

## Outcomes in the first 90 days after starting dialysis – transition of the UK Renal Registry to capture of all acute and chronic dialysis sessions

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### Introduction

Registries report survival of renal replacement therapy (RRT) recipients, but typically discount individuals who died within 90 days of initiation, or who recovered renal function. Where 90-day mortality is reported, only individuals coded by their treating centre as having reached end-stage kidney disease (ESKD) tend to be included. Current data are thus of limited utility when prognosticating for individuals starting dialysis, especially where initiation is for acute kidney injury, where death and recovery tend to happen early. From 1st January 2015 UK renal centres were required to report any patient having even a single dialysis session to the UK Renal Registry (UKRR). This project describes survival and recovery of renal function amongst adults who received their first ever dialysis session between October 1st, 2015 and September 30th, 2016.

### Methods

Routinely-collected data were used to identify all individuals >18 years of age who received their first ever haemodialysis or peritoneal dialysis in the UK during the identified period. Patients starting dialysis after a failed transplant were excluded. Individuals were followed-up for 90 days after initiation. Timeline codes relating to death, recovery of renal function and transition from acute to chronic dialysis were utilised. Unadjusted Kaplan Meier plots were used to compare individuals who started dialysis acutely with those coded as having ESKD at initiation.

### Results

Data came from 70/71 UK adult renal centres (one exclusion due to missing data). Between 1st October 2015 and 30th September 2016, 8,673 individuals received their first ever dialysis session (82.2% haemodialysis) [Figure].

- 6,905 (79.6%) were included in the corresponding registry report
- 6,241 (72.0%) started for ESKD (75.4% haemodialysis, median age 65.1, IQR 52.4-74.9)
- 2,432 (28.0%) started acutely (99.7% haemodialysis, median age 69.0, IQR 57.05-77.5)
- 848 (9.8%) died within 90 days, of whom 551 (65.0%) started acutely
- 7,825 (90.2%) were alive at 90 days
  - o 6,517 (83.3%) of whom were receiving RRT (acquiring a diagnosis of ESKD)
  - o 1,250 (16.0%) were not receiving RRT
- 731 (8.4%) started dialysis acutely and were subsequently diagnosed with ESKD
  - o 42 (5.7%) of whom died before day 90
- At 90 days, both survival off RRT and death were higher amongst individuals who started acutely (survival off RRT: 1,155 (47.5%) vs. 95 (1.5%); death: 551 (22.7%) vs. 297 (4.8%))
- Older individuals had higher mortality. However, survival was dominated by start type, such that over-75-year-olds who started dialysis chronically had lower mortality at all time points than under-60-year-olds who started acutely
- Amongst 790 over-75-year olds who started acutely, 505 (36%) died within 90 days

### Conclusion

Current approaches to early survival reporting for individuals receiving RRT are problematic. Exclusion of acute dialysis recipients overestimates survival in the first 90 days following initiation and introduces clinician subjectivity regarding who is included in the dataset. These issues will affect all renal registries. Now that the UKRR collects outcomes for all individuals starting RRT, future survival reports and analyses can accurately reflect real-world outcomes following dialysis initiation.