



**Queensland
Government**

Dialysis prevalence in Queensland adults by Indigenous status: Projected trends to 2026

Melanie Watson, Sue-Lynne MacLeod, Trisha Johnston

Health Statistics Centre, Queensland Health

There has been an increasing trend in the number of hospitalisations for dialysis in Queensland over the past decade¹. Factors contributing to this increase include population ageing, increasing diabetes prevalence and the chronic disease burden among Indigenous[†] Australians². Between 2000 and 2007, the incidence of end-stage kidney disease (ESKD) and hospitalisations for dialysis were 10 times higher in the Indigenous population when compared to the non-Indigenous population³. The aim of this analysis was to estimate the projected prevalence of long-term dialysis patients in Queensland, by region and Indigenous status to 2026.

Data were obtained from the ANZDATA registry, which provided the number of dialysis patients at 31st December in Queensland by facility, five-year age group and Indigenous status for the period 2004 to 2009. Included in the registry are “all patients receiving renal replacement therapy where the intention to treat is long-term”⁴, so the true prevalence of those with ESKD in the population may be underestimated. It also does not include those patients requiring dialysis treatment for acute kidney injury. Treatment facility was used as a proxy for area of residence, and health service districts (HSD) were collapsed into regions to ensure adequate numbers for analysis (Appendix 1). Regions incorporated districts with sufficient activity and similar historical prevalence. Children (0-14 years) and adolescents (15-19 years) treated in Children’s facilities were excluded.

The number of adult dialysis patients in Queensland increased from 1,596 in 2005 to 1,936 in 2009, while the overall prevalence increased slightly. Prevalence in the Indigenous population was similar in 2005 and 2009 (Table 1). As with incidence rates and hospitalisations, the age-standardised prevalence in the Indigenous population was almost 10 times the non-Indigenous population (Table 1). This varied slightly by region, with Indigenous prevalence around 15-20 times higher in the Northern region, and approximately 5-10 times higher in the Central and Southern regions of the state (Figures 1 and 2).

Figure 1. Age-standardised prevalence (95% CI) of Indigenous adult dialysis patients by region, 2005 – 2009

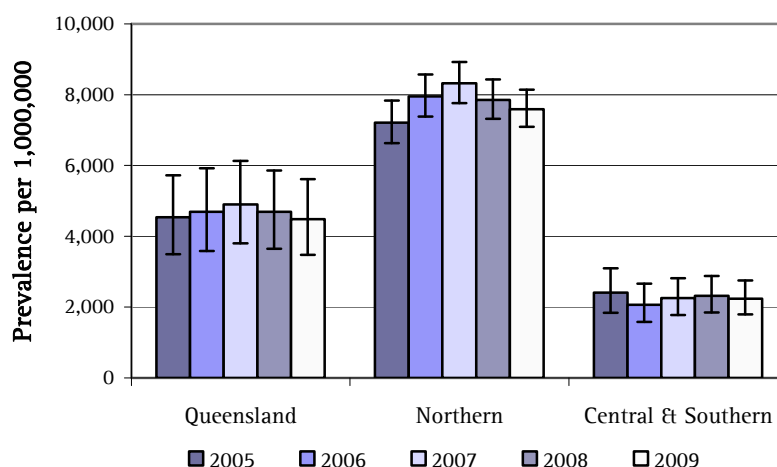
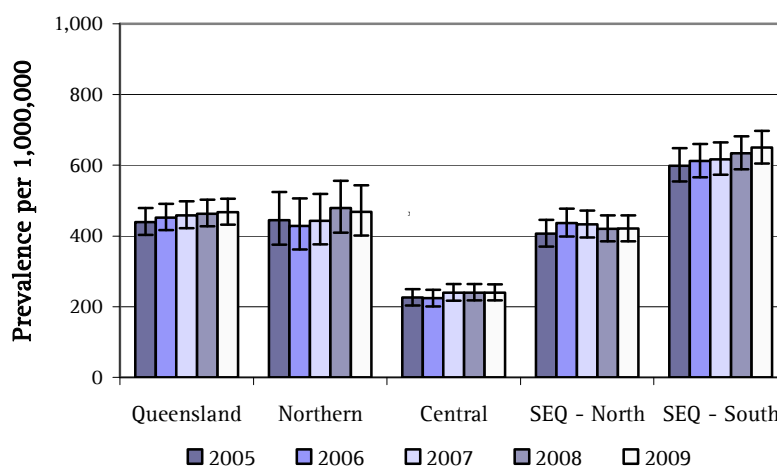


Figure 2. Age-standardised prevalence (95% CI) of non-Indigenous adult dialysis patients by region, 2005 – 2009



[†] The term Indigenous is used when referring to Aboriginal and Torres Strait Islander people collectively.

Linear regression modelling was applied to the most recent five years of prevalence data, 2005 to 2009. The crude prevalence by Indigenous status and region was calculated, and a linear model fitted. These models were used to project the (crude) prevalence of adult dialysis patients in Queensland to 2026.

There was a significant linear increase in the prevalence of adult dialysis patients between 2005 and 2009 (Table 2) except for the non-Indigenous South East Queensland (Northern) region. The greatest estimated increase was in the Indigenous Northern region, where prevalence was projected to increase by 113 per 1,000,000 per year (95% CI 12, 215). This

was also the most variable due to the smaller numbers in this group. These models were used to calculate the projected prevalence between 2011 and 2026 (Table 3). Projected values are an estimate only, and confidence intervals are provided in order to reflect the uncertainty around these.

The prevalence of patients on long-term dialysis is projected to increase into the future, based on recent trends. For some regions in the period 2005 to 2009, there was some suggestion of a decrease in the rate at which prevalence was increasing. Estimated prevalence projections should be updated as new data emerge in order to reflect current trends.

Table 1. Age-standardised prevalence of adult patients on dialysis per 1,000,000 by Indigenous status in Queensland, 2005 – 2009

| Year | Indigenous | | Non-Indigenous | |
|------|---------------------|-------------------------|---------------------|-------------------------|
| | Number ¹ | Prevalence ² | Number ¹ | Prevalence ² |
| 2005 | 228 | 4,543 | 1,368 | 439 |
| 2006 | 246 | 4,689 | 1,453 | 452 |
| 2007 | 279 | 4,905 | 1,520 | 458 |
| 2008 | 285 | 4,694 | 1,584 | 463 |
| 2009 | 291 | 4,490 | 1,645 | 467 |

Source: Queensland Health analysis of ANZDATA Registry data[‡]

¹ Dialysis patients at 31st December

² Standardised to the Australian 2001 population using five-year age groups (15-65+)

Table 2. Estimated increase (95%CI) in prevalence per 1,000,000 per year by region* and Indigenous status

| Region | Indigenous | Non-Indigenous |
|-----------------------------|---------------|----------------|
| Queensland | 79 (25, 133) | 9 (7, 10) |
| Northern | 113 (12, 215) | 12 (5, 19) |
| Central ³ | 91 (54, 128) | 5 (3, 7) |
| SEQ ⁴ – Northern | - | 4 (-3, 11) |
| SEQ – Southern | - | 14 (12, 15) |

³ Includes Southern region for Indigenous

⁴ SEQ: South-East Queensland

Table 3. Projected⁵ crude prevalence (95%CI) of adult dialysis patients per 1,000,000 by region* and Indigenous status, 2011 - 2026

| Indigenous | 2009 ⁶ | 2011 | 2016 | 2021 | 2026 |
|-----------------------------|-------------------|----------------------|----------------------|----------------------|-----------------------|
| Queensland | 2,955 | 3,205 (2,608, 3,801) | 3,601 (2,514, 4,688) | 3,997 (2,371, 5,623) | 4,393 (2,215, 6,570) |
| Northern | 5,032 | 5,406 (4,280, 6,532) | 5,971 (3,919, 8,023) | 6,537 (3,468, 9,605) | 7,102 (2,993, 11,212) |
| Central & Southern | 1,526 | 1,744 (1,330, 2,159) | 2,199 (1,443, 2,954) | 2,653 (1,523, 3,783) | 3,108 (1,594, 4,621) |
| Non-Indigenous | | | | | |
| Queensland | 479 | 499 (479, 518) | 542 (506, 578) | 585 (531, 638) | 628 (556, 700) |
| Northern | 463 | 491 (415, 568) | 553 (414, 692) | 614 (407, 822) | 676 (398, 954) |
| Central | 244 | 258 (235, 280) | 284 (242, 325) | 310 (248, 371) | 336 (253, 418) |
| SEQ ⁷ – Northern | 457 | 472 (394, 549) | 492 (350, 633) | 512 (300, 723) | 532 (248, 815) |
| SEQ – Southern | 639 | 665 (649, 680) | 734 (706, 763) | 804 (761, 846) | 873 (816, 930) |

⁵ Projected prevalence calculated as the predicted values (95% CI) using the linear regression model

⁶ Actual crude prevalence per 1,000,000

⁷ SEQ: South-East Queensland

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* Refer to Appendix 1 for a list of districts and facilities within each region.

References

1. Watson M, Wills R, Martin C, MacLeod S-L. Trends in renal dialysis in Queensland, 1999/2000-2007/2008. *StatBite #24*: Queensland Health, 2009.
2. Queensland Government. Queensland Statewide Renal Health Services Plan, 2008-17, Part One: The Way Forward. Brisbane: Queensland Government, 2007.
3. Watson M, Kennedy B, Johnston T. A comparison of end-stage kidney disease and renal dialysis by Indigenous status in Queensland. *StatBite #28*: Queensland Health, 2010.
4. Appendices I and II. *ANZDATA Registry Report 2009*. Adelaide, South Australia: Australian and New Zealand Dialysis and Transplant Registry, 2009.

Appendix 1. Mapping of facilities in ANZDATA to Health Service Districts

| Indigenous | Non-Indigenous | Health Service Districts | Facilities in ANZDATA registry |
|----------------------|-------------------------------------|--|---|
| Northern | Northern | Cairns and Hinterland Cape York Torres Strait – Northern Peninsula Townsville Mt Isa | Atherton Hospital Cairns Home HD Training Cairns Hospital Cairns Private Hospital Cooktown Satellite Innisfail Hospital Mossman Hospital Home Hill Satellite Mount Isa Satellite Northward Satellite – Townsville Palm Island Satellite Townsville Townsville Hospital Vincent Satellite Townsville |
| Central and Southern | Central and West | Central West Central Queensland Darling Downs – West Moreton South West Mackay | East Street Self Care – Rockhampton Rockhampton Hospital Kingaroy Satellite St Andrews Dialysis Clinic – Toowoomba Toowoomba Hospital Mackay Hospital |
| | South East Queensland – Northern | Metro North Sunshine Coast Wide Bay | Bundaberg Hospital Caloundra Private Hospital Gympie Satellite Hervey Bay Nambour Hospital Nambour Selangor Private Hospital Noosa Satellite Chermside Dialysis Unit (Nephrocare) North Lakes Dialysis Unit – Royal Brisbane Redcliffe Hospital Royal Brisbane Hospital Wesley Hospital |
| | South East Queensland – Southern | Metro South Gold Coast Darling Downs – West Moreton | Henry Dalziel Greenslopes Logan Satellite Centre Princess Alexandra Hospital Redlands Hospital Allamanda Dialysis Unit Gold Coast Hospital John Flynn Hospital Robina Satellite Ipswich Hospital |