STATE OF THE NATION

CHRONIC KIDNEY DISEASE IN AUSTRALIA

MAY 2014

CKD is common

Around 1.7 million Australians (1 in 10) aged 18 years and over have clinical evidence of chronic kidney disease (CKD)[1]. However, as CKD typically has no symptoms, less than 10% of the people with CKD are aware they have this condition[2]. This means over 1.5 million Australians are unaware they have indicators of CKD.

The most visible outcome of CKD is end stage kidney disease (ESKD); people with ESKD require dialysis or a kidney transplant (together called renal replacement therapy) to stay alive. There are currently 20,766 people in Australia who are on renal replacement therapy[3].

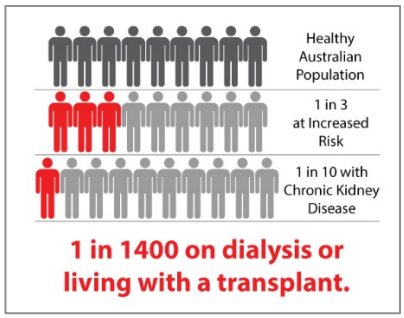

Figure 1: How much CKD in Australia[4]

However, people with CKD are up to 20 times more likely to die from a heart attack or stroke than they are to receive dialysis[5].

Currently, the three most common causes of kidney disease requiring kidney replacement therapy in Australia are diabetes, glomerulonephritis (inflammation of the kidney) and hypertension (high blood pressure)[3].

CKD is resource intensive

The ***health care costs*** associated with CKD are ***higher for people with diabetic kidney disease*** than for any other types of CKD. Diabetic kidney disease is associated with annual direct health care costs of between $3,700 and $4,900 per person – equating to an estimated ***$1 billion per annum***[6].

The cumulative cost (in 2009 dollars) of treating all current and new cases of ESKD from 2009 to 2020 is between approximately $11.3 billion and $12.3 billion[7].

Prevalence of ESKD is growing:

At the end of 2012, the prevalence of ESKD being treated with kidney replacement therapy was 916 patients per million population (pmp)[3]. This figure has increased from 605 patients pmp in 2000.

While glomerulonephritis continues to make the largest contribution to the prevalence of treated-ESKD, the growth in prevalence has been fuelled by a ***130% increase in ESKD due to diabetes in the last decade*** (Figure 2)[6].

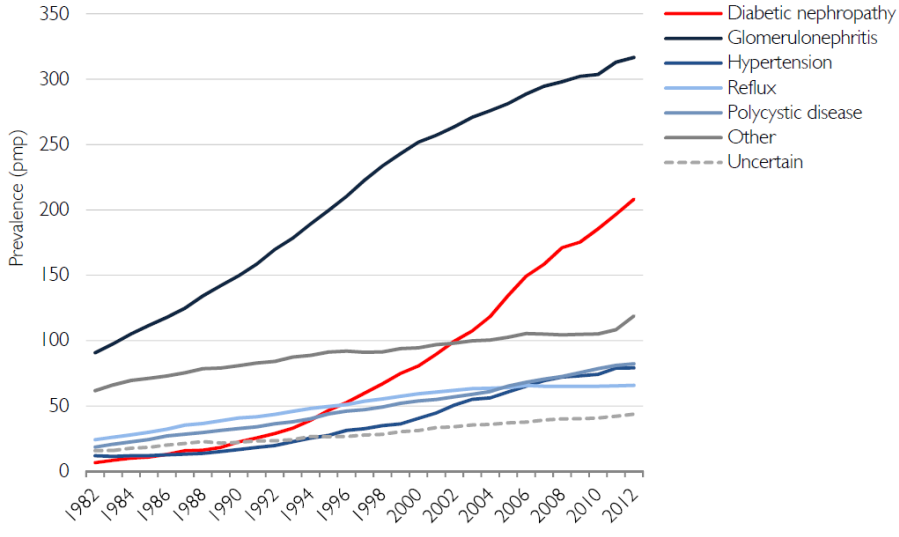

Figure 2: Growth in the prevalence of treated-ESKD by primary cause of ESKD in Australia, 1982-2012[6]

Opportunities for improvement:

Men have a higher prevalence of CKD compared with women (Figure 3). This is particularly evident in the 65-74 years age group (25.3% versus 16.3%)[8].

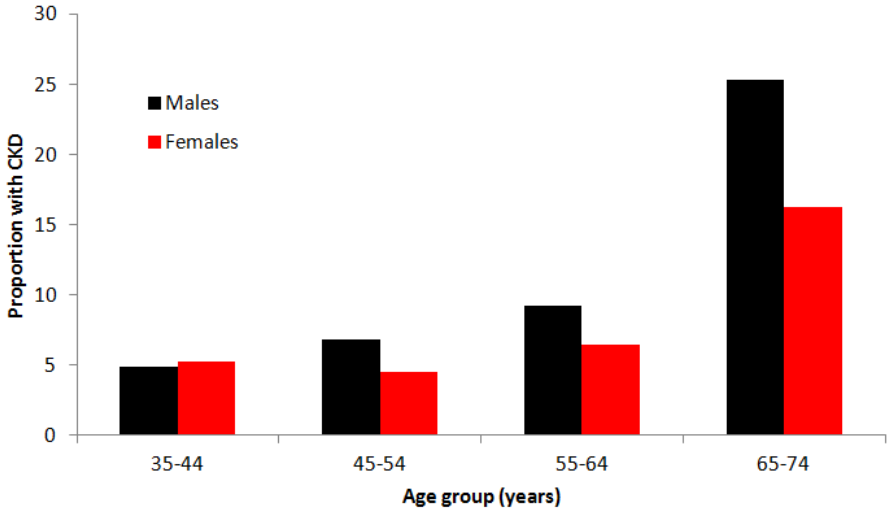

Figure 3: Chronic kidney disease by age and gender[8]

Lower socioeconomic status is associated with a higher prevalence of CKD; 13.5% of people with the lowest socioeconomic status have clinical evidence of CKD compared with 8.4% of people with the highest socioeconomic status [8].

Aboriginal and Torres Strait Islander people are more likely than other Australians to be hospitalised for dialysis. The Indigenous age-standardised rate for regular dialysis hospitalisations is at least 7 times the rate for other Australians[9].

The rate of treated-ESKD is around twice as high for people living in ***remote and very remote areas*** compared with people living in major cities[9]**.** Men have higher rates of treated-ESKD than females in major cities, inner regional and outer regional areas (Figure 4).

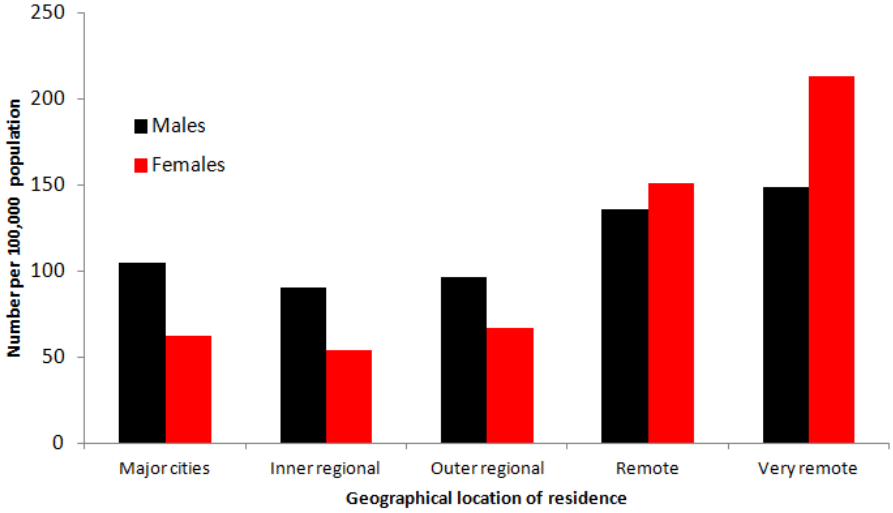

Figure 4: Rates of treated-ESKD by gender and geographical location of residence[9]

The higher rates of treated-ESKD for females in remote and very remote areas is likely due to relatively high proportion of Aboriginal and Torres Strait Islander peoples living in these areas. Aboriginal and Torres Strait Islander females are more likely than Aboriginal and Torres Strait Islander males to develop ESKD in remote and very remote areas[10].

Incidence of ESKD is stabilising:

In Australia, after a period of linear growth ***the rate of patients pmp starting renal replacement therapy ("incidence rate") appears to have stabilised*** at 112 patients pmp in 2012[3]. This is consistent across all age groups (Figure 5)[11].

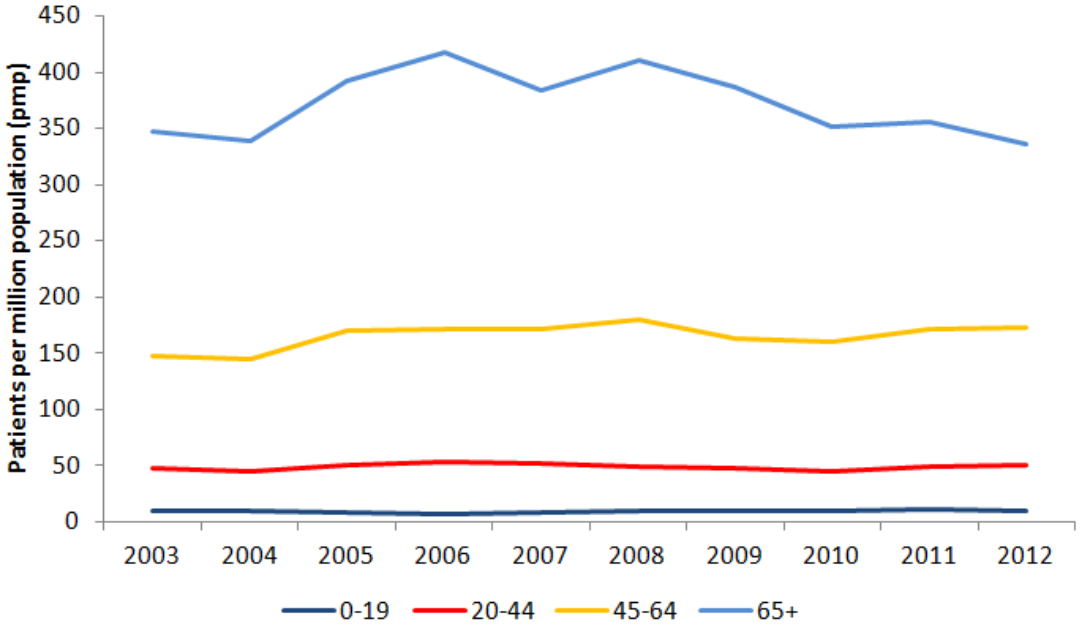

Figure 5: Trends in the incidence of treated-ESKD by age[11]

The stabilisation in new patient rate is particularly evident when looking at the incidence of ESKD in Australia due to diabetes. After a period of linear growth between 1990 and 2005, the yearly incidence of ESKD due to diabetic nephropathy appears to be steady at approximately 40 patients pmp (Figure 6)[6].

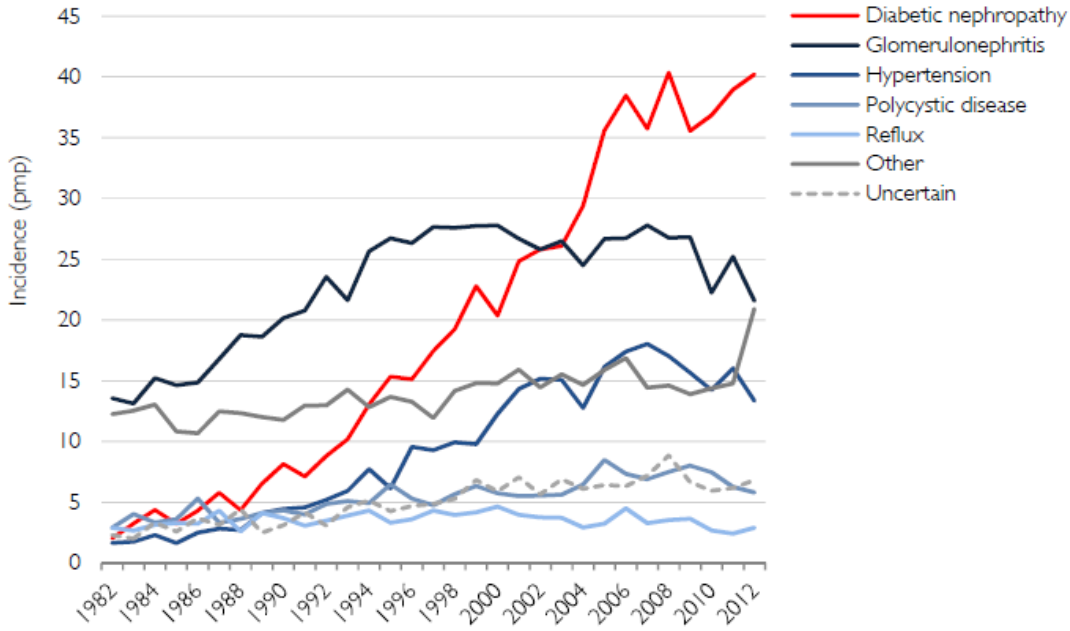

Figure 6: Trends in the incidence of ESKD in Australia by primary cause[6]

Opportunities for improvement:

The rates of new cases of treated ESKD due to diabetic nephropathy have declined from 2006 onwards in the United States, Canada, and several European countries. It is likely that ***better diabetic management*** plus ***early detection*** and the utilisation of ***pharmacological intervention*** have reduced the incidence and progression of diabetic nephropathy[6].

The incidence of treated-ESKD is higher in ***males*** than in females (138 patients pmp versus 83 patients pmp)[11]. This gender gap has steadily increased over the past decade (Figure 7).

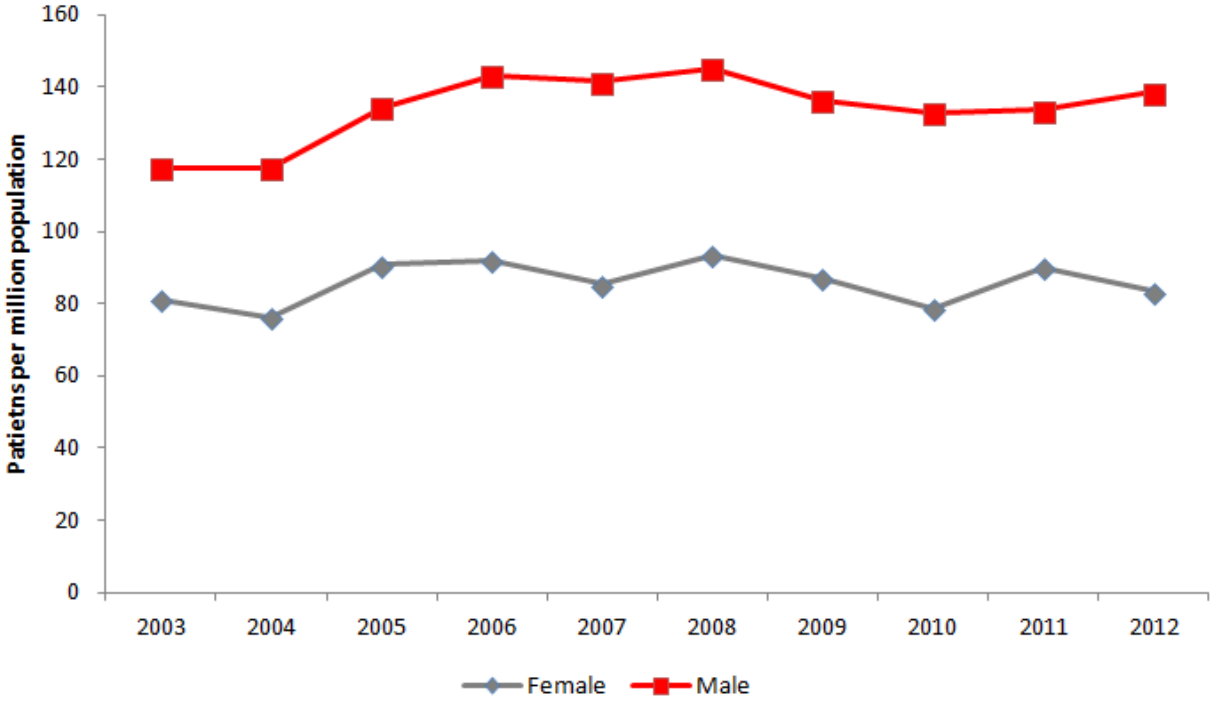

Figure 7: Trends in the incidence of treated-ESKD by gender[11]

CKD is harmful

In Australia, someone dies with kidney related disease ***every 25 minutes***.

The presence of even mild protein in the urine (proteinuria) substantially shortens the estimated life expectancy of men and women of all ages[12]. For ***a 40 year old male, mild proteinuria will shorten your life by 8 years on average*** (Figure 8).

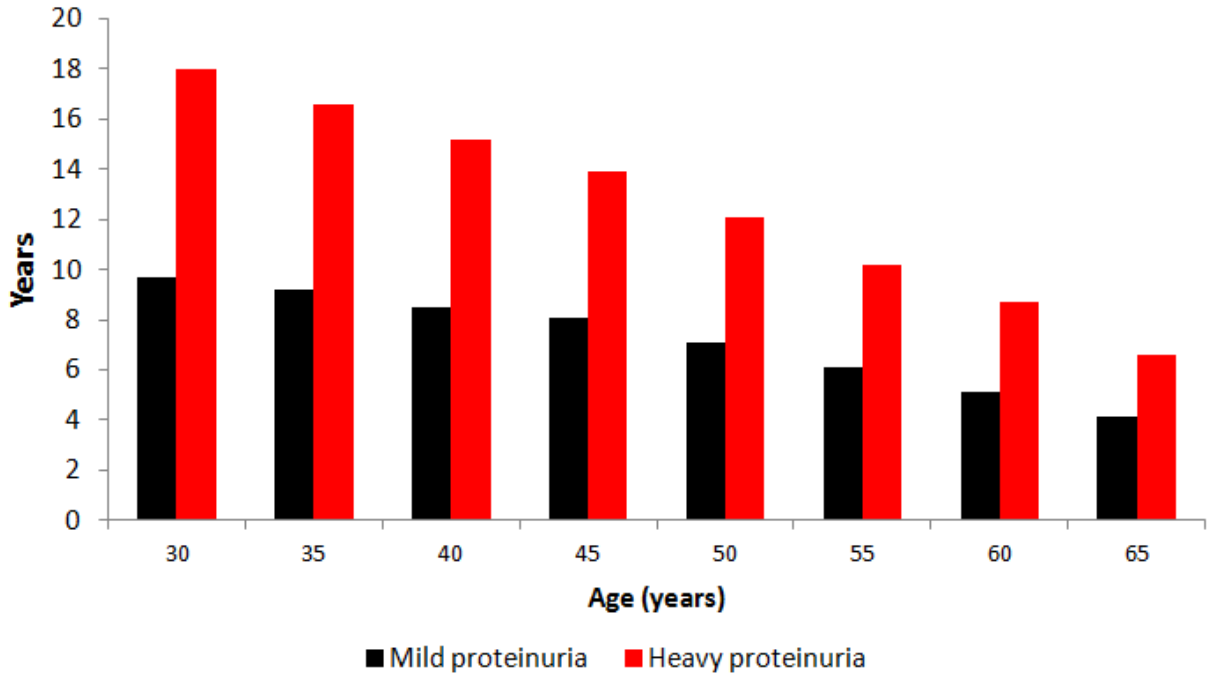

Figure 8: Number of years that life expectancy is reduced in males with mild or heavy proteinuria compared to normal protein levels[12]

Someone with CKD is up to 20 times more likely to ***die from a heart attack or stroke*** than they are to progress to ESKD requiring dialysis or transplant[5]. This holds true for even the early stages of CKD. For those that do receive a transplant or go on to dialysis, the ***survival rate*** at five years is ***worse than most common cancers*** (Figure 9)[13].

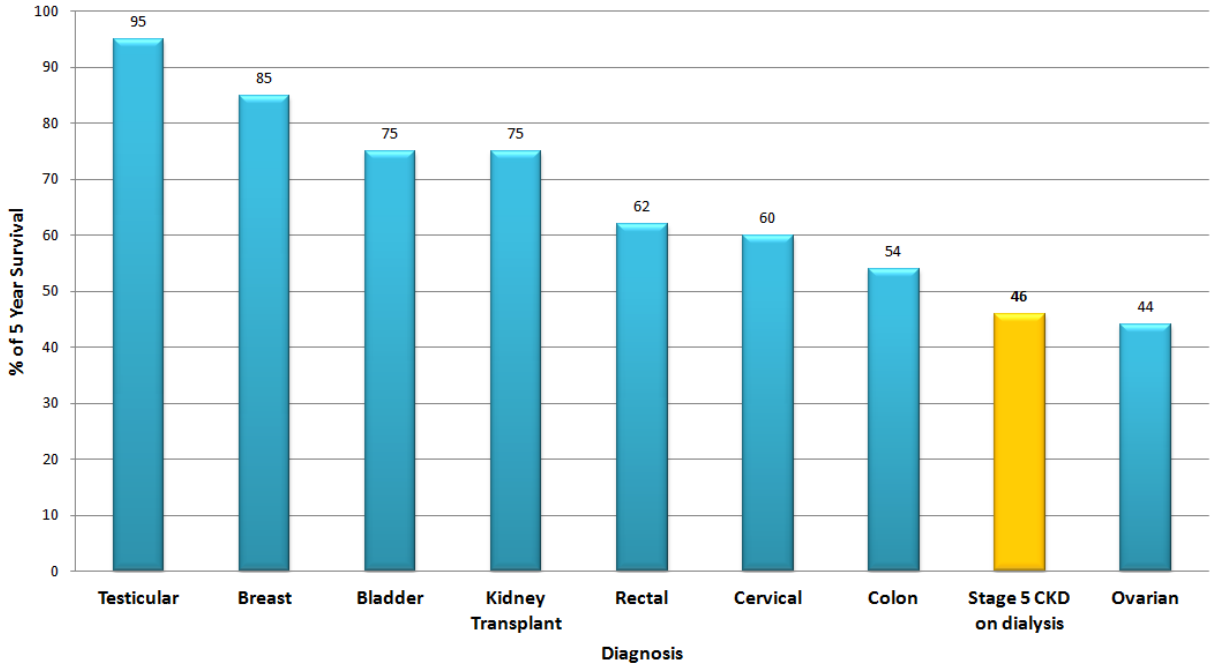

Figure 9: Five year survival of patients aged 60 years with common cancers compared with CKD[13]

Death rate is stabilising:

The number of deaths due to kidney failure (including chronic and acute kidney failure) has been stable over the last five years (Figure 10)[14].

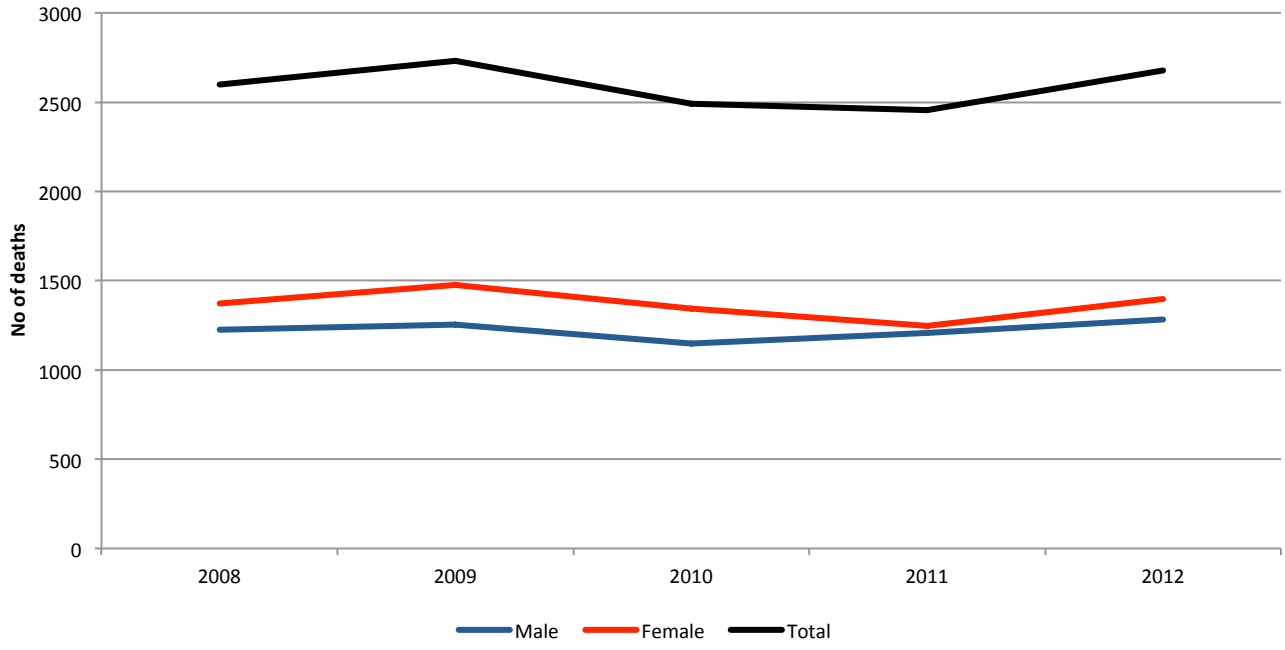

Figure 10: Cases where kidney failure is reported as a cause of death[14]

Opportunities for improvement:

Men are more likely than women to die from kidney failure (11.5 vs 8.3 deaths per 100,000 population per year)[14].

People living in ***remote and very remote areas*** have a CKD death rate twice as high as people in major cities (23.9 vs 10.8 deaths per 100,000 population per year)[9].

CKD can be prevented

Opportunities for improvement:

CKD is often not recognised in primary care. Among people with abnormal kidney function, only 18% were correctly identified as having CKD (Figure 11)[15].

Many patients with CKD are not receiving optimal management. Every second person with CKD receiving blood pressure medication ***does not have their blood pressure controlled to target levels***[15].

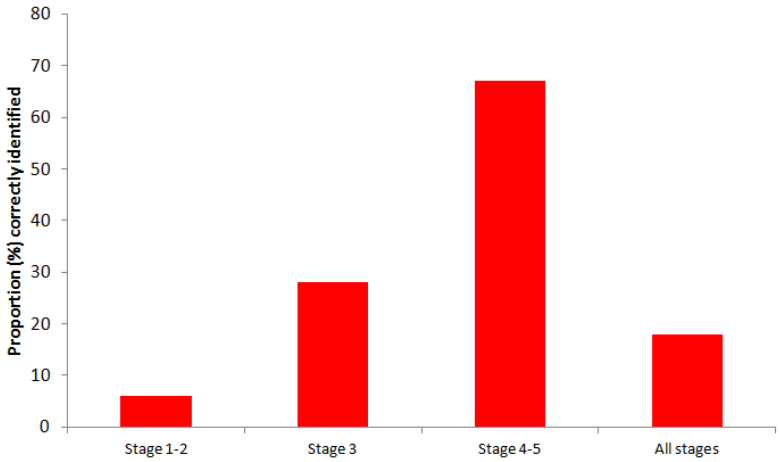

Figure 11: GP's recognition of CKD among those with kidney function recorded and available[15]

Many factors that lead to an increased risk of developing CKD are modifiable. A striking ***63% of people with CKD are overweight or obese***, and at least 51% have a waist circumference that puts their health at risk (Figure 12)[8].

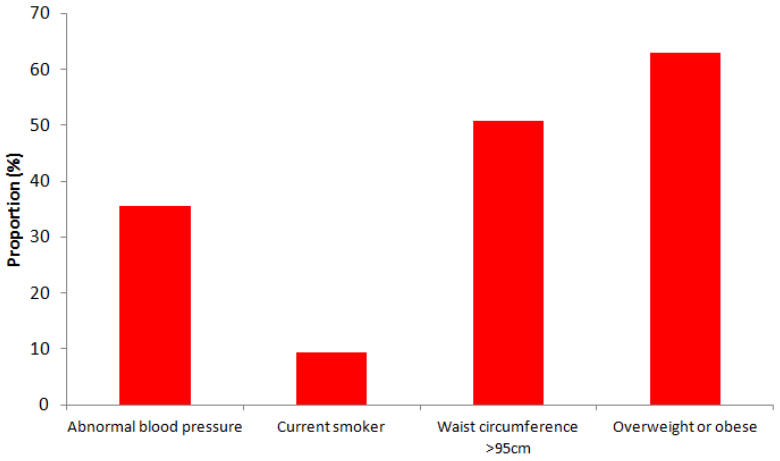

Figure 12: Prevalence of health risk factors in persons aged 18 years and over with CKD[8]

Uncontrolled blood pressure remains an issue, with 1 in 3 of people with CKD recording an abnormal blood pressure[8].

Around 1 in 4 people with CKD have ***abnormal cholesterol levels***, and a similar number have HbA1c results that indicate they either have ***diabetes*** or are at high risk of developing diabetes[8].

Summary

The State of the Nation of CKD in Australia (2014) has outlined the current situation of CKD in this country. More and more people are living with or are at risk of developing CKD. Growing numbers are dying prematurely from cardiovascular disease. A small number progress to requiring dialysis or transplant; "treatments" with a survival rate lower than most common cancers.

Inequities in gender, geographic location and socioeconomic status all provide opportunities for improvement.

Early detection and optimal management of CKD has great potential to attenuate the future health burden attributable to CKD in Australia.

Acknowledgements

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