

EMERGING HOT SPOTS IN AUSTRALIAN KRT INCIDENCE

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Background

The incidence of treated end-stage kidney disease has been well described clinically but less so spatially. We used geo-referenced registry data to describe the spatio-temporal variation in kidney replacement therapy (KRT) incidence and determine emerging hot spots.

Methods

Patients beginning KRT in each year 2001-2018 from the ANZDATA registry were attributed to SA3s (Statistical Local Area 3) by their residential postcode. The study was restricted to Sydney and Melbourne. Crude per capita rates and age- and sex-standardised incidence ratios (SIRs) were calculated by SA3 for 3-yearly periods using ABS population data, with Poisson confidence intervals calculated.

Findings

Highest crude rates (>200 pmpy) were generally found in outer suburban areas, especially the west of Sydney (Figs. 1,2). Rates there also changed most significantly, increasing 2½- to 5-fold from 2001/3 to 2016/18 (Fig. 1) & exceeding the national change of 25%.

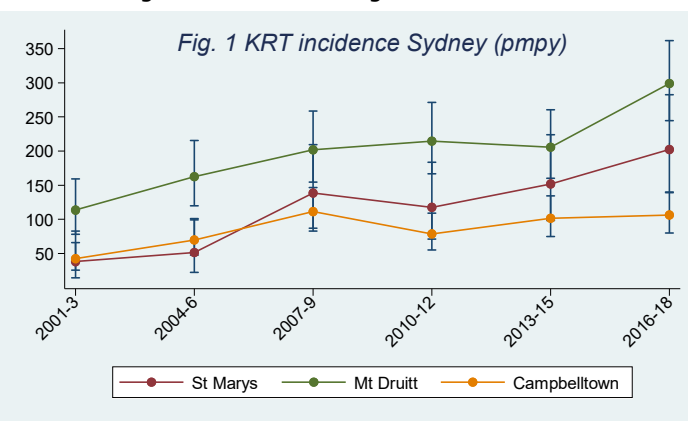
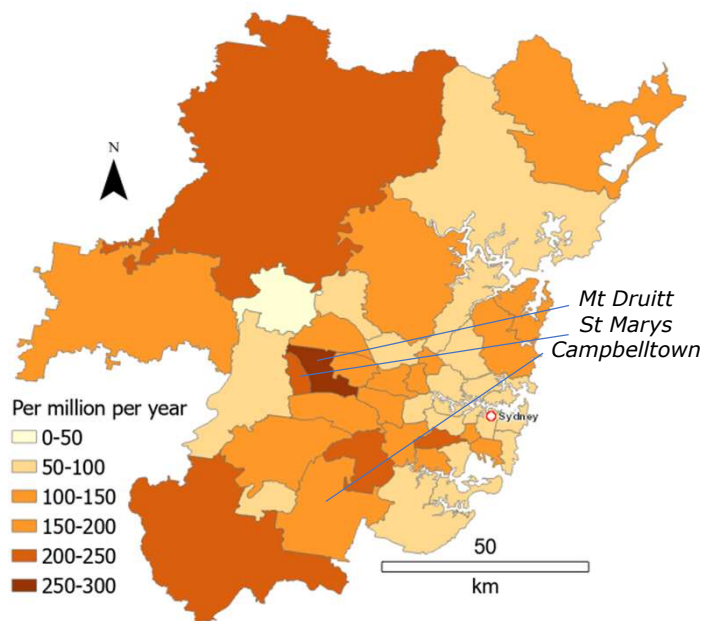


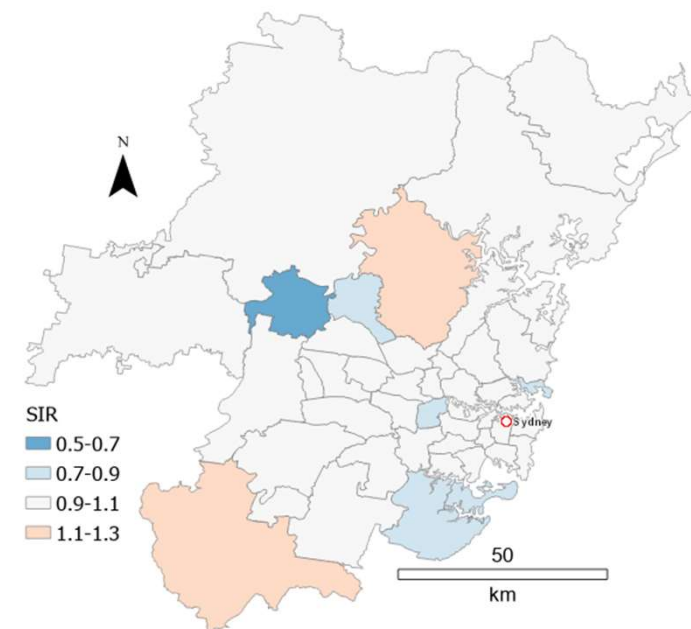
Fig. 2 KRT incidence Sydney 2016-18



Temporal variation was lower in Melbourne - only one area exhibited significant change from 01/03 to 16/18 (Knox). Standardised incidence ratios (SIRs) for Sydney SA3s revealed that most of the geographic variation in incidence could be explained by variation in the age structure of the underlying populations (Fig. 3).

Likewise no significant temporal change in SIRs could be identified, although in some areas (e.g. Mount Druitt) the SIR remained above 1 throughout the period. These areas were generally associated with greater relative socioeconomic disadvantage as measured by the SEIFA Index of Relative Socioeconomic Disadvantage.

Fig. 3 KRT standardised incidence ratio Sydney 2016-18



Conclusions

While adjusted rates such as SIRs are more relevant for understanding causes and risk factors, crude rates remain useful for service planning. By tracking KRT rates across space and time, historical data can be used to identify emerging hot spots of incidence. Doing so early may lend itself not only to service planning, but delivery of interventions targeting early detection of CKD and better practice in those areas.¹

Reference

¹Hawley CM, Pascoe EM. *Kidney International*. 2019; 96: 277-80.