Darling Downs
Health

Health Service Plan 2019-2029

Activity and Projections Paper

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Darling Downs Health

Health Service Plan Activity and Projections Paper March 2019

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Office of the Chief Executive
Darling Downs Hospital and Health Service
Jofre Level 1 Baillie Henderson Hospital
PO Box 405 Toowoomba Qld 4350

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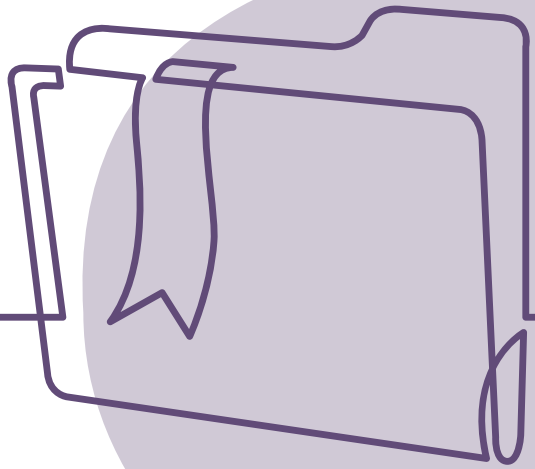


Section 1

Introduction

The purpose of the Health Service Plan Activity and Projections 2019-29 (this paper) is to provide projected service activity estimates to inform and support the Chief Executive and Board to make decisions regarding the development of services across Darling Downs Hospital and Health Service (Darling Downs Health).

The paper provides by facility the estimated inpatient bed and treatment spaces requirements up to 2036/37. The most critical of these findings are highlighted in the accompanying document, the Darling Downs Health Health Service Plan 2019-29.

Future estimates for capacity requirements are set out in the following chapters based on Queensland Health endorsed data sets and methodologies to create the 'Base Case' scenario. The Base Case Scenario is fundamentally representative of maintaining future services without change to the type of services provided or historical patient flows. The Base Case estimates are based on built in assumptions about public private market share, continued reductions in hospital length of stay and static rates for self-sufficiency. This paper measures the change to forecast Base Case capacity by moderating benchmarks used in the assumptions for reduced length of stay, market share and self-sufficiency.

This paper also looks at the impact on the Base Case of providing alternative models of care or new services as identified during stakeholder consultations. Alternative models of care are mostly focused on hospital substitution and avoidance and therefore should reduce projected capacity requirements. Caution is required interpreting the impact of these results on the Base Case projections. In the first instance any projected reduction in demand for services arising from alternative models of care must be used to account for reductions arising from the built in Base Case assumptions.

Finally, while there is limited capacity to develop new services in the next ten years at Toowoomba Hospital due to physical space constraints, stakeholder consultation highlighted discrete requests for service development, the impact on Base Case capacity of providing these services is outlined in this paper.

Section 2

Analyse the Darling Downs Health Base Case

2.1. INTRODUCTION

The System Planning Branch, Department of Health (DoH) annually provides data sets with projected future health service activity to each Hospital and Health Service.

The projections of future health service activity are a collection of medium term, health service planning projections that forecast demand for anticipated healthcare by service type and location.

In addition to the data set DoH also provide endorsed guidelines for standard methodologies to determine specific service stream requirements (medical inpatient beds, special care nursery cots, chemotherapy bed alternatives etcetera). Note that the inpatient bed guidelines were endorsed in 2009 and do not reference the 'market share adjustment'.The DoH has since added this adjustment to allow for the impact of decreasing rates of private health insurance and the subsequent rising increase in demand for public services. A summary of methodologies for projecting health service activity is provided in the Appendix C section. Alternatively, to access the page with the complete set of endorsed projection methodologies go to:

http://qheps.health.qld.gov.au/ppb/html/ppb_plan_guidelines_home.htm

The resulting analysis based on interrogation of the DoH data sets and using the endorsed guidelines for projecting bed and services requirements for each facility determines the 'Base Case'. The Base Case forms the foundation for determining what is required to meet future activity demand. For the purposes of this report, the 'Base Case' refers to all activity projections using the latest DoH data sets for general inpatient admissions, endoscopy, mental health, renal dialysis, outpatients, emergency department presentations and chemotherapy. All projections in the 'Base Case' are calculated using DoH methodology developed specifically for each activity type.

The 'Base Case' provides projections based on a business as usual approach including historical trend of separations, current utilisation of services and current referral patterns. The tool generates a model of projected activity which based on state averages may result in a subtle change over time.For example, if the Darling Downs Health Average Length of Stay (ALOS) for a particular specialty related group is higher than the state average then the model will subtly trend the ALOS in the projections down close to the State ALOS. If the Darling Downs Health ALOS is less than the State average the projection will be status quo. It should also be noted that the ALOS generated in the DoH data sets do not include any portion of the inpatient stay greater than 90 days.

For the purposes of health service planning the 'Base Case' is reviewed in order to provide a comparator for individually modelled scenario's that can be viewed as 'what-if's' based around key strategic questions for Darling Downs Health. That is, what would the impact be, in terms of health service activity and capacity requirements at Toowoomba Hospital (TH), if Darling Downs Health:

- Systematically implemented a series of targeted model of care changes aimed at reducing demand on acute inpatient beds?
- Pursued an altered future role for its rural and remote facilities?
- Took steps to expand the role of TH to increase self-sufficiency for targeted specialty services?
- Expanded public/private arrangements for future acute service delivery?

These questions are explored within Sections 3 through to 6 of this report.

2.2. POPULATION PROJECTIONS UNDERPINNING THE BASE CASE

Acute Inpatient Modelling (AIM) and non-AIM projections are informed by a variety of inputs and one of the most important is the population projections provided by Queensland Government Statistician's Office (QGSO) based on Australian Bureau of Statistics (ABS) data.

Population level 2016 Census data was released by the ABS at the end of June 2017 allowing a comparison of the QGSO 2015 edition population projections for the year 2016. The QGSO 2015 edition population projections underpin AIM and other non-AIM population-based projections (such as mental health).

Analysis of the total Darling Downs Health population indicates that the QGSO 2015 edition projections for 2016 overestimated the population growth in the region by 2,410 people or 0.9 percent based on the 2016 census results. When analysed by age groups, for all residents 60 years and over, there is very little difference between the QGSO 2015 edition projection for 2016 and the 2016 Census.For the following age groups, the QGSO 2016 projections overestimated the resident population:

- zero to 14 years of age cohort by 726 residents
- 30 to 59 years of age cohort by 2,343 residents.

For the age group 15 to 29 years of age the QGSO 2016 projections underestimated the resident population by 614 residents.

Table 1 below shows the difference between QGSO projection and Census results in five-year intervals. This means that population growth factors in the methodology for AIM and non-AIM projections are accurate for the over 60 years old cohort. For all other age groups, the projections will be slightly inflated due to the overestimate in population.

Comparison of the 2011 and 2016 Census figures shows an increase in the total Darling Downs Health population by about 12,000 residents for the five-year period. By age group, most of population growth occurred in the over 55 years and over age groups. Refer to Table 1.

Table 1 Population by Age Group, Darling Downs Health, 2011 vs 2016 Projected vs. 2016 Census

Age Group	2011 Population	2016 Population (QGSO Projection)	2016 Population (Census 2016)	Difference (Census minus Projection)	Population Change 2011 to 2016 Census
00-04	19,279	19,019	18,647	-372	-632
05-09	18,834	19,769	20,210	441	1,376
10-14	19,630	19,853	19,058	-795	-572
15-19	18,527	18,321	17,956	-365	-571
20-24	16,080	16,202	17,105	903	1,025
25-29	15,696	17,023	17,099	76	1,403
30-34	14,838	16,931	16,368	-563	1,530
35-39	16,664	16,087	15,399	-688	-1,265
40-44	17,559	17,496	17,110	-386	-449
45-49	17,303	18,152	17,870	-282	567
50-54	17,974	17,907	17,709	-198	-265
55-59	16,545	18,293	18,067	-226	1,522
60-64	16,084	16,701	16,565	-136	481
65-69	13,445	15,897	16,201	304	2,756
70+	28,841	34,309	34,188	-121	5,347
Total DDH	**267,299**	**281,960**	**279,552**	**-2,408**	**12,253**

Sources: Queensland Government population projections, 2015 edition; Australian Bureau of Statistics, Population by age and sex, regions of Australia, 2014. Australian Bureau of Statistics 2016 Quick stats (http://www.abs.gov.au/websitedbs/D3310114.nsf/Home/2016%20QuickStats)

Note: adjusted for SA2s inclusive of population of Banana SA2 outside of Darling Downs Health so will slightly overestimate population totals

Analysis by Local Planning Region indicates that the 2016 ABS Census population is lower than the QGSO projections for four of the five planning regions.The was a small increase for Western Downs Local Planning Region, however overall the Census 2016 results for the Darling Downs population demonstrated there were 2,410 residents fewer residents than QGSO projection for 2016. Refer to Table 2.

Table 2 Population by Local Planning Region, Darling Downs Health, 2011 vs 2016 Projected vs 2016 Census

	2011 Population	2016 Population (QGSO Projection)	2016 Population (Census 2016)	Difference (Census minus Projection)	Population Change 2011 to 2016 Census
Darling Downs - East	41,409	43,280	42,836	-444	1,427
Goondiwindi	10,858	11,020	10,783	-237	-75
South Burnett	33,059	34,579	33,927	-652	868
Southern Downs	39,349	40,915	40,699	-216	1,350
Toowoomba	126,426	134,983	133,654	-1,329	7,228
Western Downs	16,198	17,183	17,653	470	1,455
Total DDH	**267,299**	**281,960**	**279,552**	**-2,408**	**12,253**

Sources: Queensland Government population projections, 2015 edition; Australian Bureau of Statistics, Population by age and sex, regions of Australia, 2014 Australian Bureau of Statistics 2016 Quick stats (http://www.abs.gov.au/websitedbs/D3310114.nsf/Home/2016%20QuickStats)

Note: adjusted for SA2s inclusive of population of Banana SA2 outside of Darling Downs Health so will slightly overestimate population totals

2.3. AIM BASE CASE ACTIVITY PROJECTIONS

Darling Downs Health admitted activity (projected using AIM as the endorsed projection methodology) is projected to increase from 69,289 separations in 2016/17 to 131,611 separations in 2036/37. This represents an annual compound growth rate (AGR) of 3.26%.

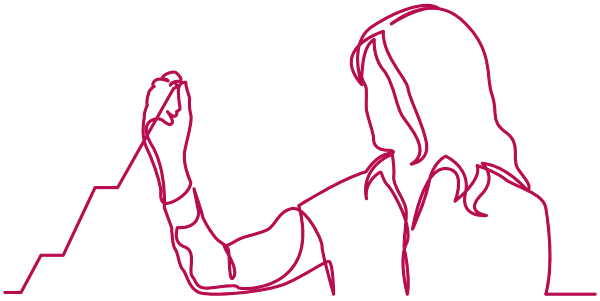
Adult activity is projected to increase at a faster rate (3.37% per year) than paediatric activity (1.84% per year), and same day activity is projected to increase at a faster rate than overnight activity. Refer to Table 3.

Table 3 Total Activity, Darling Downs Health by Adult / Child and Stay Type, 2016/17 to 2036/37

Adult/ Child	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Adult	ON	33,147	168,585	45,324	228,778	58,165	293,285	25,018	124,700	2.85%	2.81%
	SD	30,502	30,502	45,977	45,977	65,325	65,325	34,823	34,823	3.88%	3.88%
Adult Total		**63,649**	**199,087**	**91,302**	**274,756**	**123,490**	**358,610**	**59,841**	**159,523**	**3.37%**	**2.99%**
Child	ON	3,470	9,166	4,008	10,691	4,466	11,460	996	2,294	1.27%	1.12%
	SD	2,170	2,170	2,891	2,891	3,654	3,654	1,484	1,484	2.64%	2.64%
Child Total		**5,640**	**11,336**	**6,899**	**13,582**	**8,121**	**15,114**	**2,481**	**3,778**	**1.84%**	**1.45%**
Grand Total		**69,289**	**210,423**	**98,200**	**288,338**	**131,611**	**373,724**	**62,322**	**163,301**	**3.26%**	**2.91%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Note: Excludes unqualified neonates and renal dialysis



The majority of adult separations in 2016/17 were for general medical and surgical services. However when considering overnight bed days, sub-acute services (palliative care, rehabilitation, other non-acute, Geriatric Evaluation Management) require almost as many beds as surgical services. The highest growth rate for adult overnight beds is projected to be for subacute services. Adult same day services are projected to grow at 3.9 percent including chemotherapy. There is limited growth projected for bed days in obstetrics and gynaecology. Refer to Table 4.

Table 4 Adult Activity, Darling Downs Health by Stay Type and Specialty Grouping, 2016/17 to 2036/37

Stay type	Specialty	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
ON	Medical	14,501	54,150	20,667	76,754	27,987	100,013	13,486	45,863	3.3%	3.1%
	Mental Health	1,882	33,426	2,556	46,465	3,330	60,922	1,448	27,496	2.9%	3.0%
	Obstetrics & Gynaecology	4,359	10,708	5,294	12,330	5,054	11,500	695	792	0.7%	0.4%
	Surgical / Procedural	10,776	37,081	14,464	49,031	18,486	61,224	7,710	24,143	2.7%	2.5%
	Subacute	1,629	33,220	2,343	44,197	3,308	59,624	1,679	26,404	3.6%	3.0%
	Other**	-	-	0	1	0	2	0	2	n/a	n/a
ON Total		**33,147**	**168,585**	**45,324**	**228,778**	**58,165**	**293,285**	**25,018**	**124,700**	**2.9%**	**2.8%**
SD	Medical	9,074	9,074	17,280	17,280	27,342	27,342	18,268	18,268	5.7%	5.7%
	Mental Health	498	498	1,078	1,078	1,765	1,765	1,267	1,267	6.5%	6.5%
	Obstetrics & Gynaecology	4,346	4,346	4,518	4,518	4,924	4,924	578	578	0.6%	0.6%
	Surgical / Procedural	12,713	12,713	18,074	18,074	24,281	24,281	11,568	11,568	3.3%	3.3%
	Subacute	43	43	126	126	261	261	218	218	9.4%	9.4%
	Chemotherapy*	3,828	3,828	4,898	4,898	6,743	6,743	2,915	2,915	2.9%	2.9%
	Other**			3	3	8	8	8	8	n/a	n/a
SD Total		**30,502**	**30,502**	**45,977**	**45,977**	**65,325**	**65,325**	**34,823**	**34,823**	**3.9%**	**3.9%**
Grand Total		**63,649**	**199,087**	**91,302**	**274,756**	**123,490**	**358,610**	**59,841**	**159,523**	**3.4%**	**3.0%**

Source: AIM Base Case 16/17 (File supplied by Qld Department of Health, November 2018)

Note: Excludes unqualified neonates and renal dialysis,

* Chemotherapy provided to balance totals in Table 4 noting that DoH does not use AIM for projected activity

** Small numbers in Unallocated, Transplantation and Interventional Cardiology provided to balance totals in Table 4, noting these services not provided at Darling Downs Health. Note Prolonged Ventilation included in Surgical Procedural

2.3.1 MEDICAL

Adult medical services are projected to increase from 23, 575 separations in 2016/17 to 55,329 in 2036/37; a growth rate of 4.4% per year. The top three subspecialties by volume of separations by 2036/37 will be respiratory medicine, non-subspecialty medicine, cardiology and neurology each with over 4,000 separations across all DDH facilities. Refer to Table 5. Excludes chemotherapy, interventional cardiology and renal dialysis as AIM is not used as projecting future activity for these service streams (see next section for non-AIM projections).

Table 5 Adult Medical Activity, DDH by Stay Type and Service Related Group (SRG), 2016/17 to 2036/37

Stay Type	SRG 8	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
ON	Cardiology	2,959	7,999	3,571	9,611	4,167	10,828	1,208	2,829	1.7%	1.5%
	Dermatology	67	307	95	367	128	467	61	160	3.3%	2.1%
	Drug & Alcohol	448	976	653	1,427	884	1,864	436	888	3.5%	3.3%
	Endocrinology	745	2,973	1,016	3,670	1,334	4,478	589	1,505	3.0%	2.1%
	Gastroenterology	842	2,690	1,190	3,824	1,527	4,763	685	2,073	3.0%	2.9%
	Haematology	321	1,371	412	1,892	473	2,152	152	781	2.0%	2.3%
	Immunology & Infections	1,467	6,543	2,330	10,324	3,454	14,397	1,987	7,854	4.4%	4.0%
	Medical Oncology	401	2,246	478	2,312	451	2,050	50	-196	0.6%	-0.5%
	Neurology	1,845	7,271	2,838	11,181	4,104	15,397	2,259	8,126	4.1%	3.8%
	Non Subspecialty Medicine	2,054	8,013	3,131	11,336	4,478	15,462	2,424	7,449	4.0%	3.3%
	Renal Medicine	351	1,417	568	2,343	792	3,114	441	1,697	4.2%	4.0%
	Respiratory Medicine	2,763	11,491	3,986	17,015	5,620	23,046	2,857	11,555	3.6%	3.5%
	Rheumatology	238	853	400	1,452	577	1,996	339	1,143	4.5%	4.3%
ON Total		**14,501**	**54,150**	**20,667**	**76,754**	**27,987**	**100,013**	**13,486**	**45,863**	**3.3%**	**3.1%**
SD	Cardiology	1,950	1,950	3,367	3,367	4,947	4,947	2,997	2,997	4.8%	4.8%
	Dermatology	194	194	326	326	405	405	211	211	3.7%	3.7%
	Drug & Alcohol	296	296	611	611	921	921	625	625	5.8%	5.8%
	Endocrinology	304	304	619	619	1,040	1,040	736	736	6.3%	6.3%
	Gastroenterology	559	559	1,017	1,017	1,516	1,516	957	957	5.1%	5.1%
	Haematology	1,374	1,374	2,720	2,720	4,615	4,615	3,241	3,241	6.2%	6.2%
	Immunology & Infections	540	540	1,099	1,099	1,892	1,892	1,352	1,352	6.5%	6.5%
	Medical Oncology	211	211	311	311	370	370	159	159	2.9%	2.9%
	Neurology	1,294	1,294	2,676	2,676	4,342	4,342	3,048	3,048	6.2%	6.2%
	Non Subspecialty Medicine	1,348	1,348	2,772	2,772	4,683	4,683	3,335	3,335	6.4%	6.4%
	Renal Medicine	308	308	562	562	738	738	430	430	4.5%	4.5%
	Respiratory Medicine	696	696	1,200	1,200	1,872	1,872	1,176	1,176	5.1%	5.1%
SD Total		**9,074**	**9,074**	**17,280**	**17,280**	**27,342**	**27,342**	**18,268**	**18,268**	**5.7%**	**5.7%**
Grand Total		**23,575**	**63,224**	**37,948**	**94,035**	**55,329**	**127,355**	**31,754**	**64,131**	**4.4%**	**3.6%**

Source: AIM Base Case 16/17 (File supplied by Qld Department of Health, November 2018). Note: excludes chemotherapy, interventional cardiology and renal dialysis as AIM is not used as projecting future activity for these service streams (see next section for non-AIM projections).

By volume, TH is projected to have the greatest growth in adult medical activity to 2036/37 with an increase from 12,225 separations to 30,920 separations or 4.7% per annum. Adult medical bed days at TH are projected to grow at 3.6% per annum. Refer to Table 6.

Note: Table 6 excludes chemotherapy, interventional cardiology and renal dialysis as AIM is not used as projecting future activity for these service streams (see next section for non-AIM projections).

Table 6 Adult Medical Activity, Darling Downs Health by Place of Treatment 2016/17 to 2036/37

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Cherbourg	ON	364	1,468	454	1,786	552	2,057	188	589	2.1%	1.7%
	SD	87	87	136	136	195	195	108	108	4.1%	4.1%
Cherbourg Total		**451**	**1,555**	**591**	**1,922**	**747**	**2,252**	**296**	**697**	**2.6%**	**1.9%**
Chinchilla	ON	432	1,319	562	1,810	720	2,213	288	894	2.6%	2.6%
	SD	195	195	333	333	502	502	307	307	4.8%	4.8%
Chinchilla Total		**627**	**1,514**	**895**	**2,143**	**1,222**	**2,715**	**595**	**1,201**	**3.4%**	**3.0%**
Dalby	ON	697	2,369	1,015	3,547	1,396	4,768	699	2,399	3.5%	3.6%
	SD	664	664	1,108	1,108	1,642	1,642	978	978	4.6%	4.6%
Dalby Total		**1,361**	**3,033**	**2,123**	**4,655**	**3,039**	**6,410**	**1,678**	**3,377**	**4.1%**	**3.8%**
Darling Downs Private(public patients)	ON	6	22	7	23	8	26	2	4	1.6%	0.8%
	SD	2	2	4	4	6	6	4	4	5.8%	5.8%
Darling Downs Total		**8**	**24**	**11**	**27**	**14**	**32**	**6**	**8**	**3.0%**	**1.4%**
Goondiwindi	ON	573	1,775	696	2,271	834	2,587	261	812	1.9%	1.9%
	SD	169	169	271	271	378	378	209	209	4.1%	4.1%
Goondiwindi Total		**742**	**1,944**	**967**	**2,542**	**1,212**	**2,965**	**470**	**1,021**	**2.5%**	**2.1%**
Inglewood	ON	140	537	194	823	259	1,084	119	547	3.1%	3.6%
	SD	42	42	70	70	101	101	59	59	4.5%	4.5%
Inglewood Total		**182**	**579**	**264**	**893**	**360**	**1,185**	**178**	**606**	**3.5%**	**3.6%**
Jandowae	ON	121	651	173	895	232	1,161	111	510	3.3%	2.9%
	SD	53	53	86	86	126	126	73	73	4.4%	4.4%
Jandowae Total		**174**	**704**	**260**	**981**	**357**	**1,287**	**183**	**583**	**3.7%**	**3.1%**
Kingaroy	ON	1,189	3,252	1,626	4,844	2,156	6,469	967	3,217	3.0%	3.5%
	SD	668	668	1,330	1,330	2,125	2,125	1,457	1,457	6.0%	6.0%
Kingaroy Total		**1,857**	**3,920**	**2,955**	**6,174**	**4,281**	**8,593**	**2,424**	**4,673**	**4.3%**	**4.0%**
Miles	ON	242	834	319	1,138	404	1,407	162	573	2.6%	2.6%
	SD	126	126	190	190	258	258	132	132	3.6%	3.6%
Miles Total		**368**	**960**	**508**	**1,328**	**661**	**1,665**	**293**	**705**	**3.0%**	**2.8%**
Millmerran	ON	163	723	243	1,055	343	1,482	180	759	3.8%	3.7%
	SD	97	97	177	177	268	268	171	171	5.2%	5.2%
Millmerran Total		**260**	**820**	**420**	**1,232**	**611**	**1,750**	**351**	**930**	**4.4%**	**3.9%**
Murgon	ON	401	1,131	578	1,696	795	2,315	394	1,184	3.5%	3.6%
	SD	167	167	346	346	574	574	407	407	6.4%	6.4%
Murgon Total		**568**	**1,298**	**925**	**2,042**	**1,369**	**2,890**	**801**	**1,592**	**4.5%**	**4.1%**
Nanango	ON	412	1,418	578	2,083	788	2,792	376	1,374	3.3%	3.4%
	SD	101	101	188	188	302	302	201	201	5.6%	5.6%
Nanango Total		**1,519**	**765**	**2,271**	**1,090**	**3,094**	**577**	**1,575**	**3.8%**	**3.6%**	
Oakey	ON	168	959	256	1,408	376	2,033	208	1,074	4.1%	3.8%
	SD	53	53	90	90	134	134	81	81	4.7%	4.7%
Oakey Total		**221**	**1,012**	**346**	**1,498**	**510**	**2,167**	**289**	**1,155**	**4.3%**	**3.9%**

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
St Andrew's Toowoomba (public patients)	ON	1	1	1	2	1	2	0	1	1.4%	2.7%
	SD	6	6	12	12	18	18	12	12	5.6%	5.6%
St Andrew's Total		**7**	**7**	**13**	**13**	**19**	**19**	**12**	**12**	**5.1%**	**5.2%**
Stanthorpe Hospital	ON	833	2,606	1,166	3,885	1,586	5,116	753	2,510	3.3%	3.4%
	SD	489	489	968	968	1,531	1,531	1,042	1,042	5.9%	5.9%
Stanthorpe Total		**1,322**	**3,095**	**2,134**	**4,853**	**3,116**	**6,646**	**1,794**	**3,551**	**4.4%**	**3.9%**
Tara Hospital	ON	301	754	391	1,067	483	1,275	182	521	2.4%	2.7%
	SD	126	126	224	224	331	331	205	205	5.0%	5.0%
Tara Total		**427**	**880**	**615**	**1,291**	**814**	**1,606**	**387**	**726**	**3.3%**	**3.1%**
Taroom	ON	106	365	143	483	195	616	89	251	3.1%	2.7%
	SD	30	30	67	67	113	113	83	83	6.8%	6.8%
Taroom Total		**136**	**395**	**210**	**551**	**308**	**729**	**172**	**334**	**4.2%**	**3.1%**
Texas	ON	106	380	134	477	169	549	63	169	2.4%	1.9%
	SD	21	21	34	34	47	47	26	26	4.1%	4.1%
Texas Total		**127**	**401**	**168**	**511**	**216**	**596**	**89**	**195**	**2.7%**	**2.0%**
Toowoomba	ON	6,723	28,775	10,032	40,357	13,876	52,682	7,153	23,907	3.7%	3.1%
	SD	5,502	5,502	10,656	10,656	17,043	17,043	11,541	11,541	5.8%	5.8%
Toowoomba Total		**12,225**	**34,277**	**20,688**	**51,013**	**30,920**	**69,725**	**18,695**	**35,448**	**4.7%**	**3.6%**
Warwick	ON	1,518	4,774	2,087	7,038	2,795	9,274	1,277	4,500	3.1%	3.4%
	SD	475	475	989	989	1,645	1,645	1,170	1,170	6.4%	6.4%
Warwick Total		**1,993**	**5,249**	**3,076**	**8,027**	**4,440**	**10,919**	**2,447**	**5,670**	**4.1%**	**3.7%**
Wondai	ON	5	37	10	67	18	106	13	69	6.7%	5.4%
	SD	1	1	2	2	4	4	3	3	6.8%	6.8%
Wondai Total		**6**	**38**	**12**	**69**	**22**	**110**	**16**	**72**	**6.7%**	**5.5%**
Grand Total		**23,575**	**63,224**	**37,948**	**94,035**	**55,329**	**127,355**	**31,754**	**64,131**	**4.4%**	**3.6%**

Source: AIM Base Case 16/17 (File supplied by Qld Department of Health, November 2018)

Note: Excludes chemotherapy and interventional cardiology. Note: The tables include ICU/CCU bed days at TH (745 ICU (2016/17) and 812 CCU (2015/16) bed days. Note CCU beds not available at time of publishing for 2016/17 therefore AIM Base Case 2015/16 used as source).

2.3.2 SURGICAL SERVICES

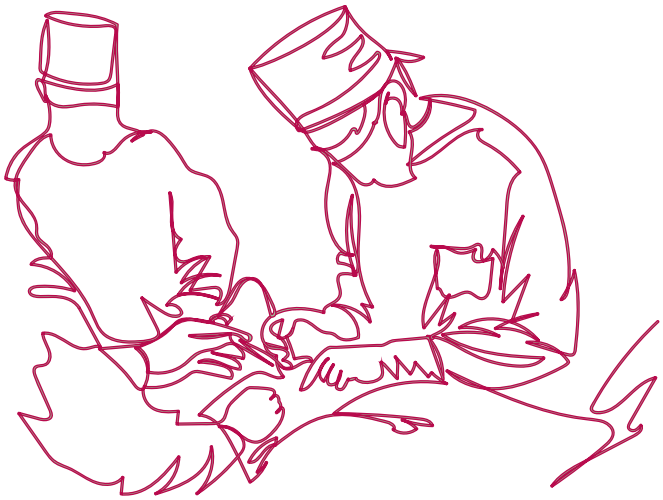
Adult surgical / procedural services are projected to increase from 23,489 separations in 2016/17 to 42,767 separations in 2036/37; a growth rate of three percent per year. The highest volume specialties are projected to be non-subspecialty surgery and orthopaedic services. Refer to Table 7.

Notes:

- Endoscopy services are projected utilising a non-AIM methodology. However, they have been included in this AIM projection to ensure overnight bed days are accounted for and included when calculating treatment spaces.
- The Service Related Group (SRG) neurosurgery includes admissions for head injuries.

Table 7 Adult Surgical / Procedural Activity, Darling Downs Health by Stay Type and SRG, 2016/17 to 2036/37

Stay Type	SRG 8	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
ON	Breast Surgery	161	292	220	393	273	476	112	184	2.7%	2.5%
	Cardiac Surgery			0	0	0	1	0.1	0.6	0.0%	0.0%
	Colorectal Surgery	302	2,333	384	2,694	445	2,954	143	621	2.0%	1.2%
	Dentistry	139	235	157	287	179	328	40	93	1.3%	1.7%
	Diagnostic GI Endoscopy	496	1,971	616	2,481	742	2,935	246	964	2.0%	2.0%
	Ear, Nose & Throat	818	1,606	1,039	2,250	1,300	3,138	482	1,532	2.3%	3.4%
	Extensive Burns	13	30	13	70	12	67	-0.9	37	-0.4%	4.1%
	Haematological Surgery	37	361	41	343	45	386	8	25	1.0%	0.3%
	Head & Neck Surgery	124	286	157	350	183	399	59	113	2.0%	1.7%
	Maxillo Surgery	36	73	34	74	32	71	- 4	-2	-0.6%	-0.1%
	Neurosurgery	265	957	411	1,360	638	2,154	373	1,197	4.5%	4.1%
	Non Subspecialty Surgery	3,507	9,656	4,801	13,203	6,252	16,816	2,745	7,160	2.9%	2.8%
	Ophthalmology	46	79	70	194	104	286	58	207	4.2%	6.6%
	Orthopaedics	2,663	11,399	3,663	15,706	4,718	19,922	2,055	8,523	2.9%	2.8%
	Plastic & Reconstructive Surgery	213	824	278	1,027	356	1,362	143	538	2.6%	2.5%
	Prolonged Ventilation	52	1,153	59	1,288	65	1,287	13	134	1.1%	0.6%
	Thoracic Surgery	18	88	23	127	29	164	11	76	2.4%	3.2%
	Upper GIT Surgery	880	2,533	1,039	3,041	1,183	3,434	303	901	1.5%	1.5%
	Urology	836	1,985	1,252	2,898	1,690	3,725	854	1,740	3.6%	3.2%
	Vascular Surgery	170	1,220	206	1,246	240	1,320	70	100	1.7%	0.4%
ON Total		**10,776**	**37,081**	**14,464**	**49,031**	**18,486**	**61,224**	**7,710**	**24,143**	**2.7%**	**2.5%**



Stay Type	SRG 8	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
SD	Breast Surgery	69	69	106	106	137	137	68	68	3.5%	3.5%
	Cardiac Surgery			0	0	0	0	0.4	0.4	0.0%	0.0%
	Colorectal Surgery	48	48	86	86	125	125	77	77	4.9%	4.9%
	Dentistry	227	227	280	280	319	319	92	92	1.7%	1.7%
	Diagnostic GI Endoscopy	5,202	5,202	6,408	6,408	7,737	7,737	2,535	2,535	2.0%	2.0%
	Ear, Nose & Throat	982	982	1,066	1,066	1,389	1,389	407	407	1.7%	1.7%
	Extensive Burns	8	8	10	10	12	12	4	4	2.0%	2.0%
	Haematological Surgery	8	8	12	12	16	16	8	8	3.5%	3.5%
	Head & Neck Surgery	37	37	43	43	48	48	11	11	1.3%	1.3%
	Maxillo Surgery	4	4	6	6	9	9	5	5	4.2%	4.2%
	Neurosurgery	294	294	503	503	782	782	488	488	5.0%	5.0%
	Non Subspecialty Surgery	2,323	2,323	3,960	3,960	5,945	5,945	3,622	3,622	4.8%	4.8%
	Ophthalmology	75	75	134	134	220	220	145	145	5.5%	5.5%
	Orthopaedics	1,843	1,843	2,997	2,997	4,164	4,164	2,321	2,321	4.2%	4.2%
	Plastic Surgery	509	509	677	677	805	805	296	296	2.3%	2.3%
	Prolonged Ventilation			0	0	0	0	0.2	0.2	0.0%	0.0%
	Thoracic Surgery	1	1	9	9	18	18	17	17	15.6%	15.6%
	Upper GIT Surgery	302	302	437	437	590	590	288	288	3.4%	3.4%
	Urology	673	673	1,158	1,158	1,694	1,694	1,021	1,021	4.7%	4.7%
	Vascular Surgery	108	108	183	183	271	271	163	163	4.7%	4.7%
SD Total		**12,713**	**12,713**	**18,074**	**18,074**	**24,281**	**24,281**	**11,568**	**11,568**	**3.3%**	**3.3%**
Grand Total		**23,489**	**49,794**	**32,539**	**67,106**	**42,767**	**85,505**	**19,278**	**35,711**	**3.0%**	**2.7%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Let's Take A Closer Look at Public Surgical Outflows

Services provided by Darling Downs Health public facilities for vascular surgery, plastic surgery and neurosurgery, ophthalmology and urology have been historically limited due to limited ability to recruit specialists in these service streams. More recently Toowoomba Hospital has recruited additional urology specialists and ENT have undertaken some plastic surgery for removal of facial cancers. However there remains relatively low utilisation for these services with over 2,500 patients per annum treated outside the Darling Downs Health for these services. Table 8 below shows very low utilisation for ophthalmology, plastic surgery and vascular surgery (less than 80 percent) indicating that Darling Downs Health residents using public services are receiving a lower rate of treatment when compared to the state average despite accessing services at metropolitan hospitals (See Table 9).

Table 8 Relative Utilisation 2016/17 of Neurosurgery, Ophthalmology, Plastic Surgery, Urology and Vascular Surgery Public Patients Darling Downs Health residents.

Relative Utilisation SRG 8	Year 2016/17
Neurosurgery	95.23
Ophthalmology	70.42
Plastic & Reconstructive Surgery	73.86
Urology	87.71
Vascular Surgery	75.97

Source: AIM Base Case 16/17 (File supplied by Qld Department of Health, November 2018)

Table 9 Public Services provided by hospitals outside Darling Downs Health to Darling Downs Health Residents 2016/17 for Neurosurgery, Ophthalmology, Plastic Surgery, Urology and Vascular Surgery

	2016/17		2021/22		2026/27	
SRG 8	Separations	Bed days	Separations	Bed days	Separations	Bed days
Neurosurgery	299	2,127	346	2,157	398	2,292
Ophthalmology	1,098	1,421	1,471	1,783	1,864	2,219
Plastic Surgery	314	1,062	356	1,046	395	1,157
Urology	594	1,250	742	1,502	897	1,749
Vascular Surgery	217	1,673	249	1,584	277	1,676
Grand Total	**2,522**	**7,533**	**3,164**	**8,073**	**3,832**	**9,093**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

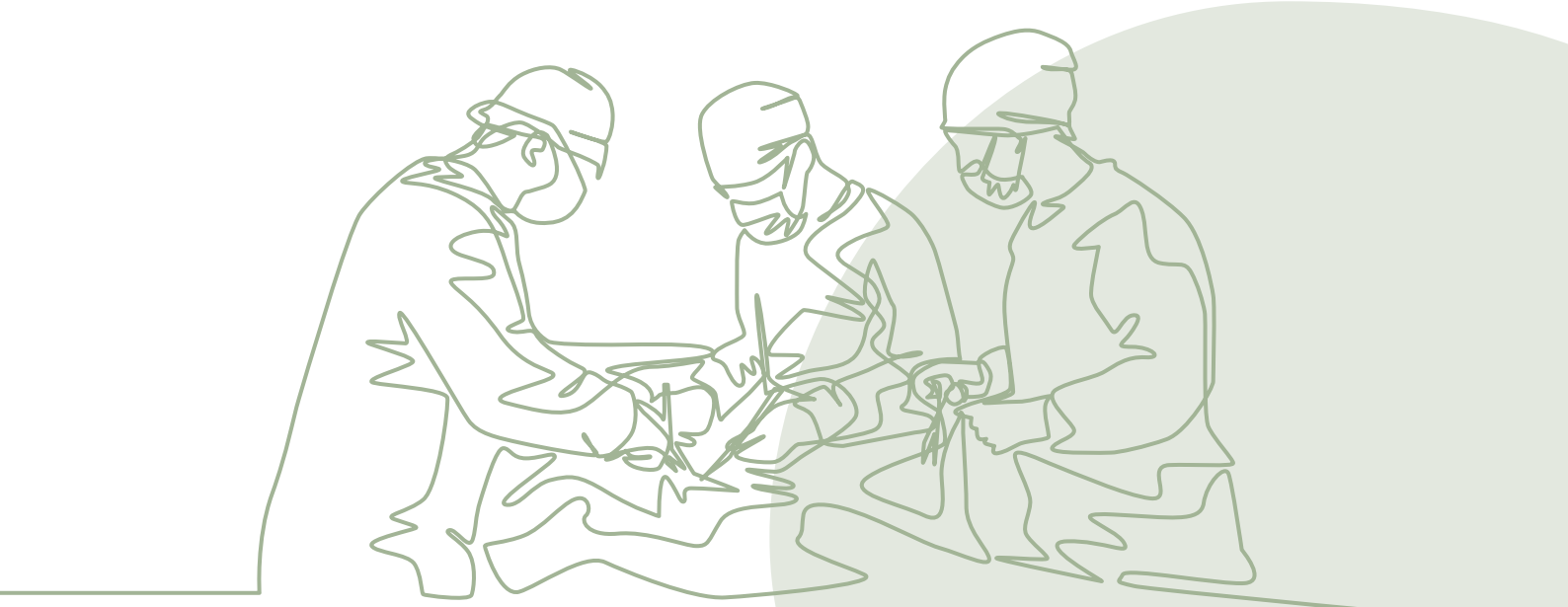


Table 9 does not include the potential inflows from South West Hospital and Health Service that would occur if Toowoomba Hospital provided the above services or increased capacity in these services.

Adult surgical / procedural services are projected to increase at a 3% per annum growth rate (separations) at TH. In 2036/37, TH is projected to account for 28,160 of 42,767 of total surgical/procedural separations across Darling Downs Health. Refer to Table 10.Public surgical/procedural services purchased from private facilities are projected to increase from 265 to 403 separations.

Table 10 Adult Surgical / Procedural Activity, Darling Downs Health by Place of Treatment and Stay Type, 2016/17 to 2036/37 (public patients)

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Cherbourg	ON	165	585	197	608	228	674	63	89	1.6%	0.7%
	SD	51	51	76	76	106	106	55	55	3.7%	3.7%
Cherbourg Total		**216**	**636**	**273**	**685**	**334**	**780**	**118**	**144**	**2.2%**	**1.0%**
Chinchilla	ON	195	437	248	619	312	816	117	379	2.4%	3.2%
	SD	156	156	258	258	384	384	228	228	4.6%	4.6%
Chinchilla Total		**351**	**593**	**506**	**877**	**696**	**1,200**	**345**	**607**	**3.5%**	**3.6%**
Dalby	ON	345	840	480	1,306	643	1,829	298	989	3.2%	4.0%
	SD	685	685	982	982	1,319	1,319	634	634	3.3%	3.3%
Dalby Total		**1,030**	**1,525**	**1,462**	**2,287**	**1,961**	**3,148**	**931**	**1,623**	**3.3%**	**3.7%**
Darling Downs Private(public patients)	ON	3	9	4	9	5	11	2	2	2.1%	0.8%
	SD	71	71	95	95	120	120	49	49	2.6%	2.6%
Darling Downs Total		**74**	**80**	**99**	**104**	**124**	**130**	**50**	**50**	**2.6%**	**2.5%**
Goondiwindi	ON	308	722	374	1,022	450	1,225	142	503	1.9%	2.7%
	SD	238	238	301	301	369	369	131	131	2.2%	2.2%
Goondiwindi Total		**546**	**960**	**675**	**1,322**	**820**	**1,594**	**274**	**634**	**2.1%**	**2.6%**
Inglewood	ON	34	100	43	139	50	162	16	62	1.9%	2.4%
	SD	50	50	82	82	117	117	67	67	4.4%	4.4%
Inglewood Total		**84**	**150**	**125**	**221**	**167**	**279**	**83**	**129**	**3.5%**	**3.2%**
Jandowae	ON	22	160	33	198	44	270	22	110	3.6%	2.7%
	SD	24	24	40	40	58	58	34	34	4.5%	4.5%
Jandowae Total		**46**	**184**	**73**	**238**	**103**	**328**	**57**	**144**	**4.1%**	**2.9%**
Kingaroy	ON	677	1,590	907	2,409	1,176	3,224	499	1,634	2.8%	3.6%
	SD	1,049	1,049	1,517	1,517	2,062	2,062	1,013	1,013	3.4%	3.4%
Kingaroy Total		**1,726**	**2,639**	**2,423**	**3,925**	**3,238**	**5,286**	**1,512**	**2,647**	**3.2%**	**3.5%**
Miles	ON	176	392	225	521	285	645	109	253	2.4%	2.5%
	SD	174	174	239	239	305	305	131	131	2.8%	2.8%
Miles Total		**350**	**566**	**464**	**760**	**590**	**950**	**240**	**384**	**2.6%**	**2.6%**
Millmerran	ON	61	208	94	335	135	466	74	258	4.0%	4.1%
	SD	17	17	29	29	41	41	24	24	4.5%	4.5%
Millmerran Total		**78**	**225**	**124**	**364**	**176**	**508**	**98**	**283**	**4.2%**	**4.2%**
Murgon	ON	159	490	235	746	329	1,046	170	556	3.7%	3.9%
	SD	65	65	112	112	172	172	107	107	5.0%	5.0%
Murgon Total		**224**	**555**	**346**	**858**	**502**	**1,218**	**278**	**663**	**4.1%**	**4.0%**
Nanango	ON	161	384	221	576	292	770	131	386	3.0%	3.5%
	SD	45	45	82	82	129	129	84	84	5.4%	5.4%
Nanango Total		**206**	**429**	**304**	**659**	**421**	**899**	**215**	**470**	**3.6%**	**3.8%**

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Oakey	ON	48	272	79	467	125	735	77	463	4.9%	5.1%
	SD	23	23	35	35	51	51	28	28	4.1%	4.1%
Oakey Total		**71**	**295**	**113**	**502**	**176**	**787**	**105**	**492**	**4.7%**	**5.0%**
St Andrew's	ON	11	15	13	18	15	20	4	5	1.5%	1.5%
	SD	180	180	226	226	265	265	85	85	1.9%	1.9%
St Andrew's Total		**191**	**195**	**239**	**245**	**279**	**285**	**88**	**90**	**1.9%**	**1.9%**
Stanthorpe Hospital	ON	350	946	478	1,406	656	2,032	306	1,086	3.2%	3.9%
	SD	550	550	827	827	1,113	1,113	563	563	3.6%	3.6%
Stanthorpe Total		**900**	**1,496**	**1,305**	**2,234**	**1,770**	**3,145**	**870**	**1,649**	**3.4%**	**3.8%**
Tara Hospital	ON	98	255	123	337	143	364	45	109	1.9%	1.8%
	SD	75	75	115	115	155	155	80	80	3.7%	3.7%
Tara Total		**173**	**330**	**238**	**451**	**298**	**519**	**125**	**189**	**2.8%**	**2.3%**
Taroom	ON	38	111	50	162	64	221	26	110	2.6%	3.5%
	SD	20	20	27	27	34	34	14	14	2.7%	2.7%
Taroom Total		**58**	**131**	**77**	**190**	**98**	**255**	**40**	**124**	**2.7%**	**3.4%**
Texas	ON	66	351	85	349	108	414	42	63	2.5%	0.8%
	SD	16	16	26	26	37	37	21	21	4.3%	4.3%
Texas Total		**82**	**367**	**111**	**375**	**145**	**451**	**63**	**84**	**2.9%**	**1.0%**
Toowoomba	ON	7,137	27,369	9,615	35,252	12,173	43,035	5,036	15,666	2.7%	2.3%
	SD	8,412	8,412	11,887	11,887	15,988	15,988	7,576	7,576	3.3%	3.3%
Toowoomba Total		**15,549**	**35,781**	**21,502**	**47,138**	**28,160**	**59,023**	**12,611**	**23,242**	**3.0%**	**2.5%**
Warwick	ON	721	1,844	960	2,550	1,252	3,262	531	1,418	2.8%	2.9%
	SD	812	812	1,118	1,118	1,455	1,455	643	643	3.0%	3.0%
Warwick Total		**1,533**	**2,656**	**2,079**	**3,668**	**2,708**	**4,717**	**1,175**	**2,061**	**2.9%**	**2.9%**
Wondai	ON	1	1	2	2	2	2	0.7	0.7	2.7%	2.7%
Wondai Total		**1**	**1**	**2**	**2**	**2**	**2**	**0.7**	**0.71**	**0.03**	**0.03**
Grand Total		**23,489**	**49,794**	**32,539**	**67,106**	**42,767**	**85,505**	**19,278**	**35,711**	**3.0%**	**0.03**

Source: AIM Base Case 16/17 (File supplied by Qld Department of Health, November 2018). Note: The tables include ICU/CCU bed days at TH (1,036 ICU (2016/17) and 42 CCU bed days in (2015/16 noting CCU beds not available at time of publishing for 2016/17 therefore AIM Base Case 2015/16 used as source).

2.3.3 MENTAL HEALTH

AIM is not the endorsed health planning tool for projecting Mental Health activity. The National Mental Health Service Planning Framework (NMHSPF) is the endorsed tool for planning mental health projected activity. According to the NMHSPF Darling Downs Health has sufficient acute and non-acute mental health beds to meet demand to at least 2026, noting that the NMHSPF projections do not extend beyond 2026.

The following tables are illustrative only with respect to growth noting that the projected future bed day predictions are not used to calculate inpatient bed requirements for mental health.The AIM base case adult indicates that mental health services are projected to increase at a 3.9 percent per annum, with same day separations growing at 6.5 percent per annum and overnight separations growing at 2.9 percent per annum.

Indigenous Darling Downs Health residents are more likely to be hospitalised for mental health episodes than non-Indigenous residents with almost 15 percent of all Darling Downs Health mental health separations being for Indigenous residents despite our Indigenous population representing only five percent of the total Darling Downs Health population. See Table 12 below.

Table 11 Adult Mental Health, Darling Downs Health by Stay Type 2016/17 to 2036/37

Stay Type	SRG 8	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
ON	Mental Health	1,882	33,426	2,556	46,465	3,330	60,922	1,448	27,496	2.9%	3.0%
ON Total		**1,882**	**33,426**	**2,556**	**46,465**	**3,330**	**60,922**	**1,448**	**27,496**	**2.9%**	**3.0%**
SD	Mental Health	498	498	1,078	1,078	1,765	1,765	1,267	1,267	6.5%	6.5%
ON Total		**498**	**498**	**1,078**	**1,078**	**1,765**	**1,765**	**1,267**	**1,267**	**6.5%**	**6.5%**
Grand Total		**2,380**	**33,924**	**3,634**	**47,543**	**5,095**	**62,687**	**2,715**	**28,763**	**3.9%**	**3.1%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 12 Total Mental Health separations 2016/17 by Indigenous Status

SRG 8	Indigenous Status	Adult	Child	Total
Mental Health	ATSI	364	15	379
	Non-ATSI	2,016	190	2,206
Mental Health Total		**2,380**	**205**	**2,585**

Toowoomba Hospital accounts for 76 percent of adult mental health separations (2016/17) with an ALOS of 11.4 days. ALOS for mental health separations ranged from one day at Texas and Taroom Hospitals to 3.6 days at Cherbourg Hospital. There is no published CSCF level for mental health acute inpatient services at rural facilities. There are CSCF level 4 ambulatory adult mental health services at Kingaroy, Dalby and Warwick Hospitals and CSCF level 3 ambulatory adult mental health services at Goondiwindi, Stanthorpe and Chinchilla Hospitals.

- What opportunities are there for professional development in rural areas in Mental Health for medical (including general practitioners), nursing staff and allied health clinicians?
- To what extent does lack of supported housing accommodation contribute to longer LOS? What is the LOS for rural hospitals – how many same day admissions?

Table 13 Adult Mental Health, Darling Downs Health by Place of Treatment and Stay Type, 2016/17 to 2036/37

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Cherbourg	ON	19	79	26	192	35	296	16	217	3.1%	6.8%
	SD	4	4	8	8	14	14	10	10	6.3%	6.3%
Cherbourg Total		**23**	**83**	**35**	**200**	**48**	**309**	**25**	**226**	**3.8%**	**6.8%**
Chinchilla	ON	16	51	20	98	25	122	9	71	2.2%	4.5%
	SD	7	7	18	18	29	29	22	22	7.3%	7.3%
Chinchilla Total		**23**	**58**	**38**	**116**	**54**	**151**	**31**	**93**	**4.3%**	**4.9%**
Dalby	ON	31	90	47	174	64	239	33	149	3.7%	5.0%
	SD	20	20	50	50	82	82	62	62	7.3%	7.3%
Dalby Total		**51**	**110**	**96**	**223**	**146**	**322**	**95**	**212**	**5.4%**	**5.5%**
Goondiwindi	ON	46	120	55	272	65	325	19	205	1.7%	5.1%
	SD	6	6	18	18	30	30	24	24	8.4%	8.4%
Goondiwindi Total		**52**	**126**	**73**	**291**	**95**	**355**	**43**	**229**	**3.1%**	**5.3%**
Inglewood	ON	12	32	14	69	17	83	5	51	1.8%	4.9%
	SD	5	5	15	15	23	23	18	18	8.0%	8.0%
Inglewood Total		**17**	**37**	**29**	**83**	**40**	**106**	**23**	**69**	**4.4%**	**5.4%**
Jandowae	ON	2	2	3	3	4	4	2	2	3.7%	4.0%
	SD	2	2	5	5	8	8	6	6	7.0%	7.0%
Jandowae Total		**4**	**4**	**7**	**8**	**12**	**12**	**8**	**8**	**5.6%**	**5.7%**
Kingaroy	ON	89	191	114	346	146	480	57	289	2.5%	4.7%
	SD	58	58	107	107	164	164	106	106	5.3%	5.3%
Kingaroy Total		147	249	221	453	311	644	164	395	3.8%	4.9%
Miles	ON	16	30	21	51	25	64	9	34	2.4%	3.9%
	SD	1	1	3	3	6	6	5	5	9.2%	9.2%
Miles Total		**17**	**31**	**24**	**55**	**31**	**70**	**14**	**39**	**3.1%**	**4.2%**
Millmerran	ON	2	3	3	6	4	8	2	5	3.4%	5.3%
	SD	4	4	9	9	15	15	11	11	6.8%	6.8%
Millmerran Total		**6**	**7**	**12**	**15**	**19**	**23**	**13**	**16**	**5.9%**	**6.2%**
Murgon	ON	21	36	28	86	36	126	15	90	2.7%	6.5%
	SD	24	24	45	45	68	68	44	44	5.4%	5.4%
Murgon Total		**45**	**60**	**73**	**131**	**105**	**195**	**60**	**135**	**4.3%**	**6.1%**
Nanango	ON	21	49	29	88	37	116	16	67	2.9%	4.4%
	SD	3	3	6	6	10	10	7	7	6.0%	6.0%
Nanango Total		**24**	**52**	**35**	**94**	**47**	**125**	**23**	**73**	**3.4%**	**4.5%**
Oakey	ON	2	3	3	5	4	7	2	4	3.6%	4.5%
Oakey Total		**2**	**3**	**3**	**5**	**4**	**7**	**2**	**4**	**3.6%**	**4.5%**
Stanthorpe Hospital	ON	25	60	33	91	42	119	17	59	2.7%	3.5%
	SD	10	10	26	26	44	44	34	34	7.7%	7.7%
Stanthorpe Total		**35**	**70**	**59**	**117**	**87**	**163**	**52**	**93**	**4.6%**	**4.3%**
Tara Hospital	ON	15	37	19	63	23	76	8	39	2.2%	3.7%
	SD	13	13	29	29	44	44	31	31	6.3%	6.3%
Tara Total		**28**	**50**	**48**	**91**	**67**	**120**	**39**	**70**	**4.5%**	**4.5%**
Taroom	ON	1	1	2	11	3	18	2	17	5.1%	15.5%
	SD	2	2	6	6	11	11	9	9	8.8%	8.8%
Taroom Total		**3**	**3**	**8**	**18**	**14**	**29**	**11**	**26**	**7.8%**	**12.0%**

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Texas	ON	1	1	1	3	1	3	0	2	1.9%	6.0%
	SD	2	2	7	7	12	12	10	10	9.5%	9.5%
Texas Total		**3**	**3**	**8**	**10**	**14**	**15**	**11**	**12**	**7.9%**	**8.5%**
Toowoomba	ON	1,485	32,425	2,034	44,569	2,663	58,372	1,178	25,947	3.0%	3.0%
	SD	327	327	699	699	1,157	1,157	830	830	6.5%	6.5%
Toowoomba Total		**1,812**	**32,752**	**2,733**	**45,268**	**3,819**	**59,528**	**2,007**	**26,776**	**3.8%**	**3.0%**
Warwick	ON	78	216	104	340	134	464	56	248	2.7%	3.9%
	SD	10	10	28	28	48	48	38	38	8.1%	8.1%
Warwick Total		**88**	**226**	**131**	**367**	**182**	**512**	**94**	**286**	**3.7%**	**4.2%**
Grand Total		**2,380**	**33,924**	**3,634**	**47,543**	**5,095**	**62,687**	**2,715**	**28,763**	**3.9%**	**3.1%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 14 Average Length of Stay (ALOS) Mental Health separations 2016/17 by place of treatment

SRG 8	Place of Treatment	Separations	ALOS
Mental Health	Cherbourg Hospital	23	3.61
	Chinchilla Hospital	24	2.46
	Dalby Hospital	53	2.17
	Goondiwindi Hospital	52	2.42
	Inglewood Hospital	17	2.18
	Jandowae Hospital	4	1.00
	Kingaroy Hospital	149	1.69
	Miles Hospital	19	1.74
	Millmerran Hospital	6	1.17
	Murgon Hospital	45	1.33
	Nanango Hospital	24	2.17
	Oakey Hospital	2	1.50
	Stanthorpe Hospital	35	2.00
	Tara Hospital	29	1.79
	Taroom Hospital	3	1.00
	Texas Hospital	3	1.00
	Toowoomba Hospital	2,004	11.37
	Warwick Hospital	93	2.51
Mental Health Total		**2,585**	**9.28**

2.3.4 OBSTETRICS AND GYNAECOLOGY

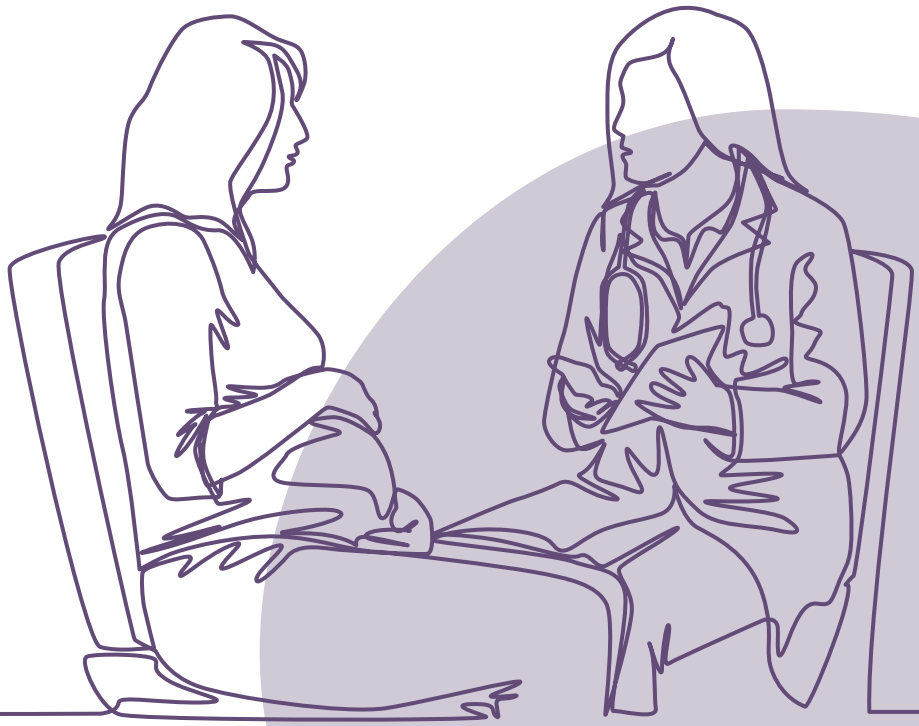
Adult obstetrics and gynaecology services are projected to increase from 8,721 separations in 2016/17 to 10,008 in 2036/37; a growth rate of 0.7 percent per year. Vaginal and caesarean deliveries are projected to increase from 2,899 in 2016/17 to 3,481 by 2036/37 in Darling Downs Health. This represents an annual growth rate of 0.9 percent per annum.

There were 3,925 antenatal separations in 2016/17, 880 more separations than actual births for that year.

Table 15 Obstetrics and Gynaecology Activity, DDH by Stay Type and SRG/ESRG, 2016/17 to 2036/37

Stay Type	SRG 8	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
ON	Gynaecology	627	1,370	749	1,454	839	1,513	212	143	1.5%	0.5%
	Ante-natal Admission	858	1,390	973	1,456	857	1,184	- 1.0	-206	-0.01%	-0.8%
	Caesarean Delivery	831	3,140	1,014	3,721	1,093	3,954	262	814	1.4%	1.2%
	Post-Natal Admission	137	278	148	273	157	267	20	-11	0.7%	-0.2%
	Vaginal Delivery	1,916	4,553	2,425	5,453	2,128	4,617	212	64	0.5%	0.1%
ON Total		**4,369**	**10,731**	**5,309**	**12,357**	**5,073**	**11,535**	**704**	**804**	**0.7%**	**0.4%**
SD	Gynaecology	1,085	1,085	1,280	1,280	1,374	1,374	289	289	1.2%	1.2%
	Ante-natal Admission	3,067	3,067	2,975	2,975	3,208	3,208	141	141	0.2%	0.2%
	Caesarean Delivery	2	2	2	2	1	1	- 0.8	- 0.8	-2.4%	-2.4%
	Post-Natal Admission	48	48	65	65	92	92	44	44	3.3%	3.3%
	Vaginal Delivery	150	150	204	204	259	259	109	109	2.8%	2.8%
SD Total		**4,352**	**4,352**	**4,526**	**4,526**	**4,935**	**4,935**	**583**	**583**	**0.6%**	**0.6%**
Grand Total		**8,721**	**15,083**	**9,835**	**16,883**	**10,008**	**16,470**	**1,287**	**1,387**	**0.7%**	**0.4%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.



Most obstetrics and gynaecology services were provided at TH (6,419 separations) in 2016/17. Dalby and Kingaroy Hospitals had the next highest activity in 2016/17 with 745 and 627 separations respectively. Note this includes antenatal separations and Dalby has a high rate of antenatal separations (63 percent of total separations). In 2036/37, TH is projected to account for 7,512 of 10,008 total obstetrics and gynaecology separations across Darling Downs Health. Refer to Table 15.

Kingaroy Hospital had 324 deliveries in 2016/17, almost double the number of deliveries in Dalby (169) and Warwick (162). 231 mothers birthing at Toowoomba Hospital were mothers of Darling Downs East and 108 mothers were from Southern Downs in 2016/17 (see Figure 1 below).Only 27 mothers birthing at Toowoomba Hospital were from South Burnett (see Table 16 below).

Figure 1 Births by Facility 2016/17

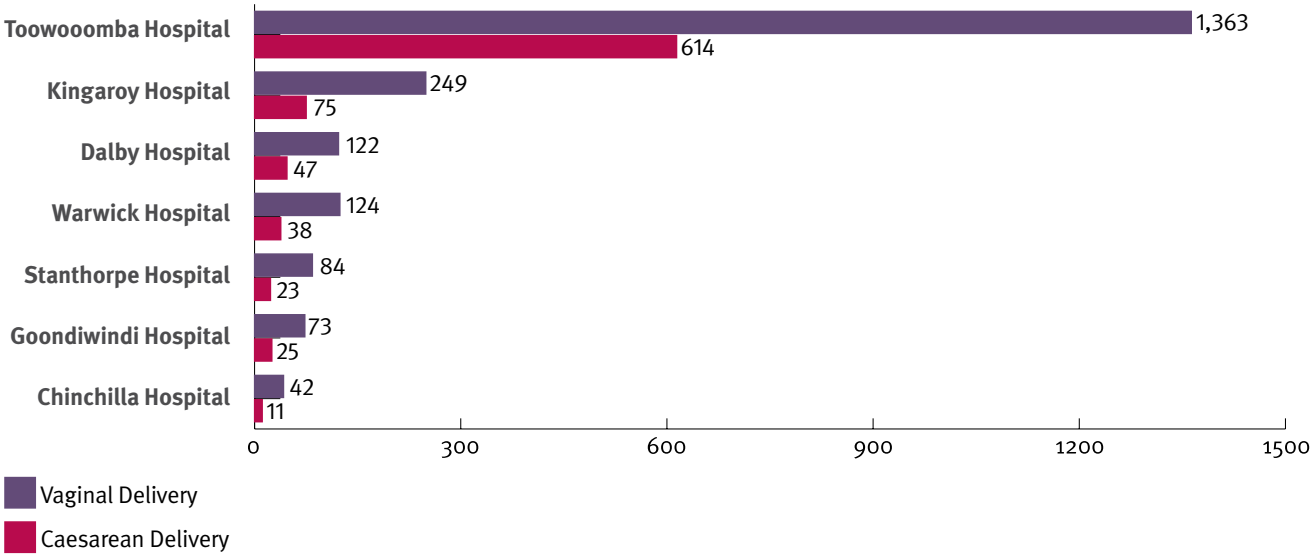


Table 16 Obstetrics and Gynaecology Activity, Darling Downs Health by Place of Treatment and Stay Type, 2016/17 to 2036/37

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Cherbourg	ON	13	27	15	25	16	25	3	-2	1.2%	-0.3%
	SD	25	25	29	29	35	35	10	10	1.7%	1.7%
Cherbourg Total		**38**	**52**	**44**	**54**	**51**	**60**	**13**	**8**	**1.5%**	**0.7%**
Chinchilla	ON	65	149	78	165	72	145	7	-4	0.5%	-0.1%
	SD	41	41	47	47	51	51	10	10	1.1%	1.1%
Chinchilla Total		**106**	**190**	**125**	**212**	**123**	**197**	**17**	**7**	**0.7%**	**0.2%**
Dalby	ON	262	665	299	728	271	642	9	-23	0.2%	-0.2%
	SD	483	483	463	463	471	471	-12	-12	-0.1%	-0.1%
Dalby Total		**745**	**1,148**	**762**	**1,191**	**742**	**1,113**	**-3**	**-35**	**0.0%**	**-0.2%**
DD Public	ON	1	3	1	3	1	2	0	-0.6	-1.8%	-1.2%
Darling Downs (public) Total		**1**	**3**	**1**	**3**	**1**	**2**	**0**	**-0.6**	**-1.8%**	**-1.2%**
Goondiwindi	ON	139	320	156	327	148	298	9	-22	0.3%	-0.4%
	SD	51	51	57	57	60	60	9	9	0.9%	0.9%
Goondiwindi Total		**190**	**371**	**214**	**384**	**208**	**359**	**18**	**- 12**	**0.5%**	**-0.2%**
Inglewood	ON	4	6	4	7	5	7	1	1.1	0.9%	0.8%
	SD	4	4	4	4	5	5	1	0.9	1.0%	1.0%
Inglewood Total		**8**	**10**	**9**	**11**	**10**	**12**	**2**	**1.9**	**0.9%**	**0.9%**

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Jandowae	ON	4	8	5	7	5	7	1	-0.9	1.1%	-0.6%
	SD	1	1	1	1	1	1	0	0.4	1.5%	1.5%
Jandowae Total		**5**	**9**	**6**	**8**	**6**	**8**	**1**	**-0.6**	**1.2%**	**-0.3%**
Kingaroy	ON	442	1,012	548	1,189	506	1,073	64	61	0.7%	0.3%
	SD	185	185	208	208	224	224	39	39	1.0%	1.0%
Kingaroy Total		627	1,197	756	1,397	730	1,297	103	100	0.8%	0.4%
Miles	ON	4	5	5	5	5	5	1	0.4	1.1%	0.3%
	SD	4	4	5	5	7	7	3	3	2.7%	2.7%
Miles Total		**8**	**9**	**10**	**11**	**12**	**12**	**4**	**3**	**1.9%**	**1.5%**
Millmerran	ON	4	5	4	5	4	5	0	0.1	0.3%	0.1%
	SD	1	1	1	1	1	1	0	-0.1	-0.5%	-0.5%
Millmerran Total		**5**	**6**	**5**	**6**	**5**	**6**	**0**	**0.0**	**0.1%**	**0.0%**
Murgon	ON	3	4	4	5	5	6	2	2	2.3%	1.7%
	SD	6	6	8	8	10	10	4	4	2.7%	2.7%
Murgon Total		**9**	**10**	**12**	**13**	**15**	**16**	**6**	**6**	**2.6%**	**2.3%**
Nanango	ON	5	7	5	6	5	6	0	-1.2	0.1%	-1.0%
	SD	1	1	1	1	1	1	0	0.2	0.8%	0.8%
Nanango Total		**6**	**8**	**6**	**7**	**6**	**7**	**0**	**-1.1**	**0.3%**	**-0.7%**
Stanthorpe Hospital	ON	159	398	173	407	165	372	6	-26	0.2%	-0.3%
	SD	61	61	69	69	74	74	13	13	1.0%	1.0%
Stanthorpe Total		**220**	**459**	**242**	**475**	**239**	**445**	**19**	**-14**	**0.4%**	**-0.1%**
Tara Hospital	ON	8	10	9	11	10	11	2	1.1	1.1%	0.5%
	SD	17	17	18	18	20	20	3	3	0.8%	0.8%
Tara Total		**25**	**27**	**27**	**29**	**30**	**31**	**5**	**4**	**0.9%**	**0.7%**
Taroom	ON	1	2	1	3	1	2	0	0.0	0.4%	0.1%
	SD	1	1	1	1	1	1	0	0.1	0.4%	0.4%
Taroom Total		**2**	**3**	**2**	**4**	**2**	**3**	**0**	**0.1**	**0.4%**	**0.2%**
Texas	ON	2	2	2	2	2	2	0	0.1	0.2%	0.2%
	SD	2	2	3	3	3	3	1	1.4	2.7%	2.7%
Texas Total		**4**	**4**	**5**	**5**	**6**	**6**	**2**	**2**	**1.6%**	**1.6%**
Toowoomba	ON	3,019	7,573	3,737	8,913	3,612	8,438	593	865	0.9%	0.5%
	SD	3,400	3,400	3,541	3,541	3,899	3,899	499	499	0.7%	0.7%
Toowoomba Total		**6,419**	**10,973**	**7,278**	**12,454**	**7,512**	**12,337**	**1,093**	**1,364**	**0.8%**	**0.6%**
Warwick	ON	234	535	262	550	240	487	6	-48	0.1%	-0.5%
	SD	69	69	70	70	70	70	1	1.3	0.1%	0.1%
Warwick Total		**303**	**604**	**332**	**620**	**310**	**557**	**7**	**-47**	**0.1%**	**-0.4%**
Grand Total		**8,721**	**15,083**	**9,835**	**16,883**	**10,008**	**16,470**	**1,287**	**1,387**	**0.7%**	**0.4%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Of the 6,419-total obstetrics and gynaecology separations from TH in 2016/17, ante-natal admissions account for the greatest number of separations (3,044 separations), and also for the greatest number of bed days (3,479 bed days).

Table 17 Obstetrics and Gynaecology Separations and Bed days, Darling Downs Health by Place of Treatment by SRG and ESRG

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Cherbourg	Gynaecology	5	9	8	10	11	13	6	4	4.3%	2.0%
	Ante-natal Admission	27	31	28	30	31	32	4	1	0.6%	0.2%
	Post-natal Admission	3	9	3	9	3	9	0.4	-0.4	0.6%	-0.2%
	Vaginal Delivery	3	3	5	5	6	6	3	3	3.5%	3.5%
Cherbourg Total		**38**	**52**	**44**	**54**	**51**	**60**	**13**	**8**	**1.5%**	**0.7%**
Chinchilla	Gynaecology	16	28	21	32	23	33	7	4.8	1.9%	0.8%
	Ante-natal Admission	33	35	34	35	35	36	2	1	0.3%	0.1%
	Caesarean Delivery	11	40	12	38	12	36	1	-3.5	0.5%	-0.5%
	Post-natal Admission	4	5	5	5	5	6	1	1	1.2%	0.5%
	Vaginal Delivery	42	82	53	102	47	86	5	4	0.6%	0.2%
Chinchilla Total		**106**	**190**	**125**	**212**	**123**	**197**	**17**	**7**	**0.7%**	**0.2%**
Dalby	Gynaecology	76	95	95	112	104	118	28	23	1.6%	1.1%
	Ante-natal Admission	470	488	432	449	423	434	-47	-54	-0.5%	-0.6%
	Caesarean Delivery	47	201	52	212	53	212	6	11	0.6%	0.3%
	Post-natal Admission	30	52	32	52	34	51	4	-0.8	0.6%	-0.1%
	Vaginal Delivery	122	312	150	365	128	297	6	-15	0.2%	-0.2%
Dalby Total		**745**	**1,148**	**762**	**1,191**	**742**	**1,113**	**-3**	**-35**	**0.0%**	**-0.2%**
Darling Downs (public patients)	Gynaecology	1	3	1	3	1	2	-0.3	-0.6	-1.8%	-1.2%
Darling Downs (public patients) Total		**1**	**3**	**1**	**3**	**1**	**2**	**-0.3**	**-0.6**	**-1.8%**	**-1.2%**
Goondiwindi	Gynaecology	49	78	56	76	57	74	8.4	-3.9	0.8%	-0.3%
	Ante-natal Admission	37	45	37	42	39	42	2	-3	0.2%	-0.3%
	Caesarean Delivery	25	74	27	81	26	78	1	4	0.2%	0.3%
	Post-natal Admission	6	9	6	11	7	11	1	2	0.6%	0.8%
	Vaginal Delivery	73	165	87	173	79	153	6	-12	0.4%	-0.4%
Goondiwindi Total		**190**	**371**	**214**	**384**	**208**	**359**	**18**	**-12**	**0.5%**	**-0.2%**
Inglewood	Gynaecology	2	4	2	5	2	5	0.5	0.7	1.1%	0.8%
		3	3	3	3	3	3	0.2	0.2	0.3%	0.3%
	Ante-natal Admission	3	3	3	4	4	4	0.9	1.0	1.4%	1.5%
Inglewood Total		**8**	**10**	**9**	**11**	**10**	**12**	**2**	**2**	**0.9%**	**0.9%**

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Jandowae	Gynaecology	2	3	2	2	3	3	0.9	-0.0	1.9%	-0.1%
		2	5	2	5	2	4	0.1	-0.9	0.1%	-1.0%
	Ante-natal Admission	1	1	1	1	1	1	0.4	0.4	1.5%	1.5%
Jandowae Total		**5**	**9**	**6**	**8**	**6**	**8**	**1**	**-1**	**1.2%**	**-0.3%**
Kingaroy	Gynaecology	115	145	137	170	144	173	29	28	1.1%	0.9%
	Ante-natal Admission	170	204	184	210	181	198	11	-6	0.3%	-0.2%
	Caesarean Delivery	75	260	95	311	103	332	28	72	1.6%	1.2%
	Post-natal Admission	18	29	20	30	22	31	4	2	1.1%	0.3%
	Vaginal Delivery	249	559	320	676	279	564	30	5	0.6%	0.0%
Kingaroy Total		**627**	**1,197**	**756**	**1,397**	**730**	**1,297**	**103**	**100**	**0.8%**	**0.4%**
Miles	Gynaecology	5	6	7	7	9	9	4	3	2.7%	2.0%
	Ante-natal Admission	2	2	2	2	2	2	0.1	0.1	0.2%	0.2%
	Post-natal Admission	1	1	1	1	1	1	0.1	0.1	0.4%	0.4%
Miles Total		**8**	**9**	**10**	**11**	**12**	**12**	**4**	**3**	**1.9%**	**1.5%**
Millmerran	Gynaecology	1	2	1	2	2	2	0.6	0.4	2.3%	0.9%
	Ante-natal Admission	4	4	4	4	4	4	-0.5	-0.5	-0.6%	-0.6%
Millmerran Total		**5**	**6**	**5**	**6**	**5**	**6**	**0.1**	**-0.0**	**0.1%**	**0.0%**
Murgon	Gynaecology	5	6	7	8	10	11	5	5	3.3%	2.8%
	Ante-natal Admission	3	3	3	3	3	3	0.4	0.4	0.6%	0.6%
	Vaginal Delivery	1	1	2	2	2	2	1.0	1.0	3.5%	3.5%
Murgon Total		**9**	**10**	**12**	**13**	**15**	**16**	**6**	**6**	**2.6%**	**2.3%**
Nanango	Ante-natal Admission	6	8	6	7	6	7	0.3	-1.1	0.3%	-0.7%
Nanango Total		**6**	**8**	**6**	**7**	**6**	**7**	**0**	**-1.1**	**0.3%**	**-0.7%**
Stanthorpe	Gynaecology	58	76	67	89	69	91	10.9	14.8	0.9%	0.9%
	Ante-natal Admission	45	53	43	50	45	49	0	-4	0.0%	-0.4%
	Caesarean Delivery	23	86	24	84	24	84	1	-2.2	0.2%	-0.1%
	Post-natal Admission	10	19	10	16	11	16	1.4	-2.9	0.7%	-0.8%
	Vaginal Delivery	84	225	97	236	89	205	5	-20	0.3%	-0.5%
Stanthorpe Total		**220**	**459**	**242**	**475**	**239**	**445**	**19**	**-14**	**0.4%**	**-0.1%**

Hospital of Treatment	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Tara	Gynaecology	4	4	5	5	6	6	2	2	1.9%	1.9%
	Ante-natal Admission	17	19	18	19	19	20	2	1.3	0.6%	0.3%
	Post-natal Admission	1	1	1	1	1	1	0	0	0.4%	0.4%
	Vaginal Delivery	3	3	4	4	4	4	0.9	0.9	1.4%	1.4%
Tara Total		**25**	**27**	**27**	**29**	**30**	**31**	**5**	**4**	**0.9%**	**0.7%**
Taroom	Ante-natal Admission	1	1	1	1	1	1	0.1	0.1	0.4%	0.4%
	Vaginal Delivery	1	2	1	3	1	2	0.1	0.0	0.4%	0.1%
Taroom Total		**2**	**3**	**2**	**4**	**2**	**3**	**0.2**	**0.1**	**0.4%**	**0.2%**
Texas	Ante-natal Admission	3	3	3	3	3	3	0.1	0.1	0.1%	0.1%
	Vaginal Delivery	1	1	2	2	2	2	1.4	1.4	4.5%	4.5%
Texas Total		**4**	**4**	**5**	**5**	**6**	**6**	**2**	**2**	**1.6%**	**1.6%**
Toowoomba	Gynaecology	1,300	1,903	1,539	2,114	1,691	2,250	391	347	1.3%	0.8%
	Ante-natal Admission	3,044	3,479	3,092	3,496	3,214	3,489	170	10	0.3%	0.0%
	Caesarean Delivery	614	2,339	763	2,851	833	3,067	219	728	1.5%	1.4%
	Post-natal Admission	98	177	119	191	147	212	49	35	2.0%	0.9%
	Vaginal Delivery	1,363	3,075	1,765	3,802	1,626	3,320	263	245	0.9%	0.4%
Toowoomba Total		**6,419**	**10,973**	**7,278**	**12,454**	**7,512**	**12,337**	**1,093**	**1,364**	**0.8%**	**0.6%**
Warwick	Gynaecology	73	93	79	99	80	98	7.4	4.8	0.5%	0.3%
	Ante-natal Admission	58	74	56	71	54	64	-4	-10	-0.4%	-0.7%
	Caesarean Delivery	38	142	42	145	43	145	5	3	0.6%	0.1%
	Post-natal Admission	10	20	10	17	11	16	1.2	-4	0.6%	-1.0%
	Vaginal Delivery	124	275	145	289	122	234	-2.2	-41	-0.1%	-0.8%
Warwick Total		**303**	**604**	**332**	**620**	**310**	**557**	**7**	**-47**	**0.1%**	**-0.4%**
Grand Total		**8,721**	**15,083**	**9,835**	**16,883**	**10,008**	**16,470**	**1,287**	**1,387**	**0.7%**	**0.4%**

Source: AIM Base Case 16/17 (File supplied by Qld Department of Health, November 2018)

Table 18 Births Toowoomba Hospital 2016/17 by place of residence.

Place of Residence	2016/17
Darling Downs - East	231
Goondiwindi	19
South Burnett	27
Southern Downs	108
Toowoomba	1,232
Western Downs	69
Outside HHS	291
Total	**1,977**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

2.3.5 SUBACUTE

Adult subacute activity is projected to increase from 1,672 separations in 2016/17 to 3,569 in 2036/37; a growth rate of 3.9 percent per year. The highest volume specialty (in terms of separations) is projected to be palliative (non-acute). Refer to Table 19.The total number of same day sub-acute separations is 261 by 2036/37, indicating little demand for dedicated same day beds for any of the sub-acute SRGs based on current models of care.

Table 19 Adult Subacute Activity, Darling Downs Health by Stay Type and SRG/ESRG, 2016/17 to 2036/37

ESRG 8		2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
ON	Geriatric Management	163	3,327	381	6,757	741	13,250	578	9,923	7.9%	7.2%
	Other Non-Acute	636	18,489	736	21,115	877	24,949	241	6,460	1.6%	1.5%
	Palliative	467	4,197	672	5,647	921	6,898	454	2,701	3.5%	2.5%
	Rehabilitation	363	7,207	553	10,678	769	14,528	406	7,321	3.8%	3.6%
ON Total		**1,629**	**33,220**	**2,343**	**44,197**	**3,308**	**59,624**	**1,679**	**26,404**	**3.6%**	**3.0%**
SD	Geriatric Management			2	2	5	5	4.9	4.9	0.0%	0.0%
	Other Non-Acute	5	5	8	8	10	10	5.5	5.5	3.8%	3.8%
	Palliative	38	38	60	60	86	86	48	48	4.1%	4.1%
	Rehabilitation			56	56	160	160	160	160	0.0%	0.0%
SD Total		**43**	**43**	**126**	**126**	**261**	**261**	**218**	**218**	**9.4%**	**9.4%**
Grand Total		**1,672**	**33,263**	**2,469**	**44,323**	**3,569**	**9,886**	**1,897**	**26,623**	**3.9%**	**3.0%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Adult subacute separations are projected to increase at 4.9 percent annually at TH and 5.3 percent annually at Dalby Hospital. In 2036/37, TH is projected to account for 1,797 of 3,569 total subacute separations across Darling Downs Health. Refer to Table 20. There will be a corresponding increase in bed days at TH from 11,170 in 2016/17 to 16,579 in 2026/27 and 24,457 in 2036/37.

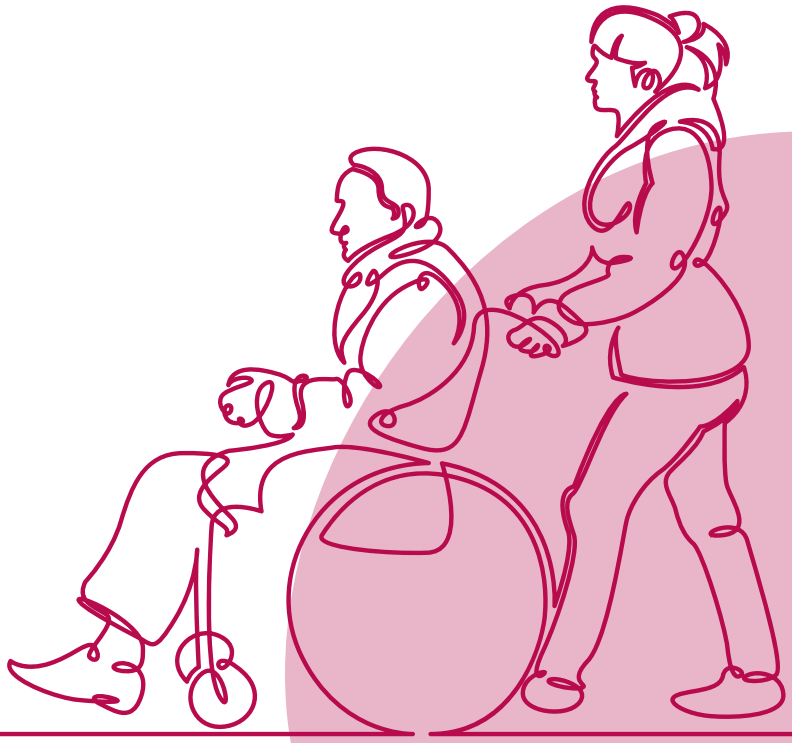


Table 20 Adult Subacute Activity, Darling Downs Health by Place of Treatment 2016/17 to 2036/37

Hospital of Treatment	ESRG 8	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Cherbourg	Other Non-Acute	2	24	2	24	2	22	-0.3	-2	-0.8%	-0.5%
	Palliative	2	4	2	5	2	5	0.4	0.8	1.0%	1.0%
Cherbourg Total		**4**	**28**	**4**	**29**	**4**	**27**	**0.1**	**-1.5**	**0.2%**	**-0.3%**
Chinchilla	Other Non-Acute	5	179	5	197	5	208	-0.0	29	0.0%	0.7%
	Palliative	7	27	9	76	10	73	3	46	1.6%	5.1%
Chinchilla Total		**12**	**206**	**15**	**273**	**15**	**281**	**3**	**75**	**1.0%**	**1.6%**
Dalby	Geriatric Management (non-acute)	33	652	65	1,032	116	1,829	83	1,177.1	6.5%	5.3%
	Other Non-Acute	9	252	10	160	10	167	1.1	-85.2	0.6%	-2.0%
	Palliative	21	160	34	204	50	238	29	78.2	4.4%	2.0%
	Rehabilitation	46	996	85	1,715	130	2,569	84	1,573	5.3%	4.9%
Dalby Total		**109**	**2,060**	**194**	**3,111**	**306**	**4,804**	**197**	**2,744**	**5.3%**	**4.3%**
Goondiwindi	Other Non-Acute	19	226	21	419	24	473	5	247	1.2%	3.8%
	Palliative	5	26	8	33	14	37	9	11	5.1%	1.8%
Goondiwindi Total		**24**	**252**	**29**	**451**	**38**	**510**	**13.8**	**258.1**	**2.3%**	**3.6%**
Inglewood	Other Non-Acute	13	166	14	225	14	206	1.2	40	0.4%	1.1%
	Palliative	4	48	5	55	5	52	1.0	4	1.1%	0.4%
Inglewood Total		**17**	**214**	**18**	**280**	**19**	**258**	**2**	**44**	**0.6%**	**0.9%**
Jandowae	Other Non-Acute	13	4,667	16	5,840	21	7,962	8	3,295	2.4%	2.7%
	Palliative	6	94	8	98	10	94	3.9	0.1	2.5%	0.0%
Jandowae Total		**19**	**4,761**	**24**	**5,938**	**31**	**8,056**	**11.8**	**3,295.3**	**2.5%**	**2.7%**
Kingaroy	Geriatric Management (non-acute)	2	18	7	81	11	118	9	100	8.7%	9.9%
	Other Non-Acute	25	167	28	194	30	209	5	42	0.9%	1.1%
	Palliative	24	91	33	122	43	148	19	57.2	2.9%	2.5%
	Rehabilitation	87	898	124	1,212	166	1,606	79	708	3.3%	2.9%
Kingaroy Total		**138**	**1,174**	**192**	**1,608**	**249**	**2,081**	**111**	**907**	**3.0%**	**2.9%**
Miles	Other Non-Acute	2	30	3	78	4	102	2.1	71.5	3.7%	6.3%
	Palliative	3	11	4	40	4	40	0.9	28.5	1.3%	6.6%
Miles Total		**5**	**41**	**6**	**118**	**8**	**141**	**3.0**	**100.0**	**2.3%**	**6.4%**
Millmerran	Other Non-Acute	17	615	19	673	22	751	5	136	1.3%	1.0%
	Palliative	12	203	20	335	32	611	20	408	5.1%	5.7%
Millmerran Total		29	818	40	1,008	54	1,362	25.4	544.0	3.2%	2.6%
Murgon	Other Non-Acute	30	855	35	947	41	1,048	11	193	1.6%	1.0%
	Palliative	21	127	31	188	47	253	26.2	125.7	4.1%	3.5%
Murgon Total		**51**	**982**	**65**	**1,136**	**89**	**1,301**	**37.7**	**319**	**2.8%**	**1.4%**
Nanango	Other Non-Acute	20	395	21	424	21	443	1.3	48	0.3%	0.6%
	Palliative	15	101	18	122	20	133	5.0	32.4	1.4%	1.4%
Nanango Total		**35**	**496**	**39**	**546**	**41**	**576**	**6**	**80**	**0.8%**	**0.8%**

Hospital of Treatment	ESRG 8	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Oakey	Geriatric Management (non-acute)	1	35	2	61	3	88	2	53	5.6%	4.7%
	Other Non-Acute	34	923	41	964	50	1,106	16	183	1.9%	0.9%
	Palliative	4	25	7	31	11	36	7.5	10.5	5.4%	1.8%
Oakey Total		**39**	**983**	**50**	**1,056**	**64**	**1,230**	**25.0**	**247.4**	**2.5%**	**1.1%**
Stanthorpe	Other Non-Acute	47	1,270	50	1,267	55	1,295	8.3	25.2	0.8%	0.1%
	Palliative	39	423	52	559	70	566	31	143	3.0%	1.5%
	Rehabilitation	39	810	59	1,157	85	1,668	45.7	858.2	4.0%	3.7%
Stanthorpe Total		**125**	**2,503**	**161**	**2,983**	**210**	**3,529**	**85.4**	**1,026.3**	**2.6%**	**1.7%**
Tara	Other Non-Acute	5	16	6	34	7	39	2.1	22.8	1.8%	4.5%
	Palliative	3	12	4	25	4	22	1	10	1.5%	3.2%
Tara Total		**8**	**28**	**10**	**59**	**11**	**61**	**3.2**	**33**	**1.7%**	**4.0%**
Taroom	Other Non-Acute	3	36	5	103	10	177	7	141	6.0%	8.3%
	Palliative	1	3	3	10	7	20	6	17	9.9%	10.0%
Taroom Total		**4**	**39**	**8**	**113**	**16**	**197**	**12**	**158**	**7.3%**	**8.4%**
Texas	Other Non-Acute	1	1	1	1	1	1	-0.2	-0.0	-1.2%	-0.1%
	Palliative	3	39	6	71	10	122	7.5	83.4	6.4%	5.9%
Texas Total		**4**	**40**	**7**	**72**	**11**	**123**	**7**	**83.4**	**5.3%**	**5.8%**
Toowoomba	Geriatric Management (non-acute)	92	1,973	238	4,387	484	8,972	392	6,999	8.7%	7.9%
	Other Non-Acute	239	4,493	297	5,263	383	6,228	144	1,735.5	2.4%	1.6%
	Palliative	240	1,502	364	2,145	511	2,746	271	1,244	3.9%	3.1%
	Rehabilitation	122	3,202	243	4,784	419	6,511	297	3,309	6.4%	3.6%
Toowoomba Total		**693**	**11,170**	**1,141**	**16,579**	**1,797**	**24,457**	**1,104**	**13,287**	**4.9%**	**4.0%**
Warwick	Geriatric Management (non-acute)	35	649	72	1,199	132	2,247	97.3	1,598.1	6.9%	6.4%
	Other Non-Acute	129	3,397	139	3,436	151	3,572	22	175	0.8%	0.3%
	Palliative	85	922	110	1,153	142	1,317	57.3	395.2	2.6%	1.8%
	Rehabilitation	69	1,301	99	1,866	130	2,334	61	1,033	3.2%	3.0%
Warwick Total		**318**	**6,269**	**420**	**7,654**	**555**	**9,470**	**237.2**	**3,201.5**	**2.8%**	**2.1%**
Wondai	Other Non-Acute	28	782	31	873	37	951	8.8	168.7	1.4%	1.0%
	Palliative	10	417	12	436	14	469	4.0	52.2	1.7%	0.6%
Wondai Total		**38**	**1,199**	**43**	**1,309**	**51**	**1,420**	**12.8**	**220.9**	**1.5%**	**0.8%**
Grand Total		**1,672**	**33,263**	**2,469**	**44,323**	**3,569**	**59,886**	**1,897**	**26,623**	**3.9%**	**3.0%**

2.3.6 CRITICAL CARE

In the Darling Downs Health adult intensive care (ICU) and coronary care (CCU) services are provided from TH. Only bed days are identifiable in the AIM dataset, and therefore no separations are provided.

Surgical and procedural separations currently account for the greatest number of ICU bed days. This will change over time as medical separations are projected to have the greatest annual growth in ICU bed days at 3.3 percent per annum. Refer to Table 21 below. Note ICU and CCU bed days are included in the totals of all previous tables in this paper.

DoH planning allows for 6.4 beds (private and public) per 100,000 population. Toowoomba has 14 private ICU beds (six at St Vincent's and eight at St Andrew's Hospitals) and five public ICU beds making a total of 19 beds. Applying the base model formula, a population of 282,000 allows for 18 ICU beds, however, an adjustment should be made for a higher proportion aged and Indigenous residents. Therefore, using this modelling technique, based on the estimated Darling Downs Health 2016 population (QGSO 2015 edition) the number of ICU beds is currently adequate noting the heavy weighting for private ICU beds compared to public ICU beds. This number of ICU beds does not provide capacity for future growth in demand.

An alternative methodology is to use the projected AIM for ICU bed days and the DoH recommended occupancy rate (OR) for public ICU beds. This equates to eight public ICU beds for 2016/17 and this is three more than the current five designated ICU beds at TH. This methodology indicates there is a shortfall in public ICU beds, however this was not reported as a significant issue by stakeholders during consultations. Further analysis is required to better understand the relationships between public ICU and CCU beds and private and public ICU beds especially given the high recurrent costs associated with ICU beds ($1.5 million per annum at 100 percent OR).

Table 21 Adult ICU Bed days, Darling Downs Health by Specialty Grouping, 2016/17 to 2036/37

SRG 8	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Medical	905	1,101	1,339	1,569	1,806	901	3.5%
Surgical/Procedural	1,036	1,147	1,267	1,388	1,477	441	1.8%
Mental Health	70	80	91	102	114	33	2.5%
Obstetrics & Gynaecology	33	37	41	42	44	11	1.5%
Subacute	2	3	3	4	4	2	2.5%
Total	**2,046**	**2,367**	**2,741**	**3,105**	**3,445**	**1,399**	**2.6%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Note: 494 of the 1,036 Surgical / Procedural 16/17 bed days are for the SRG Prolonged Ventilation which is classified as a surgical SRG in the AIM dataset.

In the process of collating data for this report 2015/16 data was also analysed. It is interesting to note a decrease between 2015/16 and 2016/17 ICU bed day activity. This decrease was due to a decrease in ICU bed day activity for surgical or procedural SRGs, highlighting the relationship between ICU beds and SRG activity.

Table 22 Adult ICU Bed days, Darling Downs Health by Specialty Grouping, 2015/16 to 2036/37

Specialty	2015/16	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Medical	736	909	1,090	1,291	1,506	770	3.5%
Surgical/Procedural	1,310	1,444	1,567	1,703	1,839	529	1.6%
Mental Health	64	78	89	100	111	36	2.1%
Obstetrics & Gynaecology	24	25	26	27	28	4	0.7%
Total	**2,135**	**2,456**	**2,772**	**3,121**	**3,485**	**1,350**	**2.4%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

The DoH AIM Base Case for 2016/17 did not include CCU bed days due to ward code mapping issues and this issue could not be resolved prior to the publishing of this report. As alternative CCU beds can be calculated by applying the recommended DoH rate of 2.5% of acute overnight beds and ED short stay beds combined. This method has been used in section 2.5 of this paper for calculating the projected number CCU beds required. For 2016/17 the result is five beds or one less than current numbers.

During consultations stakeholders reported an increase in the use of remote monitoring over time as a potential reason why five ICU beds and six CCU beds are sufficient to meet current demand. The DoH endorsed methodologies for calculating ICU and CCU beds are dated 2009 and 2010 respectively and may not include allowance for these changes in model of care.

2.3.7 PAEDIATRIC

Paediatric services are projected to grow at 2 percent per year from 2016/17 to 2036/37. Same day services are projected to grow at a higher rate than overnight services. Refer to Table 23.

Table 23 Paediatric Activity, Darling Downs Health by Stay Type and Specialty Grouping, 2016/17 to 2036/37

Stay Type	Speciality	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
ON	Medical	1,440	2,576	1,650	2,950	1,849	3,181	409	605	1.3%	1.1%
	Mental Health	79	650	94	772	119	925	40	275	2.1%	1.8%
	Obstetrics & Gynaecology	10	23	15	28	19	35	9	12	3.2%	2.1%
	Surgical / Procedural	1,235	1,834	1,444	2,194	1,652	2,443	417	609	1.5%	1.4%
	Subacute	3	43	3	77	5	99	2	56	2.4%	4.3%
ON Total		**2,767**	**5,126**	**3,206**	**6,021**	**3,644**	**6,683**	**877**	**1,557**	**1.4%**	**1.3%**
SD	Medical	768	768	1,127	1,127	1,519	1,519	751	751	3.5%	3.5%
	Mental Health	126	126	168	168	202	202	76	76	2.4%	2.4%
	Obstetrics & Gynaecology	6	6	8	8	11	11	5	5	3.0%	3.0%
	Surgical / Procedural	1,191	1,191	1,495	1,495	1,819	1,819	628	628	2.1%	2.1%
	Subacute	-	-	3	3	5	5	5	5	0.0%	0.0%
SD Total		**2,091**	**2,091**	**2,801**	**2,801**	**3,556**	**3,556**	**1,465**	**1,465**	**2.7%**	**2.7%**
Grand total		**4,858**	**7,217**	**6,007**	**8,822**	**7,200**	**10,238**	**2,342**	**3,021**	**2.0%**	**1.8%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018. Excludes qualified neonates (and unqualified neonates and renal dialysis and chemotherapy).

The top overnight SRGs with greater than 50 separations in 2016/17 across Darling Downs Health are summarised below. The top specialties in 2016/17 were respiratory medicine, ear, nose and throat, non-subspecialty surgery and orthopaedics. The highest projected growth rate in separations is projected to be in non-subspecialty medicine (2.6 percent annually), non-subspecialty surgery (1.9 percent annually) and immunology and infections (1.9 percent annually). Refer to Table 24.

Table 24 Paediatric Activity, Darling Downs Health Top Overnight SRGs (>30 Seps) by SRG, 2016/17 to 2036/37

SRG 8	2016/17		2026/27		2036/37		Change		AGR^	
	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Respiratory Medicine	732	1,288	761	1,216	784	1,183	52	-105	0.3%	-0.4%
Ear, Nose & Throat	482	669	597	773	702	879	220	210	1.9%	1.4%
Non Subspecialty Surgery	307	513	366	656	427	740	120	227	1.7%	1.8%
Orthopaedics	268	432	270	446	271	450	3	18	0.0%	0.2%
Non Subspecialty Medicine	207	333	291	471	367	569	160	236	2.9%	2.7%
Immunology & Infections	141	323	193	430	252	526	111	203	2.9%	2.5%
Gastroenterology	102	154	101	173	94	164	-8	10	-0.4%	0.3%
Mental Health	79	650	94	772	119	925	40	275	2.1%	1.8%
Endocrinology	77	156	92	237	110	264	33	108	1.8%	2.7%
Neurosurgery	57	65	76	91	97	111	40	46	2.7%	2.7%
Neurology	56	84	60	103	61	103	5	19	0.4%	1.0%
Thoracic Surgery	52	53	58	62	68	72	16	19	1.4%	1.6%
Other	207	406	249	593	293	697	86	291	1.8%	2.7%
Grand Total	**2,767**	**5,126**	**3,207**	**6,022**	**3,644**	**6,683**	**877**	**1,557**	**1.4%**	**1.3%**

Source: AIM Base Case 16/17 (File supplied by Qld Department of Health, November 2018).

Excludes qualified neonates (and unqualified neonates and renal dialysis and chemotherapy)

The top same day SRGs with greater than 50 separations in 2015/16 across Darling Downs Health are summarised below. The top specialties in 2015/16 were ear nose and throat, respiratory medicine and non-subspecialty surgery. The highest projected growth rate is projected to be in gastroenterology (3.6 percent annually), non-subspecialty medicine (3.4 percent annually), and respiratory medicine (2.5 percent annually). Refer to Table 25.

Table 25 Paediatric Activity, Darling Downs Health Top Same Day SRGs (>30 Seps) by SRG, 2016/17 to 2036/37

SRG 8	2016/17		2026/27		2036/37		Change		AGR^	
	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days	Seps	Bed-days
Ear, Nose & Throat	383	383	469	469	581	581	198	198	2.1%	2.1%
Respiratory Medicine	327	327	488	488	663	663	336	336	3.6%	3.6%
Non Subspecialty Surgery	276	276	340	340	419	419	143	143	2.1%	2.1%
Orthopaedics	205	205	271	271	331	331	126	126	2.4%	2.4%
Neurosurgery	157	157	231	231	298	298	141	141	3.2%	3.2%
Mental Health	126	126	168	168	202	202	76	76	2.4%	2.4%
Non Subspecialty Medicine	125	125	201	201	298	298	173	173	4.4%	4.4%
Dentistry	112	112	112	112	104	104	-8	-8	-0.4%	-0.4%
Immunology & Infections	89	89	101	101	114	114	25	25	1.2%	1.2%
Neurology	50	50	63	63	71	71	21	21	1.8%	1.8%
Gastroenterology	49	49	96	96	149	149	100	100	5.7%	5.7%
Drug & Alcohol	38	38	56	56	73	73	35	35	3.3%	3.3%
Renal Medicine	31	31	37	37	41	41	10	10	1.4%	1.4%
Other	**123**	**123**	**167**	**167**	**214**	**214**	**91**	**91**	**2.8%**	**2.8%**
Grand Total	**2,091**	**2,091**	**2,801**	**2,801**	**3,556**	**3,56**	**1,465**	**1,465**	**2.7%**	**2.7%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Excludes qualified neonates (and unqualified neonates and renal dialysis and chemotherapy).

Paediatric services are projected to increase at the highest growth rates at TH (2.2 percent annually). In 2036/37, TH is projected to account for 4,705 of 7,200 total paediatric separations across Darling Downs Health. Refer to Table 26.

Table 26 Paediatric Activity, Darling Downs Health by Place of Treatment and Stay Type, 2016/17 to 2036/37

Treating Hospital	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
		Seps	Bed days	Seps	Bed days	Seps	Bed days	Seps	Bed days	Seps	Bed days
Cherbourg	ON	113	287	119	276	125	278	12	- 9	0.5%	-0.2%
	SD	53	53	67	67	82	82	29	29	2.2%	2.2%
Cherbourg Total		**166**	**340**	**186**	**343**	**206**	**360**	**40**	**20**	**1.1%**	**0.3%**
Chinchilla	ON	74	94	78	115	83	117	9	23	0.6%	1.1%
	SD	54	54	68	68	83	83	29	29	2.2%	2.2%
Chinchilla Total		**128**	**148**	**146**	**183**	**166**	**200**	**38**	**52**	**1.3%**	**1.5%**
Dalby	ON	110	216	125	228	139	245	29	29	1.2%	0.6%
	SD	181	181	230	230	281	281	100	100	2.2%	2.2%
Dalby Total		**291**	**397**	**355**	**458**	**420**	**526**	**129**	**129**	**1.8%**	**1.4%**
Goondiwindi	ON	151	244	159	266	162	259	11	15	0.3%	0.3%
	SD	54	54	70	70	85	85	31	31	2.3%	2.3%
Goondiwindi Total		**205**	**298**	**229**	**336**	**247**	**344**	**42**	**46**	**0.9%**	**0.7%**
Inglewood	ON	3	3	3	3	3	3	0	0	-0.7%	-0.3%
	SD	6	6	8	8	11	11	5	5	2.9%	2.9%
Inglewood Total		**9**	**9**	**11**	**12**	**13**	**13**	**4**	**4**	**2.0%**	**2.0%**
Jandowae	ON	2	7	2	5	2	4	0	- 3	0.5%	-2.6%
	SD	7	7	9	9	11	11	4	4	2.1%	2.1%
Jandowae Total		**9**	**14**	**11**	**14**	**13**	**15**	**4**	**1**	**1.7%**	**0.2%**
Kingaroy	ON	193	296	215	323	233	335	40	39	1.0%	0.6%
	SD	223	223	270	270	317	317	94	94	1.8%	1.8%
Kingaroy Total		**416**	**519**	**485**	**592**	**550**	**652**	**134**	**133**	**1.4%**	**1.1%**
Miles	ON	44	67	49	83	54	87	10	20	1.0%	1.3%
	SD	36	36	47	47	60	60	24	24	2.6%	2.6%
Miles Total		**80**	**103**	**96**	**131**	**114**	**147**	**34**	**44**	**1.8%**	**1.8%**
Millmerran	ON	9	9	9	9	8	8	- 1	- 1	-0.4%	-0.4%
	SD	11	11	14	14	16	16	5	5	2.0%	2.0%
Millmerran Total		**20**	**20**	**22**	**22**	**25**	**25**	**5**	**5**	**1.1%**	**1.1%**
Murgon	ON	36	47	40	54	44	58	8	11	1.0%	1.1%
	SD	29	29	40	40	51	51	22	22	2.9%	2.9%
Murgon Total		**65**	**76**	**80**	**94**	**95**	**109**	**30**	**33**	**1.9%**	**1.8%**
Nanango	ON	14	15	17	18	20	21	6	6	1.7%	1.6%
	SD	12	12	19	19	27	27	15	15	4.0%	4.0%
Nanango Total		**26**	**27**	**36**	**37**	**46**	**47**	**20**	**20**	**2.9%**	**2.8%**
Oakey	ON	1	1	1	1	1	1	0	0	-0.5%	-0.5%
	SD	4	4	5	5	6	6	2	2	2.1%	2.1%
Oakey Total		**5**	**5**	**6**	**6**	**7**	**7**	**2**	**2**	**1.7%**	**1.7%**
St Andrew's	SD	2	2	2	2	3	3	1	1	1.5%	1.5%
St Andrew's (public) Total	**SD**	**2**	**2**	**2**	**2**	**3**	**3**	**1**	**1**	**1.5%**	**1.5%**
Stanthorpe	ON	81	124	96	165	107	175	26	51	1.4%	1.7%

Treating Hospital	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
			Bed days	Seps	Bed days	Seps	Bed days	Seps	Bed days	Seps	Bed days
	SD	53	53	82	82	110	110	57	57	3.7%	3.7%
Stanthorpe Total	**SD**	**134**	**177**	**177**	**247**	**217**	**286**	**83**	**109**	**2.4%**	**2.4%**
Tara	ON	17	19	18	44	19	43	2	24	0.5%	4.1%
	SD	28	28	35	35	44	44	16	16	2.3%	2.3%
Tara Total	**SD**	**45**	**47**	**53**	**79**	**62**	**86**	**17**	**39**	**1.6%**	**3.1%**
Taroom	ON	12	17	12	19	12	17	0	0	-0.1%	0.1%
	SD	13	13	15	15	17	17	4	4	1.5%	1.5%
Taroom Total	**SD**	**25**	**30**	**27**	**33**	**29**	**35**	**4**	**5**	**0.8%**	**0.7%**
Texas	ON	12	17	13	20	15	21	3	4	1.0%	1.1%
	SD	6	6	8	8	9	9	3	3	2.0%	2.0%
Texas Total	**SD**	**18**	**23**	**21**	**28**	**23**	**30**	**5**	**7**	**1.3%**	**1.4%**
Toowoomba	ON	1,742	3,430	2,087	4,130	2,449	4,746	707	1,316	1.7%	1.6%
	SD	1,278	1,278	1,748	1,748	2,256	2,256	978	978	2.9%	2.9%
Toowoomba Total	**SD**	**3,020**	**4,708**	**3,834**	**5,878**	**4,705**	**7,002**	**1,685**	**2,294**	**2.2%**	**2.0%**
Warwick	ON	153	233	163	263	169	265	16	32	0.5%	0.6%
	SD	41	41	65	65	89	89	48	48	3.9%	3.9%
Warwick Total	**SD**	**194**	**274**	**228**	**328**	**258**	**353**	**64**	**79**	**1.4%**	**1.3%**
Grand Total		**4,858**	**7,217**	**6,008**	**8,823**	**7,200**	**10,239**	**2,342**	**3,022**	**2.0%**	**1.8%**

Source: Acute Inpatient Model: Darling Downs Health Scenario (16/17 Base). The above table excludes unqualified neonates and renal dialysis, qualified neonates (741 separations 16/17) and chemotherapy (41 separations 16/17).

Table 27 Paediatric Activity Outflow to Metropolitan Hospitals * by Stay Type 2016/17 to 2036/37 (all SRGs)

Paediatrics Treated Metro*	Stay Type	2016/17		2026/27		2036/37		Change		AGR^	
			Bed days	Seps	Bed days	Seps	Bed days	Seps	Bed days	Seps	Bed days
All SRGs	ON	826	6,903	982	7,478	1,143	8,235	317	1,332	1.6%	0.9%
	SD	681	681	859	859	1,042	1,042	361	361	2.2%	2.2%
Total Paediatrics Metro		**1,507**	**7,584**	**1,841**	**8,337**	**2,185**	**9,277**	**678**	**1,693**	**1.9%**	**1.0%**

*Source: Acute Inpatient Model: Darling Downs Health Scenario (16/17 Base). * Ellen Barron Family Centre, Queensland Children's Hospital, Mater Mothers' Public Hospital, Royal Brisbane & Women's Hospital, The Prince Charles Hospital.*

See Section 2.4.7 for qualified neonate activity projections.

2.4. NON-AIM ACTIVITY PROJECTIONS

2.4.1. MENTAL HEALTH

Mental Health services are projected utilising a population-based methodology, with flows applied. Projections have been sourced from the Department of Health and are based on the National Mental Health Service Planning Framework ('the Framework') by HHS of Residence and age group, extracted by Mental Health and Other Drugs (MHAOD) Branch.

Flows from other HHSs to Darling Downs Health are summarised in the table below based on treatment at Toowoomba Hospital. Refer to Table 28. These cross-HHS flows are built into the future bed day projections in the Table 29.

Table 28 Mental Health Patient Flow Assumptions to Darling Downs Health

HHS of Residence	Service	Age Classification	Patient Flow (%)
Darling Downs	Acute	0-17	96.4%
Darling Downs	Acute + CCU + Medium Secure	18-64	100.0%
Darling Downs	Acute + Older Persons + Medium Secure	65+	100.0%
Interstate/Overseas/Not Stated	Acute	0-17	3.3%
Interstate/Overseas/Not Stated	Acute + CCU	18-64	4.8%
Interstate/Overseas/Not Stated	Acute	65+	11.3%
Interstate/Overseas/Not Stated	Older Persons	65+	4.80%
South West	Acute + CCU + Medium Secure	18-64	100.0%
South West	Acute + Older Persons + Medium Secure	65+	100.0%
West Moreton	Acute	0-17	22.5%
West Moreton	Acute + CCU	18-64	4.5%
West Moreton	Older Persons	65+	4.5%
Wide Bay	Medium Secure	18-64	100.0%
Wide Bay	Medium Secure	65+	100.0%
Central West	Medium Secure	18-65	100.0%
Central West	Medium Secure	65+	100.0%
Central Queensland	Medium Secure	18-66	100.0%
Central Queensland	Medium Secure	65+	100.0%

Source: Mental Health Projections - 2018 (ASGS 2011) Final_v1.0 provided by the Department of Health

Note that for each population group (HHS and residence and age) in Table 28 Mental Health Patient Flow Assumptions to Darling Downs Health, the patient flow percentage is the percentage of total bed days in Queensland for all patients in that group admitted for mental health treatment who will be treated at Toowoomba Hospital.

The Framework's mental health bed projections do not include: -

- 40 non-acute psychiatric beds and 20 non-acute legacy intellectual disability beds at the Baillie Henderson Hospital (BHH) campus
- outflows to high security beds and forensic mental health beds
- inflows from Wide Bay and Rockhampton districts.

According to the Framework Darling Downs Health has sufficient acute and non-acute mental health beds to meet demand to at least 2026, noting that the Framework projections do not extend beyond 2026. The Framework promotes a mix of mental health services and assumes a significant component of future investment will be made for community based care programs in addition to inpatient bed capacity.

Note: AIM data is not used for mental health projections. AIM data includes statistical anomalies. For example, the total bed days for Darling Downs Health for the SRG Mental Health increased from 21,669 bed days in 2015/16 to 33,924 bed days in 2016/17. Of the 33,924 bed days recorded in 2016/17, 10,623 bed days were for stays greater than 90 days compared to only 1,367 of the total 21,669 bed days in 2015/16.

Table 29 Adult Mental Health Bed Days, Darling Downs Health by Facility of Treatment and Primary Classification, 2021/22 to 2026/27

	Primary Classification	2021-22	2026-27	Change
Toowoomba Hospital	Acute Adult +PICU+PIMH	12,459	13,407	948
	Acute older adults	2,951	3,470	519
	Acute Total	15,410	16,877	1,467
Community Care Unit	CCU ABI	15,714	15,714	-
Non-acute Older Persons	Older Persons Extended Treatment	8,493	8,493	-
Non-acute Medium Secure	SMHRU Medium secure	10,449	11,487	1,038
Grand Total		**50.066**	**52,571**	**2,505**

Source: Mental Health Projections - 2018 (ASGS 2011) Final_v1. as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

The current number of child youth mental health beds (Yannanda) is projected to be sufficient to at least 2026-27.

Table 30 Child Mental Health Bed Days and Projected Beds, Toowoomba Hospital (Yannanda) 2021/22 to 2026/27, 70% occupancy

Primary Classification	2021-22 Bed Days	2026-27 Bed Days	18-19 Beds	21-22 Beds	26-27 Beds
Acute - Child and Youth (0-17 years)	1611	1826	8	6	7

Source: Mental Health Projections - 2018 (ASGS 2011) Final_v1. as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

It is projected that an increase in mental health beds is required from 131 beds to 171 beds by 2026-27 across the TH and Baillie Henderson Hospital (BHH) campuses. There is a considerable difference in distribution of current beds towards an increased number of Community Care beds in the future.

Table 31 Adult Mental Health Bed Projections

Location	Primary Classification	2018-19	2021-22	2026-27
Toowoomba Hospital	Acute Adult+PICU+PIMH	43	38	41
	Acute older adults	8	9	11
	Acute Total	51	47	52
Community Care Unit	CCU ABI	24	48	48
Non-acute Older Persons	Older Persons Extended Treatment	24	26	29
Non-acute Medium Secure	SMHRU Medium secure	24	32	35
Grand Total		**123**	**153**	**164**

Source: Mental Health Projections - 2018 (ASGS 2011) Final_v1. as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Based on 90% occupancy; Acute Total TH 26-27 rounded up.

The Framework methodology is based on a complex array of expert opinions and draws upon literature in both Australian and other jurisdictions. The planning principles contained in the Framework methodology need to be contextualised to reflect local needs. The Framework assumes a healthy community service is operating supported through funding mechanisms such as the NDIS. Capacity to manage within the projected planning figures above relies upon a full and comprehensive array of primary services yet to be achieved in most areas.

Darling Downs Health is currently working on a local mental health planning document with the DDWMPHN to localise the Framework principles and when this work is completed Darling Downs Health will be better informed with respect to the future planning of inpatient and community resources. Issues to be considered contextualising the Framework include:

2.4.1.1 Acute Adult Mental Health (including Older Persons)

- The Framework methodology doesn't account for all cross-district flows, nor do the planning figures reflect adjustments for rural and Aboriginal and Torres Strait Islander (ATSI) population issues particularly well. How many acute beds are adequate depends in part upon the supply of extended beds to ensure long stay patients in acute units do not create access block.

2.4.1.2 Child Youth Mental Health

- Currently Yannanda has eight beds the original planning being based on economy of scale, capacity for overflow and future proofing. Note the beds in Yannanda are for adolescents aged 12 to 18 years and not the zero to 17 years range listed in the Framework.

2.4.1.3 Medium Secure and Extended Secure

- Planning figures need to consider impact on medium secure facilities when high secure beds within the State are in demand. Some longer-term residents are from catchments outside the extended secure boundaries and would not be included in planning figure methodology.

2.4.1.4 Community Care Unit (CCU)

- The Framework allows for 48 community care beds in Darling Downs Health. Darling Downs Health currently has 24 CCU beds and a further 24 beds in extended treatment and rehabilitation (Jacaranda). Effectively this provides for the correct number of beds for this program although they are configured slightly differently.

2.4.1.5 Older Persons Beds (non-Acute)

- Currently there are 24 older person extended beds in Darling Downs Health (Connolly BHH) and this is consistent with the Framework noting some consumers are outside the catchment listed in Table 31 above. The current unit was recently refurbished.

2.4.1.6 Walwa and Giabal (formerly Morris Mouatt)

- Giabal is unlikely to be decommissioned in the short to medium term due to complex issues with the NDIS model and high-level funding provisions by the NDIA planners. It should be noted that the consumers here have benefited from increased community access hours.
- Walwa residents include young people requiring nursing home care and a number of individuals who have significant behavioural disturbances that make their care in alternative environments unlikely at this point in time in the absence of highly specialised NDIS programs with specialist disability accommodation.

2.4.1.7 Longer Term Planning

- Going forward the greatest challenges relate to the adequacy of community based funding, not only in terms of our community based services, but also in terms of the adequacy of primary care supports and increased challenges with regard to co-morbid drug and alcohol related issues.

2.4.2. RENAL DIALYSIS

Renal dialysis services are projected utilising a projected prevalence rate across different regions in Queensland, adjusted for Aboriginal and Torres Strait Islander population. The endorsed planning guidelines apply a 40 percent home renal dialysis target for Darling Downs Health (therefore 60 percent chair-based). Projections have been sourced from the Department of Health.

Patient flow assumptions underpinning the projections for Darling Downs Health are summarised in Table 32.

Table 32 Renal Dialysis Patient Flow Assumptions to Darling Downs Health

HHS of Residence	Patient Flow (%)
West Moreton	8%
South West	100%
Darling Downs	100%

Source: Renal Dialysis Projections provided by the Department of Health

In Darling Downs Health, there are public renal services currently provided at:

- Toowoomba Hospital (19 in-centre chairs all modalities)
- Kingaroy Hospital (6 chairs)
- Dalby Hospital (2 chairs)
- St Andrew's Toowoomba Hospital (contracted services)

The Department of Health provides renal dialysis projections for the whole of Darling Downs Health broken down by facility of treatment. Projections are based on 2016/17 data and do not contain data on the Dalby Hospital renal service as this did not commence until January 2017.

Renal dialysis equivalent in-centre treatments are projected to increase at 2.9 percent per annum (compound growth).

Table 33 Darling Downs Health Renal Dialysis Equivalent In-centre treatments by Facility 2021/22 to 2036/37

Facility of Treatment	2021-22	2026-27	2031-32	2036-37	Change	AGR
Kingaroy Hospital	6,108	7,075	8,078	9,087	1,787	2.7%
St Andrew's Toowoomba Hospital	6,108	7,075	8,078	9,087	1,787	2.7%
Toowoomba Hospital	20,476	24,080	27,958	32,056	6,948	3.0%
Total	**32,693**	**38,230**	**44,115**	**50,231**	**10,523**	**2.9%**

Source: Renal Dialysis Projections 2017 Final_v1. as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

To define future requirements for renal dialysis at Darling Downs Health facility level, an analysis of projected demand by Planning Region has been calculated based on estimates of the total populations in each area. Refer to Table 33. Facility based projections are based on a continuation of the practice to contract a portion of services from the private sector. Table 34 supports establishing two chairs at Warwick Hospital by 2021-22 or earlier and expansion of chairs at Dalby Hospital by 2026-27 or earlier.

Table 34 Proportion of total Darling Downs Health renal activity by planning region population

Region	2021-22			2026-27			2031-32			2036-37		
	Total Renal Dialysis OOS	In-Centre 60%	Home 40%	Total Renal Dialysis OOS	In-Centre 60%	Home 40%	Total Renal Dialysis OOS	In-Centre 60%	Home 40%	Total Renal Dialysis OOS	In-Centre 60%	Home 40%
Toowoomba	13,485	8,091	5,394	15,848	9,509	6,339	18,330	10,998	7,332	20,853	12,512	8,341
Darling Downs - East	4,164	2,498	1,666	4,745	2,847	1,898	5,340	3,204	2,136	5,930	3,558	2,372
Southern Downs	4,046	2,428	1,619	4,620	2,772	1,848	5,201	3,120	2,080	5,773	3,464	2,309
South Burnett	3,402	2,041	1,361	3,935	2,361	1,574	4,490	2,694	1,796	5,048	3,029	2,019
Western Downs	1,659	995	663	1,892	1,135	757	2,130	1,278	852	2,364	1,418	945
Goondiwindi	1,008	605	403	1,120	672	448	1,230	738	492	1,337	802	535
West Moreton HHS	2,157	1,294	863	2,880	1,728	1,152	3,788	2,273	1,515	4,902	2,941	1,961
South West HHS	2,771	1,663	1,108	3,190	1,914	1,276	3,607	2,164	1,443	4,023	2,414	1,609
TOTAL	**32,693**	**19,616**	**13,077**	**38,230**	**22,938**	**15,292**	**44,115**	**26,469**	**17,646**	**50,231**	**30,138**	**20,092**

2.4.2.1 Chair-Based Activity at 40 percent Home-Based Dialysis

The projected chair-based activity applying the 40 percent home-based dialysis target (as per the endorsed Queensland Health guidelines) for Darling Downs Health is outlined below.

Table 35 Darling Downs Health Chair-Based (Assuming 40% In-Home Target) Renal Dialysis Separations / Occasions of Service Projections by Place of Residence, 2021/22 to 2036/37

Facility of Treatment	2021-22	2026-27	2031-32	2036-37
Kingaroy Hospital	3,665	4,245	4,847	5,452
St Andrew's Toowoomba Hospital	3,665	4,245	4,847	5,452
Toowoomba Hospital	12,286	14,448	16,775	19,234
Total	**19,616**	**22,938**	**26,469**	**30,138**

Source: Renal Dialysis Projections provided by the Department of Health, based on 2016/17 activity. Supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018

Successful home dialysis requires adequate training (three months) and capital funds to maintain home dialysis equipment. Some other health services in Queensland are yet to achieve consistent rates of 40 percent for home dialysis. Darling Downs Health has successfully achieved the 40 percent target for home dialysis for several years. This achievement will need to be sustained to meet future demand prior to a new hospital redevelopment. Table 36 shows the number of occasions of service projected based on only 30 percent in home care.

Table 36 Darling Downs Health Chair-Based (Assuming 30% In-Home) Renal Dialysis Separations / Occasions of Service Projections by Place of Residence, 2021/22 to 2036/37

Facility of Treatment	2021-22	2026-27	2031-32	2036-37
Kingaroy Hospital	4,276	4,953	5,655	6,361
St Andrew's Toowoomba Hospital	4,276	4,953	5,655	6,361
Toowoomba Hospital	14,334	16,856	19,571	22,439
Total	**22,885**	**26,761**	**30,880**	**35,161**

Source: Renal Dialysis Projections provided by the Department of Health, based on 2016/17 activity. Supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018

2.4.3. CANCER SERVICES

2.4.3.1. Chemotherapy

Chemotherapy services are projected utilising a projected incidence rate across different regions in Queensland and treatment rate assumptions. Projections have been sourced from the Department of Health.

Patient flow assumptions underpinning the projections for Darling Downs Health are summarised in 36.

Note: The Department of Health projections for chemotherapy lists Toowoomba Hospital as the facility of treatment for all occasions of service.

92 percent of Darling Downs Health adult residents are treated in Darling Downs Health (Toowoomba Hospital). Only 10 percent of children who reside in Darling Downs Health are treated at Toowoomba Hospital with 90 percent of Darling Downs Health children requiring chemotherapy going to Queensland Children's Hospital.

Table 37 Chemotherapy Patient Flow Assumptions to Darling Downs Health

HHS of Residence	% of HHS Adults Treated DDH	% of HHS Children Treated DDH
Darling Downs	92%	10%
South West	26%	0
West Moreton	2%	0

Source: Cancer Projections_Final v1.1 Supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018. Adults defined as 15+ years of age

Table 38 Darling Downs Health Chemotherapy Separations / Occasions of Service Projections, 2021/22 to 2036/37

Chemotherapy	2021-22	2026-27	2031-32	2036-37	Change (No.)	AGR^
Adults	6,995	7,902	8,817	9,752	2,756	2.24%
Children	4	5	5	5	1	0.74%
Grand Total	**7,000**	**7,907**	**8,822**	**9,757**	**2,757**	**2.24%**

Source: Cancer Projections_Final v1.1 Supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018, noting that 2016/17 equivalent figures not provided in the Department of Health projections. Adults defined as 15+ years of age

2.4.3.2. Radiation Oncology

Radiation oncology services are projected utilising a projected incidence rate across different regions in Queensland and treatment rate assumptions. The projections for radiation oncology services are outlined below, separated by adults and children.

Patient flow assumptions underpinning the radiation oncology projections are based on 80 percent of Darling Downs Health residents and South West Residents are treated in Darling Downs Health.

The following table shows the expected rate of treatment calculated as follows:

Resident demand = incidence x proportion of patients requiring radiotherapy treatment (64.3%) x treatments per patient (20) x public provision (65%).

Table 39 Radiation Oncology Patient Flow Assumptions to Darling Downs Health

HHS of Residence	% Treated at Darling Downs Health
Darling Downs	80%
South West	80%

All public radiation oncology in Toowoomba is performed at St Andrews (Radiation Oncology Centres - ROC) via an agreed contract between ROC and Darling Downs Health. Patients still have their specialist consultations and other treatments at Toowoomba Hospital. This requires significant coordination especially when radiation treatment must be undertaken within tight timeframes for chemotherapy.

A dedicated cancer centre incorporating radiation oncology would greatly improve clinical care and flow. Current site limitations at Toowoomba Hospital and costs involved with installing radiation oncology equipment are likely to push this priority back until a new hospital is completed. Medical imaging for bone scanning and positron emission tomography (PET) is currently undertaken offsite. Consideration is required as to when these services will be provided by TH.

Table 40 TH Radiation Oncology Separations / Occasions of Service Projections, 2021/22 to 2036/37

Radiotherapy		2021-22	2026-27	2031-32	2036-37	Change (No.)	AGR^
Adults	Treatment	13,932	15,661	17,390	19,139	5,207	2.14%
	Simulation and Planning	733	824	915	1,007	274	2.14%
Children	Treatment	85	88	91	94	9	0.69%
	Simulation and Planning	4	5	5	5	0	0.69%

Source: Cancer Projections_Final v1.1 Supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018, noting that 2016/17 equivalent figures not provided in the Department of Health projections

The above projections are based on an 80 percent flow of Darling Downs Health and South West residents having treatment in the Darling Downs. Incident rate for 21-22 is 2,046 adults and children *(Source: DoH Cancer Projections 2017 Final v1.0d)*. In 2021-22, 43 public adult radiation oncology treatments or plans will be undertaken daily (based on a 340-day year).

2.4.3.3. Future requirements Cancer Care

The Cancer Care Unit currently includes specialist consulting rooms, day unit (chemotherapy) and inpatient unit. Given the specialist nature of the treatment and high clinical risks, the unit requires access to ICU and emergency response services on site and therefore this service is not suited to an early move to Baillie Henderson Campus.

In addition to the additional workforce required to service increased projected activity, additional consulting rooms and alterations to the day unit will be required. Workforce priorities should consider including a clinical booking coordinator (new position) to build capacity by improving patient scheduling and flow.

Potential for cancer services to be provided from rural facilities is limited given the highly specialist nature of the care provided, the low volumes of patients and access to ICU and emergency services.

Option for palliative care to move across to the Baillie Henderson Hospital campus as an early stage in the new hospital build should be considered in the master planning process (requires hospice style accommodation).

2.4.4. ENDOSCOPY

Endoscopy services are projected utilising historical activity (applying a linear trend) and patient flow data from inpatient and outpatient data sources. Projections have been sourced from the DoH.

The Darling Downs Health rate of endoscopy is 2,109 per 100,000 persons and is similar to the Queensland rate of 2,127 per 100,000 persons (based on 2016/17 totals, Darling Downs Health 5,947 and Queensland (105,069)).

The projections in Table 40 include classifications 'Colonoscopy' and 'Other Endoscopy'. 'Other Endoscopy' is defined as all other gastrointestinal (GI) endoscopy plus bronchoscopy.

Table 41 Darling Downs Health Endoscopy separations / Occasions of Service Projections, 2016/17 to 2036/37 (Change and AGR based on rate between 2021-22 to 2036-37)

	Specialty	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Dalby Hospital	Colonoscopy	165	126	131	140	148	22	1.09%
	Other Endoscopy	46	116	139	144	149	32	1.66%
Dalby Hospital Total		**211**	**242**	**270**	**284**	**297**	**55**	**1.37%**
Goondiwindi Hospital	Colonoscopy	102	81	84	87	90	9	0.68%
	Other Endoscopy	35	72	84	87	90	18	1.53%
Goondiwindi Total		**137**	**153**	**168**	**174**	**180**	**27**	**1.10%**
Kingaroy Hospital	Colonoscopy	391	404	451	501	549	146	2.08%
	Other Endoscopy	290	403	478	531	581	179	2.48%
Kingaroy Hospital Total		**681**	**806**	**929**	**1,031**	**1,131**	**324**	**2.28%**
Miles Hospital	Colonoscopy	91	72	72	74	76	4	0.37%
	Other Endoscopy	35	65	76	78	81	16	1.46%
Miles Hospital Total		**126**	**137**	**148**	**153**	**157**	**20**	**0.91%**
Stanthorpe Hospital	Colonoscopy	174	145	148	157	165	20	0.87%
	Other Endoscopy	148	162	165	171	178	16	0.63%
Stanthorpe Hospital Total		**322**	**307**	**312**	**328**	**343**	**36**	**0.74%**
Toowoomba Hospital	Colonoscopy	1,777	1,692	1,871	2,084	2,331	639	2.16%
	Other Endoscopy	1,950	2,741	3,219	3,557	3,900	1,159	2.38%
Toowoomba Hospital Total		**3,727**	**4,433**	**5,090**	**5,641**	**6,231**	**1,798**	**2.30%**
Toowoomba Surgicentre	Colonoscopy	24	28	31	34	39	11	2.19%
	Other Endoscopy	27	34	40	45	49	16	2.60%
Toowoomba Surgicentre Total		**51**	**62**	**71**	**79**	**88**	**27**	**2.42%**
Warwick Hospital	Colonoscopy	394	262	259	282	301	39	0.93%
	Other Endoscopy	298	340	338	355	372	32	0.60%
Warwick Hospital Total		**692**	**602**	**596**	**637**	**673**	**71**	**0.75%**
Grand Total		**5,947**	**6,743**	**7,585**	**8,327**	**9,101**	**2,358**	**2.02%**

Source: Endoscopy 2017_Final_V1.0 projections supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health)

2.4.5 EMERGENCY AND ELECTIVE SURGICAL ACTIVITY BY SRG & ESRG

2.4.5.1 Darling Downs Health Emergency Surgical or Procedural Separations (Selected SRGs see Appendix A)

Across Darling Downs Health there were 14,559 surgical or procedural separations (including obstetrics) in 2016/17 with an emergency status. Emergency surgical and procedural separations are projected to grow at 3.2 percent per annum across Darling Downs Health. Growth at Toowoomba Hospital is slightly higher at 3.4 percent per annum. See Table 42.

Table 42 Darling Downs Health emergency surgical and procedural separations 2016/17 to 2036/37 including obstetrics and gynaecology

Place of Treatment	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Cherbourg Hospital	294	325	363	400	439	145	2.0%
Chinchilla Hospital	422	490	577	666	771	349	3.1%
Dalby Hospital	1,128	1,294	1,521	1,756	2,018	890	3.0%
Darling Downs (public patients)	4	4	5	5	5	1	1.4%
Goondiwindi Hospital	557	610	675	736	801	244	1.8%
Inglewood Hospital	81	96	113	131	149	68	3.1%
Jandowae Hospital	54	67	82	97	113	59	3.8%
Kingaroy Hospital	1,045	1,242	1,477	1,729	2,014	969	3.3%
Miles Hospital	279	321	372	422	479	200	2.7%
Millmerran Hospital	85	105	128	153	181	96	3.9%
Murgon Hospital	237	284	343	409	483	246	3.6%
Nanango Hospital	213	256	306	357	413	200	3.4%
Oakey Hospital	71	88	109	134	164	93	4.3%
St Andrew's Toowoomba Hospital (public patients)	5	7	8	9	11	6	4.0%
Stanthorpe Hospital	551	642	758	884	1,026	475	3.2%
Tara Hospital	203	233	267	298	330	127	2.5%
Taroom Hospital	70	79	90	100	111	41	2.4%
Texas Hospital	87	100	117	134	152	65	2.8%
Toowoomba Hospital	8,339	9,967	11,888	13,947	16,204	7,865	3.4%
Warwick Hospital	834	975	1,156	1,349	1,567	733	3.2%
Grand Total	**14,559**	**17,186**	**20,354**	**23,717**	**27,432**	**12,873**	**3.2%**

Source: Acute Inpatient Model: Darling Downs Health Scenario (16/17 Base). Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

2.4.5.2 TH Emergency and Elective Surgical and Procedural Separations Including Obstetrics

The rate of growth for elective surgical and procedural separations including obstetrics at Toowoomba Hospital is 1.7 percent per annum. This is lower than the projected rate for emergency surgical and procedural separations.

Table 43 Projected Activity Toowoomba Hospital Surgical SRGs by Elective Emergency Status including Obstetrics

Facility of Treatment	Emergency Status	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
Toowoomba Hospital	Emergency	8,339	9,967	11,888	13,947	16,204	7,865	3.4%
	Elective	11,698	12,751	14,476	15,444	16,479	4,781	1.7%
Toowoomba Hospital Total		**20,037**	**22,718**	**26,364**	**29,391**	**32,683**	**12,646**	**2.5%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

2.4.5.3 TH Surgical Separations and Operating Theatre Cases

In 2016/17 there were a total of 9,247 operating theatre cases including 3,618 emergency and 5,629 elective cases at Toowoomba Hospital including obstetrics (sourced from Toowoomba Hospital theatre statistics). The number of theatre cases is much lower than separations reported in Table 43 above as Table 43 includes surgical separations not requiring theatre time. For example, 3,044 antenatal separations were recorded for Toowoomba Hospital in 2016/17 and these are included in Table 43 above. By excluding ESRGs not requiring operating theatre time, it is possible to more accurately match the number of actual theatre cases undertaken at Toowoomba Hospital in 2016/17. The list of ESRGs excluded includes:

- Abdominal pain
- Digestive system diagnoses including GI obstruction
- Non-procedural ENT
- Otitis Media & URTI
- Non-procedural Gynaecology
- Head injuries
- Injuries Nonsurgical
- Non - procedural Ophthalmology
- Injuries to limbs, Other
- Ortho non-surgical
- Other non-procedural urology
- Non-procedural vascular including skin ulcers
- Vaginal deliveries
- Antenatal admissions
- Post-natal admissions

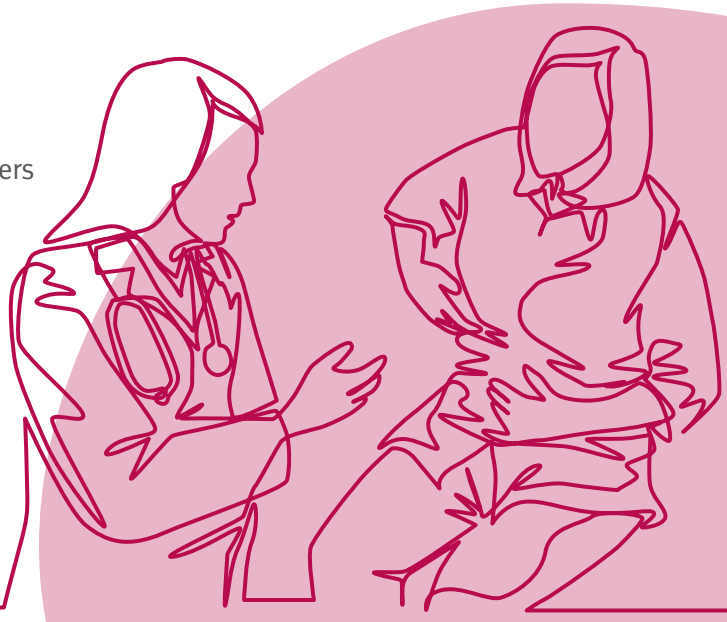


Table 44 Projected activity Toowoomba Hospital Surgical SRGs by Elective Emergency Status including Obstetrics but excluding non-operative ESRGs.

Facility of Treatment	Emergency Status	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
Darling Downs Private (public patients)	Emergency	4	4	5	5	5	1	1.0%
	Elective	20	26	31	36	40	20	2.2%
Darling Downs Private (public patients) Total		**24**	**30**	**36**	**41**	**46**	**22**	**2.1%**
St Andrew's Toowoomba Hospital (public patients)	Emergency	4	4	5	5	6	4	1.2%
	Elective	179	201	221	238	256	201	1.2%
St Andrew's Toowoomba Hospital (public patients) Total		**183**	**217**	**206**	**226**	**243**	**261**	**1.2%**
Toowoomba Hospital	Emergency	3,240	3,718	4,210	4,685	5,173	1,933	2.4%
	Elective	5,981	6,768	7,578	8,192	8,840	2,859	2.0%
Toowoomba Hospital Total		**9,221**	**10,486**	**11,788**	**12,877**	**14,013**	**4,792**	**2.1%**
Grand total		**9,428**	**10,722**	**12,050**	**13,162**	**14,320**	**4,892**	**2.1%**

Source: Cross Sectional – Inpatient Projections (Base Year 2016-17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

The number of separations in Table 43 very closely matches the number of reported theatre cases for 2016/17 and therefore can be used for predicting future theatre demand. Note future projections are conservative when compared to historical activity as per Table 44 below.

According to the AIM base case emergency surgical activity (operating cases) will grow at 2.4 percent per annum. Historically growth since 2010/11 has been at 8.0 percent per annum.

Table 45 Historical activity Toowoomba Hospital Surgical SRGs by Elective Emergency Status including Obstetrics but excluding non-operative ESRGs.

Toowoomba Hospital	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	Change (No.)	AGR^
Emergency	2,044	2,210	2,241	2,568	2,748	3,075	3,240	1,196	8.0%
Non-emergency	4,644	4,502	4,355	5,280	6,015	6,339	5,981	1,337	4.3%
Total	**6,688**	**6,712**	**6,596**	**7,848**	**8,763**	**9,414**	**9,221**	**2,533**	**5.5%**

Source: Cross Sectional – Inpatient Projections (Base Year 2016-17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

2.4.6. INTERVENTIONAL CARDIOLOGY

Interventional Cardiology services are projected using historical activity (applying a linear trend) and patient flow data from inpatient and outpatient data sources. Projections have been sourced from the Department of Health.

Interventional cardiology services for Darling Downs Health residents are provided at the Queensland Children's Hospital, Princess Alexandra Hospital, Royal Brisbane and Women's Hospital and Prince Charles Hospital.

By 2021, there will be 1,026 adult public separations per annum treated at metropolitan hospitals. Adult patient flows for Darling Downs Health are summarised in the Table 46 below.

Table 46 HHS of Treatment Interventional Cardiology for Darling Downs Health Residents

HHS of Treatment	% of Darling Downs Health
Metro North	20%
Metro South	80%

Table 47 Darling Downs Health Adult Interventional Cardiology Separations / Occasions of Service Projections, 2021/22 to 2036/37

Sub Classification	2021-22	2026-27	2031-32	2036-37	Change (No.)	AGR^
Angiography	574	619	664	708	134	1.4%
EPS and ablations	26	28	31	33	8	1.7%
ICD's	58	76	95	113	56	4.6%
Lead/revision/ replacement	17	18	18	19	3	1.0%
Loop recorders	11	13	15	17	6	2.9%
Other (balloon pumps)	33	48	64	79	47	6.0%
Pacemakers	71	78	84	91	20	1.6%
PCI (complex)	90	111	132	153	63	3.6%
PCI (non complex)	147	171	194	218	71	2.7%
Grand Total	**1,026**	**1,162**	**1,297**	**1,431**	**406**	**2.3%**

Source: Interventional Cardiology 2017_Final_V1.0 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018. (Lee there is a 2018 version with different 'created date when compared to 2017 version'.

Table 47 Excludes non-admitted activity.

2.4.7. QUALIFIED NEONATES

Neonatal services are projected utilising projected births and the application of cots per 1,000 births benchmark (1.2 per 1,000 for NICU, 5.6 per 1,000 for SCN). These projections are adjusted (increased) for areas with high percentages of Aboriginal and Torres Strait Islander populations. Projections have been sourced from the Department of Health.

Special Care Nursery (SCN) services at TH are projected to increase from 970 separations in 2016/17 to 1,095 separations in 2036/37; an annual compound growth rate of 0.6 percent. Refer to Table 49.

Table 48 SCN Separations Patient Flows Assumptions to Darling Downs Health 16/17

HHS of Treatment	% of Darling Downs Health
Darling Downs	69%
Interstate	6%
South West	60%
West Moreton	5%

Source: Qualified Neonate Projections (NICU_SCN Projections 2018) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 49 TH SCN Separations / Occasions of Service Projections, 2016/17 to 2036/37

2016/17		2021/22		2026/27		2031/32		2036/37		Change (Seps)	AGR^
Seps	Bed days	Seps	Bed days	Seps	Bed days	Seps	Bed days	Seps	Bed days		
970	4982	1074	5520	1174	6033	1080	5549	1095	5,627	125	0.6%

Source: Qualified Neonate Projections as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Neonatal intensive care services (NICU) for Darling Downs Health residents are projected to increase from 1,510 (173 separations) in 2016/17 bed days to 1,731 bed days (198 separations) in 2036/37; an annual growth rate of 0.7 percent.

Table 50 Darling Downs Health Resident NICU Bed Day Projections, 2016/17 to 2036/37

Facility of Treatment	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Gold Coast University Hospital	57	64	70	66	68	11	0.9%
Mater Mothers' Public Hospital	959	996	1,043	1,068	1,095	136	0.7%
Royal Brisbane & Women's Hospital	494	524	550	556	569	75	0.7%
Grand Total	**1,510**	**1,584**	**1,663**	**1,691**	**1,731**	**221**	**0.7%**

Source: Qualified Neonate Projections as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

What determines the need to establish a sustainable NICU?

The minimum number of births to sustain NICU is 10,000 births or more (Queensland Health 2006) and therefore the combined catchment of both Darling Downs Health and South West Hospital and Health Service does not result in sufficient births to support the establishment of a sustainable NICU.

2.4.8. EMERGENCY DEPARTMENT

Emergency Department (ED) projections have been provided by the Department of Health, calculated utilising the endorsed projection methodology and are outlined by Darling Downs Health facility in this section. Note the endorsed methodology utilises historical trends, adjusted for population growth. They therefore pick up any unusual trends that may be in the data (e.g. in specific triage categories) from recent years. For this reason, the projections provided must be interpreted and applied with extreme caution.

Table 51 - TH Emergency Department Presentation Projections by Age Group and Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
Adult	Triage 1	403	575	732	894	1,054	651	5%
	Triage 2	5,190	7,819	10,216	12,665	15,067	9,877	6%
	Triage 3	20,437	28,051	35,373	42,777	50,071	29,635	5%
	Triage 4	13,158	13,319	13,676	13,896	14,077	919	0.4%
	Triage 5	1,124	1,138	1,170	1,189	1,206	81	0.4%
Adult Total		**40,312**	**50,902**	**61,167**	**71,421**	**81,474**	**41,163**	**4%**
Child	Triage 1	61	90	115	141	168	108	6%
	Triage 2	587	892	1,172	1,464	1,764	1,177	6%
	Triage 3	5,678	7,755	9,702	11,744	13,850	8,172	5%
	Triage 4	4,050	4,065	4,101	4,170	4,246	195	0.2%
	Triage 5	184	185	186	190	194	10	0.3%
Child Total		**10,560**	**12,988**	**15,277**	**17,710**	**20,221**	**9,661**	**3%**
Grand Total		**50,872**	**63,890**	**76,443**	**89,131**	**101,696**	**50,824**	**4%**

Source: Emergency Department Projections (Lee to confirm if Final v1.0 2017 data [which has date created: 25/9/2017 & updated 2/2/2018 which differs to ASGS 2018 version Draft v1.0 Date created 23/8/2018) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Toowoomba Hospital ED activity is projected to increase at a rate of four percent per annum. The annual growth in emergency activity at the rural hub hospitals, Dalby and Kingaroy is two percent and three at Warwick Hospital. After Toowoomba Hospital, Warwick Hospital has the busiest Emergency Department with almost 21, 000 presentations per annum.

Dalby Hospital emergency activity (11,514 presentations in 2016/17) is only marginally higher than Goondiwindi (9,073 presentations 2016/17), Chinchilla (9,003 presentations 2016/17) and Stanthorpe hospitals (8,729 presentations 2016/17).

Jandowae, Inglewood, Taroom, Texas, Wandoan and Wondai all have less than 2,000 emergency presentations per annum.

Table 52 Cherbourg Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
Adult	Triage 1	8	12	14	17	20	11	5%
	Triage 2	228	331	433	537	642	413	6%
	Triage 3	724	802	845	883	920	196	1%
	Triage 4	1,462	1,491	1,527	1,554	1,575	114	0.4%
	Triage 5	2,065	2,297	2,595	2,893	3,190	1,125	2.3%
Adult Total		**4,487**	**4,933**	**5,415**	**5,884**	**6,347**	**1,860**	**2%**
Child	Triage 1	3	5	6	8	10	8	8%
	Triage 2	37	59	84	109	136	99	7%
	Triage 3	334	378	398	420	442	108	1%
	Triage 4	972	1,026	1,073	1,124	1,175	203	1.0%
	Triage 5	291	333	384	439	498	208	2.9%
Child Total		**1,636**	**1,800**	**1,946**	**2,100**	**2,261**	**626**	**2%**
Grand Total		**6,123**	**6,733**	**7,361**	**7,984**	**8,608**	**2,486**	**2%**

Source: Emergency Department Projections provided by the Department of Health 2017

Table 53 Chinchilla Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
Adult	Triage 1	12	14	16	17	19	7	2%
	Triage 2	128	146	175	203	230	102	3%
	Triage 3	858	1,040	1,250	1,452	1,649	791	4%
	Triage 4	3,630	4,617	5,558	6,457	7,333	3,703	3.8%
	Triage 5	2,870	4,210	5,517	6,746	7,961	5,091	5.5%
Adult Total		**7,499**	**10,027**	**12,515**	**14,876**	**17,192**	**9,694**	**4%**
Child	Triage 1	3	3	4	4	5	2	3%
	Triage 2	20	25	31	38	44	24	4%
	Triage 3	205	238	282	326	370	166	3%
	Triage 4	1,104	1,408	1,715	2,023	2,332	1,228	4.0%
	Triage 5	173	171	171	172	173	0	0.0%
Child Total		**1,504**	**1,845**	**2,204**	**2,563**	**2,925**	**1,421**	**4%**
Grand Total		**9,003**	**11,872**	**14,719**	**17,439**	**20,117**	**11,114**	**4%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 54 Dalby Hospital Emergency Department Presentation Projections by Age Group and Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
Adult	Triage 1	33	45	55	65	75	42	4%
	Triage 2	567	674	782	890	992	425	3%
	Triage 3	2,331	3,096	3,787	4,479	5,163	2,833	4%
	Triage 4	3,577	3,662	3,796	3,907	4,014	437	0.6%
	Triage 5	2,312	2,363	2,448	2,517	2,583	272	0.6%
Adult Total		**8,819**	**9,839**	**10,868**	**11,858**	**12,827**	**4,008**	**2%**
Child	Triage 1	3	4	5	5	6	3	4%
	Triage 2	61	75	89	104	119	58	4%
	Triage 3	641	858	1,038	1,227	1,425	784	4%
	Triage 4	1,594	1,630	1,653	1,687	1,729	135	0.4%
	Triage 5	397	402	404	409	416	19	0.2%
Child Total		**2,695**	**2,969**	**3,189**	**3,432**	**3,694**	**999**	**2%**
Grand Total		**11,514**	**12,809**	**14,057**	**15,289**	**16,522**	**5,008**	**2%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 55 Goondiwindi Hospital Emergency Department Presentations Projections by Age Group and Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
Adult	Triage 1	19	23	27	31	34	15	3%
	Triage 2	327	392	476	558	636	309	4%
	Triage 3	1,402	1,705	2,034	2,355	2,665	1,263	3%
	Triage 4	2,821	3,457	4,056	4,631	5,188	2,367	3.3%
	Triage 5	2,114	2,694	3,260	3,796	4,318	2,204	3.8%
Adult Total		**6,683**	**8,271**	**9,852**	**11,370**	**12,842**	**6,159**	**3%**
Child	Triage 1	3	3	4	4	5	2	3%
	Triage 2	45	57	72	87	103	58	4%
	Triage 3	299	351	416	482	547	249	3%
	Triage 4	1,315	1,630	1,945	2,260	2,577	1,262	3.6%
	Triage 5	729	721	722	724	727	- 2	0.0%
Child Total		**2,390**	**2,763**	**3,159**	**3,557**	**3,959**	**1,569**	**3%**
Grand Total		**9,073**	**11,033**	**13,011**	**14,927**	**16,801**	**7,727**	**3%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 56 Inglewood Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	5	7	7	7	7	2	2%
	Triage 2	62	64	64	64	64	2	0%
	Triage 3	242	286	306	326	346	104	2%
	Triage 4	272	295	306	317	328	56	1.0%
	Triage 5	457	644	873	1,101	1,330	873	5.8%
Grand Total		**1,038**	**1,296**	**1,556**	**1,815**	**2,074**	**1,036**	**4%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 57 Jandowae Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	2	2	2	2	2	0	1%
	Triage 2	38	49	65	80	95	57	5%
	Triage 3	235	388	506	623	741	506	6%
	Triage 4	334	457	582	707	831	497	4.9%
	Triage 5	808	771	791	811	831	23	0.1%
Grand Total		**1,417**	**1,668**	**1,946**	**2,223**	**2,501**	**1,084**	**3%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 58 Kingaroy Hospital Emergency Department Presentation Projections by Age Group and Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
Adult	Triage 1	46	63	77	92	107	61	5%
	Triage 2	976	1,418	1,850	2,286	2,719	1,743	6%
	Triage 3	2,637	2,979	3,190	3,395	3,587	950	2%
	Triage 4	5,741	5,881	6,043	6,170	6,267	526	0.5%
	Triage 5	3,167	3,523	3,979	4,426	4,864	1,696	2.3%
Adult Total		**12,567**	**13,863**	**15,138**	**16,370**	**17,544**	**4,977**	**2%**
Child	Triage 1	7	11	15	19	23	16	7%
	Triage 2	108	172	247	319	396	287	7%
	Triage 3	880	1,005	1,068	1,136	1,206	326	2%
	Triage 4	1,904	2,011	2,105	2,205	2,307	404	1.0%
	Triage 5	508	580	667	761	863	354	2.8%
Child Total		**3,407**	**3,779**	**4,102**	**4,440**	**4,794**	**1,388**	**2%**
Grand Total		**15,974**	**17,642**	**19,240**	**20,810**	**22,338**	**6,365**	**2%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 59 Miles Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	14	20	20	20	20	6	2%
	Triage 2	112	115	115	115	115	3	0%
	Triage 3	650	768	822	876	929	279	2%
	Triage 4	920	998	1,035	1,071	1,108	188	1.0%
	Triage 5	1,206	1,700	2,303	2,906	3,509	2,303	5.8%
Grand Total		**2,902**	**3,601**	**4,295**	**4,988**	**5,682**	**2,780**	**4%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 60 Millmerran Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	8	9	9	9	9	1	1%
	Triage 2	60	78	102	126	150	90	5%
	Triage 3	500	827	1,077	1,327	1,577	1,077	6%
	Triage 4	837	1,146	1,458	1,771	2,083	1,246	4.9%
	Triage 5	1,409	1,344	1,379	1,414	1,449	40	0.1%
Grand Total		**2,814**	**3,404**	**4,025**	**4,647**	**5,268**	**2,454**	**3%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 61 Murgon Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	8	10	12	14	16	8	4%
	Triage 2	135	149	171	193	216	81	2%
	Triage 3	673	889	1,001	1,112	1,223	550	3%
	Triage 4	1,648	2,328	2,993	3,657	4,322	2,674	5.2%
	Triage 5	1,715	1,974	2,445	2,916	3,387	1,672	3.6%
Grand Total		**4,179**	**5,351**	**6,622**	**7,893**	**9,164**	**4,985**	**4%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 62 Nanango Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	8	10	12	14	16	8	4%
	Triage 2	56	62	71	80	89	33	2%
	Triage 3	492	650	732	813	894	402	3%
	Triage 4	1,581	2,234	2,871	3,509	4,146	2,565	5.2%
	Triage 5	2,236	2,574	3,188	3,802	4,416	2,180	3.6%
Grand Total		**4,373**	**5,530**	**6,874**	**8,218**	**9,562**	**5,189**	**4%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 63 Oakey Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	11	15	19	23	27	16	5%
	Triage 2	96	118	140	162	184	88	3%
	Triage 3	841	1,131	1,387	1,647	1,908	1,067	4%
	Triage 4	1,292	1,303	1,320	1,338	1,354	62	0.2%
	Triage 5	585	588	594	598	602	17	0.1%
Grand Total		**2,825**	**3,155**	**3,460**	**3,768**	**4,075**	**1,249**	**2%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 64 Stanthorpe Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	53	67	87	108	127	74	5%
	Triage 2	769	1,394	1,787	2,173	2,547	1,778	7%
	Triage 3	2,192	3,494	4,605	5,702	6,780	4,588	6%
	Triage 4	3,254	3,307	3,367	3,420	3,465	211	0.3%
	Triage 5	2,461	2,485	2,504	2,511	2,502	41	0.1%
Grand Total		**8,729**	**10,747**	**12,350**	**13,915**	**15,422**	**6,693**	**3%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 65 Tara Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	3	4	4	4	4	1	2%
	Triage 2	118	122	122	122	122	4	0%
	Triage 3	596	704	753	803	852	256	2%
	Triage 4	883	958	993	1,028	1,064	181	1.0%
	Triage 5	1,842	2,596	3,517	4,438	5,359	3,517	5.8%
Grand Total		**3,442**	**4,384**	**5,390**	**6,395**	**7,401**	**3,959**	**4%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 66 Taroom Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	2	8	8	8	8	6	7%
	Triage 2	43	45	45	45	45	2	0%
	Triage 3	187	248	305	363	420	233	4%
	Triage 4	315	315	315	315	315	-	0.0%
	Triage 5	753	1,085	1,264	1,443	1,622	869	4.1%
Grand Total		**1,300**	**1,701**	**1,937**	**2,174**	**2,410**	**1,110**	**3%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 67 Texas Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	3	4	4	4	4	1	2%
	Triage 2	53	55	55	55	55	2	0%
	Triage 3	192	227	243	259	275	83	2%
	Triage 4	362	393	407	422	436	74	1.0%
	Triage 5	853	1,202	1,629	2,055	2,482	1,629	5.8%
Grand Total		**1,463**	**1,881**	**2,337**	**2,794**	**3,251**	**1,788**	**4%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 68 Wandoan Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	-	-	-	-	-	-	0%
	Triage 2	3	3	3	3	3	0	0%
	Triage 3	21	25	27	28	30	9	2%
	Triage 4	147	159	165	171	177	30	1.0%
	Triage 5	1,458	2,055	2,784	3,513	4,242	2,784	5.8%
Grand Total		**1,629**	**2,242**	**2,979**	**3,715**	**4,452**	**2,823**	**5%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 69 Warwick Hospital Emergency Department Presentation Projections by Age Group and Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
Adult	Triage 1	25	32	41	50	59	34	5%
	Triage 2	1,189	2,171	2,761	3,339	3,893	2,704	6%
	Triage 3	3,668	5,856	7,676	9,476	11,228	7,560	6%
	Triage 4	6,209	6,240	6,341	6,407	6,452	243	0.2%
	Triage 5	5,715	5,719	5,770	5,784	5,788	73	0.1%
Adult Total		**16,806**	**20,019**	**22,590**	**25,057**	**27,420**	**10,614**	**3%**
Child	Triage 1	2	2	3	3	4	2	4%
	Triage 2	127	239	318	393	474	347	7%
	Triage 3	930	1,554	2,102	2,633	3,202	2,272	7%
	Triage 4	2,064	2,150	2,197	2,262	2,338	274	0.7%
	Triage 5	738	769	785	807	834	95	0.6%
Child Total		**3,861**	**4,714**	**5,404**	**6,099**	**6,852**	**2,990**	**3%**
Grand Total		**20,667**	**24,732**	**27,994**	**31,156**	**34,271**	**13,604**	**3%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Table 70 Wondai Hospital Emergency Department Presentation Projections by Triage Category, 2016/17 to 2036/37

Age Group	Triage	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	AGR^
All Ages	Triage 1	1	1	2	2	2	1	4%
	Triage 2	-	-	-	-	-	-	0%
	Triage 3	4	5	6	7	7	3	3%
	Triage 4	16	23	29	36	42	26	5.2%
	Triage 5	58	67	83	99	115	57	3.6%
Grand Total		**79**	**96**	**119**	**143**	**166**	**87**	**4%**

Source: Emergency Department Projections provided by the Department of Health 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

2.4.9. OUTPATIENTS

Projections for outpatient occasions of service are provided by the Department of Health calculated utilising a methodology that firstly establishes outpatient growth rates (by reviewing inpatient projections from the AIM tool), then assigning the inpatient growth rates to one year of historical outpatient data (DSS) by facility of treatment and Tier 2 classification. Patient flows from other HHS's to Darling Downs Health are established and assigned.

Note: In order to stabilise fluctuations in activity of smaller (non-ABF) facilities, these facilities are aggregated by HHS and assigned an aggregated non-ABF growth rate by HHS. Consequently, outpatient projections are not provided by the Department of Health at facility level for rural facilities across Darling Downs Health.

Table 71 Projected Occasions of Service, TH by Primary Classification, 2016/17 - 2036/37

OOS	2016/17	2021/22	2026/27	2031/32	2036/37	Change (No.)	Change (%)	AGR^
Medical Imaging	32,401	40,378	50,318	59,762	70,978	38,577	119%	4.00%
Allied Health	30,633	37,059	45,050	52,304	59,668	29,035	95%	3.39%
Medical	25,866	32,643	40,310	48,225	56,517	30,651	118%	3.99%
Maternity	23,816	25,888	28,958	30,443	28,493	4,677	20%	0.90%
Orthopaedics	16,588	19,954	24,158	27,809	31,841	15,253	92%	3.31%
Oncology	11,488	12,729	14,037	14,896	15,575	4,087	36%	1.53%
Pre-Admission	10,179	11,734	13,709	15,410	17,228	7,049	69%	2.67%
Surgical	9,520	11,105	13,185	15,081	17,099	7,579	80%	2.97%
Ear Nose and throat (ENT)	7,165	8,020	9,265	10,339	11,547	4,382	61%	2.41%
Paediatric	4,530	4,864	5,280	5,638	6,059	1,529	34%	1.46%
Urology	3,736	4,884	6,324	7,729	9,263	5,527	148%	4.64%
Gastroenterology	3,532	4,679	6,065	7,045	8,272	4,740	134%	4.35%
Sub Acute	3,521	4,272	5,194	6,023	6,850	3,329	95%	3.38%
Clinical Measurement	2,560	3,097	3,765	4,371	4,986	2,426	95%	3.39%
Minor Treatments	1,594	1,986	2,475	2,940	3,492	1,898	119%	4.00%
Nursing	1,066	1,287	1,557	1,806	2,066	1,000	94%	3.36%
Ophthalmology	905	1,214	1,612	2,026	2,525	1,620	179%	5.26%
Renal (transplant)	440	440	352	566	820	380	86%	3.16%
Grand Total	**189,540**	**226,233**	**271,613**	**312,414**	**353,279**	**163,739**	**86%**	**3.16%**

Source: Outpatient projections supplied by the Department of Health. Version 1 2017 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health). Excludes Psychiatry Primary Classification as mostly psychology services and CIMHA should be used as source

The greatest number of outpatient services are provided by Medical Imaging and this area has a compound annual growth rate of 4.21 percent at Toowoomba Hospital. Ophthalmology while small numbers (905 OOS in 16/17) is projected to have the greatest compound annual growth rate at 5.55 percent.

Figure 2 Growth in Non-admitted Activity Toowoomba Hospital

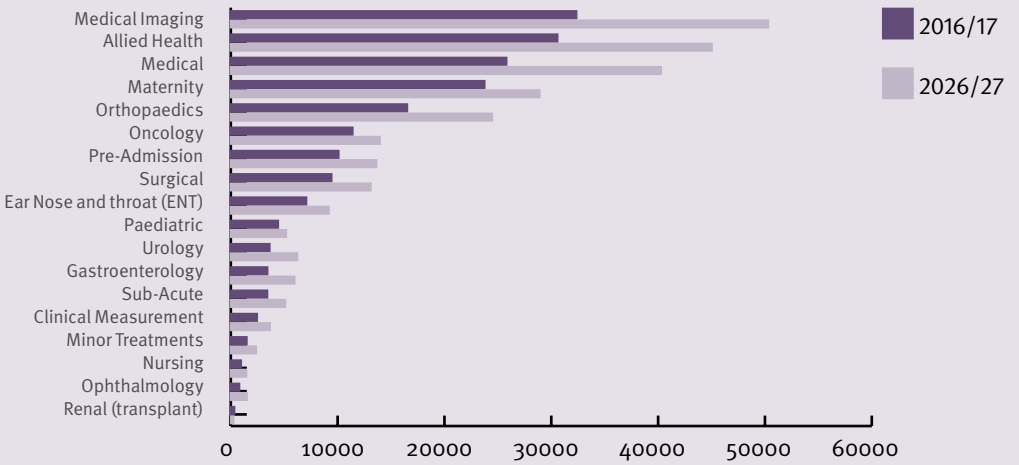


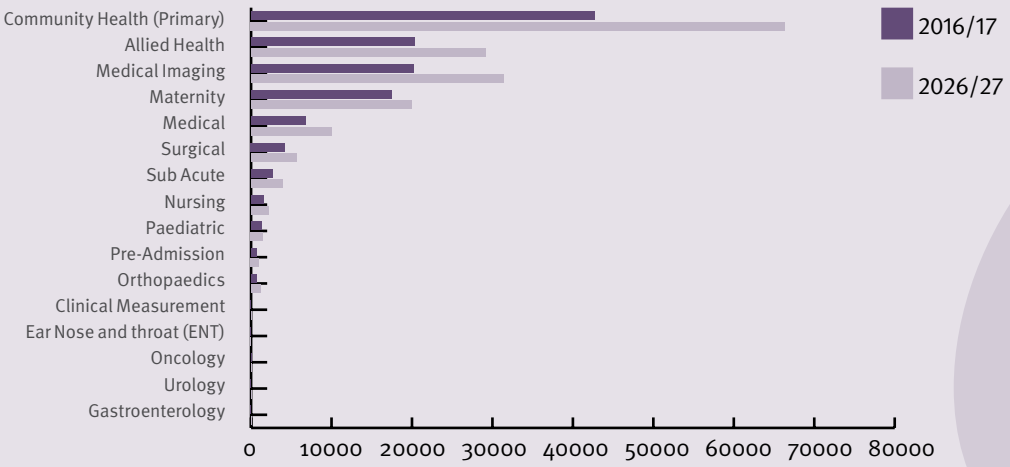
Table 72 Projected Occasions of Service Other Darling Downs Health Facilities, by Primary Classification, 2016/17 - 2036/37

OOS	2016/17	2026/27	2036/37	Change (No.)	Change (%)	AGR^
Community Health (Primary)	42,732	66,361	93,609	50,877	119%	4.21%
Allied Health	20,379	29,197	37,616	17,237	85%	3.28%
Medical Imaging	20,240	31,432	44,338	24,098	119%	4.21%
Maternity	17,516	20,006	18,771	1,255	7%	0.36%
Medical	6,810	10,049	13,618	6,808	100%	3.71%
Surgical	4,301	5,742	7,271	2,970	69%	2.80%
Sub Acute	2,781	4,007	5,202	2,421	87%	3.35%
Nursing	1,633	2,300	2,989	1,356	83%	3.23%
Paediatric	1,365	1,571	1,802	437	32%	1.47%
Pre-Admission	819	1,076	1,311	492	60%	2.51%
Orthopaedics	813	1,237	1,755	942	116%	4.13%
Clinical Measurement	85	125	161	76	89%	3.42%
Ear Nose and throat (ENT)	85	97	114	29	34%	1.56%
Oncology	75	116	163	88	118%	4.18%
Urology	24	37	53	29	119%	4.21%
Gastroenterology	21	33	46	25	119%	4.21%
Grand Total	**119,679**	**173,386**	**228,820**	**109,141**	**91%**	**3.47%**

Excludes Psychiatry Primary Classification as mostly psychology services and CIMHA should be used as source

Primary care occasions of service make up the greatest volume of occasions of service in rural facilities followed by allied health and medical imaging and maternity.

Figure 3 Growth in Non-admitted activity Other DDH Facilities



Future Opportunities

Are there changes to outpatient service models that will improve capacity to meet future demand (e.g. multidisciplinary models of care or extended clinic hours)?

2.4.10 TELEHEALTH

The number of occasions of service delivered by telehealth has increased by 69 percent between 2015/16 and 2017/18. A total of 8,659 telehealth occasions of service were provided across Darling Downs Health in 2017/18. Approximately seven percent of the total number of outpatient occasions of service provided across Darling Downs Health are telehealth occasions of service.

Table 73 Non-Admitted Telehealth Occasions of Service, Darling Downs Health, by Facility, 2015/16 to 2017/18

Facility	2015/16	2016/17	2017/18	Change 2015/16 to 2017/18	% Change 2015/16 to 2017/18
Toowoomba	3,380	4,617	5,745	2,365	70%
Cherbourg	0	0	63	63	0%
Chinchilla	262	279	81	-181	-69%
Dalby	232	292	322	90	39%
Goondiwindi	225	178	235	10	4%
Inglewood	12	12	9	-3	-25%
Jandowae	0	1	5	5	500%
Kingaroy	550	732	942	392	71%
Miles	33	25	15	-18	-55%
Millmerran	11	14	1	-10	-91%
Murgon	61	19	15	-46	-75%
Nanango	0	0	0	0	0%
Oakey	6	9	16	10	167%
Stanthorpe	60	348	530	470	783%
Tara	8	26	55	47	588%
Taroom	20	42	37	17	85%
Texas	0	0	28	28	0%
Wandoan	0	0	0	0	0%
Warwick	252	427	556	304	121%
Wondai	18	16	4	-14	-78%
Total	**5,130**	**7,037**	**8,659**	**3,529**	**69%**

Source: Darling Downs Health Non-Admitted Telehealth Service Events provided by Darling Downs Health August 2018.

The highest volumes of telehealth services provided in Darling Downs Health 2017/18 were for orthopaedic consultations (1,306 in 17/18). High numbers were also provided in nephrology and anaesthetics (for surgical preadmission).

Table 74 Non-Admitted Telehealth Occasions of Service, Darling Downs Health, by Tier 2 Clinic Speciality, 2014/15 to 2017/18

Tier 2 Clinic Name	2014/15	2015/16	2016/17	2017/18	Change 2014/15 to 2017/18	% Change 2014/15 to 2017/18
Anaesthetics	366	287	263	374	8	2%
Cardiac Rehabilitation	1	5	260	150	149	14900%
Clinical Measurement	98	108	201	306	208	212%
Endocrinology	103	191	208	240	137	133%
Gastroenterology	17	56	84	195	178	1047%
General Medicine	136	135	105	198	62	46%
Haematology	231	349	532	670	439	190%
Midwifery	412	283	442	518	106	26%
Nephrology	287	503	866	1011	724	252%
Obstetrics – management of pregnancy without complications	0	165	171	258	258	-
Oncology Medical Consultation	7	46	245	300	293	4186%
Orthopaedics	0	1249	1388	1306	1306	-
Paediatrics Medicine	212	367	495	618	406	192%
Pre- Admission and Pre-Anaesthesia	329	366	332	604	275	84%
Respiratory – other	71	79	83	222	151	213%

Source: Darling Downs Health Non-Admitted Telehealth Service Events provided by Darling Downs Health August 2018

Taking a closer look at outpatient services

During the health service planning consultation rural stakeholders consistently requested provision of local services wherever possible, including outpatient services. Telehealth service models (for inpatients and outpatients) greatly enable local service provision where clinically appropriate. Table 75 below shows the average number of patients attending TH per month from rural areas for outpatient appointments. Potentially some of these appointments could be delivered via telehealth.

Clinical stakeholder consultation suggestions on improving the delivery of telehealth included better infrastructure (dedicated room located near or within clinical spaces) and staff allocation.

Table 75 Average number of patient attending specialist outpatients by postcode

Postcode group	Av. In Person OPD Bookings per Month
Chinchilla	115
Dalby	143
Goondiwindi	35
Inglewood	10
Kingaroy	254
Miles	35
Millmerran	46
New South Wales	40
Other Queensland (outside Darling Downs Health & South West Hospital and Health Service)	237
Overseas-Other	1
South West	67
Stanthorpe	117
Texas	15
Warwick	252
Total	**1362**

Source: Extracted by Darling Downs Health Telehealth Team from HBCIS, sample October & November 2018

2.5. BASE CASE TREATMENT SPACE PROJECTIONS

The treatment space projections are based on the AIM and non-AIM activity projections provided in Chapters 2.3 and 2.4. Base Case treatment space projections have been developed for Darling Downs Health facilities on the basis of endorsed Queensland Health planning guidelines (Recommendations for Service Planning Benchmarks for Adult Medical and Surgical Beds, December 2009 Department of Health). The recommended benchmark for medical and surgical beds using the AIM methodology is:

Annual bed days/days of operation per annum/target occupancy. The recommended occupancy for ABF facilities is 85% and 70% for non-ABF facilities (or all facilities › 10,000 bed days).

How do projected bed days compare to business case projections for Toowoomba and Kingaroy Hospital redevelopment infrastructure projects? How does the total Darling Downs Health projected bed number requirements compare to the DoH rate of 2.5 beds per 1,000 population? How do projections compare with current distribution of beds within Darling Downs Health?

2.5.1 PROJECTED BED COMPARISONS WITH 'BASE CASE 2016/17' BEDS

Note: 2016/17 treatment space numbers do NOT reflect current physical capacity. They are calculated on the basis of activity with relevant benchmarks applied. In addition 'common method of rounding' affects subtotal calculations. Base year numbers were not available for all services.

Table 76 Toowoomba Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Adult Acute ON Beds						
ON Medical	82	97	114	132	149	OR .85
ON Surgical/Procedural	85	97	109	121	134	OR .85
ON Obstetrics & Gynaecology	27	29	32	30	30	OR.75&.85
ICU	8	9	11	12	13	OR .7
CCU	5	6	7	8	8	2.5% of ON
Subtotal Acute ON Adult Beds	**206**	**238**	**273**	**303**	**335**	
Adult Subacute ON Beds						
Rehabilitation	10	13	15	18	21	OR .85
Palliative Care	5	6	7	8	9	OR .85
GEM	6	10	14	21	29	OR .85
Other Non-Acute	14	16	17	19	20	OR .85
Subtotal Subacute Beds	**36**	**44**	**53**	**65**	**79**	
Paediatric ON Beds						
Paediatric Beds	13	14	15	16	17	OR 0.75
SCN	15	17	18	17	17	
Subtotal all Paed ON beds	**28**	**31**	**33**	**33**	**34**	
Subtotal ON Beds exc MH	**270**	**313**	**359**	**401**	**447**	**Excludes MH**
Same Day/Bed Alternatives OR 1.7						
SD Medical	6	9	14	19	24	OR1.7
SD Obstetrics	4	4	4	5	5	OR1.7
SD Paeds Medical	1	1	1	2	2	
SD Surgical inc Gyn	11	13	15	18	21	OR 1.7
SD Endoscopy	8	9	10	11	12	OR 1.7
Renal Dialysis*	15	23	27	32	36	OR1.7
Chemotherapy	15	14	16	18	20	16/17 actual

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Total Same Day Excl. ED SS	**60**	**73**	**87**	**104**	**119**	**Excludes ED**
Emergency Department						
Adult Treatment Spaces						
Cat 2, 3, 4 & 5	24	31	38	45	52	
Resuscitation	4	6	8	9	11	
Isolation	3	4	5	6	7	
Decontamination Room						
Sub Total	**31**	**41**	**51**	**60**	**70**	
Paediatric Treatment Spaces						
Cat 2, 3, 4 & 5	6	8	10	12	14	
Resuscitation	-	-	-	-	-	
Subtotal	6	8	10	12	14	
ED Total Treatment Spaces	**37**	**49**	**60**	**72**	**83**	
ED Short Stay Beds						
Adult	9	12	14	17	20	
Paediatric	2	3	3	4	5	
Total ED Short Stay Beds	**11**	**14**	**18**	**21**	**24**	
Acute Mental Health (AMHU) Beds						
Adult Acute	43	38	41	n/a	n/a	MH Branch
Older Persons Acute (65+)	8	9	11	n/a	n/a	MH Branch
Child and Youth (0-17)	8	6	7	n/a	n/a	MH Branch
Subtotal AMHU Beds	**59**	**53**	**59**	**n/a**	**n/a**	
Grand Total All Beds	**400**	**453**	**523**	**584**	**650**	**Notional 59 MH beds >26/27**
Perioperative / Interventional Spaces						
Theatre Elective ON cases	3	4	4	4	4	
Elective Same Day Theatre	1	2	3	3	4	
Emergency Theatre	2	2	2	3	3	
Total Theatres	**6**	**8**	**9**	**10**	**11**	
Stage 1 Recovery*	14	19	21	25	26	
Stage 2 Recovery	7	14	17	21	24	
Endoscopy Suites	1	2	2	2	3	
Birthing Suites	6	7	7	7	7	

** Includes recovery for theatre and endoscopy*

According to the Base Case projection for TH using DoH projection methodologies, TH requires an additional 129 adult acute overnight beds, six paediatric and neonatal beds and 43 adult overnight subacute beds by 2036/37. Significant increases in capacity for same day beds and bed alternatives are also required. Note the 2016/17 bed requirements are higher than actual bed numbers at TH. TH consistently operates at 100 percent bed occupancy or higher and the Base Case is calculated using 85 percent bed occupancy.

Additional overnight beds are also projected to be required by 2036/37 under the Base Case for Warwick Hospital (an additional 29 beds) Kingaroy (an additional 20 beds) and Dalby Hospital (an additional 20 beds). Note 'additional' is based on the difference between 2016/17 base case calculations and projected requirement by 2036/37. For all rural facilities the base case number of beds for 2016/17 was much lower than actual beds recorded for each facility. See Table 96 at the end of this section.

Table 77 Cherbourg Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Adult Acute ON Beds						
ON Med/ Surg/ ObsGyn/MH	8.5	9.3	10.2	11.1	12	OR 0.7
Subacute	0.1	0.1	0.1	0.1	0	
Subtotal Overnight	**8.6**	**9.4**	**10.3**	**11.2**	**12**	
Adult Same Day/ Bed Alternatives						
SD Medical/ Obs Gyn/MH	0	0.2	0.3	0.3	0.4	
SD Surgical	0	0.1	0.1	0.1	0.2	
Renal Dialysis						
Chemotherapy						
Subtotal Same Day	**0**	**0.3**	**0.4**	**0.4**	**0.6**	
Paediatrics						
Overnight Beds	1.1	1.1	1.1	1.1	1.1	
Same Day Beds	0.1	0.1	0.1	0.1	0.1	
Subtotal Paediatrics	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**	
Total Beds	**10**	**11**	**12**	**13**	**14**	
Emergency Department Treatment Spaces						
Triage 1 to 3	1	1	1	1	1	
Triage 4 and 5	2	2	3	3	3	
TOTAL Treatment Spaces	**3**	**3**	**4**	**4**	**4**	**Incl 1 paed**

Table 78 Chinchilla Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Adult Acute ON Beds						
ON Med/ Surg/ ObsGyn/MH	8	9	11	12	13	OR 0.7
Subacute	1	1	1	1	1	
Subtotal Overnight	**9**	**10**	**12**	**13**	**14**	
Adult Same Day/ Bed Alternatives						
SD Medical/ Obs Gyn/MH	0.4	0.5	0.6	0.8	0.9	
SD Surgical	0.3	0.3	0.4	0.5	0.6	
Renal Dialysis						
Chemotherapy						
Subtotal Same Day	**1**	**1**	**1**	**1**	**2**	
Paediatrics						
Overnight Beds	0.4	0.4	0.5	0.5	0.5	
Same Day Beds	0.1	0.1	0.1	0.1	0.1	
Subtotal Paediatrics	**0**	**1**	**1**	**1**	**1**	
Total Beds	**10**	**11**	**13**	**14**	**16**	
Emergency Department Treatment Spaces						
Triage1 to 3	1	1	1	1	2	
Triage 4 and 5	3	4	5	6	7	
Isolation	0	0	1	1	1	
TOTAL Treatment Spaces	**4**	**5**	**7**	**9**	**10**	**Incl 1 paed**

Table 79 Dalby Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Adult Acute ON Beds						
ON Medical/ MH	8	10	12	14	16	OR .85
ON Surgical / Proc Beds	3	4	4	5	6	OR .85
ON Obs & Gynaecology Beds	2	2	2	2	2	OR .85
Subtotal Adult Acute ON	**13**	**16**	**18**	**21**	**24**	
Adult Subacute ON Beds						
Rehabilitation	3	4	5.5	7	8	
Palliative Care	1	1	1	1	1	
GEM	2	2.5	3	4	6	
Other Non-Acute	0	0.5	0.5	1	1	
Subtotal Subacute Beds	**6**	**8**	**10**	**13**	**16**	
Paediatric ON Beds						
Paediatric Beds	1	1	1	1	1	
Subtotal all ON acute/subacute	**20**	**25**	**29**	**35**	**40**	
Same Day/ Bed Alternatives						
SD Medical/Obs &Gynae/MH	2	2	3	3	4	
SD Surgical	1	1	2	2	2	
Renal Dialysis						
Chemotherapy						
Total Same Day	**3**	**3**	**5**	**5**	**6**	
Total ON & SD beds	**23**	**28**	**34**	**40**	**46**	
Emergency Department						
Treatment Spaces						
Triage 2 and 3	2	3	3	4	4	
Triage 4 and 5	4	4	4	4	5	
Resuscitation	0	0	1	1	1	
Isolation	1	1	1	1	1	
TOTAL Treatment Spaces	**7**	**8**	**9**	**10**	**11**	**Incl. 2 paed by 36/37**
Perioperative / Interventional Spaces						
Total Theatres	**1**	**1**	**1**	**1**	**1**	
Stage 1 Recovery	2	2	2	2	2	
Stage 2 Recovery	2	2	2	2	2	
Birthing Suites	1	1	1	1	1	

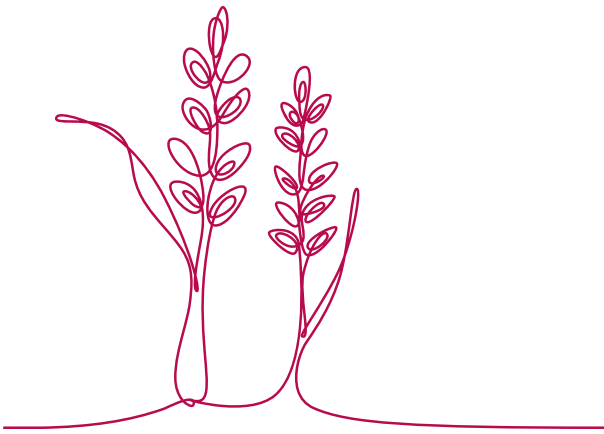


Table 80 Goondiwindi Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Adult Acute ON Beds						
ON Medical/ Surgical/ Obs Beds/MH	11	14	15	16	17	OR 0.7
Adult Subacute	1	2	2	2	2	
Subtotal all On acute/subacute	**12**	**16**	**17**	**18**	**19**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	1	1	
Renal Dialysis						
Chemotherapy						
Paediatric ON & SD	1	1	1	1	1	
Total ON and Same Day beds	**14**	**17**	**18**	**19**	**21**	**Rounding**
Emergency Department						
Treatment Spaces						
Triage 1 to 3	1	2	2	2	3	
Triage 4 and 5	3	4	4	5	5	
TOTAL Treatment Spaces	**4**	**5**	**6**	**7**	**8**	**Incl. paed**
Perioperative / Interventional Spaces						
Total Theatres	1	1	1	1	1	
Stage 1 Recovery	1	1	1	1	1	
Stage 2 Recovery	1	1	1	1	1	
Birthing Suites	1	1	1	1	1	

Table 81 Inglewood Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs /MH	3	3	4	5	5	OR 0.7
Adult Subacute	1	1	1	1	1	
Subtotal all ON beds	**4**	**4**	**5**	**6**	**6**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	0	
Renal Dialysis						
Chemotherapy						
Total Same Day	**0**	**0**	**0**	**0**	**0**	
Total Beds	**4**	**4**	**5**	**6**	**6**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	0	0	0	0	0	
Cat 4 and 5	1	1	1	1	1	
TOTAL Treatment Spaces	**1**	**1**	**1**	**1**	**1**	

Table 82 Jandowae Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs	3	4	4	5	6	OR 0.7
Adult Subacute	19	20	23	27	32	
Subtotal all ON beds	**22**	**24**	**27**	**32**	**37**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	0	
Renal Dialysis						
Chemotherapy						
Total Same Day	**0**	**0**	**0**	**0**	**0**	
Total Beds	**22**	**24**	**28**	**32**	**37**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	0	0	0	1	1	
Cat 4 and 5	0	0	1	1	1	
TOTAL Treatment Spaces	**1**	**1**	**1**	**1**	**1**	

Note average length of stay for Jandowae was 22 days in 2016/17 and there was a 77% increase in bed days despite 16 percent decrease in separations. The above projections require further investigation as potentially long stay patients have skewed the projections.

Table 83 Kingaroy Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Adult Acute ON Beds						
ON Medical/ MH	11	14	17	19	22	OR .85
ON Surgical / Proc Beds	5	7	8	9	10	
ON Obs & Gynaecology Beds	3	4	4	3	3	
Subtotal Adult Acute Beds	**19**	**25**	**29**	**31**	**35**	
Adult Subacute ON Beds						
Rehabilitation	3	3	4	5	5.5	
Palliative Care	0	0	0	0	0	
GEM	0	0	0	0	0	
Other Non-Acute	1	1	1	1	1	
Subtotal Subacute Beds	**4**	**4**	**5**	**6**	**7**	
Paediatric ON Beds						
Paediatric Beds	1	1	1	1	2	
Subtotal all ON Beds	**24**	**30**	**35**	**38**	**44**	
Same Day/ Bed Alternatives						
SD Medical	1	2	2	3	3.5	
SD Surgical	2	2	2.5	3	3	
Renal Dialysis	6	7	8	9	10	
Chemotherapy						
Subtotal SD beds	**3**	**4**	**5**	**6**	**7**	
Total ON & SD beds	**27**	**34**	**40**	**45**	**51**	
Emergency Department						
Cat 2 to 3	3	4	4	5	5	Includes 1 paediatric
Cat 4 and 5	4	5	5	5	5	Includes 1 paediatric
Resuscitation	1	1	1	2	2	
Isolation	1	1	1	1	1	
TOTAL Treatment Spaces	**9**	**11**	**11**	**13**	**13**	
Perioperative / Interventional Spaces						
Overnight Theatres	1	1	1	1	1	
Same Day Theatres	0	1	1	1	1	
Total Theatres	1	2	2	2	2	
Stage 1 Recovery	2	4	4	4	4	
Stage 2 Recovery	3	6	6	6	6	
Birthing Suites	1	2	2	2	2	

Table 84 Miles Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs/MH	5	6	7	7	8	OR 0.7
Adult Subacute	0	0	0	1	1	
Subtotal all ON beds	**5**	**6**	**7**	**8**	**9**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	0	
Renal Dialysis						
Chemotherapy						
Total SD & ON Beds	**5**	**6**	**7**	**8**	**9**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	1	1	1	1	1	
Cat 4 and 5	1	1	1	2	2	
TOTAL Treatment Spaces	**1**	**2**	**2**	**2**	**3**	

Table 85 Millmerran Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs Beds	4	5	5	7	8	OR 0.7
Adult Subacute	3	3	4	5	5	
Subtotal all On acute/subacute	**7**	**8**	**9**	**12**	**13**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	0	
Renal Dialysis						
Chemotherapy						
Subtotal Same Day	**0**	**0**	**0**	**0**	**0**	
Total ON&SD beds	**7**	**8**	**9**	**12**	**13**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	0	1	1	1	1	
Cat 4 and 5	1	1	1	1	1	
TOTAL Treatment Spaces	**1**	**2**	**2**	**2**	**2**	

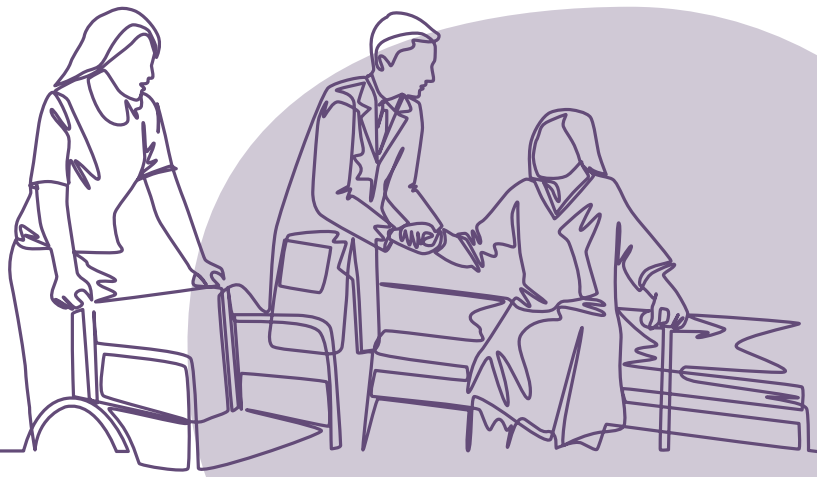


Table 86 Murgon Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs Beds	7	8	10	12	14	OR 0.7
Adult Subacute	4	4	4	5	5	
Subtotal all On acute/subacute	**11**	**12**	**14**	**17**	**19**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	0	
Renal Dialysis						
Chemotherapy						
Subtotal Same Day	**0**	**0**	**1**	**1**	**1**	
Total ON&SD beds	**11**	**12**	**15**	**18**	**20**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	1	1	1	1	1	
Cat 4 and 5	1	2	2	3	3	
TOTAL Treatment Spaces	**2**	**3**	**3**	**4**	**4**	

Table 87 Nanango Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs Beds	7	9	11	13	14	OR 0.7
Adult Subacute	2	2	2	2	2	
Subtotal all On acute/subacute	**9**	**11**	**13**	**15**	**16**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	0	
Renal Dialysis						
Chemotherapy						
Subtotal Same Day	**0**	**0**	**0**	**0**	**0**	
Total ON&SD beds	**9**	**11**	**13**	**15**	**16**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	0	1	1	1	1	
Cat 4 and 5	1	2	2	3	3	
TOTAL Treatment Spaces	**1**	**3**	**3**	**4**	**4**	

Table 88 Oakey Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs Beds	5	6	7	9	11	OR 0.7
Adult Subacute	4	4	4	4	5	
Subtotal all On acute/subacute	**9**	**10**	**11**	**14**	**16**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	0	
Renal Dialysis						
Chemotherapy						
Subtotal Same Day	**0**	**0**	**0**	**0**	**0**	
Total ON&SD beds	**9**	**10**	**12**	**14**	**16**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	1	1	1	1	2	
Cat 4 and 5	1	1	1	1	1	
TOTAL Treatment Spaces	**2**	**2**	**2**	**2**	**2**	

Table 89 Stanthorpe Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/Obs Beds	12	17	18	19	20	OR 0.7
Surgical ON	4	5	6	7	8	
Subtotal Medical/Surgical	**16**	**22**	**24**	**26**	**28**	
Adult subacute						
Other non-acute	5	5	5	5	5	
Palliative	2	2	2	2	2	
Rehabilitation	3	4	5	5	7	
Subtotal Subacute	**10**	**11**	**12**	**12**	**14**	
Subtotal all ON beds	**25**	**32**	**35**	**38**	**42**	
Same Day/ Bed Alternatives						
SD Medical	1	1	2	2	2	
SD Surgical	1	1	1	2	2	
Renal Dialysis						
Chemotherapy						
Subtotal Same Day	**2**	**2**	**3**	**4**	**4**	
Total ON&SD beds	**27**	**34**	**38**	**42**	**46**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	3	4	6	7	8	
Cat 4 and 5	2	2	2	2	2	
TOTAL Treatment Spaces	**5**	**6**	**8**	**9**	**12**	
Perioperative / Interventional Spaces						
Total Theatres	1	1	1	1	1	
Stage 1 Recovery	2	2	2	2	2	
Stage 2 Recovery	2	2	2	2	2	
Birthing Suites	1	1	1	1	1	

Table 90 Tara Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs Beds	4	5	6	6	7	OR 0.7
Adult Subacute	0	0	0	0	0	
Subtotal all On acute/subacute	**4**	**5**	**6**	**6**	**7**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	1	
Renal Dialysis						
Chemotherapy						
Total ON&SD beds	**4**	**5**	**6**	**6**	**8**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	1	1	1	1	1	
Cat 4 and 5	1	1	2	2	2	
TOTAL Treatment Spaces	**2**	**2**	**3**	**3**	**3**	

Table 91 Taroom Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs Beds	2	2	3	3	3	OR 0.7
Adult Subacute	0	0	0	1	1	
Subtotal all On acute/subacute	**2**	**2**	**3**	**4**	**4**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	0	
Renal Dialysis						
Chemotherapy						
Total ON&SD beds	**2**	**2**	**3**	**4**	**4**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	0	0	0	0	0	
Cat 4 and 5	0	1	1	1	1	
TOTAL Treatment Spaces	**0**	**1**	**1**	**1**	**1**	

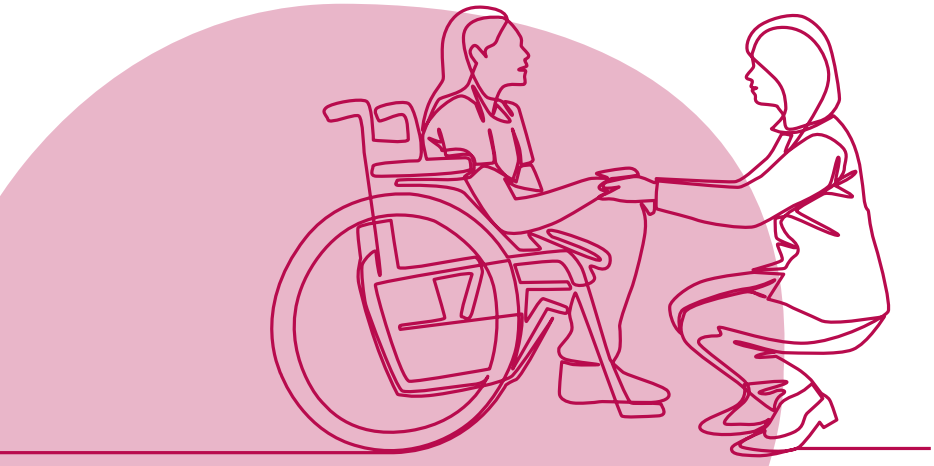


Table 92 Texas Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs	3	3	3	4	4	OR 0.7
Adult Subacute	0	0	0	0	0	
Subtotal all ON beds	**3**	**3**	**3**	**4**	**4**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	0	
Renal Dialysis						
Chemotherapy						
Total ON&SD beds	**3**	**3**	**3**	**4**	**4**	
Emergency Department						
Treatment Spaces						
Cat 1 to 3	0	0	0	0	0	
Cat 4 and 5	0	1	1	1	1	
TOTAL Treatment Spaces	**0**	**1**	**1**	**1**	**1**	

Table 93 Warwick Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/MH	16	20	24	27	31	OR .85
ON Surgical / Proc Beds	6	7	8	9	11	
ON Obs & Gynaecology Beds	2	2	2	2	2	
Subtotal Adult Acute Beds	**24**	**29**	**34**	**38**	**43**	
Adult Subacute ON Beds						
Rehabilitation	4	5	6	7	8	
Palliative Care	3	3	4	4	4	
GEM	2	3	4	5	7	
Other Non-Acute	11	11	11	11	12	
Subtotal Subacute Beds	**20**	**22**	**25**	**28**	**31**	
Paediatric ON Beds						
Paediatric Beds	1	1	1	1	1	
Subtotal all ON acute/subacute	**45**	**51**	**58**	**66**	**74**	
Same Day/ Bed Alternatives						
SD Medical	1	1	2	2	3	
SD Surgical	1	2	2	2	2	
Renal Dialysis						
Chemotherapy						
Subtotal SD Beds	**2**	**3**	**3**	**4**	**5**	
Total ON & SD beds	**47**	**54**	**62**	**70**	**79**	
Emergency Department						
Treatment Spaces						
Cat 2 to 3	4	7	9	11	13	
Cat 4 and 5	6	6	6	6	6	
Resuscitation	1	1	2	2	2	
Isolation	1	1	1	2	2	
TOTAL Treatment Spaces	**12**	**15**	**18**	**21**	**24**	

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Perioperative / Interventional Spaces						
Overnight Theatres	1	1	1	1	1	
Same Day Theatres	0	0	1	1	1	
Total Theatres	**1**	**1**	**2**	**2**	**2**	
Stage 1 Recovery	2	2	4	4	4	
Stage 2 Recovery	3	3	6	6	6	
Birthing Suites	1	1	1	1	1	

Table 94 Wondai Hospital Base Case Projections

Treatment Space	Base Year	Projected Years				Notes
	2016/17	2021/22	2026/27	2031/32	2036/37	
Acute ON Beds						
ON Medical/ Surgical/ Obs	0	0	0	0	0	OR 0.7
Adult Subacute	5	5	5	5	6	
Subtotal all ON beds	**5**	**5**	**5**	**6**	**6**	
Same Day/ Bed Alternatives						
SD Medical	0	0	0	0	0	
Renal Dialysis						
Chemotherapy						
Emergency Department						
Treatment Spaces						
Cat 1 to 3	0	0	0	0	0	
Cat 4 and 5	0	0	0	0	0	
TOTAL Treatment Spaces	**0**	**0**	**0**	**0**	**0**	

2.5.2 BED NUMBERS AS RECORDED IN THE MONTHLY ACTIVITY COLLECTION

Table 95 BHH Hospital (BARA-MAC) December 2018

Non-Acute Specialised Mental Health Beds	
Legacy intellectual disability	20
Medium secure	24
General psychiatric	40
Older persons psychiatric	24
Subtotal all On acute/subacute	**108**

Note: Bed numbers as recorded in the Monthly Activity Collection December 2018 Minus Unqualified Baby Cots but including ED short stay and acute mental health.

Table 96 Bed numbers (BARA-MAC) as at April 2019

Facility	Actual Beds 2018/19
Toowoomba (includes 59 Acute Mental Health Unit and 10 ED Short Stay beds)	384
Cherbourg	17
Chinchilla	16
Dalby	43
Goondiwindi	33
Inglewood	10
Jandowae	12

Facility	Actual Beds 2018/19
Kingaroy	49
Miles	13
Millmerran	12
Murgon	15
Nanango	10
Oakey	10
Stanthorpe	45
Tara	15
Taroom	10
Texas	6
Warwick	69
Wondai (MAC)	5
MAC Total Beds *including Mental Health and ED Short Stay excl. unqualified cots*	**774**

The average number of beds per 1,000 population in Queensland public hospitals is 2.5. Based on a population of 288,500 for the Darling Downs in 2018, using the rate of 2.5 beds, Darling Downs would be expected to have 721 beds excluding the sub-acute Baillie Henderson Hospital mental health beds.

Overall Darling Downs Health has more beds than requirements as at 2018/19 based on AIM activity projections and DoH methodology. The distribution is rural hospitals have more beds than projected requirements and TH has fewer beds than projected requirements. Table 97 shows the actual beds against projected bed requirements. Rural facilities have a high proportion of sub-acute separations with long lengths of stay.

Table 97 Actual Beds Compared with Projected Bed

Facility	Actual Beds 2018/19	2016/17	2026/27	2036/37
Toowoomba	384	400	523	650
Cherbourg	17	10	12	14
Chinchilla	16	10	13	16
Dalby	43	23	34	46
Goondiwindi	33	14	18	21
Inglewood	10	4	5	6
Jandowae	12	12	12	12
Kingaroy	49	27	40	51
Miles	13	5	7	9
Millmerran	12	7	9	13
Murgon	15	11	15	20
Nanango	10	9	13	16
Oakey	10	9	12	16
Stanthorpe	45	27	38	46
Tara	15	4	6	8
Taroom	10	2	3	4
Texas	6	3	3	4
Warwick	69	47	62	79
Wondai (MAC)	5	5	5	6
Total	**774**	**629**	**830**	**1037**

2.5.3. RENAL DIALYSIS

The Department of Health provides renal dialysis projections by facility of treatment. Projections are not available by planning region. Further analysis is included in this section to understand planning requirements for Dalby and Warwick Hospitals (not included in Department of Health projections) for future renal dialysis services.

In Darling Downs Health there is currently a total of 23 in-centre chairs (not including renal services purchased through public private partnership).

- Toowoomba Hospital Level 5 CSCF (19 in-centre chairs all modalities)
- Kingaroy Level 2 Satellite (6 chairs)
- Dalby Level 2 Satellite (2 chairs)

Future base case renal dialysis in-service chair projections are based on the following assumptions:

- The public private partnership for renal services will continue with no changes to current arrangements on the planning horizon.
- 40 percent in home-based dialysis noting Darling Downs Health has consistently maintained a rate of 40 percent or higher since 2004 including peritoneal dialysis.

Department of Health renal dialysis projections for Darling Downs Health are provided for Toowoomba Hospital, St Andrew's Toowoomba Hospital and Kingaroy Hospital. Projected in service chair requirements based on 40 percent home dialysis at these centres are as follows:

Table 98 In-Centre Renal Dialysis Chair Projections by Facility Based on 40% Home Dialysis

Facility of Treatment	2021-22	2026-27	2031-32	2036-37
Toowoomba Hospital	23	27	32	36
St Andrew's Toowoomba Hospital	7	8	9	10
Kingaroy Hospital	7	8	9	10
Total	**37**	**43**	**50**	**57**

Currently Toowoomba Hospital has 19 'chairs' and this will increase to 26 'chairs' with the completion of the self-care unit. This will provide sufficient capacity to at least 2026-27 providing the rate of home-based dialysis continues to be 40 percent or higher.

Table 98 above assumes an increase in the current '6 chairs' service provided by St Andrew's Toowoomba Hospital and does not include existing and planned satellite services at Dalby and Warwick Hospitals. Table 99 Future requirements with six chairs capacity St Andrew's Toowoomba Hospital and Dalby and Warwick Hospital satellite chairs assuming 40% home-based dialysis below adjusts for these differences:

Table 99 Future requirements with six chairs capacity St Andrew's Toowoomba Hospital and Dalby and Warwick Hospital satellite chairs assuming 40% home-based dialysis

Facility of Treatment	2021-22	2026-27	2031-32	2036-37
Toowoomba Hospital	18	23	29	34
St Andrew's Toowoomba Hospital	6	6	6	6
Dalby Hospital Satellite	4	4	4	4
Warwick Hospital Satellite	2	2	2	2
Kingaroy Hospital Satellite	7	8	9	10
Total	**37**	**43**	**50**	**57**

Completion of the new Toowoomba Hospital Redevelopment may provide opportunity to review current private partnership arrangements. Table 100 below provides an estimate of 'chairs' required for Toowoomba Hospital assuming satellite centres are operating at Kingaroy, Dalby and Warwick, 40 percent home-based dialysis and no private 'chairs' from 2031-32 onwards:

Table 100 Maintain 6 St Andrew's Hospital Chairs to 2026/27 and nil by 31/32 and 2036/37 with Dalby and Warwick Chairs and 40% Home Based Dialysis

Facility of Treatment	2021-22	2026-27	2031-32	2036-37
Toowoomba Hospital	18	23	35	41
St Andrew's Toowoomba Hospital	6	6	-	-
Dalby Hospital Satellite	4	4	4	4
Warwick Hospital Satellite	2	2	2	2
Kingaroy Hospital Satellite	7	8	9	10
Total	**37**	**43**	**50**	**57**

Section 2.4.2 of this paper provides the renal dialysis projected activity for Darling Downs Health by Planning Region for all modalities (in-centre haemodialysis and peritoneal dialysis including training chairs and home dialysis). The activity projections were completed for both a 40 percent home-based dialysis and 30 percent home-based dialysis. Table 101 below shows the number of chairs that would be required across Darling Downs Health if the home-based dialysis rate decreased to 30 percent. This is provided only for comparison purposes only.

Table 101 Total Darling Downs Health Renal Dialysis Chair Projections - 30% Home Based Dialysis) 2021/22 to 2036/37

Total Darling Downs Health	2021-22	2026-27	2031-32	2036-37
Projected renal 'chairs' required @ 30% home based dialysis	43	50	58	66

2.5.4. CHEMOTHERAPY

Projections for chemotherapy chairs required at TH are provided in Table 102 below based on activity data in section 2.4.3:

Table 102 Darling Downs Health Chemotherapy Chair Projections 2021/22 to 2036/37

Chemotherapy	2021-22	2026-27	2031-32	2036-37	Change (No.)	AGR^
Adults	6995	7902	8817	9752	2756	2%
Children	4	5	5	5	1	1%
Grand Total	**7000**	**7907**	**8822**	**9757**	**2757**	**2%**
Chairs	**14**	**16**	**18**	**20**		

Source Cancer Projections 2018 Final_v1.1 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Section 3

Changing Models of Care

3.1. INTRODUCTION

Models of care in health services develop and change over time, enabled by new technologies and clinical approaches. Potentially implementation of innovative models of care will reduce the number of projected bed days as forecast in the AIM Base Case.

Innovations identified during consultation with potential to decrease admissions or length of stay include:

- increase hospital in the home (HITH)
- expand hospital avoidance from ED
- increase telehealth
- implement digital hospital and transformation strategies
- reduce readmission through improved coordination and discharge telephone intervention
- strengthen the hub and spoke model by increasing service capability and self-sufficiency at rural facilities for admitted and non-admitted services.
- implement bariatric management pathways including surgical and non-surgical treatment pathways.
- increase allied health resources at TH to support management of palliative care, chronic pain conditions and bariatric services.

Many of the above strategies are focused on reducing admissions and length of stay at Toowoomba Hospital as Toowoomba Hospital experiences critical pressure on bed capacity and this will not change until a new facility is completed. For the rural sites, the proposed strategies are focused on increasing self-sufficiency and capability to provide more services locally. Successful implementation of the following strategies could shift activity from Toowoomba Hospital to rural facilities:

- increase consulting rooms with telehealth capacity
- improve theatre and sterilisation services and additional endoscopy suite Warwick Hospital
- provide infrastructure and equipment to support step down of bariatric patients
- increase allied health resources to enable step down from Toowoomba Hospital of patients requiring rehabilitation
- maximise opportunities presented by the completion of the new Kingaroy Hospital to attract clinical staff to increase self-sufficiency.
- Enhance mental health services in rural areas
    - » increase mental health nursing resources (including use of MHNIP)
    - » improve facilities to manage agitated patients
    - » increase AODs services
- Improve patient transport options including expanding transport models to centres such as Dalby potentially in conjunction with other service providers.

Some strategies that could reduce demand require implementation at a whole of Darling Downs Health level:

- Improve management of patients with dementia (particularly for patients with behaviour that results in discharge delays back to nursing homes or carers)
- Develop effective and efficient models of care for social admission patients.
- Increase chronic disease specialists for management of diabetes to manage projected future increase in morbidity.
- Improve Indigenous health services
  - » Improve integration with Aboriginal Medical Services
  - » Develop role of Indigenous Health Workers
  - » Provide improved outreach paediatric and Child Youth Mental Health Services at Cherbourg Hospital.

Strategies to increase self-sufficiency for speciality services could change patient flows from metropolitan hospitals to Toowoomba Hospital. Other strategies improving access may also lead to an increase in demand for services. Therefore, implementation of the following strategies is likely to increase the projected bed day requirements in the AIM Base Case:

- Increase paediatric services (including early childhood development), ophthalmology, dental care, cancer services and renal services
- Establish an interventional cardiology service at TH
- Increase after hours services:
  - » to support increase in emergency admissions at TH including pathology, pharmacy, allied health and dentistry
  - » in medical imaging services at rural facilities.

3.2 BED DAYS SAVED IMPLEMENTING STRATEGIES IDENTIFIED IN THE HEALTH SERVICE PLAN AT TH

In this section a selection of the above strategies is modelled to determine the potential reduction in bed days or separations. **It should be noted all strategies have cost implications and therefore require a business case assessment prior to translating any potential bed savings to the Base Case.**

3.2.1 BED DAYS SAVED HOSPITAL IN THE HOME (HITH)

The DoH recommended KPI for HITH is 'up to or greater than 1.5 percent' (source DoH Hospital in the Home Recommended KPIs / Minimum Data Set). The measurement is based on the total number of patients admitted to HITH as a percentage of total hospital separations. The current rate of HITH at TH is 0.4 percent (source Darling Downs Health Activity and Costing Evaluation Service).

The current DoH measurement is based on percentage of total hospital separations including same day separations. While increasing HITH may increase the number of same day separations by reducing a patient's length of stay, including planned same day separations in the HITH cohort is not an option. Therefore, the following calculations for the impact of HITH on bed days are based on overnight patients only. To moderate for the exclusion of same day separations in the calculation a target of three percent is applied. This seems to be an ambitious target but is in fact similar in terms of separations to the 1.5 percent rate using both same day and overnight separations. The average saving in length of stay is estimated to be 1.5 days (source The Commonwealth Fund)

Table 103 Bed days saved at TH by increasing the HITH rate from 0.4% of total admissions to 3.0% of overnight (ON) admissions excluding palliative care separations.

	2016/17	2021/22	2026/27	2031/32	2036/37
Total separations	44228	52311	62856	73218	84457
ON separations	21,186	24,816	28,938	32,481	36,616
HITH			**16/17**	**26/27**	**36/37**
Current rate 0.4% of total admissions	HITH Separations		177	251	338
Bed days saved @ 1.5 days per sep			**265**	**377**	**507**
Proposed Rate 3.0 % of ON separations	HITH Separations		636	868	1098
Bed days saved @ 1.5 days per sep			**953**	**1302**	**1648**
Net change in bed days saved between HITH rate at 0.4% (total admissions) and 3% (ON admissions)			688	925	1141

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Activity includes adults and children noting 89 percent of the overnight activity is for adult separations. Palliative care separations are excluded as these are considered in the following section.

Based on a length of stay reduction of 1.5 days per HITH separation and an occupancy of 85 percent, HITH will reduce bed requirements at TH by three beds by 2026/27 and four beds by 2036/37. Predominantly the reduction will be in adult beds (90 percent).

3.2.2 BED DAYS SAVED HOSPITAL IN THE HOME (HITH) COMMUNITY PALLIATIVE CARE

An opportunity to significantly increase HITH services to non-acute palliative patients will provide patients and carers with the choice to remain at home while saving hospital bed days. This is treated separately to HITH in the above section due to a greatly increased target of 10 percent.

Table 104 Bed days saved TH increasing the rate of palliative care HITH to 10.0%

Palliative (non-acute)	2016/17	2021/22	2026/27	2031/32	2036/37
Separations	240	308	364	431	512
ALOS	6.3	6.2	5.9	5.6	5.4
10% at home	**24**	**31**	**36**	**43**	**51**
Bed days saved	**150**	**189**	**215**	**243**	**275**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Based on a bed occupancy of 85 percent, HITH for Palliative patients will reduce bed requirements at TH by 1 bed by 2026/27. This bed reduction will remain unchanged to 2036/37.

3.2.3 BED DAYS SAVED ACUTE GERIATRIC EVALUATION SERVICE (AGES)

Darling Downs Health implemented the AGES program at TH on five-day basis in 2016/17 to reduce ED presentations and hospital admissions by residential aged care facility (RACF) residents. During stakeholder consultations it was recommended the program be extended to seven days a week and include access to a mobile x-ray. Effectively this would increase the scope of the program by forty percent.

While a comprehensive evaluation is not available for the AGES program, a similar hospital in the nursing home program (HiNH) was undertaken by a large metropolitan hospital in 2018 and was the subject of an evaluation published in 2018 (Fan et al., 2018). The authors found that implementing the HiNH intervention was associated with approximately 10 ED presentations and 23 hospital admissions avoided per 1,000 RACF beds per month (276 p.a.). The program was based on a five day per week service.

In the Toowoomba region there were 1,199 residential aged care places (public and private) as at 30 June 2016 (source: Australian Government Department of Health and Ageing). Based on the findings of the HiNH study it would be expected that 331 admissions would have been avoided in 2016/17 due to the AGES program operating five days a week and that a further 132 admissions could have been avoided by operating a seven day a week service.

Table 105 Bed days saved at TH by increasing the AGES program from five to seven days per week

Extend AGES 7 days / week	2016/17	2026/27	2036/37
Admissions avoided 5-day service	331	447	563
Admissions avoided weekend service	132	179	225
Bed days saved weekend service	551	649	739
Beds saved by AGES weekend service	**2**	**2**	**2**

Assumes 276 admissions avoided per annum per 1,000 RACF places by a five-day service and growth (simple) of 3.5 percent per annum in RACF places for Toowoomba region assuming base of 1,199 in 2016/17 (Caring places: planning for aged care and dementia 2010-2050). ALOS used in calculations for over 70 cohort only (4.2 days 2016/17 to 3.3 days 2036/37).

Based on AGES reducing admissions by 276 p.a. per 1,000 RACF beds, extending the service to 7 days with a mobile x-ray will reduce bed requirements at TH by 2 beds by 2026/37 and this will remain unchanged by 2036/37.

3.2.4 CONTRIBUTION OF IEMR IN REDUCING ALOS AT TH

Early adopter hospitals reported a four percent reduction in ALOS following implementation of ieMR. Assuming a similar result is obtained following implementation of ieMR at TH, this will assist in achieving part of the reduction required to meet assumptions built into the AIM model on continuing reductions in ALOS (see section 3.3.1.2). A four percent reduction will result in the TH ALOS reducing from 2.73 in 2016/17 to 2.62 following implementation of ieMR (excluding renal dialysis, unqualified neonates, chemotherapy, diagnostic endoscopy and mental health separations).

A reduction in ALOS to 2.62 by 2021/22 will save the equivalent of seven beds at Toowoomba Hospital when compared to the AIM projection using an ALOS of 2.67 for 2021/22. Without any further improvements in ALOS, the projected beds will not provide sufficient capacity from 2026/27 onwards. A total reduction of nine percent is built into the AIM ALOS from 2016/17 to 2036/37, therefore a further reduction in length of stay is required to ensure AIM projections by 2036/37 are accurate. Table 106 below shows the additional beds required over and above the AIM projections for TH if no reduction in ALOS occurs and additional beds required if the only reduction in ALOS is through the ieMR implementation.

Table 106 Additional beds required at TH if ALOS reduction in AIM is not achieved or only partly achieved

AIM ALOS 2016/17 = 2.73	2021/22	2026/27	2031/32	2036/37
Separations	41,646	50,400	58,808	68,030
AIM ALOS with built in reduction	2.67	2.58	2.52	2.47
ALOS reduction due to ieMR only	2.62	2.62	2.62	2.62
Bed days based on AIM ALOS*	111,307	130,344	148,526	168,441
Bed days based on ALOS ieMR only	109,113	132,048	154,078	178,238
Bed days if ALOS remains static 2.73	113,694	137,592	160,546	185,722
Difference in bed days ieMR ALOS	**- 2,194**	**1,704**	**5,552**	**9,797**
Bed Equivalent ieMR ALOS	- 7	5	18	32
Difference in bed days ALOS 2.73	**2,387**	**7,248**	**12,021**	**17,281**
Bed Equivalent ALOS 2.73	8	23	39	56

*Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018. Excludes renal dialysis, unqualified neonates, diagnostic endoscopy, chemotherapy and mental health. *Includes long stay › 90 days noting long stay days are not factored into AIM ALOS.*

If there is no change in ALOS at TH then an additional 23 beds will be required by 2026/27 and 56 beds by 2036/37 over and above Base Case projections. If ieMR results in a 4% reduction in ALOS at TH then this will be reduced to 5 beds by 2026/27 and 32 beds by 2036/37 over and above Base Case projections.

3.2.5 ADDITIONAL REDUCTIONS REQUIRED IN ALOS

Improved discharge planning practices and clinical advancements are required to attain a continued improvement in ALOS over and above the potential impact of ieMR described in 3.2.4. Assuming a potential four percent improvement in ALOS from ieMR, a further one percent reduction is required for surgical separations and six percent reduction for medical separations. Table 107 below shows the required total reduction in ALOS at TH. Therefore strategies aimed at reducing the length of stay for medical separations are a priority.

Table 107 TH Changes to ALOS Built Into AIM Model (ieMR impact on ALOS not included)

	SRG	2016/17	2021/22	2026/27	2031/32	2036/37	Reduction
ALOS changes in AIM Model	Medical	2.68	2.62	2.53	2.47	2.42	10%
	Surgical	2.98	2.93	2.89	2.86	2.82	5%

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018. Excludes renal dialysis, unqualified neonates, diagnostic endoscopy, chemotherapy and mental health.

The reduction in ALOS also impacts forecast bed days for rural facilities. Strategies for reducing length of stay are required or the AIM projections will be an underestimate of beds required in rural facilities.

Table 108 Rural Hospitals Changes to ALOS Built Into AIM Model

	SRG	2016/17	2021/22	2026/27	2031/32	2036/37	Reduction
ALOS changes in AIM Model	Medical	2.97	2.96	2.87	2.81	2.75	7%
	Surgical	1.67	1.68	1.66	1.65	1.65	2%

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018. Excludes renal dialysis, unqualified neonates, diagnostic endoscopy, chemotherapy and mental health.

Strategies to reduce length of stay are required for AIM projections to be accurate. Strategies to reduce length of stay for medical separations is a priority at both TH and rural facilities.

See section 3.2.7 on the decrease in medical ALOS required to achieve the built-in reduction in the AIM Base Case even after the successful implementation of other strategies to reduce separations and bed days.

3.2.6 REDUCTIONS IN READMISSION RATES

There is no current target for the 28-day readmission rate however reducing the readmission rate at TH from 6.4 percent (source Darling Downs Health Activity Costing and Evaluation Services) to five percent will save bed days. Table 109 below shows potentially a reduction in eight beds could be achieved by 2036/37 by reducing the current rate of readmission at TH by 1.4 percent.

Table 109 Reduction in beds based on reducing readmission rate at TH

TH	2021/22	2026/27	2031/32	2036/37
Separations	41,646	50,400	58,808	68,030
1.4% of total	583	706	823	952
ALOS	2.67	2.58	2.52	2.47
Bed Days Saved	1,555	1,822	2,076	2,355
Beds saved	**5**	**6**	**7**	**8**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018. Excludes renal dialysis, unqualified neonates, diagnostic endoscopy, chemotherapy and mental health.

3.2.7 Summary of impact of strategies on reducing projected bed requirements

The following tables provide a summary of the individual impact of each strategy listed above to reduce bed requirements. Essentially, to match the impact of the in built reduction in ALOS in the AIM Base Case projections, all of the above strategies will need to be successful including a further reduction of 3.8 percent in ALOS medical separations over and above any reduction achieved through ieMR at TH and a reduction of 6.25 percent for medical separation ALOS at rural facilities.

Table 110 TH: analysis of changes to bed numbers based on changes to AIM ALOS or readmission rates by 2036/37

TH Strategy	Change to AIM Bed projections 2036/37
No change in ALOS from 2016/17	+56
ieMR reduces ALOS by 4%	-24
Reduce readmission rate to 5%	-8
AGES	-2
HITH	-4
Palliative HITH	-1
Reduce medical ALOS by 3.2%	-17

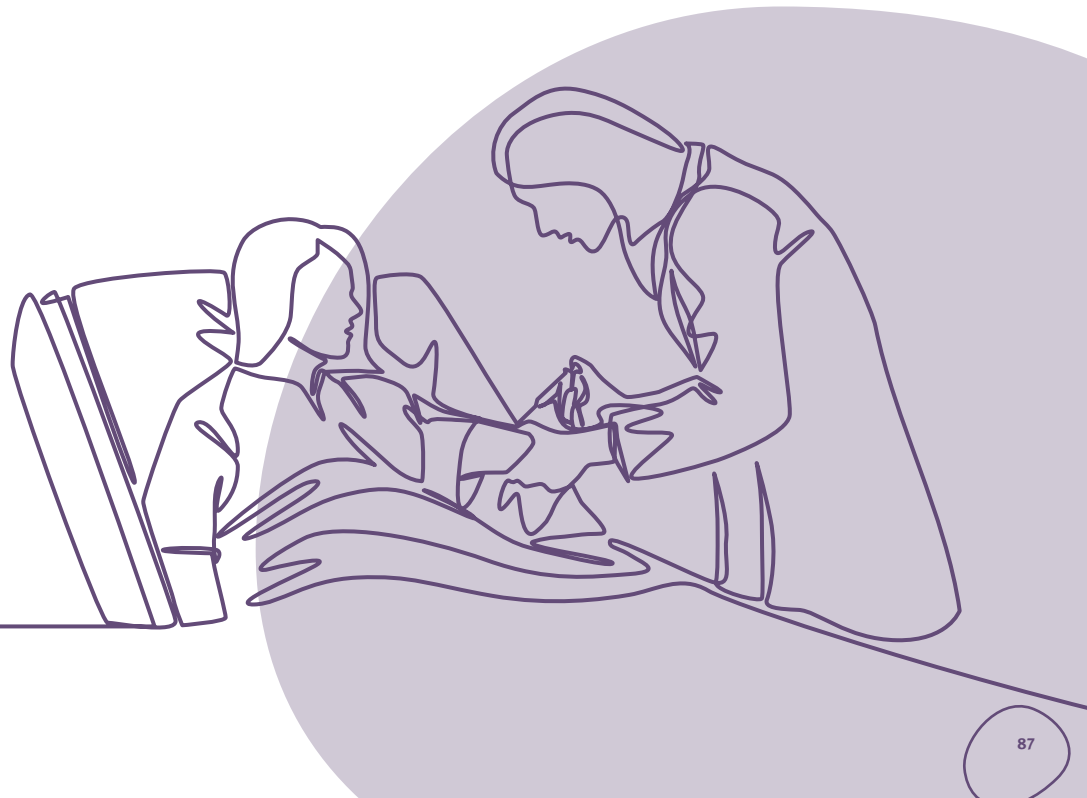
Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018. Excludes renal dialysis, unqualified neonates, diagnostic endoscopy, chemotherapy and mental health.

The implementation of HITH (including palliative), 7-day AGES service, ieMR and strategies to reduce readmission rates and medical ALOS will at best ensure AIM Base Case projections are accurate. No further reductions to be applied.

Table 111 Rural: analysis of changes to bed numbers based on changes to AIM ALOS or readmission rates by 2036/37

Rural Strategy	Bed change 2036/37
Beds required in no change in ALOS	+26
Reduce medical ALOS 7%	-26

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018. Excludes renal dialysis, unqualified neonates, diagnostic endoscopy, chemotherapy and mental health.



3.3. ACCOUNTING FOR POTENTIAL CHANGES IN AIM BASE CASE ASSUMPTIONS

3.3.1. METHODOLOGY

While the 'Base Case' essentially reflects the 'status quo' scenario based on no significant changes to models of care, it does include built in assumptions impacting on the projected activity forecasts.

For this reason, the first crucial step in identifying risks and opportunities associated with changes to models of care is to understand the assumptions and trends within the AIM model that underpin the majority of general acute and subacute inpatient services. In doing so, Darling Downs Health can be assured that the potential impact of identified opportunities are not already accounted for by in-built trends.

3.3.1.1 Length of Stay Trends in AIM

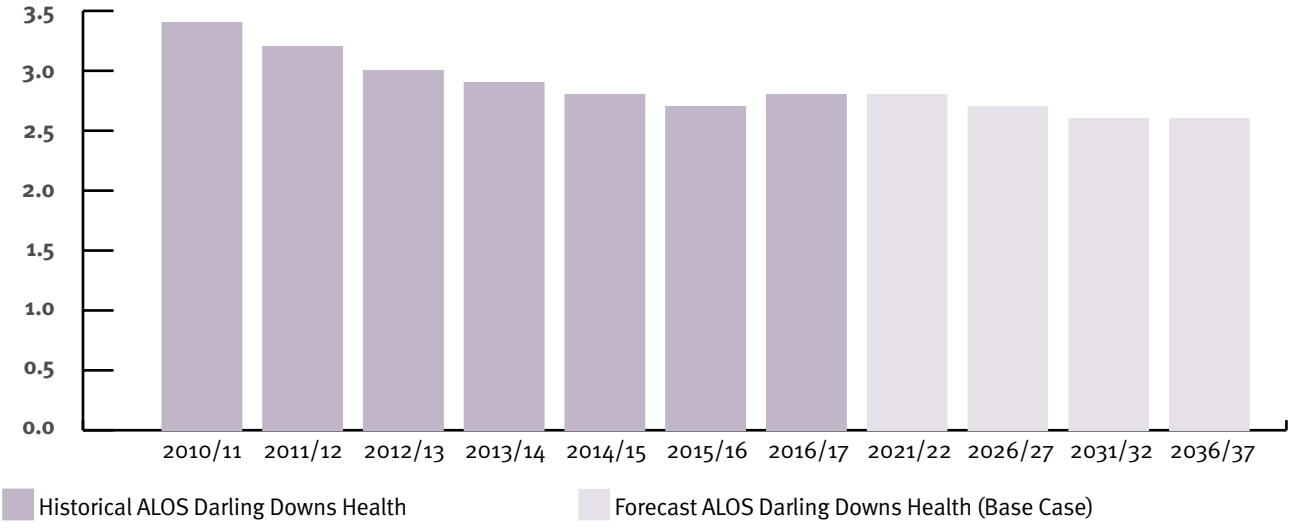
The AIM tool builds in clinical trends identified in historical data and through consultation. Although it is not possible to identify the exact inputs, the output can be analysed to identify trends in the projection. Trends in length of stay are important to consider in planning. The AIM tool aligns length of stay over time with the Queensland average where the HHS length of stay is higher than average.

The Aim Base Case calculation for ALOS excludes bed days with a length of stay over 90 days. 98 percent of separations with a length of stay over 90 days are in the Mental Health SRG. The following table excludes mental health, chemotherapy, diagnostic endoscopy, renal dialysis and unqualified neonates.

Table 112 Darling Downs Health - Length of Stay excluding mental health, chemotherapy, endoscopy, renal dialysis and unqualified neonates

Historical ALOS Darling Downs Health							Forecast ALOS Darling Downs Health (Base Case)			
2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2021/22	2026/27	2031/32	2036/37
3.4	3.2	3.0	2.9	2.8	2.7	2.8	2.8	2.7	2.6	2.6

Figure 4 Darling Downs Health - Length of Stay excluding mental health, chemotherapy, endoscopy, renal dialysis and unqualified neonates



Source: Cross Sectional - Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Excludes renal dialysis and unqualified neonates, diagnostic endoscopy, chemotherapy and mental health.

3.3.1.2. Comparison with historical activity growth

Table 3 of this report provides projected activity growth rates to 2036/37 based on the AIM Base Case 2016/17. The Base Case forecasts an annual growth rate for separations at 3.3 percent and 2.9 percent for bed days. Applying the same parameters to historical activity data generates a much higher annual growth rate of 6.9 percent for separations (see Table 113 below). Some of the growth may be explained by the inclusion of chemotherapy and endoscopy activity as activity for these SRGs may be also provided on a non-admitted basis.

Table 113 Historical activity growth in Darling Downs Health Separations

Adult/Child	Stay Type	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	CAGR
Adult	ON	26,106	27,225	28,262	29,429	30,986	32,557	33,147	4.1%
	SD	15,869	16,039	15,418	16,842	24,359	24,977	30,502	11.5%
Adult Total		**41,975**	**43,264**	**43,680**	**46,271**	**55,345**	**57,534**	**63,649**	**7.2%**
Child	ON	3,089	3,115	3,253	3,164	3,495	3,683	3,470	2.0%
	SD	1,292	1,454	1,381	1,515	2,135	2,204	2,170	9.0%
Child Total		**4,381**	**4,569**	**4,634**	**4,679**	**5,630**	**5,887**	**5,640**	**4.3%**
Grand Total		**46,356**	**47,833**	**48,314**	**50,950**	**60,975**	**63,421**	**69,289**	**6.9%**

Source: Cross Sectional - Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Excludes renal dialysis and unqualified neonates

Table 114 below shows historical growth without endoscopy and chemotherapy. Growth remains higher at 6 percent per annum or almost double the projected annual growth rate. The greatest growth is in same day separations.

Table 114 Historical activity growth in Darling Downs Health Separations excluding SRGS Diagnostic Endoscopy and Chemotherapy

Adult/Child	Stay Type	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	CAGR
Adult	ON	25,849	26,944	27,999	29,119	30,595	32,094	32,651	4.0%
	SD	11,805	12,785	14,108	15,851	19,171	20,522	21,472	10.5%
Adult Total		**37,654**	**39,729**	**42,107**	**44,970**	**49,766**	**52,616**	**54,123**	**6.2%**
Child	ON	3,081	3,113	3,249	3,160	3,493	3,677	3,465	2.0%
	SD	1,269	1,438	1,377	1,513	2,131	2,196	2,121	8.9%
Child Total		**4,350**	**4,551**	**4,626**	**4,673**	**5,624**	**5,873**	**5,586**	**4.3%**
Grand Total		**42,004**	**44,280**	**46,733**	**49,643**	**55,390**	**58,489**	**59,709**	**6.0%**

Source: Cross Sectional - Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Excludes renal dialysis and unqualified neonates, diagnostic endoscopy and chemotherapy.

The historical annual growth rate for Darling Downs Health bed days is 3.1 percent. This is comparable with the forecast annual growth in bed days reported in Table 3 at 2.9 percent. See Table 115 below.

Table 115 Historical activity growth in Darling Downs Health Bed Days excluding SRGS Diagnostic Endoscopy and Chemotherapy

Adult/Child	Stay Type	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	CAGR
Adult	ON	143,598	142,430	132,634	137,028	141,759	146,143	166,614	2.5%
	SD	11,805	12,785	14,108	15,851	19,171	20,522	21472	10.5%
Adult Total		**155,403**	**155,215**	**14,6742**	**152,879**	**160,930**	**166,665**	**188,086**	**3.2%**
Child	ON	9,746	9,588	10,401	9,435	9,795	9,472	9,161	-1.0%
	SD	1,269	1,438	1,377	1,513	2,131	2,196	2,121	8.9%
Child Total		**11,015**	**11,026**	**11,778**	**10,948**	**11,926**	**11,668**	**11,282**	**0.4%**
Grand Total		**166,418**	**166,241**	**158,520**	**163,827**	**172,856**	**178,333**	**199,368**	**3.1%**

Source: Cross Sectional - Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Excludes renal dialysis and unqualified neonates, diagnostic endoscopy and chemotherapy.

While the forecast activity for bed days in the AIM Base Case is consistent with historical growth rates for bed days, this assumes that length of stay will continue to reduce in future years at a similar rate to the previous seven years. Should the ALOS remain unchanged, the result will be an additional 25,445 beds days. This equates to an additional 82 beds across Darling Downs Health. Note ALOS does not include excess bed days (over 90 days) and these need to be added when using separations and ALOS to calculate bed days.

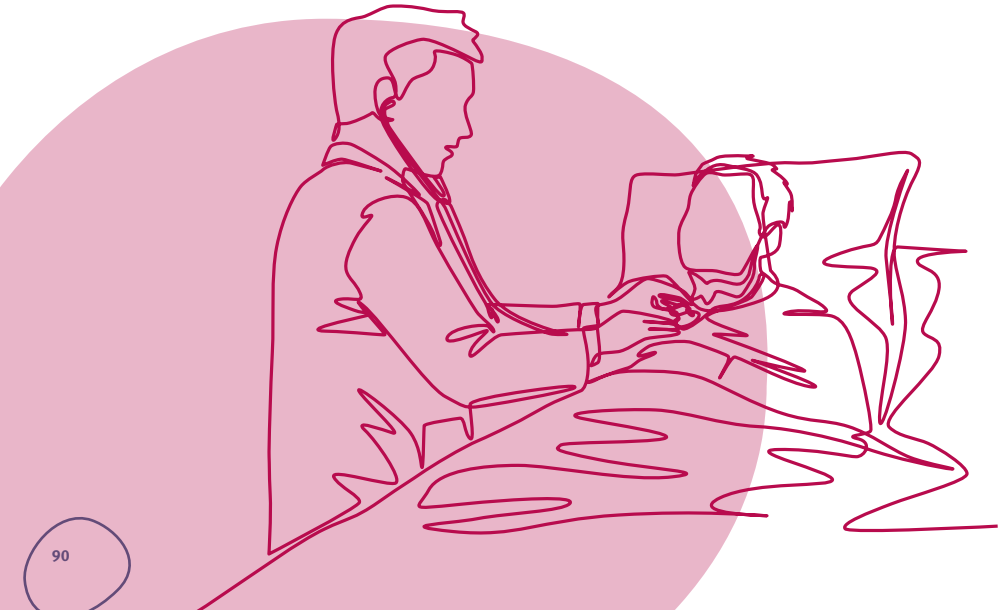
Table 116 Darling Downs Health Comparison of bed days: static ALOS vs reducing ALOS (AIM)

Values	2016/17	2021/22	2026/27	2031/32	2036/37	ACGR
ALOS	2.79	2.75	2.67	2.61	2.56	-0.4%
Separations	57,124	68,371	82,317	95,927	110,899	3.4%
Bed days based on reducing ALOS	164,668	193,900	225,997	257,884	292,418	2.9%
Excess bed days over 90 days	5,245	5,703	6,401	7,345	8,363	2.4%
Bed days if ALOS is static	164,668	196,516	236,132	275,062	317,863	3.3%
Bed equivalent difference	0	8	33	55	82	

Source: Cross Sectional - Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Excludes renal dialysis and unqualified neonates, diagnostic endoscopy and chemotherapy.

If there is no reduction in ALOS, an additional 82 beds are required across Darling Downs Health by 2036/37 over and above the AIM projections for bed requirements



3.3.1.3. Projected Reductions in Relative Utilisation

In addition to overnight average length of stay adjustments, the AIM process also adjusts relative utilisation (RU) for some SRG's in line with Statewide trends. The simplified formula for each projection of the combination of ESRG, age group and stay type is:

Statewide admission rate x local population x local relative utilisation (RU) = number of admissions (Guide to Health Service Planning 2, 2010)

RU is an indicator of the rate at which residents of a geographic area use inpatient services compared to the state as a whole. The RU calculation is based admissions anywhere in Queensland, and therefore a low RU reflects a population not accessing services in Queensland and not just within the local HHS. The information in the following tables may indicate which specialty areas are either under or over in local service provision compared to the State, but further investigation is required to ensure results are not due to anomalies in the recording of admissions.

Table 117 Top 10 SRG's with Lowest Relative Utilisation

SRG 8	2016/17		2036/37		RU Change
	Separations	RU	Separations	RU	
Public Darling Downs Health Residents					
Rehabilitation (non-acute)	542	35.6	2,372	17.7	-17.9
Geriatric Management (non-acute)	163	48.4	739	80.9	32.5
Thoracic Surgery	144	66.1	236	49.4	-16.7
Ophthalmology	1,220	70.4	2,967	21.5	-48.9
Plastic & Reconstructive Surgery	944	73.9	1,461	30.0	-43.9
Transplantation	14	75.4	24	83.6	8.2
Vascular Surgery	448	76.0	717	46.7	-29.3
Haematological Surgery	62	82.9	86	48.3	-34.7
Private Darling Downs Health Residents					
Rehabilitation (non-acute)	771	19.9	6,936	100	80.1
Drug & Alcohol	91	28.7	225	100	71.3
Mental Health	1,259	37.3	3,336	100	62.7
Maxillo Surgery	25	44.1	60	100	55.9
Plastic & Reconstructive Surgery	1,331	65.4	2,459	100	34.6
Medical Oncology	358	70.2	400	100	29.8
Rheumatology	83	72.5	218	100	27.5
Vascular Surgery	322	75.7	578	100	24.3
Breast Surgery	432	79.4	868	100	20.6

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

The built-in reduction in RU also impacts on projected inpatient bed days. Further analysis is required to better understand the impact RU has on total projected public bed days for Darling Downs Health.

Table 118 Top 10 SRG's with Highest Relative Utilisation

SRG 8	2016/17		2036/37		RU Change
	Separations	RU	Separations	RU	
Public Darling Downs Health Residents					
Cardiology	4,932	102.6	9,105	82.7	-19.9
Renal Medicine	862	104.7	1,813	74.0	-30.8
Endocrinology	1175	105.2	2,572	77.8	-27.4
Mental Health	2,475	107.8	5,181	50.0	-57.9
Upper GIT Surgery	1,206	110.0	1,842	56.8	-53.2
Ear, Nose & Throat	2,563	116.5	3,789	71.9	-44.6
Other Non-Acute	632	119.4	856	98.5	-20.9
Extensive Burns	70	135.5	80	119.3	-16.2
Obstetrics	6,526	142.7	6,989	110.6	-32.1
Private Darling Downs Health Residents					
Non Subspecialty Surgery	2,039	109.8	3763	100	-9.8
Obstetrics	1,104	112.9	1301	100	-12.9
Palliative (non-acute)	123	117.5	319	100	-17.5
Haematological Surgery	65	119.2	89	100	-19.2
Other Non-Acute	56	122.9	113	100	-22.9
Immunology & Infections	1,493	126.2	3385	100	-26.2
Haematology	2,704	145.5	3213	100	-45.5
Dentistry	1,577	147.5	1360	100	-47.5
Head & Neck Surgery	362	160.1	500	100	-60.1
Prolonged Ventilation	29	181.3	39	100	-81.3

Source: Inpatient Projections (Base Year 2016/17) as supplied by DoH 2018.

Further analysis is required to understand the impact of RU on Darling Downs Health inpatient bed day projection for 2036/37

3.4. REDUCING PROJECTED OTHER NON-ACUTE ACTIVITY AT TH

There are a number of non-acute separations (primarily maintenance) at TH not requiring an acute hospital environment. This cohort of patients are generally elderly and awaiting placement in an appropriate residential aged care facility.

The development of a 'social admission patient unit' or SAPU will reduce the number of maintenance patients admitted to TH by changing existing models of care. The unit will explore the availability of out-of-hospital service options including partnerships with local aged care providers to decrease both length of stay and number of admissions.

3.4.1. METHODOLOGY

The Base Case projection for Other Non-Acute SRG patients in TH has been analysed. A 25 percent potential reduction in the number of maintenance patients has been modelled below in Table 119 .

3.4.2. THE POTENTIAL IMPACT

If 25 percent of maintenance separations and bed days are removed from TH future Base Case activity projections, there is potential to reduce bed requirements by up to 5 beds by 2036/37.

Table 119 Removing "Other Non-Acute" Patients - Potential Impact on TH

	2016/17	2021/22	2026/27	2031/32	2036/37
Base Case					
Separations	240	265	297	339	384
Bed days	4,518	4,826	5,272	5,776	6,245
Beds	15	16	17	19	20
25% Reduction in Activity					
Separations	180	199	223	254	288
Bed days	3,389	3,619	3,954	4,332	4,684
Beds	11	12	13	14	15
Difference Base Case vs 25% Reduction					
Bed reduction	4	4	4	5	5

A 25% reduction in Other non-acute separations will result in a 5 bed reduction at TH 2036/37

Section 4

The future role of rural and remote services within Darling Downs Health

4.1. INTRODUCTION

Rural and remote facilities in Darling Downs Health are currently located at Dalby, Kingaroy, Warwick, Jandowae, Tara, Oakey, Miles, Chinchilla, Wandoan, Taroom, Goondiwindi, Inglewood, Millmerran, Stanthorpe, Texas, Cherbourg, Wondai, Murgon and Nanango.

The rural primary hubs (CSCF Level 3 facilities) in Darling Downs Health may have the potential to increase their service capability and self-sufficiency for admitted and non-admitted services. These facilities are:

- **Warwick** Hospital (84km south of Toowoomba)
- **Kingaroy** Hospital (153km north of Toowoomba)
- **Dalby** Hospital (82km west of Toowoomba).

4.1.1 ACCESS TO PRIMARY CARE

People living in rural, and remote areas are more likely to defer access to general practitioners due to cost. They have higher rates of potentially preventable hospitalisations and are less likely to gain timely access to aged care. Rural communities often find it difficult to attract and retain doctors, making local access to medical services challenging. Rural patients often have a long wait to see a GP close to where they live (AMA, 2014). Access to primary care health care services has a significant impact on rural hospitals beyond the parameters of the AIM modelling tool. Further analysis is required separate to the DDH Health Service Plan 2019-29 to better understand the reasons for a higher percentage of long stay maintenance separations, longer length of stay, increased category four and five ED presentations and travel for medical imaging, allied health and speciality services.

4.1.2 THE KINGAROY HOSPITAL REDEVELOPMENT

The redevelopment when completed will provide improved infrastructure enabling greater capacity and additional services including:

- computerised tomography (CT) scanner imaging facilities
- birthing suites with contemporary facilities
- digital-hospital ready
- increase in theatre capacity (from one operating theatre to two) including provision for day surgery admission and recovery
- increased capacity for specialist outpatient consulting rooms (from four to six) with contemporary facilities
- capacity for chemotherapy treatment
- increased renal dialysis capacity
- improved telehealth facilities

The new facility will provide an opportunity for increased private public partnerships and is also more likely to be seen as an attractive workplace thus assisting in the recruitment and retention of staff. Additionally, patients currently choosing private health care options may consider public options when the redevelopment is completed due to attractiveness of a new contemporary facility in their local area. The AIM Base case does not include any increase in activity for Kingaroy Hospital based on the impact of the new facility. The following information provides a high-level analysis of potential areas for increased activity.

4.1.2.1 Potential increase in private births

The number of South Burnett private births is very low (see Table 120 below). In 2016/17 there were 324 public births at Kingaroy Hospital. While it is not possible to predict what the change may be, if any, if all women birthing in the South Burnett region decided to choose Kingaroy Hospital over a private option, then there would be a ten percent increase in the birth rate and subsequent increase in bed days.

Table 120 South Burnett resident separations for birthing (vaginal and caesareans) at private facilities.

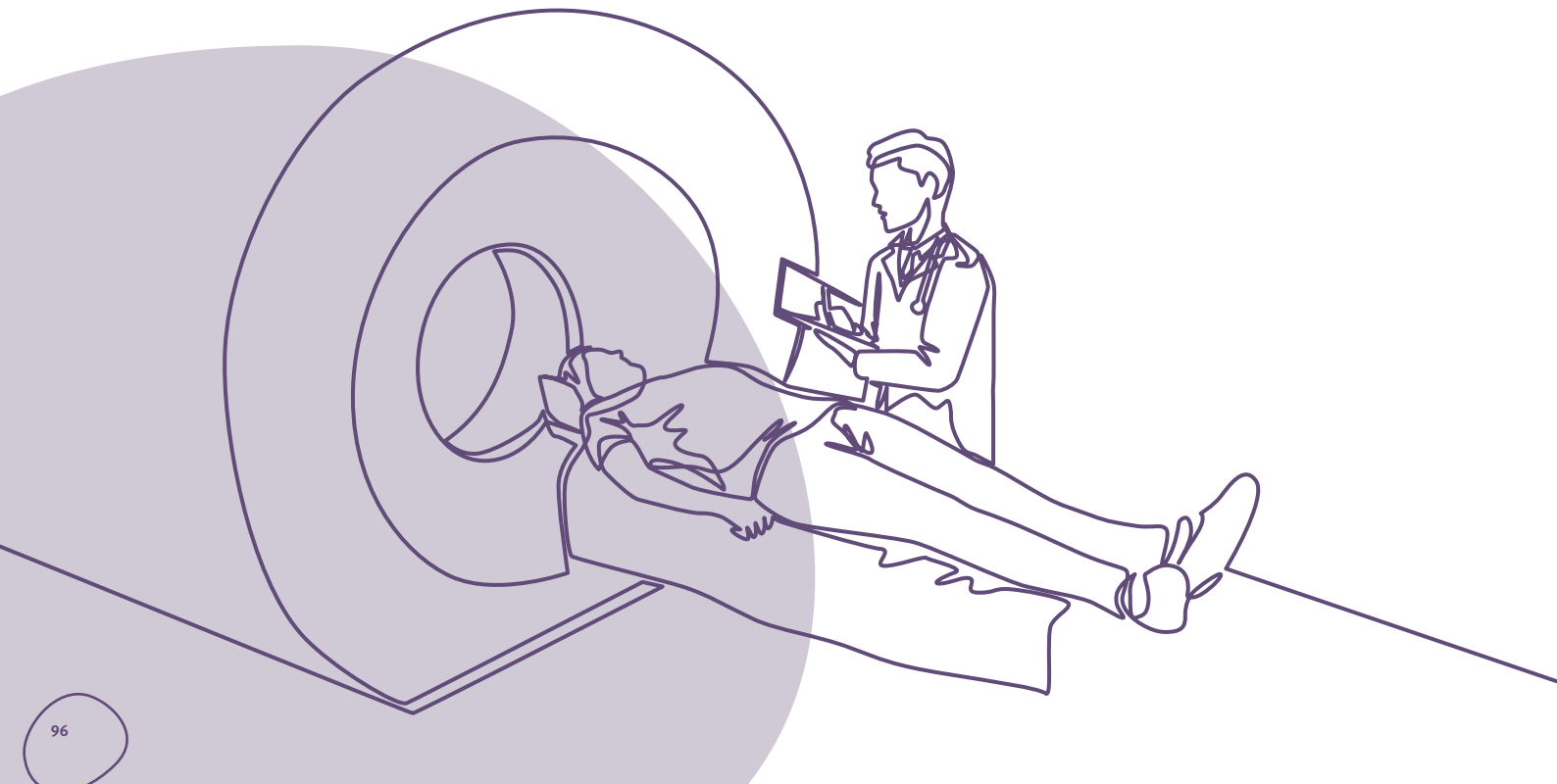
Year	2016/17	2021/22	2026/27	2031/32	2036/37
Births	33	24	16	32	34
Partial beds: 10% of projected obstetric beds for Kingaroy Hospital	N/A	0.39	0.42	0.38	0.38

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

4.1.2.2 Potential reduction in emergency transfers to TH due to afterhours CT being available

The DoH file for outpatient projections does not provide place of residence and therefore the number of patients transferred from Kingaroy Hospital to Toowoomba Hospital primarily for a CT scan is unknown. A Canadian study in 2017 on the impact of a CT scanner on inter hospital transfers found that 28 percent of all inter-facility transfers from ED were exclusively for CT scans (Bergerson, Fleet, Tounkara, Lavallee-Bourget and Turgeon-Pelchat, 2017). The DoH file for emergency presentations similarly does not provide place of residence and therefore it is unknown how may ED presentations at TH are for South Burnett residents.

There were 766 emergency admissions to TH from the South Burnett in 2016/17. While it is not possible to predict the quantum of change, it is reasonable to assume an increase in Kingaroy Hospital's self-sufficiency and corresponding change in patient flow with the availability of a CT scanner at Kingaroy Hospital. A five percent reduction in emergency transfers to Toowoomba Hospital would result in an increase of one additional bed for Kingaroy Hospital and corresponding decrease at Toowoomba Hospital by 2036/37.



4.2. ENDOSCOPY SERVICES

In 2016/17 1,256 patients accessed endoscopy services at TH from the rural planning regions. Potentially facilities currently providing endoscopy procedures in rural hospitals may be able to increase their services for low risk patients.

4.2.1. METHODOLOGY

Patient flows for endoscopy services were provided in the projections by the Department of Health. The percentage of endoscopy flows for Darling Downs Health was marginally increased to assess what the impact of a modest change in rural self-sufficiency would have on TH. At Kingaroy Hospital this may be achieved by the completion of the new hospital redevelopment providing improved facilities to enable the increase. At other sites such as Warwick Hospital, Dalby Hospital and Stanthorpe Hospital investment in infrastructure would be required to facilitate the increase. Table 121 below shows the potential impact increasing endoscopy capacity at rural hospitals will have on Toowoomba Hospital. Increasing self-sufficiency as indicated would result in a reduction of **430 endoscopies at Toowoomba Hospital by 2021/22**.

Table 121 Increasing the self-sufficiency of rural facilities in endoscopy

Place of Residence	Hospital/s of Treatment	Projected Endoscopies Status Quo			
		2021/22	2026/27	2031/32	2036/37
DDE	Toowoomba	534	586	639	691
	Dalby	242	270	284	297
Goondiwindi	Toowoomba	74	77	80	84
	Goondiwindi	153	168	174	180
South Burnett	Toowoomba	254	287	322	357
	Kingaroy	806	929	1,031	1,131
Southern Downs	Toowoomba	422	469	516	562
	Stanthorpe	307	312	328	343
	Warwick	602	596	637	673
Western Downs	Toowoomba	119	132	146	159
	Miles	137	148	153	157
Total		**3,650**	**3,974**	**4,310**	**4,632**

Proposed increase in self sufficiency by Rural Hospital		Revised Total with increased self sufficiency				Net increase endoscopies			
		2021/22	2026/27	2031/32	2036/37	2021/22	2026/27	2031/32	2036/37
31% to 50%	Dalby	388	428	461	494	146	158	177	197
67% to 70%	Goondiwindi	159	171	178	185	6	3	4	5
76% to 86%	Kingaroy	912	1,046	1,164	1,279	106	117	133	148
68% to 80%	Stanthorpe	359	379	403	426	53	67	75	83
68% to 80%	Warwick	706	723	782	836	103	127	145	163
53% to 60%	Miles	154	168	179	189	17	20	26	32
Potential Decrease Toowoomba Hospital if Increased Self Sufficiency Achieved						**430**	**491**	**560**	**628**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Future planned infrastructure developments in the Lockyer Valley may include facilities for endoscopy procedures. There is potential for patients projected to be treated at Toowoomba Hospital to flow back to West Moreton (see Table 122 below). Inflows from South West are also provided for consideration of potential changes should self-sufficiency for the South West HHS increase. Due to the uncertainty of any change to patient flow this potential change is not included in section 7.2 Summary of Capacity Changes Due to Changing Models of Care of this report.

Table 122 In Flows from Other HHS for Endoscopy procedures to Toowoomba Hospital

HHS of Residence	Endoscopies Performed Toowoomba Hospital			
	2021/22	2026/27	2031/32	2036/37
Gatton and Lockyer	329	383	447	526
South West HHS	105	115	125	137

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

4.2.2 Potential increase in endoscopy procedures at Kingaroy Hospital due to potential shift in treatment of private patients

634 private patients from the South Burnett region had an endoscopy procedure at a private facility in Darling Downs, West Moreton or Brisbane in 2016/17. A number of these patients may have sought treatment locally had the new Kingaroy Hospital redevelopment been completed. Table 123 below shows projected increase in endoscopy procedures at Kingaroy Hospital on the basis 10 percent of private endoscopy procedures for South Burnett residents will flow back to Kingaroy Hospital. The table below does not include any increase for self-sufficiency as indicated in Table 121 above.

Table 123 Projected endoscopy procedures at Kingaroy Hospital assuming 10 percent change reverse flow of patients treated privately

Facility of Treatment	2021-22	2026-27	2031-32	2036-37
Kingaroy Hospital no change in current flow	806	929	1031	1131
Potential reverse flow private patients*	65	70	75	80
Revised total for Kingaroy Hospital based on 10% reverse flow private patients	**871**	**999**	**1,106**	**1,211**

*Based on 10 percent of patients treated at these centres flowing back to Kingaroy Hospital.

Source: Endoscopy 2017_Final_V1.0 projections as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

4.2.3 Warwick Hospital endoscopy services

The approved DoH file (2017 version) for projecting endoscopy activity is conservative for Warwick Hospital with a growth rate of only 0.75 percent per annum compared to two percent for the DDH (see Table 41 of this Activity and Projections Paper 2019-2029). At the time of completing this report, the DoH 2018 version for projecting endoscopy activity became available and provides for an increase in projected numbers for Warwick Hospital. This increase is presented in Table 124 below together with a 10 percent reverse flow for private endoscopies for residents of Southern Downs. The table below does not include any increase for self-sufficiency as indicated in Table 121 above.

Table 124 Projected endoscopy procedures at Warwick Hospital assuming 10 percent change reverse flow of patients treated privately and using activity projections based on 2018 DoH file

Facility of Treatment	2021-22	2026-27	2031-32	2036-37
Warwick Hospital 2017 data file projections	602	596	637	673
Warwick Hospital 2018 data file projections	672	675	712	747
Potential reverse flow private patients*	89	101	113	125
Revised Total for Warwick Hospital based on 10% reverse flow private and 2018 projections	761	776	825	872
Net increase in projections Warwick Hospital	**159**	**180**	**188**	**198**

*Based on 10 percent of patients treated at these centres flowing back to Warwick Hospital.

Source: Endoscopy 2017_Final_V1.0 projections as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

4.3 SUBACUTE SERVICES

There is potential for rural facilities to increase their self-sufficiency in subacute services and thereby decrease bed days at Toowoomba Hospital. This will require appropriate staffing at rural facilities including allied health services.

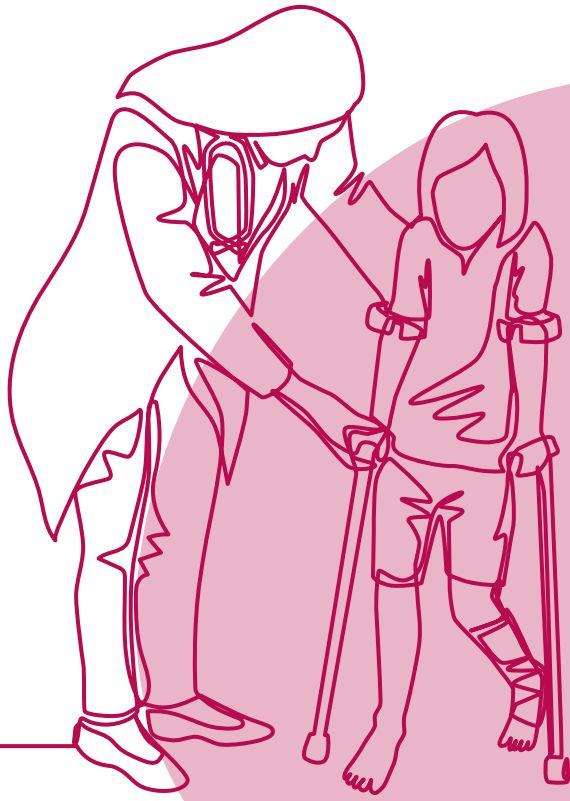
4.3.1. METHODOLOGY

The current self-sufficiency of the relevant DDH Planning Regions is outlined in Table 125 below. Self-sufficiency was lowest for Darling Downs East due to the population centre of Oakey in this planning region flowing to Toowoomba Hospital due to its closer proximity (distance Oakey to Toowoomba 28km; distance Oakey to Dalby 56km). The AIM model has a downward trend for self-sufficiency for rural facilities resulting in the projections for 2021/22 to 2036/37 effectively shifting subacute bed days from rural facilities to Toowoomba Hospital.

Table 125 Proposed increase in self-sufficiency subacute bed days by Darling Downs Health planning region

Subacute Self Sufficiency		2016/17	2021/22	2026/27	2031/32	2036/37
Darling Downs - East	Base Case	85%	84%	85%	86%	87%
	Proposed	85%	93%	93%	95%	96%
Goondiwindi	Base Case	89%	85%	81%	77%	74%
	Proposed	89%	93%	89%	85%	81%
South Burnett	Base Case	93%	91%	88%	85%	81%
	Proposed	93%	95%	92%	93%	89%
Southern Downs	Base Case	97%	97%	96%	96%	96%
	Proposed	97%	97%	96%	96%	96%
Western Downs	Base Case	70%	67%	63%	59%	56%
	Proposed	70%	73%	69%	65%	62%

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.



Increasing self-sufficiency for rural facilities by a factor of 10 percent on the above rates from 2021/22 results in an increase in bed days at rural facilities (see Table 126 below). There would be a corresponding decrease for bed days at Toowoomba Hospital. Note a factor of four percent used for South Burnett 2021/22 and 2026/27 and no change for Southern Downs due to existing high self-sufficiency rates. An increase of 10 percent is based on maintaining current self-sufficiency rather than changing models of care to increase existing self-sufficiency rates and results in a saving of seven beds at Toowoomba Hospital by 2036/37.

Table 126 Change in Bed Days due ton increase in self-sufficiency by a factor of 10 percent

Treated in Planning Region		2021/22	2026/27	2031/32	2036/37
Darling Downs - East	Separations	21	26	32	39
	Bed days	838	981	1,171	1,378
Goondiwindi	Separations	4	5	5	6
	Bed days	66	71	76	79
South Burnett	Separations	11	13	36	40
	Bed days	153	168	456	493
Southern Downs	Separations	3	4	4	5
	Bed days	51	56	62	68
Total Separations		**40**	**47**	**78**	**90**
Total Bed Days		**1,108**	**1,276**	**1,765**	**2,018**
Total Beds (OR .85)		**4**	**4**	**6**	**7**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

4.3.2 JANDOWAE HOSPITAL – REVIEW OF EXCESSIVE BED DAYS

The DoH file HHS Base Case 2016-17 projects an excessive number of beds for Jandowae Hospital (See Table 127 below). In part this may be explained by the artefact produced when a patient with a length of stay of several years is discharged or dies and the entire length of stay is credited to the year of discharge or death. Looking closer at the 2016/17 data there were four separations each with a length of stay equal to 3,525 days. The fact that four separations each had an exact length of stay of this extreme length deserves further investigation, however assuming this is correct, this means that four patients in this year were discharged or died after staying 9.7 years each in Jandowae Hospital. Assuming each of these patients stayed only 365 days each then the number of beds required in 2016/17 would be 14 and not 22. Even this is excessive given Jandowae has 12 beds and further investigation is required prior to assessing the true future requirements for Jandowae Hospital. Modelling for future bed requirements for Jandowae Hospital should not exceed 12 beds resulting in a reduction of 26 beds in the Base Case projection for 2036/37.

Table 127 Review of excessive bed days Jandowae Hospital

Year	2013/14	2014/15	2015/16	2016/17	2021/22	2026/27	2031/32	2036/37
Separations	263	272	307	257	316	380	449	522
Bed days	2,876	2,501	3,206	5,676	6,270	7,187	8,402	9,707
Projected Bed Requirements	**11**	**10**	**13**	**22**	**25**	**28**	**33**	**38**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

4.4 MEDICAL SERVICES

A high rate of self-sufficiency is achieved within the Goondiwindi and South Burnett Planning regions with greater than 80 percent of DDH bed days for patients in these regions occurring within their local hospitals.

Darling Downs East, Western Downs and Southern Downs have self-sufficiency rates less than 80 percent. Darling Downs East has the lowest self-sufficiency for reasons outlined in the section above on self-sufficiency for subacute separations (see Table 128 below). With appropriate support from Toowoomba Hospital for Rural Generalists and increased allied health resources, there may be an opportunity to marginally increase self-sufficiency. Improving access to afterhours CT services at Dalby Hospital will help decrease transfers to Toowoomba Hospital.

Table 128 Self-sufficiency medical services Darling Downs Health by planning region

Medical self-sufficiency Bed days		2016/17	2021/22	2026/27	2031/32	2036/37
Darling Downs - East	Base Case	54%	55%	55%	56%	57%
	Proposed	54%	60%	61%	62%	62%
Goondiwindi	Base Case	83%	83%	83%	83%	83%
	Proposed	83%	83%	83%	83%	83%
South Burnett	Base Case	80%	81%	81%	81%	81%
	Proposed	80%	81%	81%	81%	81%
Southern Downs	Base Case	76%	77%	77%	78%	78%
	Proposed	76%	80%	81%	82%	82%
Western Downs	Base Case	75%	74%	74%	74%	74%
	Proposed	75%	78%	77%	77%	77%

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Increasing self-sufficiency for Darling Downs East by a factor of 10 percent on the above rates, and Southern Downs and Western Downs by a factor of five percent from 2021/22 will result in an increase in bed days at rural facilities (see Table 129 below) in these regions. There would be a corresponding decrease for bed days at Toowoomba Hospital. An increase of 10 percent and five percent in the respective regions will result in a saving of **seven** beds at Toowoomba Hospital by 2036/37.

Table 129 Change in Bed Days due to increase in self-sufficiency by a factor of up to 10 percent

Treated in Planning Region		2021/22	2026/27	2031/32	2036/37
Darling Downs - East	Separations	223	274	330	389
	Bed days	567	682	807	936
Southern Downs	Separations	188	238	291	347
	Bed days	499	601	712	824
Western Downs	Separations	80	96	111	128
	Bed days	210	240	269	303
Total Separations		**492**	**608**	**731**	**865**
Total Bed Days		**1,275**	**1,524**	**1,787**	**2,063**
Total Beds (OR .85)		**4**	**5**	**6**	**7**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Section 5

Consolidating the role of Toowoomba Hospital as a regional referral hospital

5.1. INTRODUCTION

TH provides approximately 62 percent (38,503 separations in 2016/17) of the total Darling Downs Health resident separations (refer Table 38 and 39: Total separations Darling Downs Health residents by place of treatment 2016/17 from the Health Service Plan Background Paper) treated in Darling Downs Health.

In addition to the services provided to Darling Downs Health residents, a further 5,764 separations were provided by TH for residents of other HHS's in 2016/17. (Refer Table 85: Total Separations by HHS of residence Toowoomba Hospital 2016/17 from the Health Service Plan Background Paper).

Overall, Darling Downs Health is reasonably self-sufficient for the provision of public hospital services with just over 85 percent of all Darling Downs Health resident separations occurring from hospitals within Darling Downs Health (refer Table 36: Darling Downs Health self-sufficiency public hospitals only 13/14 to 16/17 from the Health Service Plan Background Paper). In 2016/17, there were 7,809 total separations for residents of Darling Downs Health provided from hospitals located in the Brisbane metropolitan area (refer Table 37: Self-Sufficiency public hospitals all stay types 2016/17 from the Health Service Plan Background Paper).

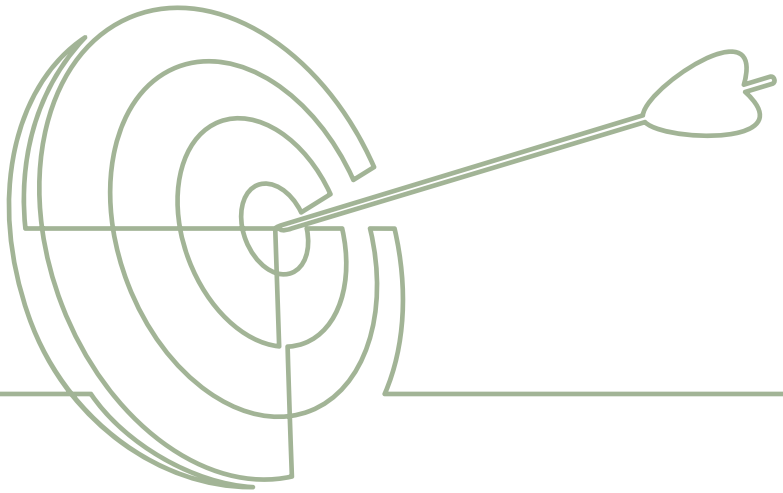
5.2. OPPORTUNITIES

During consultations the following specialty areas were identified as priorities for reducing outflows and/or consolidating TH capability for the provision of adult services:

- Interventional cardiology
- Radiation Oncology
- Medical Imaging services - access to bone scanner and Positron Emission Tomography (PET)
- Neurosurgery

When considering reversing outflows, the capacity of anaesthetics, allied health services, operating services and critical care needs to be assessed to measure impact of providing increased volumes of higher complexity services.

Potentially the Ipswich Hospital redevelopment will provide increased capacity for higher complexity services. Additionally, the building of a new hospital in the Lockyer / Gatton hospital in the next ten years will provide improved services to residents in this area. This is likely to result in reduced flows to Toowoomba Hospital for residents from this area (currently seven percent of inpatient separations or 3,036 separations).



5.2.1 Proposed new day surgery facility Toowoomba Hospital

There are seven theatres at Toowoomba Hospital. Projected demand indicates eight theatres are required by 2021/22 and nine theatres by 2026/27. A detailed business case is due to be submitted to Queensland Health June 2019 for two additional theatres as part of a day surgery unit at the Baillie Henderson Campus in Toowoomba. The new facility when completed will provide additional capacity for projected demand for surgery (see Table 130 below).

Table 130 Projected same day separations Toowoomba Hospital and required day surgery theatres

TH surgical separations	2016/17	2021/22	2026/27	2031/32	2036/37
All surgical separations	9,031	10,283	11,584	12,705	13,883
Same day surgical separations	3,314	3,822	4,372	4,847	5,360
Percentage day surgery	37%	37%	38%	38%	39%
Day surgery theatres	1.7	2.0	2.3	2.6	2.8

While a new day surgery facility will provide an opportunity to review and expand the range of services provided, it should be noted the additional capacity provided by a two-theatre day surgery unit will only enable the Base Case projections to be achieved to 2026/27 (including the current seven theatres). The facility will not provide long term any additional capacity for new or additional services outside the Base Case model beyond 2026/27.

5.3 Methodology

5.3.1. Analysis of priority specialties

An analysis of resident flow and service utilisation is provided in the accompanying Health Service Plan Background Paper to provide information on the identification of priority specialties for potential future investment:

1. Total public and private relative utilisation by residents of Darling Downs Health in the base year (indicating levels of access currently lower than the average for Queensland)
2. Public relative utilisation by residents of Darling Downs Health in the base year (indicating levels of access currently lower than the average for Queensland)
3. Projected increases in public relative utilisation by 2036/37 (indicating an underlying assumption in AIM that public sector access will be increased over time)
4. Top 10 outflows by volume of separations of Darling Downs Health residents to metropolitan hospitals
5. Top 10 inflows to Darling Downs Health by volume of separations of residents of West Moreton and South West HHS's.

5.3.2 Flow reversal from Brisbane public hospitals

The Darling Downs Health Base Case projection assumes minimal change to historical patterns in the volume of inflows from other HHSs such as West Moreton and outflows to Brisbane metropolitan hospitals. Specialities with low relative utilisation are considered, however surgeon availability and population catchment size are limiting factors in developing services such as vascular surgery, plastic surgery and neurosurgery at Toowoomba Hospital. Additionally, there is no change to the flow of Darling Downs Health residents accessing specialist services at Children Health Services in Brisbane for similar reasons.

It is anticipated that the most significant development in terms of flow reversals in the next ten years will be introduction of interventional cardiology services at Toowoomba Hospital. These changes are modelled in section 5.4.2 below.

5.4. POTENTIAL IMPACT

5.4.1. POTENTIAL IMPACT OF FLOW REVERSAL FROM METROPOLITAN PUBLIC HOSPITALS ON OVERNIGHT BED REQUIREMENTS

5.4.2. ADULT SERVICES

Outflows

In 2016/17, outflows of adult Darling Downs Health residents occupied the equivalent of 61 overnight public beds at metropolitan hospitals. Under the Base Case projection, the adult Darling Downs Health resident use of metropolitan hospital services will occupy 86 beds by 2036/37. Refer to Table 131 Projected Adult Public Darling Downs Health Resident Separations and Overnight Beds by Specialty Grouping by Place of Treatment (Metropolitan.).

Table 131 Projected Adult Public Darling Downs Health Resident Separations and Overnight Beds by Specialty Grouping by Place of Treatment (Metropolitan.) Excludes Cardiac surgery, Transplantation, Neurosurgery, Mental Health and Unallocated SRGs separations at metropolitan hospitals

Specialty Grouping	Overnight Separations			Overnight Bed Days			Overnight Beds		
	2016/17	2026/27	2036/37	2016/17	2026/27	2036/37	2016/17	2026/27	2036/37
Interventional Cardiology	167	203	234	734	829	913	2.4	2.7	2.9
Medical	1,168	1,670	2,041	5,999	7,808	8,881	19.3	25.2	28.6
Obstetrics & Gynaecology	45	58	62	245	278	287	0.8	0.9	0.9
Surgical / Procedural	1,464	1,887	2,253	9,478	11,221	12,697	30.5	36.2	40.9
Subacute	157	205	245	2,464	3,240	3,740	7.9	10.4	12.1
Total	**3,001**	**4,022**	**4,834**	**18,920**	**23,376**	**26,518**	**61.0**	**75.3**	**85.5**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

5.4.3 INTERVENTIONAL CARDIOLOGY

Bed projections include both admitted and non-admitted activity to account for changes over time in admission practices. DoH has developed specific data sets for calculating interventional cardiology activity. Children are excluded from the potential reverse flow bed days in Table 132 below on the basis that establishing an interventional cardiology service at Toowoomba Hospital would exclude paediatrics. Total beds include CCU beds.

Table 132 Interventional cardiology bed days and beds excluding paediatric

Adult beds from reverse flow	Total Bed days				Total beds required			
Interventional cardiology	**2021/2022**	**2026/2027**	**2031/2032**	**2036/2037**	**2021/2022**	**2026/2027**	**2031/2032**	**2036/2037**
Total	**1,773**	**2,049**	**2,317**	**2,584**	**6**	**7**	**7**	**8**

Source: DoH Interventional Cardiology 2017_Final_v1.0 as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Section 6

Private health sector future demand and potential impact on public sector services

6.1. INTRODUCTION

Public and private health services are interactive with changes in one sector impacting the other sector.

Two examples of the relationship between the two sectors are the impact on public services when a reduction in private health insurance occurs and the impact on public services when a partial or full withdrawal of a private sector health services occurs.

Formal and informal relationships between public and private service providers are particularly important in regional and rural areas where resources may be shared for mutual benefit. Alternatively, services may be self-contained running in parallel with limited interaction. There may also be an element of competition due to the nature of the health system in Australia especially when public hospitals aim to increase revenue through treating private patients.

Current private facilities in Toowoomba include:

- St Andrews Hospital Toowoomba provides a range of services including acute medical, surgical and mental health services. The hospital has an eight-bed intensive care unit and 24/7 emergency rapid access heart centre, as well as a cardiac catheter laboratory. The hospital also provides renal dialysis, radiation oncology and sleep study services.
- St Vincent's Private Hospital Toowoomba provides medical, surgical, maternity, paediatric, emergency, cardiac, rehabilitation and intensive care services as well as comprehensive allied health services. The emergency centre is open 24 hours, seven days a week. One of the six theatres is a hybrid theatre to provide cardiac diagnostic services. Sleep study services are also available.
- Toowoomba Surgicentre offers a broad range of surgical day hospital services. Surgical specialties include dental, ear nose and throat, gynaecology & obstetrics, plastic & reconstructive, ophthalmology, orthopaedic, oral-maxillofacial and urology.

This chapter outlines:

- Projected private hospital demand based on AIM projections to assess how much the private sector needs to grow to meet future demand. This is to identify the risk presented to the public sector if the private sector does not meet the projected demand locally as some of these patients are likely to access the public system should this occur.
- An analysis of chargeable Darling Downs Health patients. This is to identify the risk in terms of potential changes to Commonwealth or State policy regarding private patients.
- Low volume specialty areas in both the private and public sector on the basis sustainability may be enhanced through partnership.

6.2. PROJECTED PRIVATE HOSPITAL DEMAND

Private hospital demand for Darling Downs Health residents is projected to increase from 57,564 separations in 2016/17 to 107,766 separations by 2036/37; an annual growth rate of 3.2 percent per annum. This includes private separations at facilities outside the Darling Downs region.

In the private sector the SRG with the largest volume is diagnostic endoscopy, followed by chemotherapy, orthopaedics and ophthalmology. SRGs with the greatest per annum growth include rehabilitation non-acute, mental health and palliative care. Refer to Table 133.

Table 133 Projected Private Hospital Separations by Specialty Grouping, Darling Downs Health Residents, 2016/17 to 2036/37

SRG 8	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Diagnostic GI Endoscopy	8,185	9,359	10,576	11,893	13,186	5,001	2.4%
Chemotherapy	5,663	6,176	7,446	8,869	10,307	4,644	3.0%
Orthopaedics	5,210	6,018	6,752	7,748	8,982	3,772	2.8%
Ophthalmology	3,935	5,283	6,665	8,307	10022	6,087	4.8%
Non-Subspecialty Medicine	2,753	3,348	4,043	4,930	5,848	3,095	3.8%
Haematology	2,704	2,654	2,757	2,922	3,213	509	0.9%
Gynaecology	2,563	2,630	2,659	2,739	2,785	222	0.4%
Renal Dialysis	2,553	3,039	3,452	3,860	4,178	1,625	2.5%
Non-Subspecialty Surgery	2,039	2,345	2,657	3,195	3,763	1,724	3.1%
Urology	2,004	2,451	2,927	3,531	4,232	2,228	3.8%
Respiratory Medicine	1,818	2,254	2,720	3,372	4,103	2,285	4.2%
Dentistry	1,577	1,517	1,466	1,416	1,360	- 217	-0.7%
Immunology & Infections	1,493	1,800	2,197	2,773	3,385	1,892	4.2%
Ear, Nose & Throat	1,357	1,416	1,534	1,721	1,905	548	1.7%
Plastic & Reconstructive Surgery	1,331	1,569	1,821	2,143	2,459	1,128	3.1%
Mental Health	1,259	1,677	2,203	2,757	3,336	2,077	5.0%
Interventional Cardiology	1,208	1,486	1,761	2,073	2,387	1,179	3.5%
Obstetrics	1,104	764	543	1,078	1,301	197	0.8%
Cardiology	1,049	1,211	1,353	1,664	1,977	928	3.2%
Neurology	1,006	1,214	1,400	1,788	2,130	1,124	3.8%
Upper GIT Surgery	924	1,026	1,176	1,362	1,545	621	2.6%
Rehabilitation (non-acute)	771	2,010	3,420	5,113	6,936	6,165	11.6%
Unqualified Neonate	655	687	701	721	743	88	0.6%
Neurosurgery	504	583	655	745	839	335	2.6%
Breast Surgery	432	535	638	753	868	436	3.5%
Colorectal Surgery	419	488	551	626	698	279	2.6%
Endocrinology	390	443	505	607	707	317	3.0%
Head & Neck Surgery	362	393	424	462	500	138	1.6%
Medical Oncology	358	315	277	348	400	42	0.6%
Gastroenterology	341	379	425	583	705	364	3.7%
Vascular Surgery	322	361	412	477	578	256	3.0%
Renal Medicine	310	305	344	376	648	338	3.8%
Thoracic Surgery	144	138	145	157	170	26	0.8%

SRG 8	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Dermatology	142	138	129	187	205	63	1.9%
Palliative (non-acute)	123	152	186	246	319	196	4.9%
Cardiac Surgery	111	120	132	146	159	48	1.8%
Qualified Neonate	96	61	37	119	139	43	1.9%
Drug & Alcohol	91	120	137	187	225	134	4.6%
Rheumatology	83	99	113	138	218	135	5.0%
Haematological Surgery	65	73	78	84	89	24	1.6%
Other Non-Acute	56	59	68	89	113	57	3.6%
Prolonged Ventilation	29	29	31	32	39	10	1.5%
Maxillo Surgery	25	30	39	49	60	35	4.5%
Grand Total	**57,564**	**66,755**	**77,554**	**92,389**	**107,766**	**50,202**	**3.2%**

In 2016/17, there were an equivalent of 99,345 overnight bed days of private admitted activity generated by Darling Downs Health residents, regardless of where they accessed services (approximately 73% of this was in Darling Downs West Moreton private hospitals). This is projected to increase by 69,110 bed days to a total of 168,455 bed days by 2036/37 (as per Table 134). This is equivalent to 543 overnight private beds by 2036/37 based on an occupancy rate of 85 percent. Day spaces have not been projected for this exercise.

The projection in beds provides some indication as to the potential impact on Darling Downs Health public services if there is a change in private service delivery. For example, if patients who would normally access private hospitals in the Darling Downs choose public services in the future such that five percent of projected private bed days actually occur in public Darling Downs Health facilities, then an additional 27 beds will be required across Darling Downs Health by 2036/37.

Table 134 Projected Private Hospital Overnight Beds, Darling Downs Health Residents, 2016/17 to 2036/37

SRG 8	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Orthopaedics	12,802	14,801	16,495	18,975	21,519	8,717	2.6%
Rehabilitation (non-acute)	7,219	9,478	11,795	14,898	18,151	10,932	4.7%
Mental Health	7,115	8,586	10,081	11,663	13,356	6,241	3.2%
Respiratory Medicine	6,768	8,145	9,588	11,920	14,514	7,746	3.9%
Non Subspecialty Surgery	6,024	6,992	7,730	9,036	10,362	4,338	2.7%
Obstetrics	3,989	2,816	2,064	3,674	3,847	- 142	-0.2%
Cardiology	3,854	4,099	4,260	4,834	5,339	1,485	1.6%
Neurology	3,706	4,384	5,165	6,512	7,973	4,267	3.9%
Non Subspecialty Medicine	3,561	3,868	4,280	5,148	6,063	2,502	2.7%
Interventional Cardiology	3,161	3,734	4,292	4,951	5,635	2,474	2.9%

SRG 8	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Urology	2,664	3,185	3600	4162	4812	2,148	3.0%
Upper GIT Surgery	2,572	3,089	3488	3945	4376	1,804	2.7%
Plastic & Reconstructive Surgery	2,548	2,585	2984	3523	4125	1,577	2.4%
Unqualified Neonate	2,526	2,507	2,437	2,390	2,353	-173	-0.4%
Neurosurgery	2,411	2,600	2,753	2,952	3,085	674	1.2%
Colorectal Surgery	2,242	2,335	2,466	2,646	2,780	538	1.1%
Immunology & Infections	2,213	2,766	3,362	4,540	5,662	3,449	4.8%
Diagnostic GI Endoscopy	2,171	2,556	2,807	3,082	3,323	1,152	2.2%
Gynaecology	2,106	2,164	2,145	2,147	2,132	26	0.1%
Vascular Surgery	1,913	1,748	1,830	1,980	2,190	277	0.7%
Medical Oncology	1,811	1,669	1,516	1,672	1,814	3	0.0%
Palliative (non-acute)	1,748	2,159	2,518	3,209	3,981	2,233	4.2%
Haematology	1,732	1,639	1,515	1,436	1328	-404	-1.3%
Other Non-Acute	1,434	1,413	1,618	2,198	2,846	1,412	3.5%
Ear, Nose & Throat	1,327	1,406	1,511	1,725	1,950	623	1.9%
Cardiac Surgery	1,302	1,326	1,455	1,595	1,720	418	1.4%
Endocrinology	1,052	1,106	1,213	1,449	1,677	625	2.4%
Qualified Neonate	924	637	403	1,247	1,450	526	2.3%
Haematological Surgery	899	879	909	938	955	56	0.3%
Prolonged Ventilation	888	840	882	914	992	104	0.6%
Renal Medicine	830	931	1,035	1,207	1,522	692	3.1%
Gastroenterology	725	891	951	1,119	1,322	597	3.0%
Breast Surgery	624	746	857	991	1,114	490	2.9%
Thoracic Surgery	517	578	652	735	817	300	2.3%
Rheumatology	472	597	684	844	1173	701	4.7%
Drug & Alcohol	373	354	326	513	563	190	2.1%
Head & Neck Surgery	362	418	461	518	571	209	2.3%
Ophthalmology	362	436	475	537	582	220	2.4%
Dermatology	244	255	272	310	330	86	1.5%
Dentistry	128	101	106	116	130	2	0.1%
Maxillo Surgery	15	17	17	17	19	4	1.1%
Grand Total	**99,345**	**110,838**	**123,000**	**146,270**	**168,455**	**69,110**	**2.7%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

A five percent transfer of projected private overnight bed days to public DDH facilities would result in an additional 20 beds by 2026/27 increasing to 27 beds by 2036/37.

6.3. PRIVATE PUBLIC MARKET SHARE ANALYSIS

Historical hospital separation data from 2010/11 to 2016/2017 shows that while both publicly and privately funded separations have increased, the market share of privately funded activity has decreased, and publicly funded activity has increased from 55.3 percent in 2010/11 to 61.1 percent in 2016/2017.

Activity for chemotherapy, endoscopy, interventional cardiology, renal dialysis and mental health were excluded from the market share adjustment projections as this activity can be performed as either acute admitted inpatient or on a non-admitted basis. Unqualified neonates were also excluded as they do not generate costs to the health system. See Table 135 below.

Table 135 Historical Public Private Market Share, Darling Downs Health Residents, 2010/11 to 2016/17

Hospital Type	In-HHS	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Private	Out-HHS	34,028	35,553	37,499	38,206	38,036	37,886	38,041
Private Total		**34,028**	**35,553**	**37,499**	**38,206**	**38,036**	**37,886**	**38,041**
Public	In-HHS	35,082	37,119	39,280	41,741	46,496	49,472	50,894
	Out-HHS	7,077	7,599	7,621	7,254	7,450	7,616	8,932
Public Total		**42,159**	**44,718**	**46,901**	**48,995**	**53,946**	**57,088**	**59,826**
Grand Total		**76,187**	**80,271**	**84,400**	**87,201**	**91,982**	**94,974**	**97,867**

Source: Cross Sectional – Inpatient Projections (Base Year 2016-17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Excludes chemotherapy, endoscopy, interventional cardiology, renal dialysis and mental health.

The DoH Base Case includes an adjustment for an increase in the public market share but at a much lower rate than observed for the period 2010/11 to 2016/17 and while there is a marginal increase public share from 2016/17 to 2026/27 this decreases from 2026/27 to 2036/37 with a net change in public market share of just 0.2 percent over 20 years. See Table 136 below.

Table 136 Separations by Public Private Market Share, Darling Downs Health Residents, 2016/17 to 2036/37

Hospital Type	In-HHS	2016/17	2021/22	2026/27	2031/32	2036/37
Private	Out-HHS	38,041	44,332	51,414	62,216	73,629
Private Total Separations		**38,041**	**44,332**	**51,414**	**62,216**	**73,629**
Public	Out-HHS	50,894	61,031	73,541	85,633	98,834
	In-HHS	8,932	11,046	13,400	15,551	17,725
Public Total Separations		**59,826**	**72,077**	**86,941**	**101,184**	**116,560**
Grand Total		**97,867**	**116,409**	**138,355**	**163,400**	**190,188**
Percent Public Share		**61.1%**	**61.9%**	**62.8%**	**61.9%**	**61.3%**

Source: Cross Sectional – Inpatient Projections (Base Year 2016-17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Excludes chemotherapy, endoscopy, interventional cardiology, renal dialysis and mental health

An alternative scenario could be that the public market share continues to modestly increase from 2026/27 to 2036/37. A five percent shift in separations from private to public would increase the public market share from 61.1 percent in 2016/17 to 63.2 percent in 2036/37 resulting in 3,220 additional separations for DDH hospitals. This includes same day and overnight admissions but based on a ALOS of 2.61 days equates to 8,404 bed days or 27 beds across the DDH by 2036/37. See Table 137 below.

Table 137 Increase in Public Market Share Separations Darling Downs Health Residents, 2026/27 to 2036/37

Hospital Type	In-HHS	2016/17	2021/22	2026/27	2031/32	2036/37
Private	Out-HHS	38,041	44,332	51,414	60,660	69,947
Private Total		**38,041**	**44,332**	**51,414**	**60,660**	**69,947**
Public	Out-HHS	50,894	61,031	73,541	86,918	102,054
	In-HHS	8,932	11,046	13,400	15,822	18,186
Public Total Separations		**59,826**	**72,077**	**86,941**	**102,740**	**120,240**
Grand Total		**97,867**	**116,409**	**138,355**	**163,400**	**190,188**
Percent Public Share		**61.1%**	**61.9%**	**62.8%**	**62.9%**	**63.2%**
Impact on public bed days assuming ALOS 2.61 days and OR 0.85						
DDH separations arising from 5% increase in public share				**-**	**1,284**	**3,220**
DDH bed days arising from 5% increase market share				**-**	**3,353**	**8,404**
DDH beds arising from 5% increase market share					**11**	**27**

Source: Cross Sectional – Inpatient Projections (Base Year 2016-17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018. Excludes chemotherapy, endoscopy, interventional cardiology, renal dialysis and mental health

6.4. CHARGEABLE PATIENT ANALYSIS

Chargeable patients in a public hospital are those patients who elect to be treated as a private patient. Non-chargeable patients are true public patients including those that are treated in private facilities through contracting or outsourcing arrangements with the public sector.

Approximately 13 percent (10,720 of 80,332 separations) of separations in Darling Downs Health were chargeable in 2016/17. This is expected to increase to 16 percent by 2036/37 (23,686 separations of 151,894 separations). Note this includes renal dialysis patients but excludes unqualified neonates.

Table 138 Projected Chargeable Separations Darling Downs Health 2016/17 to 2036/37

Funding Type	Chargeable Status	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Public Hospital	Chargeable	10,720	13,336	16,447	19,901	23,686	12,966	4.0%
	Non-chargeable	69,612	81,930	97,144	112,110	128,208	58,596	3.1%
Public Hospital Total		**80332**	**95266**	**113591**	**132011**	**151894**	**71,562**	**3.2%**
Grand Total		**80,332**	**95,266**	**113,591**	**132,011**	**151,894**	**71,562**	**3.2%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.Excludes unqualified neonates.

Renal dialysis separations accounted for the largest volume of chargeable separations in 2016/17 followed by cardiology and non-subspecialty surgery. See Table 139 below.

Table 139 Projected Public Chargeable Separations, Darling Downs Health, by SRG 2016/17 to 2036/37

SRG 8	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Renal Dialysis	1,810	2,328	2,830	3,421	4,028	2,218	4.1%
Cardiology	1,009	1,237	1,484	1,744	2,024	1,015	3.5%
Non-Subspecialty Surgery	912	1,142	1,418	1,734	2,101	1,189	4.3%
Respiratory Medicine	722	885	1,109	1,369	1,647	925	4.2%
Neurology	683	930	1,233	1,584	1,971	1,288	5.4%
Non-Subspecialty Medicine	645	859	1,123	1,434	1,791	1,146	5.2%
Orthopaedics	612	760	935	1,128	1,340	728	4.0%
Diagnostic GI Endoscopy	602	682	767	856	941	339	2.3%
Obstetrics	437	462	510	497	511	74	0.8%
Immunology & Infections	358	460	605	761	942	584	5.0%
Chemotherapy	320	345	418	502	593	273	3.1%
Mental Health	295	384	489	602	718	423	4.5%
Urology	277	352	436	523	614	337	4.1%
Gastroenterology	212	263	319	375	435	223	3.7%
Ear, Nose & Throat	209	234	280	333	391	182	3.2%
Haematology	187	245	340	448	568	381	5.7%
Other Non-Acute	168	179	200	226	254	86	2.1%
Endocrinology	150	184	225	270	321	171	3.9%
Upper GIT Surgery	131	154	180	205	232	101	2.9%
Renal Medicine	117	154	189	231	267	150	4.2%
Neurosurgery	107	147	194	252	316	209	5.6%
Palliative (non-acute)	96	123	146	175	210	114	4.0%
Gynaecology	92	101	111	119	126	34	1.6%
Rehabilitation (non-acute)	89	116	146	182	221	132	4.7%
Medical Oncology	71	81	95	103	108	37	2.1%
Drug & Alcohol	63	89	114	140	168	105	5.0%
Geriatric Management (non-acute)	54	95	144	219	316	262	9.2%
Rheumatology	53	68	87	107	124	71	4.3%
Plastic & Reconstructive Surgery	50	59	70	80	89	39	2.9%
Dentistry	48	53	58	63	70	22	1.9%
Colorectal Surgery	28	32	36	39	43	15	2.1%
Dermatology	26	32	40	46	53	27	3.7%
Vascular Surgery	22	25	28	34	39	17	2.9%
Ophthalmology	15	20	27	34	44	29	5.5%
Qualified Neonate	13	13	14	14	15	2	0.8%
Head & Neck Surgery	10	11	12	13	13	3	1.4%
Haematological Surgery	7	8	9	11	12	5	2.7%
Breast Surgery	5	6	7	7	8	3	2.4%
Maxillo Surgery	5	5	6	7	8	3	2.1%
Prolonged Ventilation	5	5	6	6	7	2	1.4%
Extensive Burns	3	3	4	4	5	2	2.3%
Thoracic Surgery	2	2	3	3	3	1	2.7%
Total	**10,720**	**13,336**	**16,447**	**19,901**	**23,686**	**12,966**	**4.0%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.Excludes unqualified neonates.

57 percent of chargeable separations were for emergency separations. The majority of non-emergency chargeable separations were for renal dialysis, endoscopy, obstetrics, and chemotherapy. See Table 140 below.

Table 140 Projected chargeable separations by emergency Status 2016/17-2036/37

Emergency Status	2016/17	2021/22	2026/27	2031/32	2036/37	Change	AGR^
Emergency	6,101	7,555	9,314	11,300	13,517	7,416	4.1%
Non-emergency	4,619	5,781	7,133	8,601	10,168	5,549	4.0%
Total	**10,720**	**13,336**	**16,447**	**19,901**	**23,686**	**12,966**	**4.0%**

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.Excludes unqualified neonates.

Considering private emergency services

St Andrews Hospital opened a Rapid Access Heart Centre operating 24/7 private emergency cardiac centre in 2018 in Toowoomba. The introduction of a private emergency cardiac centre potentially means that less emergency patients with private insurance will access these admitted services at TH.

6.5. LOW VOLUME SPECIALTY AREAS

Low volume specialty areas may indicate potential opportunities for the public and private sectors to work more closely or they may also indicate service models struggling to be sustainable and at risk of closure in the Darling Downs.

The table below shows SRGs with low volumes, sorted from lowest to higher values up to a maximum of 500 separations for Darling Down residents.

Table 141 Low Volume Specialty Areas 2016/17: DD public and private separations

Sorted based on Lowest Private Sector Separations				
SRG 8	Separations		Bed Days	
	Public	private	Public	Private
Maxillo Surgery	41	25	78	32
Prolonged Ventilation	52	29	1,153	888
Other Non-Acute	642	56	18,519	1,434
Haematological Surgery	46	65	370	916
Rheumatology	268	83	907	472
Drug & Alcohol	820	91	1,359	403
Qualified Neonate	741	96	4,078	929
Palliative (non-acute)	506	123	4,251	1,750
Dermatology	309	142	588	335
Thoracic Surgery	74	144	145	521
Renal Medicine	695	310	1,778	988
Vascular Surgery	278	322	1,328	1,999
Gastroenterology	1,552	341	3,452	878
Medical Oncology	613	358	2,458	1,932
Head & Neck Surgery	172	362	337	560
Endocrinology	1,151	390	3,458	1,265
Colorectal Surgery	351	419	2,383	2,323
Breast Surgery	231	432	362	823
Neurosurgery	773	504	1,473	2,463
Sorted based on lowest Public Sector Separations				
Interventional cardiology	-	1,208	-	3,330
Extensive Burns	28	-	45	-
Maxillo Surgery	41	25	78	32
Haematological Surgery	46	65	370	916
Prolonged Ventilation	52	29	1,153	888
Thoracic Surgery	74	144	145	521
Ophthalmology	137	3,935	178	4,028
Geriatric Management (non-acute)	163	-	3,327	-
Head & Neck Surgery	172	362	337	560
Breast Surgery	231	432	362	823
Rheumatology	268	83	907	472
Vascular Surgery	278	322	1,328	1,999
Dermatology	309	142	588	335
Colorectal Surgery	351	419	2,383	2,323
Rehabilitation (non-acute)	364	771	7,209	7,398
Dentistry	496	1,577	604	1,669

Source: Inpatient Projections (Base Year 2016/17) as supplied by Health Service Research, Analysis and Modelling Unit, System Planning Branch, Strategy, Policy and Planning Division (SPPD). Published by the State of Queensland (Queensland Health), 2018.

Section 7

Projected capacity requirements summary

7.1. TOOWOOMBA HOSPITAL

The Base Case numbers for beds, treatment spaces and procedural rooms are summarised in Chapter 2.5. Presented below are tables with adjustments to projected activity according to specific proposed changes to services or models of care.

7.1.1. TOOWOOMBA HOSPITAL WITH ADULT INTERVENTIONAL CARDIOLOGY BY 2021/22

Table 142 TH Treatment Space Projections Summary, 2016/17 to 2036/37 With Adult Interventional Cardiology

Treatment Space	Base Year 2016/17	Projected Years 2021/22	2026/27	2031/32	2036/37	Notes
Adult Acute ON Beds						
ON Medical	82	100	117	136	153	Additional beds from 2021/22 for ON Medical for interventional cardiology
ON Surgical/Procedural	85	97	109	121	134	
ON Obstetrics & Gynaecology	27	29	32	30	30	
ICU	8	9	11	12	13	
CCU	5	9	10	11	13	
Subtotal Acute ON Adult Beds	**206**	**244**	**279**	**310**	**343**	
Adult Subacute ON Beds						
GEMS	6	10	14	21	29	
Other Non-Acute	14	16	17	19	20	
Palliative Care	5	6	7	8	9	
Rehabilitation	10	13	15	18	21	
Subtotal Subacute Beds	**36**	**44**	**53**	**65**	**79**	
Paediatric ON Beds						
Paediatric Beds	13	14	15	16	17	
SCN	15	17	18	17	17	
Subtotal all Paed ON beds	**28**	**31**	**33**	**33**	**34**	
Subtotal ON Beds	**270**	**319**	**366**	**408**	**456**	**Excludes MH**
Same Day/Bed Alternatives OR 1.7						
SD Medical	6	9	14	19	24	OR1.7
SD Obstetrics	4	4	4	5	5	OR1.7
SD Paeds Medical	1	1	1	2	2	
SD Surgical inc Gyn	11	13	15	18	21	OR 1.7
SD Endoscopy	8	9	10	11	12	OR 1.7
Renal Dialysis*	15	23	27	32	36	OR1.7
Chemotherapy	15	14	16	18	20	16/17 actual
Total Same Day Excl. ED SS	**60**	**73**	**87**	**104**	**119**	**Excludes ED**

Treatment Space	Base Year 2016/17	Projected Years 2021/22	2026/27	2031/32	2036/37	Notes
Adult Treatment Spaces						
Cat 2, 3, 4 & 5	24	31	38	45	52	
Resuscitation	4	6	8	9	11	
Isolation	3	4	5	6	7	
Decontamination Room						
Sub Total	**31**	**41**	**51**	**60**	**70**	
Paediatric Treatment Spaces						
Cat 2, 3, 4 & 5	6	8	10	12	14	
Resuscitation	-	-	-	-	-	
Subtotal	**6**	**8**	**10**	**12**	**14**	
ED Total Treatment Spaces	**37**	**49**	**60**	**72**	**83**	
ED Short Stay Beds						
Adult	9	12	14	17	20	
Paediatric	2	3	3	4	5	
Total ED Short Stay Beds	**11**	**14**	**18**	**21**	**24**	
Acute Mental Health (AMHU) Beds						
Adult Acute	43	38	41	n/a	n/a	MH Branch
Older Persons Acute (65+)	8	9	11	n/a	n/a	MH Branch
Child and Youth (0-17)	8	6	7	n/a	n/a	MH Branch
Subtotal AMHU Beds	**59**	**53**	**59**	**n/a**	**n/a**	
Grand Total All Beds	**400**	**459**	**530**	**592**	**658**	**Notional 59 MH beds >26/27**
Perioperative / Interventional Spaces						
Theatre Elective ON cases	3	4	4	4	4	
Elective Same Day Theatre	1	2	3	3	4	
Emergency Theatre	2	2	2	3	3	
Total Theatres	**6**	**8**	**9**	**10**	**11**	
Stage 1 Recovery*	14	21	23	27	28	
Stage 2 Recovery**	7	14	17	21	24	
Endoscopy Suites	1	2	2	2	3	
Cardiac Catheter Lab	0	1	1	2	2	
Birthing Suites	6	7	7	7	7	

* Includes recovery for theatre, interventional cardiology and endoscopy

** Assumes all admitted overnight for interventional cardiology

An additional six adult overnight beds including three CCU beds are required for interventional cardiology assuming service commences in 2021/22. This increases to eight overnight beds by 2036/37 including five CCU beds. Two additional Stage 1 recovery bays also required from 2021/22 for interventional cardiology.

7.2 CAPACITY CHANGES DUE TO CHANGING MODELS OF CARE

Table 143 below summarises potential changes to bed capacity arising from changes in models of care at TH as outlined in chapters three, four and five of this paper.

Table 143 Summary of Changing Models of Care Impact on Bed Numbers, 2026/27 and 2036/37 TH

Driver	Increase		Reduction	
	26/27	36/37	26/27	36/37
Bed Projections				
HITH reduction ALOS 1.5 days			3	4
HITH Palliative Patients			1	1
Extend AGES to 7 days + Mobile x-ray			2	2
Reduction in ALOS due to ieMR			18	24
Strategies to reduce ALOS Medical separations			7	17
Strategies to reduce readmission rates to 5%			6	8
ALOS does not change from 2016/17	23	56		
25% reduction subacute maintenance separations				5
A/Hrs CT scanner Kingaroy Hospital resulting in reduced emergency transfers to Toowoomba Hospital			1	1
Increase self-sufficiency factor in AIM model for rural hospitals for sub-acute patients.			4	7
Increase self-sufficiency factor in AIM model for rural hospitals for medical patients.			4	7
Initiate interventional cardiology service Toowoomba Hospital (includes coronary care unit beds)	7	8		
Endoscopy Projections				
Increase self-sufficiency rural hospital in endoscopy			491	628

7.3 CAPACITY CHANGES DUE TO CHANGING ROLE OF RURAL SERVICES

Table 144 below summarises potential changes to bed numbers and endoscopy procedures due to proposed changes outlined in chapters three and four of this paper.

Table 144 Summary of Changing Role of Rural Services Impact on Bed Numbers and Endoscopy Procedures, 2026/27 to 2036/37

Driver	Increase		Reduction	
	26/27	36/37	26/27	36/37
Bed Projections				
Potential increase private births Kingaroy Hospital	0.4	0.4		
Access to A/Hrs CT scanner Kingaroy Hospital resulting			1	1
in reduced emergency transfers to Toowoomba Hospital	1	1		
Increase self-sufficiency factor in AIM model for rural hospitals for sub-acute patients.	4	7		
Decrease bed days Jandowae Hospital due to probable artefact in Base Case 2016/17 resulting in excessive bed days.			16	26
Increase self-sufficiency factor in AIM model for rural hospitals for medical patients.	4	7		
ALOS does not change from 2016/17	10	26		
Endoscopy Projections				
Increase self-sufficiency rural hospital in endoscopy	491	628		
Shift in private endoscopy activity to public due to new Kingaroy Hospital redevelopment	70	80		
Increase endoscopies Warwick Hospital due to updated DoH projections and 10% private patient shift to public	180	198		

7.4 CAPACITY CHANGES DUE TO POSSIBLE CHANGES PRIVATE SECTOR SERVICE DELIVERY

Table 145 below summarises potential changes to capacity outlined in Chapter 6 of this paper.

Table 145 Changes to Public DDH Bed Numbers 2026/27 to 2036/37 if 5% change of projected private demand alternatively seeks public sector treatment

Driver	Increase		Reduction	
	26/27	36/37	26/27	36/37
5% transfer of projected private bed days to public Darling Downs Health facilities	20	27		

Note the AIM Base Case model accounts for a five percent shift in the market share from private to public in 2026/27 and therefore the increase of 20 beds for 2026/27 across the DDH is accounted for in the Base Case. However the AIM Base Case model does not continue with an increase in public market share beyond 2026/27, rather it returns the rate to approximately 2016/17 levels by 2036/37. An additional 27 beds will be required across the DDH by 2036/37 over and above the projected Base Case if public market share continues to be five percent higher than 2016/17 rates.

FIGURES AND TABLES

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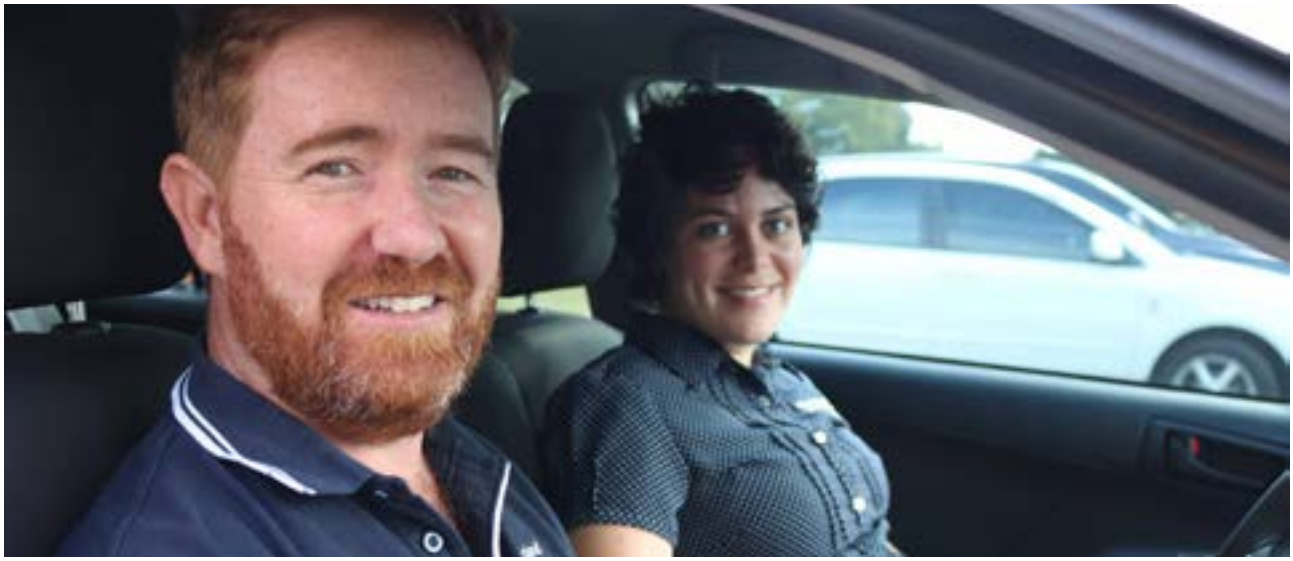


APPENDIX A: MAP OF DATA GROUPING

Table 146 Projected Occasions of Service, TH and Other DDH Facilities, by Tier 2 Class, 2016/17 - 2036/37

Excludes CIMHA appointments

Specialty Grouping	SRG
Medical	Cardiology
	Dermatology
	Endocrinology
	Gastroenterology
	Haematology
	Immunology & Infections
	Medical Oncology
	Neurology
	Non-Subspecialty Medicine
	Renal Medicine
	Respiratory Medicine
	Rheumatology
	Drug & Alcohol
Surgical / Procedural	Breast Surgery
	Colorectal Surgery
	Dentistry
	Diagnostic GI Endoscopy
	Ear, Nose & Throat
	Extensive Burns
	Haematological Surgery
	Head & Neck Surgery
	Maxillo Surgery
	Neurosurgery
	Non-Subspecialty Surgery
	Ophthalmology
	Orthopaedics
	Thoracic Surgery
	Plastic & Reconstructive Surgery
	Prolonged Ventilation
	Upper GIT Surgery
	Urology
	Vascular Surgery
Mental Health	Mental Health
Obstetrics & Gynaecology	Gynaecology
	Obstetrics
Subacute	Geriatric Management (non-acute)
	Other Non-Acute
	Palliative (non-acute)
	Rehabilitation (non-acute

APPENDIX B: SUMMARY OF DARLING DOWNS HEALTH OCCASIONS OF SERVICE

Table 146 Projected Occasions of Service, TH and Other DDH Facilities, by Tier 2 Class, 2016/17 - 2036/37

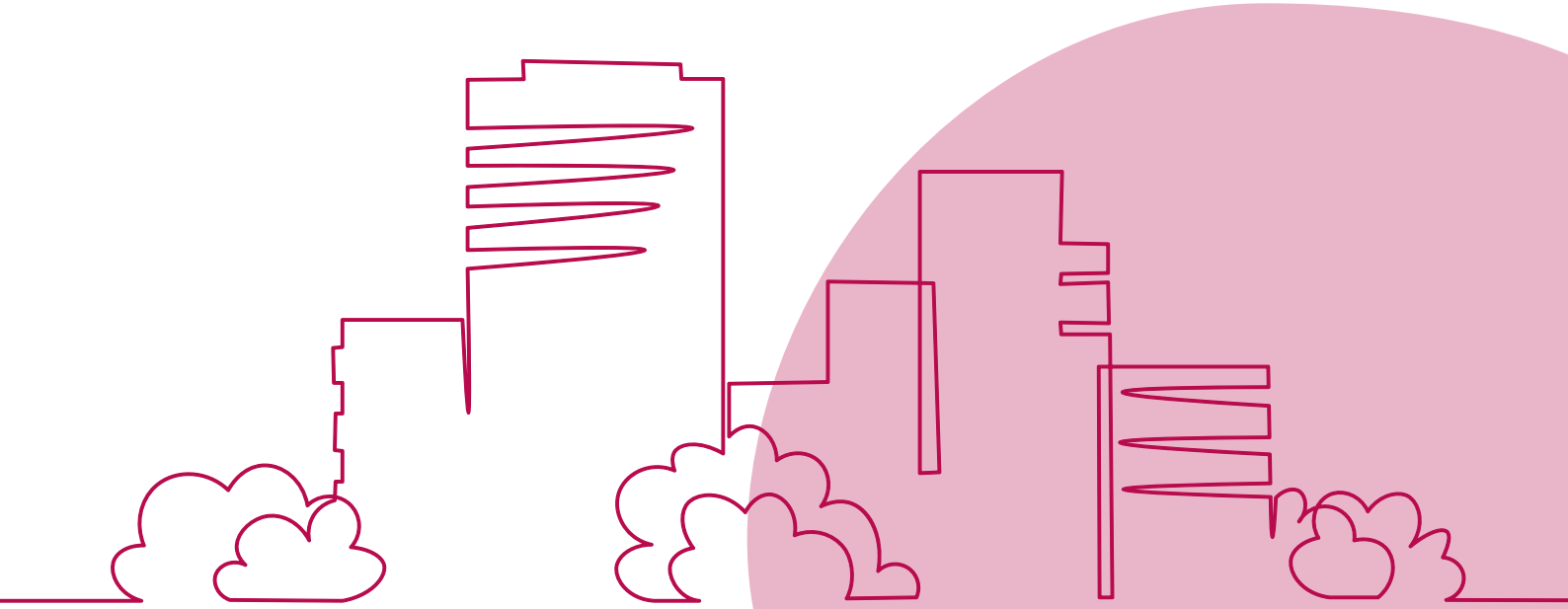
Excludes CIMHA appointments

Facility	Tier 2 Class	2016/17	2026/27	2036/37
Toowoomba Hospital	Aids and Appliances	3,413	5,019	6,648
	Anaesthetics	5,171	6,964	8,752
	Audiology	165	243	321
	Breast	1,495	2,177	2,955
	Cardiac Rehabilitation	483	730	921
	Cardiology	2,038	3,079	3,888
	Circulatory	1,015	1,574	2,259
	Clinical Measurement	2,560	3,765	4,986
	Clinical Pharmacy	3,408	5,012	6,638
	Computerised Tomography (CT)	5,174	8,035	11,334
	Continence	68	100	132
	Craniofacial	433	506	572
	Developmental Disabilities	59	68	78
	Ear Nose and Throat (ENT)	7,165	9,265	11,547
	Endocrinology	8,302	12,706	18,600
	Enteral Nutrition - Home Delivered	793	1,232	1,737
	Epilepsy	185	313	447
	Falls Prevention	136	200	265
	Gastroenterology	3,532	6,065	8,272
	General Imaging	23,492	36,482	51,462
	General Medicine	1,773	3,135	4,594
	General Surgery	4,068	6,137	8,551
	Geriatric Medicine	310	456	604
	Gynaecology	3,882	4,779	5,445
	Haematology	3,817	4,858	5,855
	Haematology and Immunology	195	391	537
	Hydrotherapy	200	294	390
	Infectious Diseases	192	314	471
	Mammography Screening	833	1,294	1,825
	Medical Oncology (Consultation)	6,030	7,215	7,640
	Medical Resonance Imaging (MRI)	1,887	2,930	4,134
	Midwifery and Maternity	18,269	22,213	21,856
	Minor Medical Procedures	693	1,076	1,518
	Minor Surgical	108	168	237
	Nephrology	4,257	7,772	11,447
	Neurology	707	1,196	1,709
	Nuclear Medicine	538	835	1,179
	Nutrition/Dietetics	2,600	3,824	5,064
	Obstetrics - management of pregnancy without complication	5,547	6,745	6,636
	Occupational Therapy	5,018	7,380	9,776
	Oncology	1,641	1,964	2,079
	Ophthalmology	905	1,612	2,525

Facility	Tier 2 Class	2016/17	2026/27	2036/37
Toowoomba Hospital	Orthopaedics	16,588	24,158	31,841
	Paediatric Medicine	3,734	4,358	5,007
	Paediatrics	737	854	974
	Palliative Care	858	1,262	1,671
	Physiotherapy	10,936	16,083	21,301
	Podiatry	1,416	2,082	2,758
	Positron Emission Tomography (PET)	477	741	1,045
	Post Acute Care	547	804	1,065
	Pre-Admission and Pre-Anaesthesia	10,179	13,709	17,228
	Psychology	2,374	3,356	4,527
	Pulmonary Rehabilitation	213	310	426
	Rehabilitation	1,110	1,632	2,162
	Respiratory	1,505	2,191	3,010
	Rheumatology	46	73	107
	Social Work	1,160	1,706	2,259
	Speech Pathology	2,317	3,407	4,513
	Stomal Therapy	370	533	709
	Transplants	440	352	820
	Urology	3,736	6,324	9,263
	Vascular Surgery	122	189	272
	Wound Management	492	724	960
Sub Total TH		**191,912**	**274,966**	**357,802**

Facility	Tier 2 Class	2016/17	2026/27	2036/37
Rural DDH Facilities	Addiction Medicine	194	256	319
	Alcohol and Other Drugs	1,481	2,085	2,711
	Anaesthetics	2,352	3,076	3,752
	Audiology	181	266	343
	Cardiac Rehabilitation	238	351	464
	Cardiology	1	2	2
	Circulatory	486	629	800
	Clinical Measurement	85	125	161
	Clinical Pharmacy	32	46	61
	Community Health Services - Care Co-ordination	716	1,112	1,568
	Community Health Services - Child & Youth Health	19,538	30,342	42,800
	Community Health Services - Chronic Disease	933	1,449	2,044
	Community Health Services - Communicable Diseases	3,096	4,808	6,782
	Community Health Services - Palliative Care	502	780	1,100
	Community Health Services - Rehabilitation	827	1,284	1,812
	Computerised Tomography (CT)	1,341	2,083	2,938
	Dermatology	5	8	11
	Developmental Disabilities	1	2	2
	Ear Nose and Throat (ENT)	85	97	114
	Endocrinology	1,114	1,871	2,868
	Gastroenterology	21	33	46
	General Imaging	18,899	29,350	41,400
	General Medicine	2,629	4,018	5,489
	General Practice and Primary Care	1171	1,819	2,565
	General Surgery	2,347	3,351	4,474
	Geriatric Evaluation and Management (GEM)	15	22	31
	Geriatric Medicine	1	2	2
	Gynaecology	1,451	1,739	1,968
	Haematology and Immunology	137	212	300
	Hepatobiliary	1	2	2
	Hydrotherapy	84	123	159
	Immunology	1	2	2
	Infectious Diseases	14	22	31
	Medical Oncology (Consultation)	2	3	4
	Midwifery and Maternity	13,449	15,371	14,476
	Nephrology	416	619	854
	Neurology	13	21	29
	Nutrition/Dietetics	1,648	2,356	3,031
	Obstetrics - Management of Complex Pregnancy	207	229	216
	Obstetrics management of pregnancy without complication	3,860	4,406	4,079
	Occupational Therapy	3,759	5,369	6,917
	Offender Health Services	57	89	125
	Oncology	67	104	146
	Orthopaedics	813	1,237	1,755
	Paediatric Medicine	1,150	1,239	1,335
	Paediatric Surgery	1	2	2

Facility	Tier 2 Class	2016/17	2026/27	2036/37
Rural DDH Facilities	Paediatrics	213	329	462
	Palliative Care	169	245	322
	Physiotherapy	7,983	11,417	14,708
	Podiatry	1,018	1,495	1,927
	Post Acute Care	2,358	3,388	4,382
	Pre-Admission and Pre-Anaesthesia	819	1,076	1,311
	Primary Health Care	15,892	24,680	34,813
	Psychiatry	16	25	35
	Psychogeriatric	1	2	2
	Psychology	745	1,228	1,738
	Respiratory	31	49	68
	Sexual Health	102	158	223
	Social Work	3,189	4,561	5,874
	Specialist Mental Health	1	2	2
	Speech Pathology	2,485	3,564	4,596
	Urology	24	37	52
	Vascular Surgery	17	22	29
	Wound Management	152	215	278
Subtotal Rural Facilities		**120,636**	**174,899**	**230,917**
Grand Total		**312,550**	**449,867**	**588,723**



APPENDIX C: OVERVIEW OF METHODOLOGIES

Activity Type	Projection Methodology	Output	Assumptions
Acute Inpatient Activity			
Qualified Neonates (Neonatal Intensive Care Unit)	Population based and flows	Bed days	1.2 cots per 1000 live births (or 2.5 cots per 1000 live Aboriginal and Torres Strait Islander births and 1.1 cots per 1000 non- Aboriginal and Torres Strait Islander births where proportions of Aboriginal and Torres Strait Islander births are greater than 10 percent). Projected births are based on projected deliveries (AIM 2016/17). Patient flows applied based on AIM 2016/17 NICU bed days.
Qualified Neonates (Special Care Nursery)	Population based and flows	Bed days	5.6 cots per 1000 live births (or 10 cots per 1000 live Aboriginal and Torres Strait Islander births and 5.3 cots per 1000 non- Aboriginal and Torres Strait Islander births where proportions of Aboriginal and Torres Strait Islander births are greater than 8 percent). Projected births based on projected deliveries (AIM). Patient flows applied based on AIM 2016/17 SCN bed days.
Sub and Non-Acute **Sub and non-acute admitted activity excluding activity qualifying as mental health activity**			
Rehabilitation (Adult)	AIM 2016/17	Bed days/ Separations	Rehabilitation SRG/ESRG, 15+ years age group (includes bed days more than 90 days).
Rehabilitation (Children)		Bed days/ Separations	Rehabilitation SRG/ESRG, 0–14 years age group (includes bed days more than 90 days).
Palliative Care (Adult)		Bed days/ Separations	Palliative SRG/ESRG, 15+ years age group (includes bed days more than 90 days).
Palliative Care (Children)		Bed days/ Separations	Palliative SRG/ESRG, 0–14 years age group (includes bed days more than 90 days).
GEM		Bed days/ Separations	Geriatric Evaluation and Management SRG/ ESRG (includes bed days more than 90 days).
Other Non-Acute (Maintenance)		Bed days/ Separations	Other Non-Acute SRG/ESRG (includes bed days more than 90 days).
Interventions and Procedures **Activity which can be performed as either an acute admitted patient or a non-admitted outpatient**			
Chemotherapy	Incidence and treatment rates	Occasions of service/ separations	Projected incidence multiplied by expected treatment rate to determine total demand by place of residence. Public provision calculated on three years (2014/15 to 2016/17) composite data from QHAPDC and Panorama DSS. Patient flows based on three years of 2016/17 Panorama DSS data, with adjustments made for known service changes. Consultation activity is included in the Outpatients service stream.
Endoscopy	Linear projection	Occasions of service/ separations	Linear projection using six years (2011/12 to 2016/17) of historical admitted QHAPDC data and non-admitted DSS place of treatment activity. Patient flows based on 2016/17 QHAPDC and ESISS data with adjustments made for known service changes.
Interventional Cardiology	Linear projection	Occasions of service/ separations	Linear projection using five years of admitted and non-admitted procedural activity data (2012/13 to 2016/17) sourced from QHADPC and DSS. Patient flows based on average of 2014/15 to 2016/17 data, with adjustments made for known service changes.
Radiotherapy	Incidence and treatment rates	Occasions of service/ separations	Projected incidence multiplied by expected treatment rate to determine total demand. Assumption of 65–70 percent public provision. 5 percent of occasions of service assumed for simulation and planning. Patient flows based on three years of 2016/17. DSS data. Consultation activity is included in the Outpatients service stream.

Activity Type	Projection Methodology	Output	Assumptions
Renal Dialysis (Adult)	Prevalence and modality targets	Individuals requiring public dialysis	Projected prevalence rate applied to projected population. It is assumed that the share of private activity for 2016/17 will be maintained (as indicated by private admitted activity and total individuals requiring dialysis). Adjustments are made for known service changes.
Renal Dialysis (Children)	Historical Activity	Individuals requiring public dialysis	The projection uses historical activity to determine the annualised number of dialyses. This is converted back to the equivalent of patients receiving full-time dialysis (i.e. 3 sessions x 52 weeks).
Outpatients Any non-admitted activity which is not considered in the intervention and procedures group.			
Tier 2 outpatient clinic	Annual rate of growth or based on AIM growth for related area	Occasions of service	Outpatient projected activity determined by applying growth rates from inpatient activity (matching inpatient activity to Tier 2 clinics). Patient flows determined at the level of purchasing lines and projection facilities.
Radiation oncology consultations	Radiation oncology—incidence and treatment rates	Occasions of service	Radiation oncology—incidence x proportion of patients requiring radiation oncology treatment (64.3 percent) x consultations per patient (10) x public provision (65 percent or 70 percent).
Outpatients Any non-admitted activity which is not considered in the intervention and procedures group.			
Emergency Department	Historical activity by SA3 of residence and adjustment for population change	Presentations	Linear projection based on historical activity (EDIS & MAC) by place of residence, age and triage category, adjusted for population growth in place of residence (where available), and growth in Triage Categories 1-3 maintained. Adjustments to account for new services based on service planning activities.
Mental Health **Acute and sub-acute activity occurring in designated mental health beds and Mental Health Related Group (SRG) in non-designated beds**			
Community Care/ Extended Treatment and Rehabilitation	Population based	Bed days	9.6 beds per 100,000 population at 90 percent occupancy for total population
Extended Forensic Treatment and Rehabilitation	Population based	Bedd ays	0.4 beds per 100,000 population at 90 percent occupancy for total population
Older Persons Extended Treatment	Population based	Bed days	3.0 beds per 100,000 population at 90 percent occupancy for total population
Adult and Older Persons Acute	Population based	Bed days	15 beds per 100,000 population at 90 percent occupancy for persons aged 15-64 years. 45 beds per 100,000 population at 90 percent occupancy for persons aged 65+ years
Child and Adolescent Acute	Population based	Bed days	7 beds per 100,000 population at 70 percent occupancy for persons aged 0-14 years. 15 beds per 100,000 population at 70 percent occupancy for persons aged 15-19 years.
Medium Secure Mental Health Rehabilitation	Population based	Bed days	4.3 beds per 100,000 population at 90 percent occupancy for persons aged 15+ years
High Secure Mental Health	Population based	Bed days	2.2 beds per 100,000 population at 90 percent occupancy for persons aged 15+ years

APPENDIX D: GLOSSARY OF TERMS

Term	Description
Acute care	A key service area for people experiencing an exacerbation of an existing condition or who may be experiencing the onset of a new illness or injury requiring hospitalisation or specialist services.
Ambulatory care	A key service area that includes emergency medical services, oral health services, public outpatient services including pre-admission, post-acute and other specialist services.
Bed days	Number of full or partial days of stay for patients who were admitted to a hospital for an episode of care and who underwent separation during the reporting period.
Burden of disease and injury	Assesses and compares the relative impact of different diseases and injuries on populations. It quantifies health loss due to disease/injury that remains after treatment, rehabilitation or prevention efforts of the health system and society generally.
Change agent	A person or process (from inside or outside the organisation) that helps an organisation transform itself by focusing on such matters as effectiveness, improvement and development.
Chronic disease	Diseases of long duration and generally slow progression. In this guide, chronic disease refers to all non-communicable disease and excludes injuries.
Clinical services capability framework	Minimum service requirements for health services, support services, staffing and safety standards in public and licensed private health facilities in Queensland.
Diagnostic related group	Part of a data grouping classification scheme that provides a clinically meaningful way of relating the types of patients treated in a hospital to the resources required by the hospital.
Disability adjusted life years	A measure of overall burden of disease and injury. It is the sum of the years of life lost and years lost to disability for a disease or condition.
Health inequality	Population-specific differences in the presence of disease, health outcomes or access to services. In other words, there are differences between populations on one or more measures of health.
Health inequity	The presence of systematic health inequalities between groups with different social advantage/ disadvantage (e.g. wealth, power or prestige). It essentially refers to the social gradient of health.
Health need	A deficiency in health that requires health care. It can be subjectively determined (by an individual) or objectively determined (by a health professional or through scientific confirmation).
Health service demand	Service activity that a catchment population can generate—that is, the amount of activity that a defined population uses regardless of where it is accessed.
Health service need	The gap between what services are currently provided to a given population and what will be required in the future to improve the health status of a community (and avoid a decline).
Health service supply	Service activity available to a catchment population—for example, the activity supplied by public sector health facilities in a particular HHS.
Health service planning	Aims to improve the health status of a given population. Health service planning should achieve this goal through the provision of efficient and effective health services, taking into account available resources and the available means and methods of health care.
Hospital separation	An episode of care that can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay ending in a change of status (e.g. from acute care to rehabilitation).
Hospitalisation	The total numbers of separations in all hospitals (public and private sector) that provide acute care services.
Impact evaluation	In health service planning, impact evaluation measures the immediate effect of the implementation of planning recommendations on services.
Inpatient	A patient who undergoes a formal admission process to receive treatment and/or care from a hospital. Care may occur in a hospital or in the home. Also referred to as an 'admitted patient'.
Integrated planning	A process which links independent planning activities and other key organisational functions to achieve alignment and congruence with strategic goals and improve organisational performance.
Life expectancy	Average number of additional years a person of a given age and sex might expect to live if the age-specific death rates of the given period continue throughout his/her life time.
Mental health services	A key service area that provides alcohol, tobacco and other drug services, mental health promotion and prevention activities, acute services and extended treatment services.
Model of care	Outlines best practice care through the application of a set of service principles across services. It provides an overarching description of how care is managed, organised and delivered within the system.
Objectives	In health service planning, objectives are statements of achievement about what services and the service system need to work towards to realise the future state as identified in the service directions.

Term	Description
Occasion of service	Any examination, consultation, treatment or other service provided to a non-admitted hospital patient in each functional unit of a health service facility on each occasion such service is provided.
Planning	Defining where one wants to go, how to get there and the timetable for the journey. Complete planning sets out indicators for tracking progress and ways to measure if the trip was worth the investment.
Planning recommendations	Health service planning results in a set of recommendations for future service delivery. These include the suite of service directions, objectives and strategies that a planning activity has recommended for implementation.
Prevention, promotion and protection	A key service area that aims to prevent illness and injury, actively promote and protect the good health and wellbeing of people, and reduce the health status gap between the most and least advantaged in the community.
Primary healthcare	A key service area that addresses health problems or established risk factors of individuals and small targeted groups by providing curative, health promotion, preventative and rehabilitative services.
Process evaluation	In health service planning, process evaluation measures the effects of the implementation process through indicators such as reach, satisfaction and quality.
Qualitative information	Information that is not numerical in nature and refers to data about needs, perceptions and preferences.
Quantitative information	Information that can be counted or expressed numerically. Data sets include demographic, epidemiological, service activity, economic and the efficacy of healthcare interventions.
Relative utilisation	An indicator of the rate at which residents of a particular geographic area utilise inpatient services as compared to the state as a whole, standardised for age and sex.
Self-sufficiency	An indicator of the local accessibility of services. It measures the rate at which residents of a particular geographic region access services within that region.
Service catchment	The geographic area for which a service is planned or the area in which most people accessing the service reside.
Service delivery model	An adaptation of an organisation's model of care that describes where and how work is carried out—developed to suit the local environment and to best meet organisational requirements.
Service directions	Describe clearly and succinctly the directions for the organisation to take to address the issues/needs that the health service planning is seeking to address.
Service enabler	In health service delivery, service enablers include assets (such as capital infrastructure), clinical support services, funding, information and communication technology and workforce.
Service provider	An individual or agency that delivers a health service.
Service user	A consumer of a health service.
Strategies	In health service planning, strategies are statements of action or 'how' services may work toward meeting the statements of achievement set out in the objectives.
Sub-acute care	A key service area that includes rehabilitation, palliative care and residential services for young people with physical and intellectual disabilities. It also includes extended care services that focus on maintaining a person's health and current functional status.
Telehealth	Delivery of health services and information via telecommunication technologies including live, audio and/or video interactive links for clinical consultations.

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