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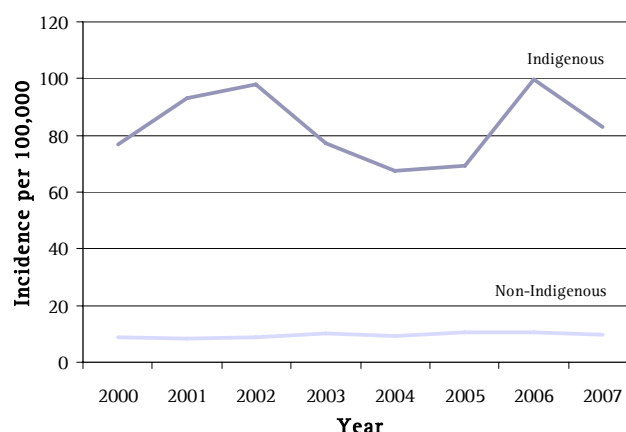
A comparison of end-stage kidney disease and renal dialysis by Indigenous status in Queensland

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Chronic kidney disease is a significant contributor to morbidity and mortality among Indigenous Australians¹. Factors contributing to the higher incidence of end-stage kidney disease (ESKD) in Indigenous[†] Australians include poorer social and economic circumstances, higher rates of risk factors, time to diagnosis and access to treatment centres. Risk factors for kidney disease include diabetes, hypertension, infections, low birth weight and obesity; conditions which are common among Indigenous people².

The incidence of treated ESKD in Queensland by Indigenous status (Figure 1) was determined using data from the Australian and New Zealand Dialysis and Transplant Registry (ANZDATA)³⁻⁶. This may underestimate the incidence of ESKD in the community, as not all people will be eligible for, or take up renal replacement therapy¹. In Queensland between 2000 and 2007, the incidence of treated ESKD remained relatively stable; however, the Indigenous rate was more variable due to the relatively small numbers each year.

Figure 1. Trends in the incidence of treated end-stage kidney disease by Indigenous status, Queensland 2000 to 2007



Source: Queensland Health analysis of ANZDATA Registry data^{*}

Combining the data for all years, the age-specific rates were calculated by Indigenous status (Table 1). The rate per 100,000 increased with increasing age, and rates were much higher for the Indigenous population. The ratios of Indigenous to non-Indigenous age-specific rates clearly show the excess in Indigenous rates, particularly in the 44-54 and 55-64 age groups, where the rates were 18.5 and 14.7 times higher respectively.

Table 1. Age-specific incidence of treated end-stage kidney disease per 100,000 persons per year by Indigenous status, Queensland 2000-2007

Age	Indigenous		Non-Indigenous		Rate ratio ³
	Number ¹	Rate ²	Number ¹	Rate ²	
0-24	11	1.7	103	1.0	1.7
25-34	26	15.8	157	3.7	4.3
35-44	69	51.8	244	5.5	9.5
45-54	145	167.9	377	9.1	18.5
55-64	112	261.2	563	17.8	14.7
65+	60	191.2	1,440	39.6	4.8
All ages⁴	423	82.5	2884	9.6	8.6

Source: Queensland Health analysis of ANZDATA Registry data

¹ Total number of new patients for renal replacement therapy from 2000 to 2007

² Age-specific rates use the Queensland Indigenous Experimental Estimated Resident Populations (2000-07)

³ Rate ratio is the Indigenous rate divided by the non-Indigenous rate

⁴ Standardised to the Australian 2001 population

* The data reported here have been supplied by the Australian and New Zealand Dialysis and Transplant Registry. The interpretation and reporting of these data are the responsibility of the authors and in no way should be seen as an official policy or interpretation of the Australian and New Zealand Dialysis and Transplant Registry.

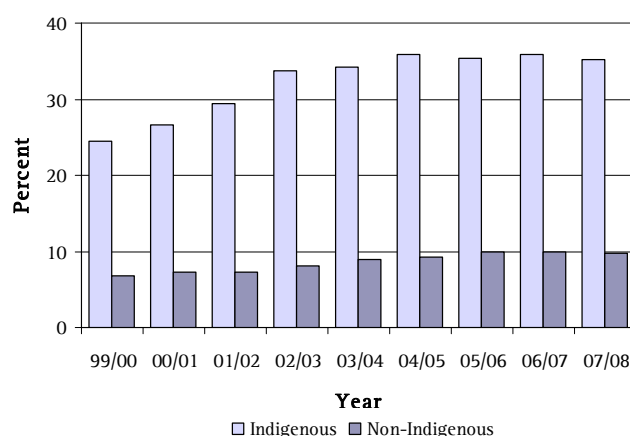
[†] The term Indigenous is used when referring to Aboriginal and Torres Strait Islander people collectively. Non-Indigenous includes 'not stated'.

Data from the Queensland Hospital Admitted Patient Data Collection (QHAPDC) were extracted to analyse the trends in dialysis episodes[‡] by Indigenous status from 1999/2000 to 2007/2008. Despite the stable incidence of treated ESKD from 2000 to 2007, the number of dialysis episodes in Queensland increased over a similar period. The total number of dialysis episodes doubled for both Indigenous and non-Indigenous patients from 1999/2000 to 2007/2008.

Indigenous Australians were over-represented in dialysis episodes between 1999/2000 and 2007/2008. Patients were identified as Indigenous in 4.4% of all episodes during this period, but in 14.8% of dialysis episodes in Queensland. As a proportion of total episodes, dialysis episodes have increased over time (Figure 2). This proportion was higher for Indigenous people, with dialysis episodes reaching a maximum of 35.9% of the total patient episodes in 2006/2007 compared with a maximum of 9.9% for the non-Indigenous in the same year.

Rates of dialysis episodes for Indigenous people were approximately ten times higher than dialysis episode rates in the non-Indigenous population between 1999/2000 and 2007/2008. One of the factors influencing this trend was the difference in the age distribution in dialysis episodes by Indigenous status. In this period, the median age[§] for Indigenous people was 54 years compared with 67 years for the non-Indigenous. These higher than expected rates of dialysis episodes in Indigenous people translated into an excess cost. In 2007/2008 the estimated excess inpatient cost of dialysis in public facilities (Diagnosis Related Group (DRG) L61Z^{**}) was \$10 million.

Figure 2. Proportion of total episodes that were for dialysis by Indigenous status, Queensland 1999/2000 to 2007/2008



Source: Queensland Hospital Admitted Patient Data Collection

In Queensland there were notable differences in the incidence of treated ESKD and rates of dialysis episodes between Indigenous and non-Indigenous Australians over the period 2000 to 2007. Overall, the incidence of ESKD was 8.6 times higher, and hospitalisations for dialysis were 10 times higher, in the Indigenous when compared to the non-Indigenous population. Dialysis comprised approximately one-third of all Indigenous hospital separations but only one-tenth of non-Indigenous separations. Despite the increase in the number of dialysis episodes from 1999/2000 to 2007/2008, the incidence of treated ESKD remained constant over a similar period, which may suggest improvements in survival for patients undergoing dialysis.

References

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[‡] Episodes of dialysis were extracted where the principal diagnosis, other diagnosis or procedure ICD-10-AM code was for dialysis and where the state of usual residence was Queensland.

[§] Median age calculation excluded those aged under 30; inclusion of the proportionally larger younger age groups in the Indigenous population can overstate the difference in median age.

^{**} Cost was estimated for episodes in public hospitals where the DRG classification was L61Z (admit for renal dialysis) and the patient was identified as Indigenous. Excess cost was defined as the difference between the actual estimated cost and the expected cost if the rate of Indigenous episodes was the same as the rate in the non-Indigenous population.