

# Chapter 1: Summary of Findings in the 2007 UK Renal Registry Report

In 2006, the overall annual acceptance rate for the whole UK was 113 pmp, an increase from 110 pmp in 2005. The rates in England (109 pmp) and Wales (135 pmp) continued to increase, whilst those in Scotland (114 pmp) and Northern Ireland (114 pmp) have fallen. From 2002 to 2006 there has been a 12% rise in the number accepted, the percentage rise being greater in England (14%) than in Scotland (5%) and Wales (4%).

The median age of patients starting RRT in the UK was 65.0 years. In non-Whites this was 59.1 years. By day 90, 8% had died and <1% stopped treatment. HD was the first modality of RRT in 77% of patients, a rise from 58% in 1998. 23% of all patients were referred late (<90 days before RRT start), a slight fall from previous years. Diabetes (either as primary renal disease or co-morbidity) and ischaemic heart disease were the most common co-morbid conditions, seen in 29% and 24% of patients respectively.

In univariate Cox regression analysis, the association for most co-morbid conditions with mortality at 1 year after 90 days from start of RRT, was more pronounced for patients <65 years compared to those aged  $\geq 65$  years. In multivariate Cox analysis, malignancy and ischaemic/neuropathic ulcers were the strongest predictors of poor survival, followed by liver disease, increasing age, previous MI and diabetes.

At the end of 2006, 43,901 adult patients were receiving RRT in the UK, a population prevalence of 725 pmp, an increase from 694 pmp in 2005 (6.9% growth). The growth in England (7.6%) exceeded that in Wales (4.0%), Scotland (3.5%) and Northern Ireland (4.5%). For all ages, crude prevalence rates in males exceeded those in females, peaking in the 75–79 age band for males at 2,411 pmp and in females in the 60–64 age band at 1,221 pmp.

Of RRT patients in the UK, 45% had a transplant, 43% were on centre-based HD,

1% on home HD and 11% on PD which is falling.

The age adjusted survival of incident patients starting RRT continued to improve. There was an improvement for patients starting on HD and PD. The one year after 90 day survival was 87.3% (95% CI 86.7–88.1). There has been a survival improvement for both the under and over 65 year age groups. The last 8 years have shown an annual 3% relative improvement in survival in both the under and over 65 year age group.

The 'vintage effect' of increasing hazard of death with length of time on RRT, prominent in data from the US, was not seen in the UK within the 9 year incident cohort follow up period.

The 5 year survival rates (including deaths within the first 90 days) were 87%, 78%, 67%, 48%, 29% and 18% respectively for patients aged 18–34, 35–44, 45–54, 55–64, 65–74 and >75 years (last years published survival data had an error).

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Overall, 80% of prevalent haemodialysis patients met the UK Renal Association standard for URR (>65%) in 2006 an increase from 56% in 1998.

At start of RRT, 40% of patients had a Hb <10 g/dl. The median Hb at commencement of dialysis was 10.4 g/dl. By 3 and 6 months after the start of RRT, 80% and 86% of incident patients had a Hb  $\geq 10$  g/dl respectively. The median Hb on HD was 11.8 g/dl and 12.0 g/dl on PD.

The median ferritin in HD patients was 418  $\mu\text{g/L}$  with 95% having a ferritin 100  $\mu\text{g/L}$ . The median ferritin in PD patients was 250  $\mu\text{g/L}$  with 85% having a ferritin 100  $\mu\text{g/L}$ .

A higher proportion of HD patients required ESA therapy than PD patients (93% vs 79%).

The mean ESA dose was higher for HD than PD patients (9,223 vs 5,969 IU/week).

A serum phosphate of  $<1.8$  mmol/L was achieved by 67% of dialysis patients (65% of HD patients, 73% of PD patients). An adjusted serum calcium concentration between  $\geq 2.2$ – $\leq 2.6$  mmol/L was achieved by 75% of dialysis patients (74% of HD patients, 79% of PD patients). A serum calcium\*phosphate product within the KDOQI guidelines was achieved by 71% of dialysis patients (70% of HD patients, 75% of PD patients). A serum PTH  $<32$  pmol/L was achieved by 61% of dialysis patients (61% of HD patients, 60% of PD patients). Longitudinal analysis continued to show year-on-year improvement in achievement of Renal Association biochemical standards.

Serum bicarbonate of  $\geq 20$ – $\leq 26$  mmol/L was achieved by 70% of HD patients. Serum bicarbonate of  $\geq 25$ – $\leq 29$  mmol/L was achieved by 53% of PD patients.

A total serum cholesterol concentration of  $<5$  mmol/L was achieved by 83% of dialysis patients (85% of HD patients and 71% of PD patients). A total serum cholesterol  $<5$  mmol/L was achieved by 67% of transplant patients.

The percentage of patients achieving the combined BP standard pre-HD ( $<140/90$  mmHg) averaged 44% and post-HD ( $<130/80$ ) averaged 48%. 30% of PD patients and 25% of renal transplant recipients achieved the standard of  $<130/80$ . Over the last 9 years there has been no significant change in systolic or diastolic BP achievement. This suggests poorly achieving centres have failed to adopt a systematic approach to blood pressure control.

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The total number of patients active on the renal transplant waiting list on 31/12/2006 was 6,220, an 8% increase from 2005. In 2006, heart beating deceased donor numbers decreased by 1% compared to 2005. In comparison, non-heart beating deceased donors and living kidney donors increased by 25% and 24% respectively.

The proportion of renal transplants performed from deceased heart beating donors fell from 60% in 2005 to 55% in 2006. In 2006, 12.5% of incident transplants were performed in patients with diabetes, similar to 2005.

On 31/12/2006, 46% (20,262) of prevalent RRT patients, had a functioning transplant. During 2006, the death rate in prevalent transplant patients was 2.4/100 patient years. An additional 3.2% of all prevalent transplants failed with patients returning to dialysis.

There were wide and unexplained variations between centres in the percentage of prevalent dialysis patients on the renal transplant waiting list and also the time taken to listing incident patients.

Results from the joint RA/BTS survey highlighted centre differences in resource allocation and clinical practices governing access to renal transplantation in both transplant and non-transplanting centres.

The median eGFR in patients with a functioning kidney transplant was 46 ml/min/ $1.73$  m<sup>2</sup>, with 17% of prevalent transplant recipients having an eGFR  $<30$ . The median eGFR 12 months after transplantation for patients transplanted in 2001–2005 was 49 ml/min/ $1.73$  m<sup>2</sup>.

The median Hb in prevalent transplant recipients was 12.8 g/dl, with 4% of patients having a Hb  $<10$  g/dl. The median Hb 12 months after transplantation for patients transplanted in 2001–2005, was 13.0 g/dl.

Transplant function analysed by CKD stage 1–2T, 3T, 4T and 5T, showed that these categories account for 24%, 59%, 15% and 2% of prevalent transplant patients respectively. Clinical and biochemical variables deteriorate with declining eGFR and patients with CKD stage 4T and 5T were less likely to achieve RA standards compared to prevalent patients on dialysis.

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