

HETEROGENEITY OF CHRONIC KIDNEY DISEASE WITH AGE IN A MAJOR METROPOLITAN PUBLIC RENAL PRACTICE IN QUEENSLAND, AUSTRALIA.

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on behalf of the NHMRC CKD.CRE and the CKD.QLD collaborative: www.ckdqld.org

Affiliations

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Background and Aim

The prevalence of chronic kidney disease [CKD] in Western populations is estimated to be 10-15%, where longevity is the norm. The aim of this study is to describe, via age, CKD patient characteristics and their outcomes [renal replacement therapy and death].

Methods

1,265 patients were enrolled into the CKD.QLD¹ registry at the Royal Brisbane and Women's Hospital in the Metro North Hospital and Health Service of Queensland Health, Australia.

CKD.QLD is a program for surveillance, practice improvement and research of patients with chronic kidney disease that embraces the renal practice network in the adult public health system in Queensland, Australia. Patient enrolment, by informed consent, commenced in May 2011.

The cohort was grouped according to age into 7 categories: <35, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years, as of time of consent, and followed till start of renal replacement therapy [RRT], death, or a censor date of November 2015.

Patient characteristics were described as mean [SD], proportions as percentage [%], and outcomes were defined as mortality [all cause] or start of RRT.

Results

- 651 of the cohort were male and 614 were female, with mean ages of 66.7 and 65.6 years respectively.
- Primary renal diagnoses by age categories are shown in **Figure 1**. Proportions with renovascular disease [including hypertension] progressively increased with age, from 8% of the patients in the <35 year age group, to 69.4% in the 85+ age group.
- The number of patients with multiple renal diagnoses was 25.5% in those less than 45 years of age, and 47.4% for those 75 years or greater.
- The percentage of patients with advanced stages of CKD [3b, 4 and 5] rose with age, from 24.8% for those <35 years, to 93.9% in those >85years of age, as shown in **Figure 2**.
- Amongst the 19 most common patient comorbidities, 9 were reviewed: coronary artery disease, cardiovascular disease, peripheral vascular disease, hypertension, chronic lung disease, gout, diabetes mellitus, dementia, and sleep apnoea. Of these 9, up to 8 comorbidities were documented per patient, with means of 0.65 in <35 and 2.9 in 85+ age groups, as shown in **Figure 3**. All comorbidities were more common in males [mean 2.8 (SD 1.7)] than females [mean 2.2 (SD1.5)] [p<0.001].
- Mortality rates *increased* from 0 to 17.5 per 100 person years as shown in **Figure 4**.
- RRT rates per 100 person years *decreased* dramatically in age groups greater than 75 years of age, as shown in **Figure 5**.

Fig 1: Primary Renal Diagnosis [PRD] by age groups

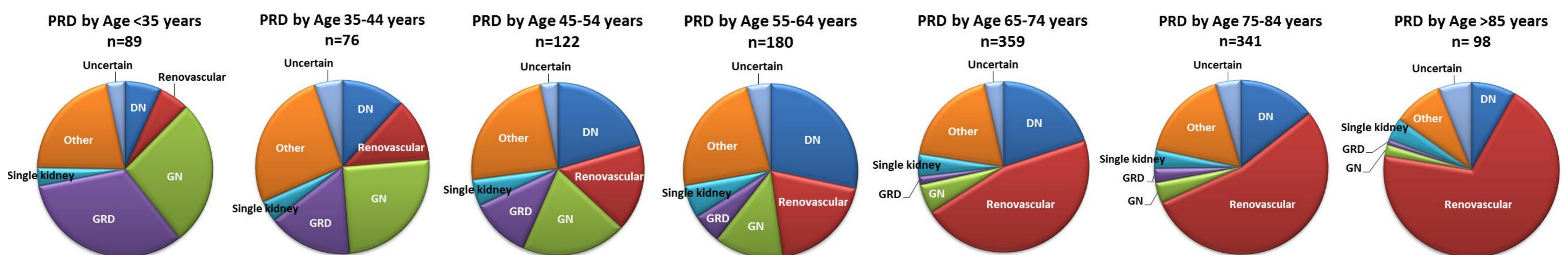


Fig 2. Percentage of CKD stages by age group

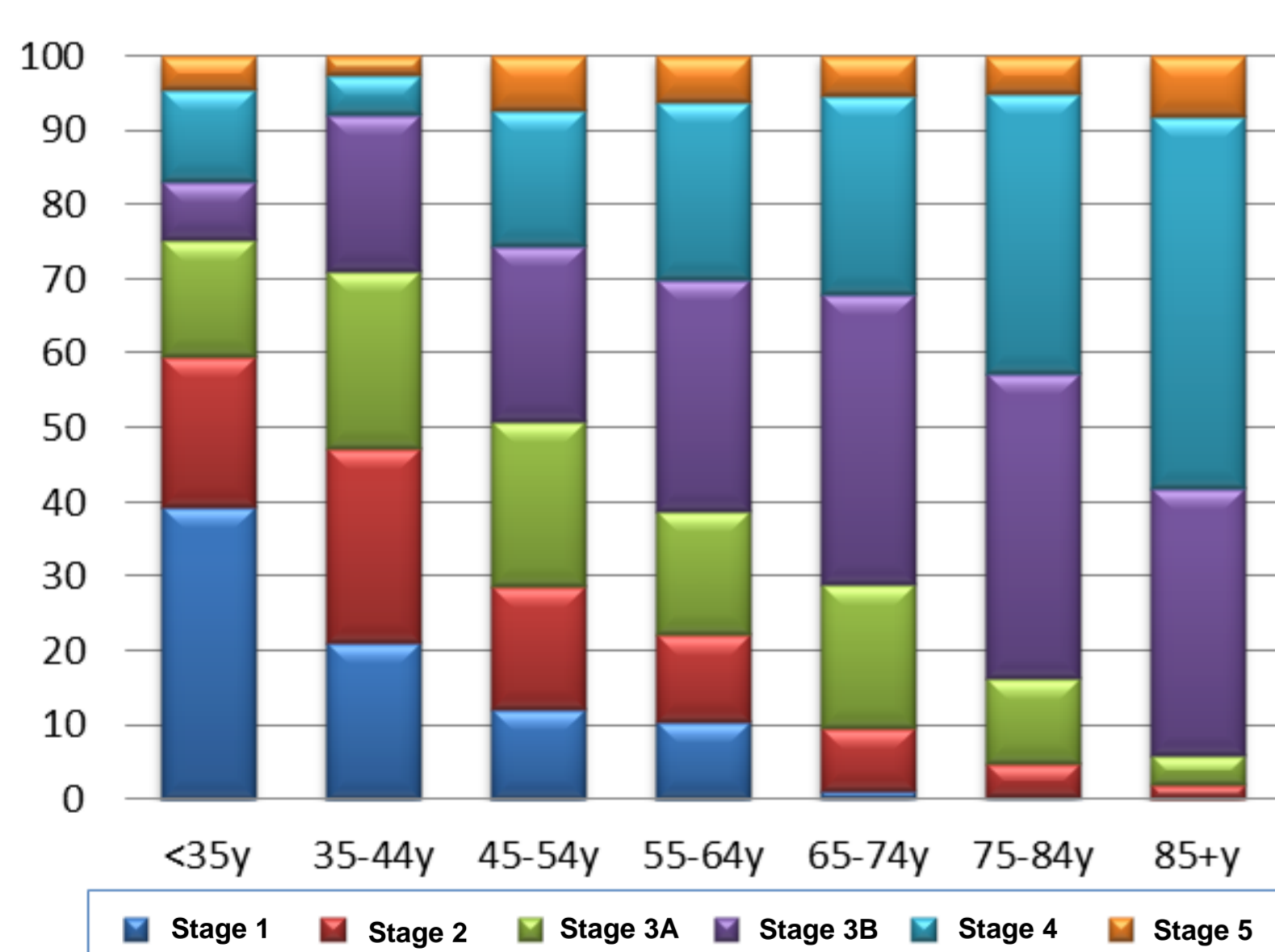


Fig 3. Mean number of comorbidities by age group

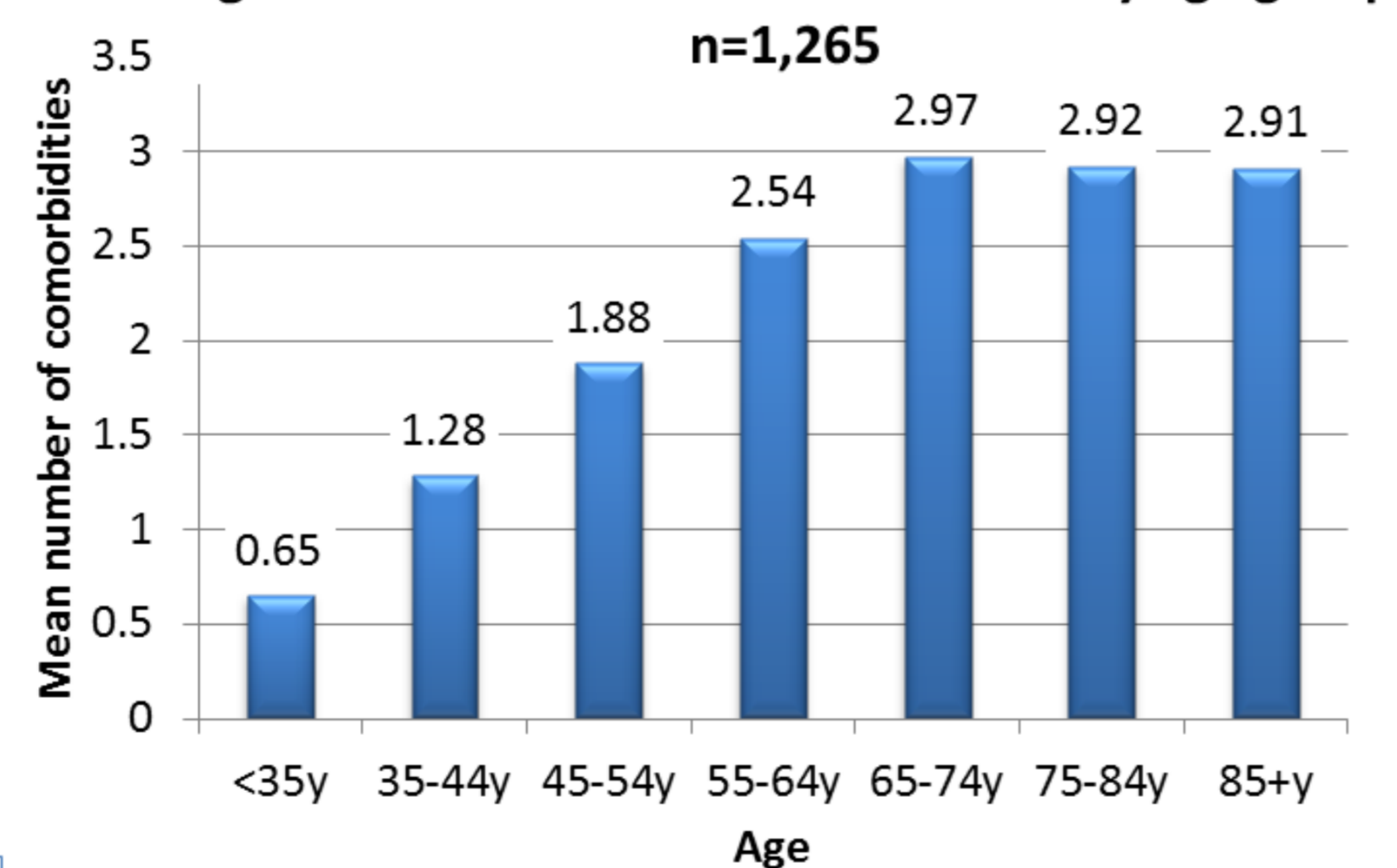


Fig 4. Incidence rates of DEATH by age, per 100 person years

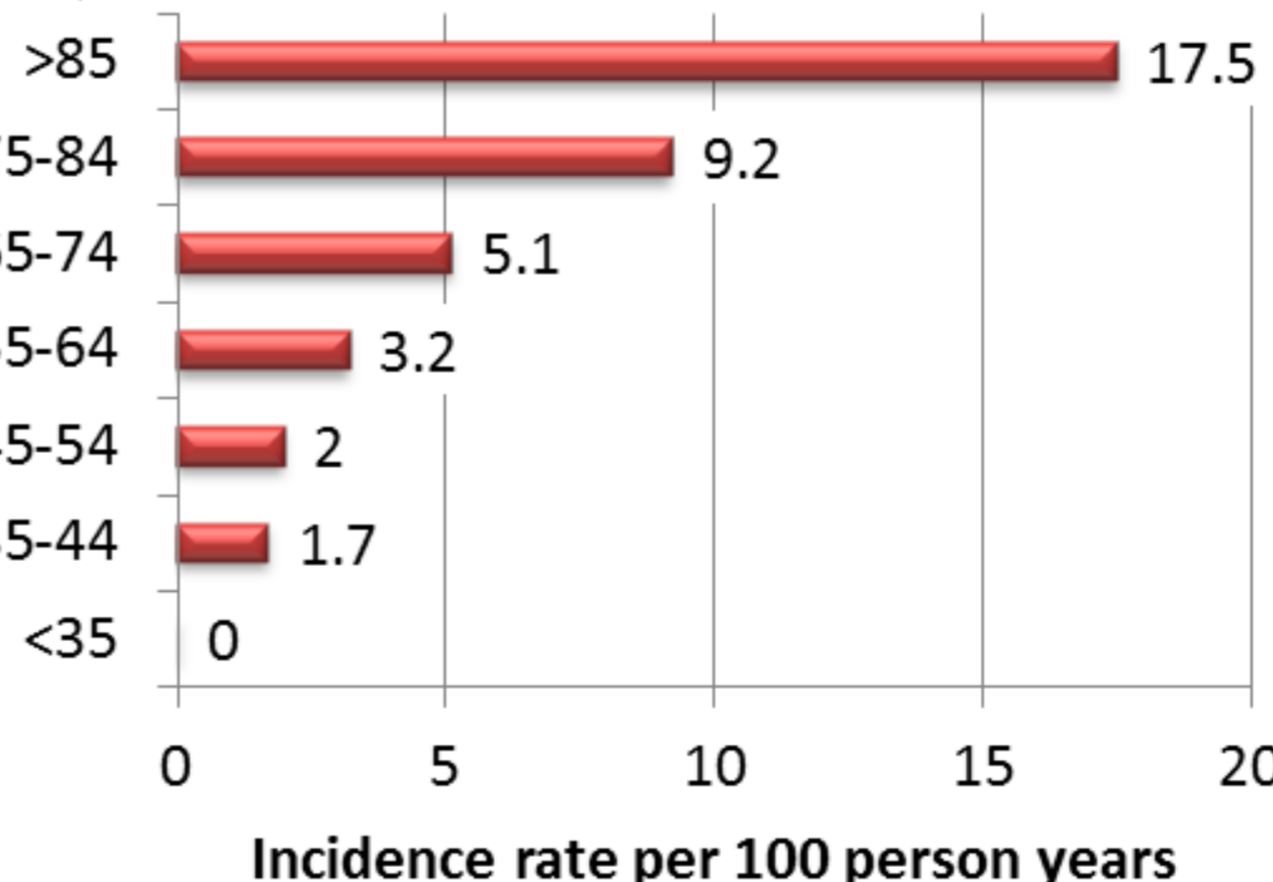
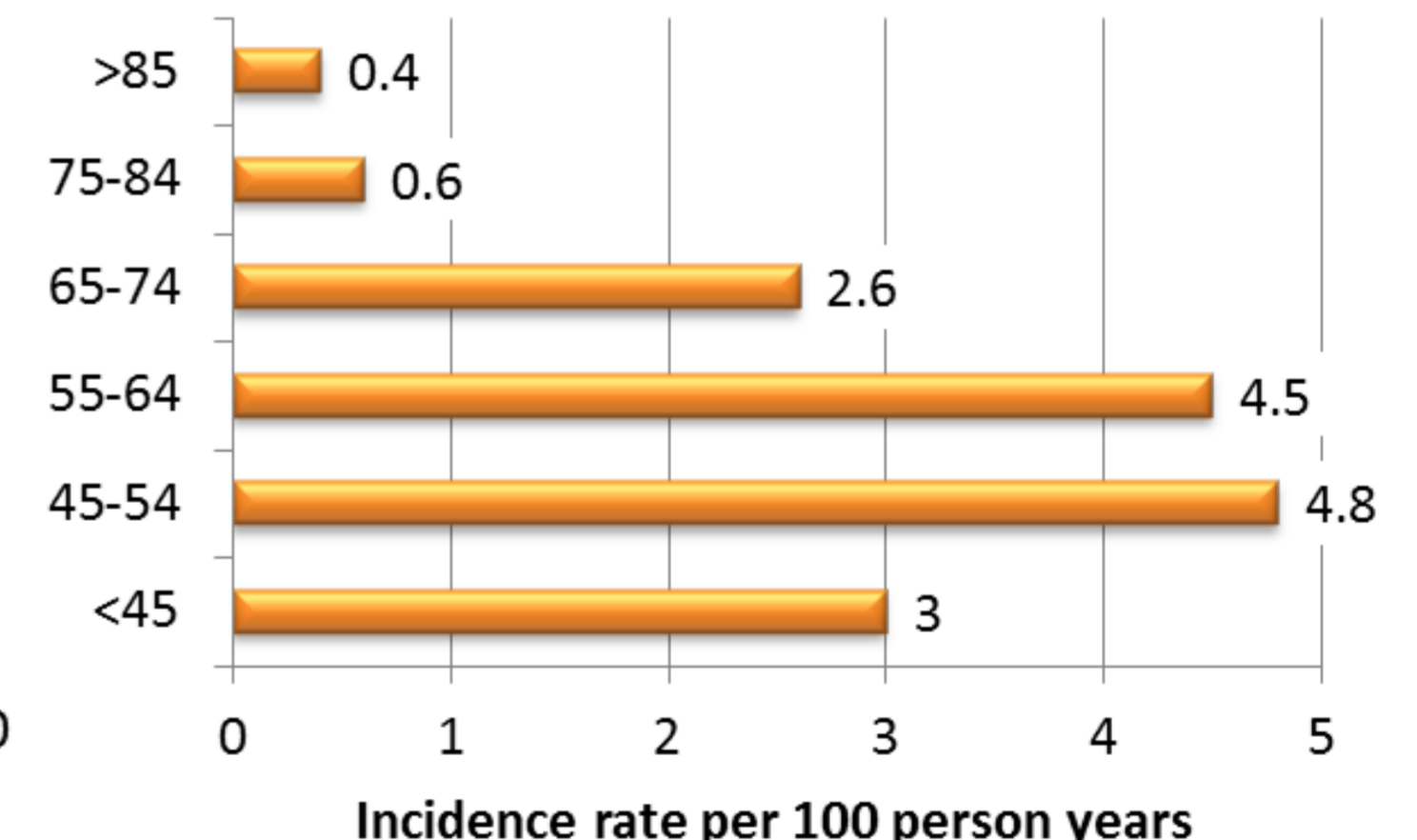


Fig 5. Incidence rates of RRT by age, per 100 per years



Conclusions

The characteristics of CKD patients differ by age, with older people more likely to have vascular and metabolic primary renal disease and advanced stages of CKD. Older people also have higher death rates and less conversion to dialysis.

There is opportunity to personalize CKD care delivery taking this heterogeneity into account, including consideration of supportive or palliative models of care.

References

¹ Venuthurupalli SK, Hoy WE, Healy HG, et al. "CKD.QLD: Growth of Chronic Kidney Disease Surveillance in Queensland, Australia." Invited Review for: "Taming the Chronic Kidney Disease Epidemic: A Global View of Surveillance Efforts". KI 2014.

Enquiries

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