

# The Renal Association UK Renal Registry

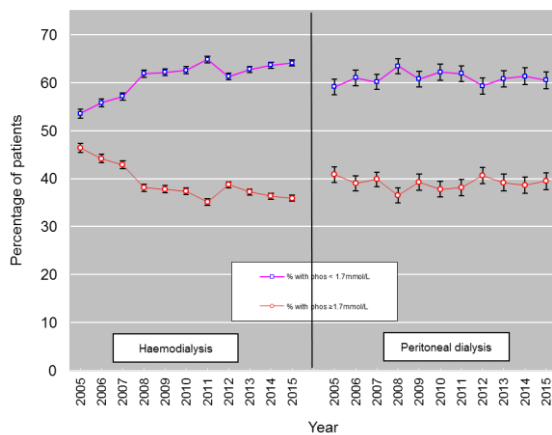


## Biochemical Variables Amongst UK Adult Dialysis Patients in 2015

The UK Renal Registry (UKRR) collects routine biochemical data from clinical information systems in renal centres in England, Wales and Northern Ireland and receives data from Scotland via the Scottish Renal Registry. Annual analyses are done on some of these data items to determine centre performance against national (Renal Association (RA)) clinical performance measures. This enables renal centres to compare their own performance against each other and to the UK average performance. The full chapter also includes wider analyses which show whether there have been changes over time.

The full chapter reports on phosphate, bicarbonate and simultaneous control of adjusted calcium, phosphate and parathyroid hormone (PTH) for people on dialysis (haemodialysis (HD) or peritoneal dialysis (PD)). Completeness of data returns to the UKRR was generally good for these data. Data were analysed for the stable group of people who had been receiving the same type of dialysis at the same renal centre for at least three months. All results are unadjusted for case-mix.

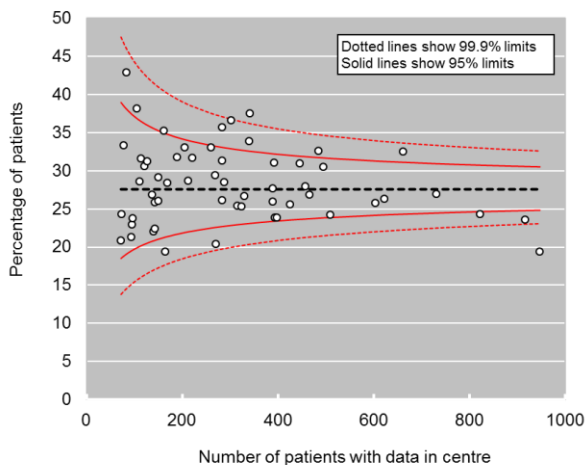
Figure 1 shows the percentage of patients meeting the target for phosphate by year and dialysis type. It also shows the percentage of people who were either above the target range (i.e.  $\geq 1.7$  mmol/L) or within the target range (i.e.  $< 1.7$  mmol/L). For 2015, 64.1% of HD and 60.5% of PD patients achieved the audit measure.



**Figure 1.** Longitudinal change in the percentage of patients with phosphate below and above the 2015 RA standard by dialysis modality 2005–2015

The full annual report chapter looks at the simultaneous control of all three of the bone and mineral disorder (BMD) parameters. For the purpose of these analyses an adjusted calcium between 2.2–2.5 mmol/L, a phosphate level being maintained between 1.1–1.7 mmol/L and a PTH between 16–72 pmol/L were evaluated in combination. Simultaneous control of all three parameters within these ranges was achieved by 27.6% of HD and 33.1% of PD patients. Figure 2 shows the funnel plot of this information for people receiving HD treatment. Each centre's percentage is shown by a white dot and these are plotted against the number of people the centre has on HD. The thick dotted line shows the average achievement (27.6%) and the red curved lines (funnels) give a measure of where you would expect most centres to fall within. Some will fall outside these curves by random chance, however the plot allows you to see the

variability between centres and whether any have markedly lower or higher percentages than the others. There are many possible reasons for such differences, for example, there may be problems with the data transfer, differences in assays used, differences in patient characteristics or differences in the use of drugs.



**Figure 2.** Funnel plot for percentage of patients on HD achieving simultaneous control of all three BMD parameters in preventing severe hyperparathyroidism by centre in 2015

Serum bicarbonate levels have not changed markedly over time with 64.3% of HD and 80.4% of PD patients achieving the audit measure for bicarbonate in 2015. A persistent percentage of HD patients remain with raised bicarbonate levels.

With a growing evidence base, audit measures for kidney disease increasingly include tighter biochemical specification limits. Observations outside the target ranges need to be interpreted cautiously as this may relate to different clinical problems or population characteristics. These will therefore require different strategies to improve centre performance of clinical audit measures.

In 2015 there was ongoing improvement in the management of BMD. In order to optimise BMD control further, it is necessary to explore these more fully, for example, to consider a number of case mix factors. To do this the UKRR needs an enhanced dataset from each centre. Many centres are updating their IT systems, with an ambition that all new developments will comply with the National Renal Dataset. Thus, in future analyses, it may be possible to integrate details of:

- assays used for the biochemical parameters
- the local reference ranges adhered to
- the dialysis dose and dialysate concentrations prescribed

as well as accessing all details of phosphate binder, factors affecting calcium levels and vitamin D analogue use.

For the complete annual report, please visit the UK Renal Registry website:

[www.renalreg.org/reports/2016-nineteenth-annual-report/](http://www.renalreg.org/reports/2016-nineteenth-annual-report/)