

Chapter 2: Introduction to the 2005 Report

The UK Renal Registry is part of the Renal Association and provides independent audit and analysis of renal care in the UK. The Registry is funded directly by participating renal units through an annual fee per patient registered.

Geographical areas covered by the UK Renal Registry

The areas covered by the UK Renal Registry and the completeness of such cover, are illustrated in Figure 2.1. All the participating centres are shown in Table 2.1.

The Scottish Renal Registry provided demographic data from the whole of Scotland. Summary data from Northern Ireland on incidence and prevalence were also obtained.

Centres in the 2005 Registry Report

All the renal units in England & Wales and also the Scottish Registry run the CCL Proton software, except:

Ipswich and Bangor (Baxter system), Aberdeen, Brighton & Newcastle (CCL clinical vision), Kings & The London (Renalware), Airdrie, Basildon, Chelmsford, Dorset, Dundee & Norwich (Mediqal eMed), Shrewsbury & Stevenage (Renalplus) and Birmingham QEH, Hammersmith & Hope Hospital (own systems).

Future coverage by the Registry

From the data presented here, it can be seen that the report on the 2004 data covers nearly 90% of the UK for some items and that by the end of 2005 some 94% of the UK will be covered by the Registry. With the recommendation in the Renal National Service Framework (NSF) that all renal units should participate in audit

through the Registry, coverage is almost complete. The Health Care Commission (HCC) wishes to use the Registry as one vehicle for monitoring implementation of the NSF. Commissioners of renal services will thus be encouraged to enable the provision of adequate data systems for all renal units to join the Registry.

There have recently been 3 new renal units created:

1. Cheshire (previously a satellite of the Wirral renal unit) will be submitting data via Liverpool.
2. Aintree (previously a satellite of the Liverpool renal unit) will be submitting data via Liverpool.
3. Colchester.

Dialysis and transplant patients in Northamptonshire were previously under the Oxford renal unit and have been transferred to the Leicester renal unit.

Centres submitting 2005 data

The renal units shown in Table 2.2(a) plan to have their IT systems set up and running in time to submit 2005 data.

Progress of other centres

It is hoped to include the Middlesex/UCH and St George's in 2006 (Table 2.2(b)).

The two remaining renal units in England without renal IT systems are Manchester Royal Infirmary and the Kent and Canterbury Hospital (Table 2.2(c)).

Completeness of returns for four important data items

This year the Registry has included a table of completeness for 4 important data items that it has been trying to improve returns upon. Centres have been ranked on their average score

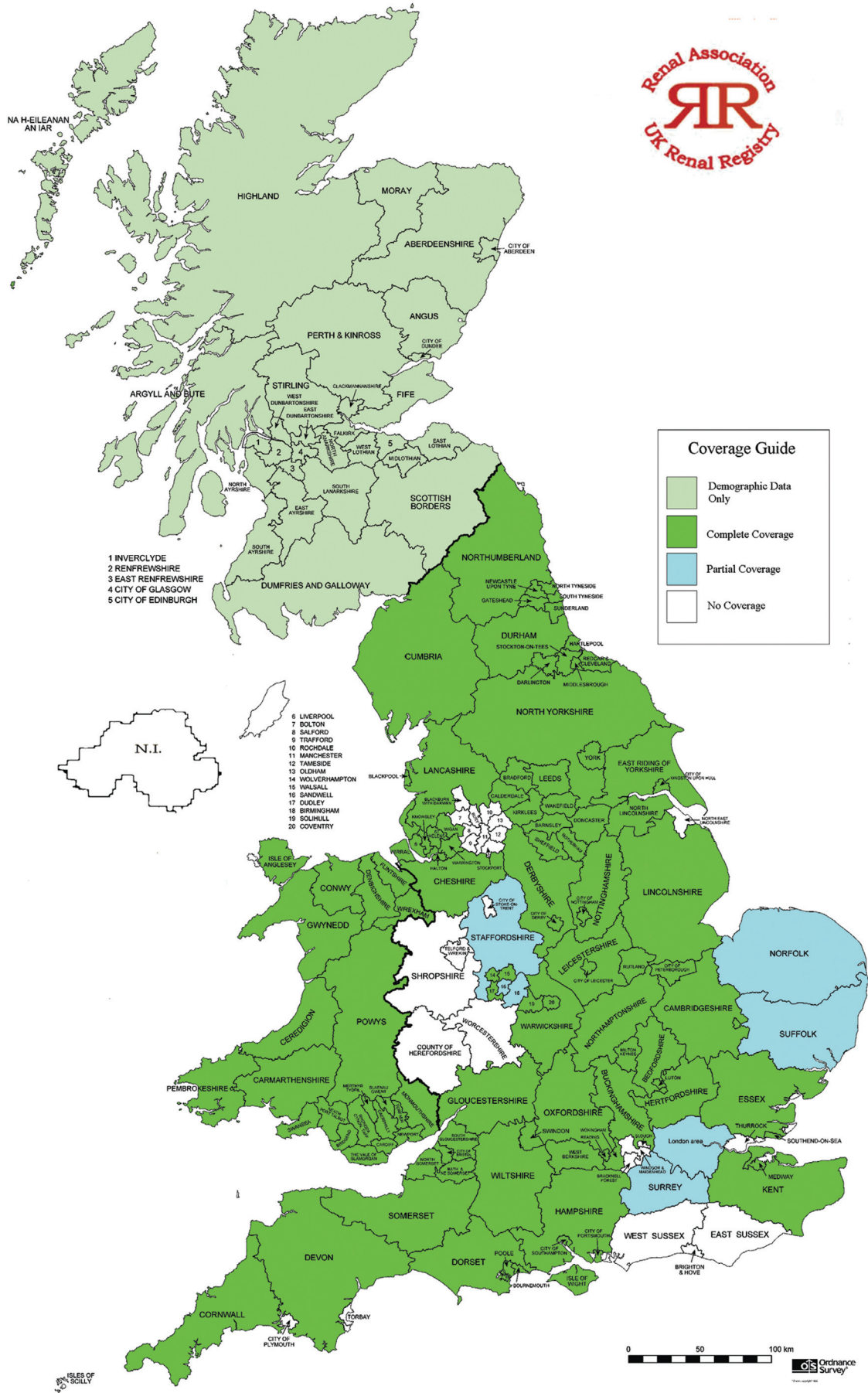


Figure 2.1: Geographical areas covered by the Renal Association UK Renal Registry

Table 2.1: Centres in the 2005 Registry Report

		Estimated population (Millions)
England & Wales		46.55
Bangor	Ysbyty Gwynedd	0.18
*Basildon	Basildon Hospital	0.50
Birmingham	Heartlands Hospital	0.60
*Birmingham	Queen Elizabeth Hospital	1.82
Bradford	St Luke's Hospital	0.60
*Brighton	Royal Sussex County Hospital	0.98
Bristol	Southmead Hospital	1.50
Cambridge	Addenbrookes Hospital	1.42
Cardiff	University of Wales Hospital	1.30
Carlisle	Cumberland Infirmary	0.36
Carshalton	St Helier Hospital	1.80
*Chelmsford	Broomfield Hospital	0.50
Clwyd	Ysbyty Clwyd	0.15
Coventry	Walsgrave Hospital	0.85
Derby	Derby City General Hospital	0.48
*Dorset	Dorchester Hospital	0.71
Dudley	Russells Hall Hospital (previously Wordsley)	0.42
Exeter	Royal Devon and Exeter Hospital	0.75
Gloucester	Gloucester Royal Hospital	0.55
Hull	Hull Royal Infirmary	1.04
Ipswich	Ipswich Hospital	0.33
Leeds	St James's Hospital & Leeds General Infirmary	2.20
Leicester	Leicester General Hospital	1.80
Liverpool	Royal Liverpool University Hospital	1.35
*London	Barts and The London Hospital	1.79
London	Guy's and St Thomas's Hospital	1.70
London	Hammersmith & Charing Cross Hospitals	1.30
London	Kings College Hospital	1.01
Manchester	Hope Hospital	0.94
Middlesbrough	James Cook University Hospital	1.00
Newcastle	Freeman Hospital	1.31
*Norwich	Norfolk and Norwich University Hospital	0.84
Nottingham	Nottingham City Hospital	1.16
Oxford	Oxford Radcliffe Hospital (previously reported as Churchill Hospital)	1.80
Plymouth	Derriford Hospital	0.55
Portsmouth	Queen Alexandra Hospital	2.00
Preston	Royal Preston Hospital	1.48
Reading	Royal Berkshire Hospital	0.60
Sheffield	Northern General Hospital	1.75
*Shrewsbury	Royal Shrewsbury Hospital	0.40
Southend	Southend Hospital	0.35
Stevenage	Lister Hospital	1.25
Sunderland	Sunderland Royal Hospital	0.34
Swansea	Morrison Hospital	0.70
Truro	Royal Cornwall Hospital	0.36
Wirral	Arrowe Park Hospital	0.53
Wolverhampton	New Cross Hospital	0.49
Wrexham	Wrexham Maelor Hospital	0.32
York	York District Hospital	0.39

Table 2.1: (continued)

		Estimated population (Millions)
Scotland	(via the Scottish Registry)	5.10
Aberdeen	Aberdeen Royal Infirmary	
Airdrie	Monklands District General Hospital	
Dumfries	Dumfries & Galloway Royal Infirmary	
Dundee	Ninewells Hospital	
Dunfermline	Queen Margaret Hospital	
Edinburgh	Royal Infirmary	
Glasgow	Glasgow Royal Infirmary & Stobhill General Hospital	
Glasgow	Western Infirmary	
Inverness	Raigmore Hospital	
Kilmarnock	Crosshouse Hospital	
Northern Ireland	Summary demographic data from all centres	1.69

*Renal unit included in the report for the first time.

Table 2.2: Progress in centres not included in this report

		Estimated population (millions)
(Indicates IT system used by hospital)		
(a) Centres submitting data for 2005		
London	Royal Free (King's system)	0.67
Northern Ireland	Belfast + all 4 NI renal units (Mediqal system)	1.69
Total		2.36
(b) Centres hoping to submit data for 2006		
London	Middlesex/UCLH – amalgamating with Royal Free in 2005 (Kings system)	0.75
London	St George's (own system)	
London	St Mary's Paddington (Proton)	0.81
Manchester	Royal Infirmary (CCL clinical vision)	2.51
Stoke	North Staffs (Cybernius system)	0.70
(c) Centre in discussion with the Registry		
Canterbury	Kent & Canterbury – buying new IT system	0.91

(Table 2.3). Ethnicity, date first seen by nephrologist and co-morbidity are not mandatory items in the Scottish Renal Registry returns so these centres have been listed separately.

Software and links to the Registry

From the above information, it is evident that there are now 11 systems in use by renal units, some of these are commercial and some in-house systems. The Registry has worked with the relevant companies to provide appropriate software links to the Registry. Ongoing

development of new data items for the national spine (eg vascular access) requires a continual commitment from these companies to support and evolve their renal IT systems and also the Registry interface.

Paediatric Renal Registry links

In the UK there are 780 patients under 18 years of age who are on renal replacement therapy. As most of the 13 UK paediatric renal units are small, the British Association of Paediatric Nephrology (BAPN) was able to set up its own database to collect data on a partially manual

Table 2.3: Completeness of data returns

Centre	Ethnicity	Primary diagnosis	Date 1st seen	Co-morbidity	Average completeness	Country
H&CX	100.0	99.8	99.4	100.0	99.8	England
Basildon	98.9	98.9	99.5	93.4	97.7	England
Wolverhampton	99.6	99.8	100.0	73.5	93.2	England
Dorset	81.0	99.7	99.5	78.2	89.6	England
Nottingham	96.1	99.2	98.8	40.1	83.6	England
Sheffield	98.1	99.8	99.2	36.9	83.5	England
York	89.1	88.5	75.4	76.0	82.2	England
Norwich	44.7	100.0	85.5	97.6	82.0	England
Middlesbrough	92.0	99.3	85.6	21.4	74.6	England
Bradford	76.6	94.1	76.0	51.6	74.6	England
Newcastle	98.8	99.9	98.1	1.3	74.5	England
Stevenage	100.0	98.3	97.6	1.6	74.4	England
Leicester	97.0	97.2	52.6	50.3	74.3	England
St James, Leeds	78.4	93.1	82.1	43.3	74.2	England
Chelmsford	32.4	96.6	78.4	86.5	73.5	England
Bristol	98.5	98.0	44.0	50.8	72.8	England
Swansea	98.3	88.8	0.8	96.9	71.2	Wales
Bangor	61.5	100.0	45.2	66.4	68.3	Wales
Portsmouth	96.5	98.8	53.6	19.3	67.0	England
Derby	84.2	90.8	17.5	72.0	66.1	England
Gloucester	100.0	97.8	9.2	50.9	64.5	England
LGI	46.5	89.1	62.8	59.5	64.5	England
ManWst	93.4	100.0	0.9	54.2	62.1	England
Sunderland	93.9	99.6	11.1	35.1	59.9	England
Truro	49.0	91.7	44.1	48.6	58.3	England
Exeter	68.3	87.9	43.1	33.8	58.3	England
Liverpool	93.1	98.5	1.0	38.3	57.7	England
Barts & London	82.9	96.1	1.8	35.7	54.1	England
Carlisle	95.7	100.0	10.6	8.0	53.6	England
Hull	72.5	99.7	12.8	27.3	53.1	England
Preston	95.7	98.7	16.2	1.1	53.0	England
QEH, Birmingham	99.8	98.5	1.9	1.4	50.4	England
Heartlands	100.0	99.8	0.6	0.4	50.2	England
Dudley	100.0	99.6	0.7	0.0	50.1	England
Ipswich	5.9	100.0	31.4	60.7	49.5	England
Reading	99.2	95.3	1.6	1.3	49.4	England
Dundee	97.0	99.1	0.0	0.0	49.0	Scotland
Kings	6.2	99.2	11.1	78.6	48.8	England
Plymouth	90.2	95.3	2.9	3.7	48.0	England
Shrewsbury	90.3	99.2	0.0	0.0	47.4	England
Coventry	87.5	99.2	0.8	0.7	47.1	England
Guy's & St Thomas's	85.0	99.9	0.8	0.7	46.6	England
Southend	55.1	100.0	1.1	28.4	46.2	England
Carshalton	66.0	99.8	0.9	10.0	44.2	England
Wirral	66.5	99.5	1.0	4.9	43.0	England
Cambridge	38.4	98.8	9.7	5.7	38.1	England
Clwyd	38.3	100.0	0.0	2.5	35.2	Wales
Oxford	38.9	99.3	1.2	1.1	35.1	England
Wrexham	51.0	77.1	0.5	1.0	32.4	Wales
Cardiff	27.7	93.9	0.3	7.4	32.3	Wales
Brighton	22.3	12.0	1.5	1.3	9.3	England

Table 2.3: (continued)

Centre	Ethnicity	Primary diagnosis	Date 1st seen	Co-morbidity	Average completeness	Country
Airdrie	92.0	99.5				Scotland
Aberdeen	89.7	93.0				Scotland
Inverness	83.7	97.3				Scotland
Dunfermline	51.1	95.0				Scotland
Dumfries & Galloway	18.8	98.4				Scotland
Glasgow RI	12.1	96.1				Scotland
Edinburgh	8.5	99.9				Scotland
Stobhill	10.1	97.8				Scotland
Glasgow WI	10.3	96.0				Scotland
Kilmarnock	3.7	100.0				Scotland

basis. As in previous years, this report includes a chapter of analyses from these data (Chapter 18). In order to integrate with the adult Registry and also provide funded resources for data management, the BAPN has asked the adult Registry to develop ways of collecting the paediatric data. This process of integration of paediatric data is proceeding slowly.

Links with other organisations

The UK Renal Registry has been active in supporting the Renal Association Standards Sub-committee in the production of the Standards document. It now participates in the Renal Association Clinical Affairs Board to support activity in all clinical areas and in informing new standards.

Close collaboration has developed with UK Transplant (UKT), in conjunction with the British Transplantation Society, to produce analyses utilising the strengths of both the UKT and Renal Registry databases. New analyses include access to the transplant waiting list and patient survival on the waiting list compared to patients having received a transplant: these can be found in Chapter 5 of this report.

Support has been given to the Department of Health (DoH) in acquiring the basic data necessary for the future planning of renal services. The Registry participated in providing data to formulate the advice to ministers for the Renal NSF. It is also working with the DoH Data Standards Board developing a Renal Dataset for the national IT spine. The Registry is part of the Kidney Alliance.

Healthcare Wales funded a data validation exercise and this has highlighted some important issues (see Chapter 17). A collaboration between the Renal Association and the Registry, the British Renal Society, the British Transplantation Society, the National Kidney Federation, and others, was selected and funded by the Health Care Commission to write the scope for audit of implementation of the Renal National Service Framework and of renal care in the UK.

The UK Registry sends fully anonymised data to the European Renal Association Registry. Several representatives have participated in discussions regarding the ERA QUEST programme for European countries to initiate quality initiatives, similar to many of those that are already undertaken by the UK Renal Registry.

The Registry has links with the new Swiss Renal Registry and while this is in the process of being established, Dr Dorothea Nitsch has been seconded to work in the UK and collaborates closely with the UK Registry. Collaborative work is also being undertaken with the German and Canadian Renal Registries.

Commissioning of renal services and PCTs

In April 2002, the 95 existing Health Authorities in England were reformed as 28 Strategic Health Authorities (SHAs). Established renal failure was designated by the government as a service for specialist commissioning. In the

Renal NSF the Strategic Health Authorities have been given a clear role in monitoring the performance of the specialised commissioning consortia. The Registry is assisting specialised commissioning consortia and individual Primary Care Trusts by providing appropriate data and analyses. The Registry has reported some demographic analyses by Local Authority and also by PCT.

Only some of the boundaries of PCTs and Local Authorities in England are similar. The Office for National Statistics is in the process of re-aligning the PCT boundaries with those of Local Authorities and hopes to complete this process by 2007.

The Registry and clinical governance

There has been considerable debate within the Renal Association Trustee and Executive Committees, the Clinical Affairs Board, the Registry Board and Registry Committee, about the Registry's responsibilities under the principles of clinical governance, particularly if an individual renal unit appears to be under-performing in some areas of activity.

The Registry Report is also sent to the Chief Executive of all Trusts in which a renal unit is situated, since responsibility for clinical governance within the Trust lies formally with the Chief Executive. For the anonymised parts of the report, the Chief Executive is informed of the code of the relevant renal unit.

In the event of Registry analyses of data from a renal unit giving rise to professional concern (eg mortality, or transplantation rates, etc), these data will first be validated internally in the Registry, and then the source data checked for validity with the reporting renal unit.

If the findings/analyses are robust and concern is warranted, the Registry Director will notify the President of the Renal Association who will write to explain these matters to the Clinical Director of the relevant unit, asking that this information be passed to the Chief Executive of the trust concerned, and also to the Clinical Governance lead for that Trust. Written evidence of the internal hospital

transfer of information should be received back to the Renal Association within 8 weeks. If this evidence is not forthcoming the President will then write to the Medical Director and Chief Executive of the Trust. The Renal Association can offer support (in terms of senior members providing advice) if requested by the Medical Director.

Anonymity and confidentiality

There has been pressure for the Renal Registry to cease the anonymous reporting of results and analyses and to identify the individual renal centres. The removal of anonymity aids the development of comparative audit and may assist learning from best practice, as well as allowing public accountability. In 2002, anonymity was removed from all the adult data except for the survival figures in individual renal units.

Progress has been slow in improving the co-morbidity and ethnicity returns essential to producing a meaningful comparison of patient survival between renal units correcting for case mix. Discussions are ongoing on the timescale to remove anonymity on survival data; an email survey of the stakeholders through the Renal Clinical Directors Forum has shown overwhelming support for removing anonymity even if co-morbidity returns remain poor. It is hoped this may happen for the next report.

Where anonymity has been retained in the report, neither the Chairman of the Registry nor the sub-committee members are aware of the identity of the centres within the analyses; only the Renal Registry director, data managers and statisticians are able to identify the centres. This identification is necessary so that the Registry can discuss with the relevant centres any discrepancies in the data or analyses.

The 'Health and Social Care Act 2001': section 60 exemption

The Registry has been granted temporary exemption by the Secretary of State to hold patient identifiable data under section 60 of the Health and Social Care Act. This exemption allows the registration of identifiable patient information from renal units without first

asking the consent of each individual patient, avoiding a breach of the common law on confidentiality.

This exemption is temporary and is reviewed annually. The progress towards collection of anonymised data or obtaining permission of the individual patient is monitored by the Patient Information Advisory Group (PIAG). The Registry is progressing towards anonymisation of data. There are concerns about the alternative of trying to get individual patient permission to hold patient identifiable data. Two recent medical studies of patient consent, albeit in more acute circumstances than ERF, showed considerable difficulties in establishing systems to obtain consent. Although refusals were uncommon, failure to initiate or complete the consent process was very common such that consent was obtained in only 33–50% of patients^{1,2}. It was also shown that outcomes in the consented group were different from those in the non-consented group. Such problems would render many of the Registry analyses invalid.

The first annual report on progress by the Registry towards anonymisation has been submitted to the Patient Information Advisory Group and the second review is due in June 2006.

Support for renal services in Connecting for Health – the National Programme for IT

Many renal units are concerned about support for existing IT systems under the National IT Programme. In addition, there is also concern about retaining existing functionality in any new IT system. Support for the National Renal Dataset and existing renal systems has been included in the Output Based Specification (OBS) contract for renal services and the full text is provided in Appendix F. Section 167 within the contract deals with provision of IT for renal services and has been signed by all the regionally based Local Service Providers (LSPs) as a component of the National IT Programme.

As mentioned earlier, the Registry is working with the DoH Data Standards Board, Connecting for Health and BT (who provide the national spine), in the specification of the

national Renal Dataset that all LSP systems will be expected to support.

Support for renal systems managers

In 2005, the Registry provided a forum for a renal informatics meeting supporting development of renal IS & IT staff. Topics included; a discussion on current informatics, health informatics professionalism (eg UKCHIP), Agenda for Change and informatics related job profiles. A detailed report on these presentations is available on the Registry web site and a further meeting is being planned for 2006.

Interpretation of the data within the report

It is important to re-emphasise that for the reasons outlined below, caution must be used in interpretation of any apparent differences between centres.

As in previous reports, the 95% confidence interval is shown for compliance with a Standard. The calculation of this confidence interval (based on the Poisson distribution) and the width of the confidence interval depends on the number of patients within the Standard and the number of patients with reported data.

To assess whether there is an overall significant difference in the percentage reaching the Standard between centres, a Chi-squared test has been used. Caution should be used when interpreting ‘no overlap’ of 95% confidence intervals between centres in these presentations. When comparing data between many centres, it is not necessarily correct to conclude that two centres are significantly different if their 95% confidence intervals do not overlap. In this process, the eye compares centre X with the other 47 centres and then centre Y with the other 46 centres. Thus, 93 comparisons have been made, and at the commonly accepted 1 in 20 level at least 5 are likely to appear ‘statistically significant’ by chance. If 48 centres were compared with each other, 1,176 such individual comparisons would be made and one would expect to find 60 apparently ‘statistically

significant' differences at the $p=0.05$ level. Thus, if the renal units with the highest and lowest achievement of a standard are selected and compared, it is probable that an apparently 'statistically significant result' will be obtained. Such comparisons of renal units selected after reviewing the data are statistically invalid. The Registry has therefore not tested for 'significant difference' between the highest achiever of a standard and the lowest achiever, as these centres were not identified in advance of looking at the data.

The most appropriate way of testing for significance between individual centres, to see where the differences lie, is not clear. The commonly used Bonferroni test is not applicable to this kind of data as the individual comparisons are not independent. In several chapters, funnel plots are used to identify significant outliers outside 2 and 3 standard deviations (see Chapters 3, 4 and 14). The Registry is investigating further methods of performing such comparisons.

In Chapters 3 and 4, charts are presented to allow PCTs and other organisations representing relatively small populations to assess whether their incidence and prevalence rates for renal failure are significantly different from the average UK performance.

Future potential

Support for Renal Specialist Registrars undertaking a non-clinical secondment

Through links with the Universities of Southampton and Bristol, some training is available in both epidemiology and statistics. The Renal Registry now has the funding for 3 registrar positions. Dr Raman Rao has worked as a Registry registrar for nearly two years and Dr Alex Hodsman and Dr Uday Udayaraj started in February 2006. Dr Az Ahmad, Dr Alison Armitage, and Dr Catherine Byrne and Dr J Rajamahesh have completed two years working as a Registry registrar. It is hoped that their positive experiences will encourage other registrars who are also interested in undertaking epidemiological work to consider working with the Registry.

Dr Fergus Caskey organised a secondment in Berlin with the German Renal Registry and undertook a detailed comparative analysis between the UK and Germany on the factors underlying the large differences in incidence of renal replacement therapy in the two countries (AJKD, March 2006).

New data collection and analysis

The survey on vascular access

The preliminary results from the Vascular Access Survey are reported in Chapter 6. The 6 month and 1 year follow up of these patients is ongoing.

This is the first report available of detailed UK data on vascular access provision and will be invaluable as a base line for monitoring implementation of the Renal NSF and in identifying the obstructions to improvements in the provision of vascular access services. It has highlighted the wide variations between renal units with some units managing to start 95% of renal replacement therapy patients with definitive access and others less than 50%. MRSA rates from HD lines were shown to account for 10% of all MRSA bacteraemia in the UK.

The Renal Association would like to thank everyone involved in the collection of these data and appreciate the effort required to supply it.

Surveys of facilities

After consultation with the Clinical Affairs Board and the Renal Clinical Directors Forum, the Registry has carried out a fourth national facilities survey. The Registry is collaborating with the British Renal Society to collect data on non-medical staffing.

Chronic kidney disease

Last year the Registry published a national survey of CKD patients under the care of nephrologists (see Report 2004); this is shortly to be published in the Quarterly Journal of Medicine. There is considerable interest in collecting further data on cohorts of renal patients with chronic renal impairment: many renal units already hold such data in their systems. The members of the Renal Association will be consulted on these and other possible future projects.

The challenge

With the presentation of these Registry data to the renal community, the challenge to UK nephrology is to find effective and creative ways of using the data to improve clinical practice. As yet, not all the necessary formal structures are in place to allow full value to be derived from the opportunities provided by the Registry data. The Renal Association has set up the Clinical Affairs Board partly to promote the use of Registry data to facilitate closing the audit loops of nephrological practice. In some cases, the Registry itself has also been able to conduct enquiries to understand the factors underlying good performance.

Other insights are also possible and quantifiable. For example, this year sees a new analysis on;

- variation in achievement of the Renal Association Standards by age band and modality (Chapter 13)
- the frequency of serum aluminium measurement and incidence of toxicity (Chapter 10)
- variability in blood pressure in patients dialysing at satellite units versus main units (Chapter 11)
- a report on a data validation exercise at 5 renal units (Chapter 17).

Recent UK Renal Registry peer reviewed publications

1. Burton C, Ansell D, Taylor H, Dunn E, Feest TG; Management of anaemia in United Kingdom renal units: a report from the UK Renal Registry. *Nephrology, Dialysis, Transplantation* 2000;15:1022–1028.
2. Roderick P, Davies R, Jones C, Feest T, Smith S, Farrington K; Simulation model of renal replacement therapy: predicting future demand in England. *Nephrol Dial Transplant*. 2004;19(3):692–701.
3. Roderick P, Nicholson T, Mehta R, Gerard K, Mullee M, Drey N, Armitage A, Feest T, Greenwood R, Lamping D, Townsend J; A clinical and cost evaluation of hemodialysis in renal satellite units in England and Wales. *Am J Kidney Dis*. 2004;44(1): 121–31.
4. Stel VS, van Dijk PC, van Manen JG, Dekker FW, Ansell D, Conte F, et al.; Prevalence of co-morbidity in different European RRT populations and its effect on access to renal transplantation. *Nephrol Dial Transplant*. 2005;20(12):2803–11.

5. Tangri N, Ansell D, Naimark D; Lack of a centre effect in UK renal units: application of an artificial neural network model. *Nephrol Dial Transplant*. 2006;21(3):743–8.
6. Feest TG, Rajamahesh J, Byrne C, Ahmad A, Ansell A, Burden R, Roderick R; Trends in adult renal replacement therapy in the UK: 1982–2002. *Quarterly Journal of Medicine* 2005;98(1):21–28.
7. Blank L, Peters J, Lumsdon A, O'Donoghue DJ, Feest TG, Scoble J, Wight JP, Bradley J; Regional differences in the provision of adult renal dialysis services in the UK. *Quarterly Journal of Medicine* 2005;98(3):183–190.
8. Roderick P, Nicholson T, Armitage A, Mehta R, Mullee M, Gerard K, et al.; An evaluation of the costs, effectiveness and quality of renal replacement therapy provision in renal satellite units in England and Wales. *Health Technol Assess* 2005;9(24):1–178.
9. Van Dijk PC, Jager KJ, Stengel B, Gronhagen-Riska C, Feest TG, Briggs JD; Renal replacement therapy for diabetic end-stage renal disease: data from 10 registries in Europe (1991–2000). *Kidney Int* 2005;67(4):1489–99.
10. Caskey FJ, Schober-Halstenberg HJ, Roderick PJ, Edenharter G, Ansell D, Frei U, et al.; Exploring the differences in epidemiology of treated ESRD between Germany and England and Wales. *Am J Kidney Dis*. 2006;47(3):445–54.
11. Ahmad A, Roderick P, Ward M, Steenkamp R, Burden R, O'Donoghue D, et al.; Current chronic kidney disease practice patterns in the UK: a national survey. *Quarterly Journal of Medicine* 2006;23:23.
12. White P, James V, Ansell D, Lodhi V, Donovan KL; Equity of Access to Dialysis Facilities in Wales *Quarterly Journal of Medicine* (In press).

The following have been submitted for publication:

13. van Manen JG, van Dijk PCW, Stel VS, Dekker FW, Clèries M, Conte F, Feest T, Kramar R, Leivestad T, Briggs JD, Stengel B, Jager KJ; Confounding effect of comorbidity in survival studies in patients on renal replacement therapy.
14. Caskey FJ, Roderick P, Steenkamp R, Thomas K, Ansell D, Feest T; Social deprivation and survival on renal replacement therapy in England.
15. Byrne C, Roderick P, Steenkamp R, Ansell D, Roderick P, Feest TG; Ethnic factors in Renal Replacement Therapy.
16. Nitsch D, Burden R, Steenkamp R, Ansell D, Roderick P, Feest TG; Diabetes in patients with established renal failure: demographics, survival and biochemical parameters.

Commissioned research and reports

1. Feest T, Rajamahesh J, Taylor H, Roderick P; The Provision of Renal Replacement Therapy for adults in the UK 1998. 1998 National Renal Survey, Report for Department of Health.

2. Roderick P, Armitage A, Feest TG, et al.; An evaluation of the effectiveness, acceptability, accessibility and costs of renal replacement therapy in renal satellite units in England and Wales. Report for Department of Health, 2003.
3. Roderick P, Davies R, Jones C, Feest T, Smith S, Farrington K; Simulation model of renal replacement therapy: predicting future demand in England. HTA report 2003.
4. Feest TG, Byrne C, Ahmad A, Roderick P, Webber S, Dawson P; The Provision of Renal Replacement Therapy in the UK 2002. Report for the Department of Health, 2004.
5. Ansell D, Benoy-Deeney F, Dawson P, Doxford H, Will E; Welsh data validation exercise project report. Report for the Welsh Assembly 2005.

Distribution of the Registry Report

The report will also be distributed to Strategic Health Authorities and all PCTs in England and Commissioners throughout the UK.

Further copies of the report will be sent to individuals or organisations on request: a donation of £15 towards the cost of printing and postage will be requested. CDs will also be available. The full report may be seen on the Registry website – www.renalreg.com

References

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