

Chronic Kidney Disease and Health Care Utilisation: insights from health data linkage in Queensland.

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Aim

To describe early findings from the linkage of data on patients identified to have chronic kidney disease [CKD], with patient-specific hospital utilisation data in Queensland.

Background

Little is known about healthcare resource consumption occasioned by pre-terminal CKD. The Surveillance and Health Economics Streams of the NHMRC CKD.CRE have partnered with the Queensland Department of Health [QH], to link a large number of people with CKD who are patients in the public renal speciality practices of QH and who are recruited to the CKD.QLD Registry to their health service utilisation.

Linkage includes to five years of their hospital data [2011-2016], across all health care facilities in Queensland, and as gathered by QH information systems.

QH will also supply data on 21,900 de-identified patients found to have CKD [through relevant ICD codes in relation to hospital episodes], who are matched 3 to 1 with the CKD.QLD Registry patients and by health service areas.

Methods

The linked data include detailed information on hospital admissions, treatment and discharge from the Queensland Hospital Admitted Patient Data Collection, deaths from the Registry of Deaths, and costs from Queensland Clinical Costing.

The researchers will apply modern econometric techniques appropriate for the analysis of large datasets.

Results

The first tranche of data has been delivered. It includes 4,013 patients from 3 major HHS settings in south east Queensland.

Among those 4,013 patients, 86.5% had at least one hospital separation. There were a total of 63,007 separations in all. Amongst those separations, 35,079 [55.7%] were for dialysis in patients who developed terminal kidney failure [n=336, 8.4%] at various intervals after their enrolment in the CKD.QLD registry.

These results are summarised in Table 1 and Figures 1 and 2.

Discussion

Although only a minority of patients [8.4%] went on to dialysis in the follow up interval, those dialysis treatments constituted more than half [55.7%] of all separations. This was uniform across all 3 sites.

Data in this preliminary view, and therefore rates of hospital separations, have not yet been adjusted for patient survival within the 5 year study interval.

Studies to follow will include diagnoses and procedures associated with non-dialysis admissions and analyses of costs as well as regional and socioeconomic variations among these.

Conclusions

- Administrative health sector datasets allow important quality and auditing functions but are under-used for research purposes, especially in CKD.
- This is the first glimpse into hospital service utilisation by patients with CKD in Australia. These, and our extended findings, are likely to attract national and international interest.
- This platform will enable the development of population models of CKD to estimate and predict future health service demands and outcomes under a range of different treatment protocols and triage options.

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Table 1 shows the number of patients per site, the percentages who were admitted at least once during the 5 year study interval, the percentages who ever received an RRT [dialysis] treatment, the total number of separations, the number of separations for dialysis alone and the number of separations that excluded dialysis.

Table 1. Patient distribution across the three main sites [data tranche one].

Site	Total patients per site	Patient numbers admitted \geq once	% of patients admitted \geq once	# [%] of patients with \geq 1 dialysis separations	Total # of separations (ALL: with and without dialysis)	# [%] of dialysis separations, of all separations
RBWH	1,638	1,444	88.2%	115 [7%]	28,062	15,569 [55.5%]
Toowoomba	1,034	864	83.6%	85 [8.2%]	19,565	10,811 [55.3%]
Logan	1,341	1,162	86.7%	136 [10.1%]	15,380	8,699 [56.6%]
TOTAL	4,013	3,470	86.5%	336 [8.4%]	63,007	35,079 [55.7%]

Figure 1 shows the number of separations by site, in total, and separately for just dialysis and again for separations that excluded dialysis.

Fig 1. Number of separations by site

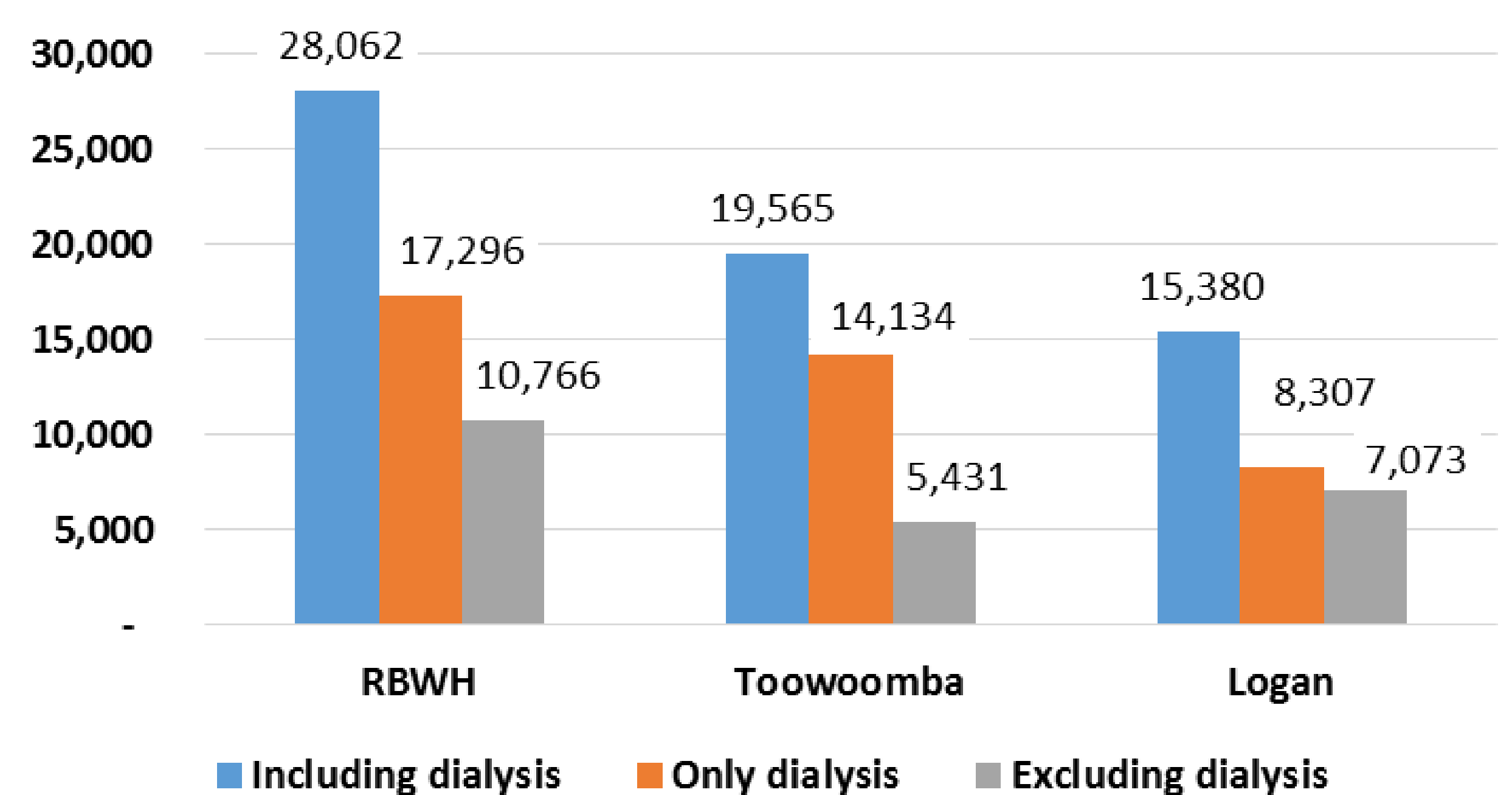
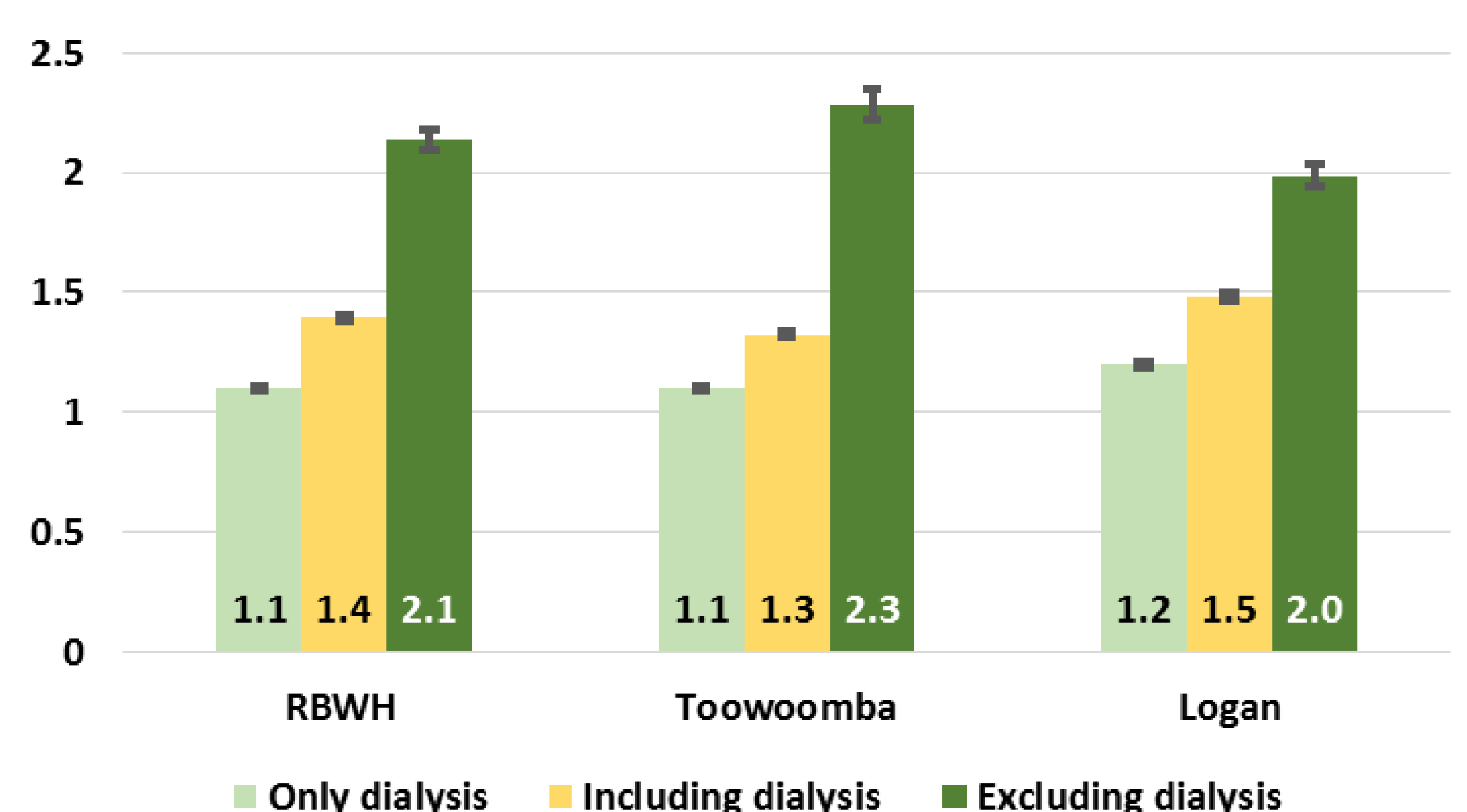


Figure 2 shows the geometric mean (95% CI) length of stay by site for dialysis separations only, for all separations including dialysis, and for separations excluding those for dialysis.

Fig 2. Geometric mean (95% CI) length of stay by site



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