

Clinical Standards Board for Scotland
(now part of NHS Quality Improvement Scotland)

Local Report on service provision for

Adult Renal Services

Renal failure is becoming increasingly common in Scotland. The condition and its treatment impacts greatly on a patient's life and work. Although no cure exists for renal failure, there is much that can be done to improve outcomes and quality of life for patients.

The Clinical Standards Board for Scotland (CSBS) Adult Renal Services Project Group focused on care provided in renal units for adults throughout Scotland. It developed 14 standards relating to the main areas of care for adults with renal failure. There was a particular focus on chronic renal failure, as this represents the vast majority of the workload in renal units. This report presents the findings from the CSBS peer review of performance against the standards.

This report was undertaken by CSBS in late 2002, and has been prepared and published by NHS Quality Improvement Scotland (NHS QIS). CSBS work was incorporated into NHS QIS on 1 January 2003.

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The Clinical Standards Board for Scotland (CSBS) was established as a Special Health Board in April 1999, with the remit to develop and run a quality assurance process for clinical services provided by NHSScotland. The ultimate objective of the work of CSBS is to improve the quality of clinical care provided across Scotland.

About this Report

CSBS published *Clinical Standards for Adult Renal Services* in February 2002. These standards are being used to assess the quality of services provided by NHSScotland nationwide in hospital settings.

This report presents the findings from the CSBS peer review to **Dumfries & Galloway Royal Infirmary Renal Unit** managed by **Dumfries & Galloway Acute & Maternity Hospitals NHS Trust**. This review visit took place on **23 July 2002** and details of the visit, including membership of the review team, can be found in Appendix 2.

1.1 How the Standards were Developed

In May 2001, CSBS established the Adult Renal Services Project Group under the chairmanship of Dr Brian Junor, Consultant Nephrologist, Western Infirmary, North Glasgow University Hospitals NHS Trust. Membership of the Adult Renal Services Project Group includes both healthcare professionals and members of the public (see Appendix 3).

The Adult Renal Services Project Group oversees the CSBS quality assurance process of:

- developing standards;
- reviewing performance against the standards throughout Scotland, using self-assessment and external peer review; and
- reporting the findings from the review.

When developing the adult renal services standards, CSBS consulted widely throughout Scotland. The views of health service staff, patients, carers and the public were sought, and all the relevant evidence available at the time was taken

into account. Draft standards were also piloted at two renal units, at Dumfries & Galloway Royal Infirmary, Dumfries, and the Western Infirmary, Glasgow.

1.2 How the Review Process Works

The CSBS review process has two key parts: local self-assessment followed by external peer review. First, each relevant Trust¹ assesses its own performance against the standards. An external peer review team then further assesses performance, both by considering the self-assessment data and visiting the renal unit to validate this information and discuss related issues. The review process is described in more detail below (see also the flow chart on page 8).

Self-Assessment by the Trust

On receiving the standards, each Trust responsible for the management of a main renal unit assesses its own performance using a framework produced by CSBS. This framework includes guidance about the type of evidence (eg guidelines, audit reports) required to allow a proper assessment of performance against the standards to be made.

The Trust submits the data it has collected for this self-assessment exercise to CSBS before the on-site visit, and it is this information that constitutes the main source of written evidence considered by the external peer review team.

External Peer Review

An external peer review team then visits the renal unit and speaks with local stakeholders (eg staff, patients, carers) about the services provided. Review teams are multidisciplinary, and include both healthcare professionals and members of the public. Training is provided for all CSBS reviewers. Each review team is led by an experienced reviewer, who is responsible for guiding the team in their work and ensuring that team members are in agreement about the assessment reached.

¹ For simplicity, the term 'Trust' is used throughout this document to refer to all the NHS organisations included in this national review. Further details on the renal units in Scotland are provided in Section 2.

The composition of each team varies, and members have no connection with the Trust they are reviewing. This promotes the sharing of good practice, and ensures that each review team assesses performance against the standards rather than make comparisons between one Trust and another.

At the start of the on-site visit, the review team meets key personnel responsible for the service under review. Reviewers then speak with local stakeholders about the services provided, including support group representatives and patients who had been selected randomly using the Scottish Renal Registry database. After these meetings, the team assesses performance against the standards, based on the information gathered during both the self-assessment exercise and the on-site visit.

The visit concludes with the team providing feedback on its findings to the Trust. This includes specific examples of local initiatives drawn to the attention of the review team (recognising that other such examples may exist), together with an indication of any particular challenges facing the Trust.

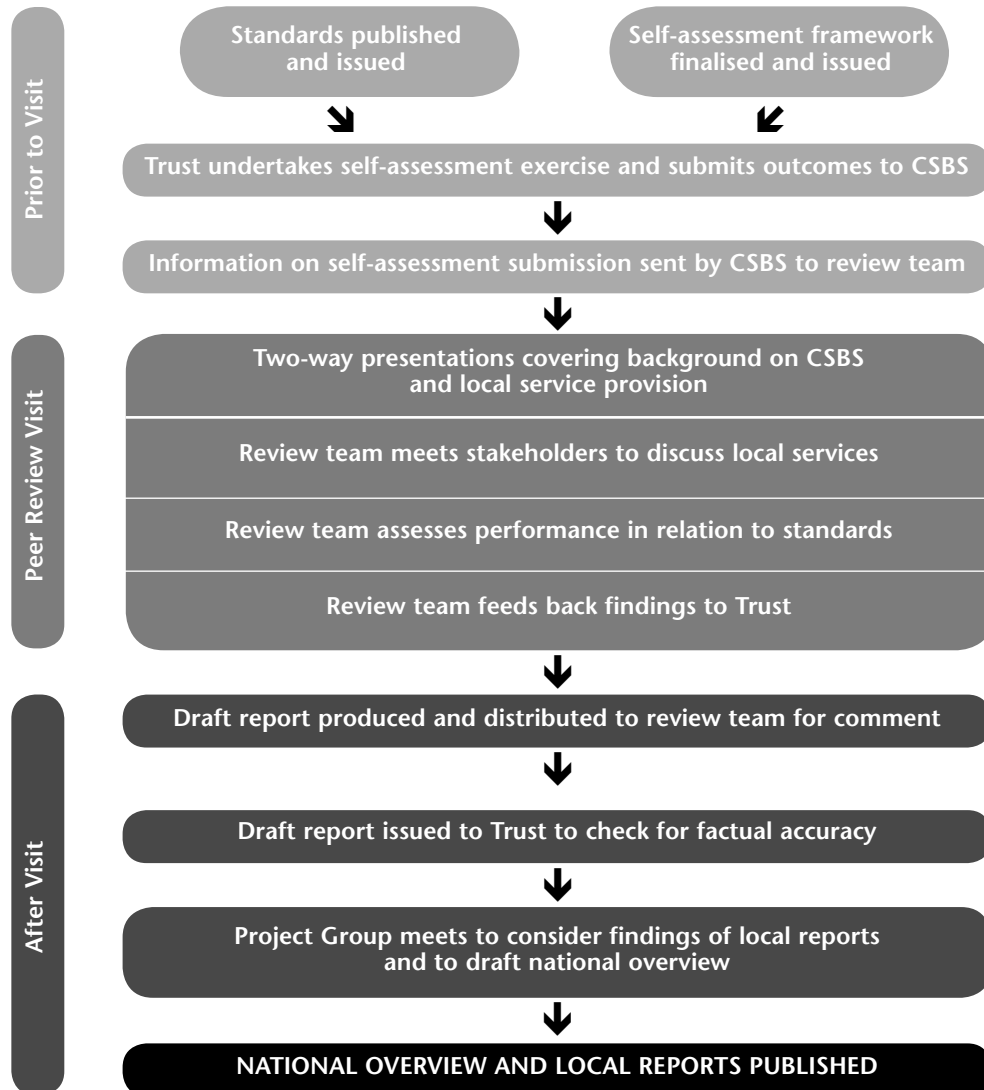
Assessment Categories

Each review team assesses performance using the categories 'met', 'not met' and 'not met (insufficient evidence)', as detailed below:

- **'Met'** applies where the evidence demonstrates the standard and/or criterion is being attained.
- **'Not met'** applies where the evidence demonstrates the standard and/or criterion is not being attained.
- **'Not met (insufficient evidence)'** applies where no evidence is available for the review team, or where the evidence available is insufficient to allow an assessment to be made.

A final category **'not applicable'** is used where a standard and/or criterion does not apply to the Trust under review.

The CSBS review process at a glance:



1.3 Reports

After the review visit, the project officer drafted a local report detailing the findings of the review team. This draft report was sent to the review team for comment, and then to the Trust to check for factual accuracy.

Following completion of the national review cycle, the Adult Renal Services Project Group reconvened to examine review findings and make recommendations to CSBS. The Adult Renal Services Project Group was then responsible for overseeing the production of a national overview of service provision across Scotland in relation to the standards. This document includes both a summary of the findings (highlighting examples of local initiatives and challenges for the service) and recommendations for improvement.

The aim of this review is to report whether the services provided by NHSScotland, both nationally and locally, met the agreed standards, and not to review the work of individual healthcare professionals. In achieving this aim, variations in practice (and potentially quality) within a service will be encountered. In such cases, variations will be reported.

Please note — all reports published by CSBS (now part of NHS QIS) are available on the NHS QIS website.

2 Summary of Findings

2.1 Overview of Local Service Provision

Dumfries & Galloway is situated in south-west Scotland and has a population of around 145,800. The majority of the population live in towns and villages, of which Dumfries is the largest in the region, although a significant proportion live in rural areas. The proportion of older people in the population is higher than the national average, whereas levels of illness and deprivation are relatively low.

Local NHS System and Services

Dumfries & Galloway NHS Board is responsible for improving the health of the local population and for the delivery of the healthcare required. It provides strategic leadership and has overall responsibility for the efficient, effective and accountable performance of the NHS in Dumfries & Galloway.

Clinical services are provided through two Trusts, Dumfries & Galloway Acute & Maternity Hospitals NHS Trust and Dumfries & Galloway Primary Care NHS Trust. The Trusts are accountable for the clinical services they provide, through the framework of clinical governance.

Further information about the local NHS system can be accessed via the website of Dumfries & Galloway NHS Board: www.show.scot.nhs.uk/dghb.

Dumfries & Galloway Royal Infirmary Renal Unit is one of ten renal units treating adults with renal failure across Scotland.

A main renal unit is the centre of renal expertise for a particular geographical area and manages the provision of renal services within that area. Both out-patient and in-patient renal services are offered, as well as specialist services. In some areas the main renal unit is supported by one or more renal satellite unit. A renal satellite unit is a haemodialysis facility which is linked to a main unit, and is not autonomous for medical decisions. They are largely nurse-led and typically provide a more accessible haemodialysis service to chronic renal patients in general good health, and not requiring the services and care of a main renal unit.

The ten renal units, to which patients in Scotland may be referred on the basis of clinical need (and location), are based at:

- Aberdeen Royal Infirmary
(including three satellite units at Chalmers Hospital, Banff, Dr Gray's Hospital, Elgin, and Peterhead Community Hospital)
- Dumfries & Galloway Royal Infirmary, Dumfries
- Crosshouse Hospital, Kilmarnock
- Glasgow Royal Infirmary
(including two satellite units at Falkirk & District Royal Infirmary and Stobhill Hospital, Glasgow)
- Monklands Hospital, Airdrie
- Ninewells Hospital, Dundee
- Queen Margaret Hospital, Dunfermline
(including one satellite unit at Victoria Hospital, Kirkcaldy)
- Raigmore Hospital, Inverness
- Royal Infirmary of Edinburgh
(including two satellite units at the Western General Hospital, Edinburgh, and Borders General Hospital, Melrose)
- Western Infirmary, Glasgow
(including an annex at Gartnavel General Hospital, Glasgow, and a satellite unit at Inverclyde Royal Hospital, Greenock)

There is also a small renal unit at Gilbert Bain Hospital, Lerwick, Shetland. This operates as an autonomous unit, but due to the small number of patients involved, has not been visited as a part of this review process. However, patients are referred to Aberdeen Royal Infirmary for renal transplant, and for complex acute renal failure.

There are three transplant centres in Scotland to which patients suitable for transplant may be referred. These are based at:

- Aberdeen Royal Infirmary
- Royal Infirmary of Edinburgh

- Western Infirmary, Glasgow

The following information was submitted by Dumfries & Galloway Acute & Maternity Hospitals NHS Trust:

- At the time of the visit there were 101 patients receiving renal replacement therapy. There were 24 new patients with chronic renal failure during the previous year. In addition, 36 new patients were treated with acute renal failure in the previous year. The number of patients on different forms of renal replacement therapy are as follows:

| | |
|--|----|
| - hospital haemodialysis | 47 |
| - home haemodialysis | 2 |
| - automated peritoneal dialysis (APD) | 19 |
| - continuous ambulatory peritoneal dialysis (CAPD) | 2 |
| - renal transplant (cadaver) | 27 |
| - renal transplant (live) | 4 |

Patients with suspected renal failure are referred by GPs to Dumfries & Galloway Royal Infirmary Renal Unit for renal investigation. Medical staff from the renal unit see referred patients at clinics in Dumfries, Stranraer and Newton Stewart. For patients requiring renal replacement therapy, dialysis is started at Dumfries & Galloway Royal Infirmary and continued at home where appropriate. Transplant patients are typically referred to the transplant unit at the Western Infirmary, Glasgow. Follow-up of transplant patients is undertaken at clinics either in Dumfries, Stranraer or Newton Stewart.

From the introductory sessions at the start of the visit, the following points regarding service provision were noted:

- The Dumfries & Galloway Royal Infirmary Renal Unit provides services across a large, rural area. Monthly clinics are held at Stranraer and Newton Stewart.
- Haemodialysis patients from the west of the region must travel up to 1¾ hours each way, three times per week, for treatment at Dumfries & Galloway Royal Infirmary. The renal unit has submitted a draft 10-year plan to NHS Dumfries & Galloway. As part of this draft plan, it is hoped that a four-station dialysis satellite unit will be built at the Garrick Hospital in Stranraer. The British Kidney Patients' Association has offered funding to build the unit. However, it was noted that funding for the running of the unit has not been identified, and there are no plans currently in place to take this forward. It was noted that

Newton Stewart is also being considered as an alternative option for a satellite unit, although there is no laboratory currently at this site.

- Staff at Dumfries & Galloway Royal Infirmary Renal Unit have a special interest in acute renal failure and routinely collect data on this patient group for audit purposes. In the period from 1994 - 2000 a total of 318 patients were treated for acute renal failure; 67 of these were cared for in the intensive care unit whilst 141 were treated in the chronic renal unit. As these patients are often acutely unwell, it is recognised that caring for them within the chronic renal unit can be disturbing for chronic renal patients.
- It was noted that there has been a reduction in consultant input to the renal unit. While this reduced input has not been intentional, a contributing factor is the amount of time required for teaching, management and administration. Support is provided by one full-time and one part-time staff grade physician.
- There is no designated renal pharmacist. In addition, the posts of social worker, renal dietician, secretary, predialysis nurse and clinic nurse are currently funded by short-term and endowment funding.
- There has been a significant increase in the number of dialysis sessions per month, from around 100 in 1992 to approximately 550 in 2002. This is reflected across Scotland.
- There is insufficient access to theatre time for vascular and peritoneal access surgery. It was noted that, as a result, operations are cancelled on overbooked lists resulting in increased stress for the patient. In addition, a high percentage of patients are given permanent catheters for haemodialysis access. This can result in a higher incidence of infection and lower the efficiency of dialysis.
- Each member of the renal nursing team has a special area of expertise in addition to their regular role. Examples of these specialties are anaemia, pre-dialysis, holiday dialysis and information technology.

Scottish Renal Registry

There is clearly a commitment to, and an awareness of, the importance and value of data collection and audit for renal services in Scotland. The Scottish Renal Registry has played a significant role in the development of audit in renal services. It was established in 1991 by the Scottish Renal Association, as a computer based registry for patients receiving renal replacement therapy for end stage renal disease

in Scotland. Once a system of computerised data collection was operational, the Scottish Renal Registry moved into comparative audit between renal units.

The Registry is now able to audit many of the standards developed by the UK Renal Association. This has resulted in renal units across Scotland sending data to the Scottish Renal Registry for the purposes of national audit. In addition to the results of national audits being published in the Registry's Annual Report, all renal units are provided with the national results and their individual unit's results.

2.2 Summary of Findings Against the Standards

A summary of the findings from the review, including examples of local initiatives drawn to the attention of the review team, is presented in this section. A detailed description of performance against the standards/criteria is included in Section 3.

Haemodialysis

Audit data provided by the unit demonstrated that the dialysis adequacy target is met for patients who have been on haemodialysis for more than 3 months. There is a comprehensive nurse-led system review of patients who do not achieve the target dialysis adequacy.

The review team noted that the frequency of dialysis water quality monitoring is outwith the essential limit set by the standard. It was reported that this is due to the consistently good results obtained in quarterly tests as a result of the central water treatment plant.

Example of a local initiative

The review team commended the organisation of the pre-dialysis clinics. Each patient is seen during a half-hour appointment, allowing potassium, phosphate and calcium levels to be monitored and controlled before the patient begins dialysis treatment. Particular emphasis is given to the control of phosphate levels. Monthly meetings are held to discuss this area of patient care, and are attended by the dedicated phosphate nurse, dietician and staff grade.

Peritoneal Dialysis

Audit data provided by the unit indicated that the peritoneal dialysis adequacy target is met for patients who have been on peritoneal dialysis for more than 8 weeks. A comprehensive system is in place to ensure prompt action is taken for patients who do not achieve the target adequacy.

The review team commended the low rate of peritonitis in patients on peritoneal dialysis. A contributing factor for this was felt to be the higher than average number of patients choosing automated peritoneal dialysis (APD) as their preferred mode of treatment.

Haemoglobin in Patients on Dialysis

Audit data provided by the unit demonstrated that the essential limits for haemoglobin concentration are met for both haemodialysis and peritoneal dialysis patients. A local protocol and clear guidelines for the management of anaemia facilitate prompt action to be taken in the treatment of patients who do not achieve haemoglobin targets.

Dialysis Access

Audit data provided by the unit indicated that the percentage of patients having permanent dialysis access available at their first dialysis is within the essential limit set by the standard. A particular challenge to the Trust is provision of dedicated theatre sessions for dialysis access surgery. The review team noted that the lack of dedicated theatre sessions for dialysis access surgery results in cancelled operations and a high percentage of patients having permanent catheters as haemodialysis access. It was also reported that medical staff often spend excessive amounts of time liaising with surgical staff to ensure patients are put on theatre lists when access surgery is required.

Nutritional Status

There is a comprehensive system of regular dietary assessment, monitoring and review of all patients receiving dialysis or with low clearance. Nutritional goals are set, documented and monitored in accordance with Renal Nutritional Group Standards for patients identified as 'at risk'.

While baseline anthropometry is not currently undertaken for all patients at the beginning of dietetic treatment, the review team noted the efforts being made to undertake this for all pre-dialysis patients.

Drug Therapy

Protocols are in place for all the areas required by the standard and staff demonstrated good awareness of these. However, the review team noted that it might also be beneficial for staff to have access to relevant protocols from the transplant unit.

Information and advice about the use of drugs in chronic renal failure and dialysis patients is available to both healthcare professionals and renal patients. The review team commended the role of the pre-dialysis nurse in providing pre-dialysis patients with this information during home visits.

The challenge to the Trust is the provision of designated pharmacy input to the renal unit. There is currently no regular pharmaceutical input into the renal unit.

Access to Multidisciplinary Team

The review team commended the good communication between members of the team. It was reported that there is easy access to most members of the multidisciplinary team, although the review team noted delays in access to the counselling service, clinical psychology and liaison psychiatry due to long waiting times.

Example of a local initiative

The review team commended the organisation of renal nursing staff whereby each individual has a special area of expertise and acts as a link nurse for that specialty. In addition the review team commended the role of the local link nurse for transplant, who accompanies patients on their first visit to the transplant clinic at the Western Infirmary, Glasgow. This was felt to be beneficial not only to the patient, but also to the renal unit in receiving feedback about the assessment.

Due to the lack of pharmaceutical input, multidisciplinary review of dialysis patients does not involve all the professionals detailed in the standard.

Assessment for Transplantation

The review team commended the frequent review of patients with regard to their status for transplantation. Suitable patients are referred to the Western Infirmary Transplant Unit, Glasgow. Type 1 diabetic patients with renal failure are considered for combined pancreas and kidney transplant and, if suitable, are referred directly to the Royal Infirmary of Edinburgh Transplant Unit. It was noted that a system has recently been put in place to inform all relevant parties in writing of decisions regarding the patient's assessment at the transplant unit. Patients on the waiting list are also informed of the outcome of their annual review in writing.

Out-patients

Audit data provided by the unit demonstrated that not all patients are offered an appointment to be seen within 1 month of referral. A major contributing factor for this is insufficient medical staff. The review team noted that referrals are prioritised by medical staff and urgent cases seen quickly.

Changes in medication are communicated to the GP via the patient using a drug management booklet. It was reported that some GPs are reluctant to act on changes made in this booklet due to questions around its accuracy and validity, particularly as the booklet is completed by both patients and medical staff. In all instances this is followed up with a letter to the GP, or phone call in urgent cases.

Provision of Patient Information

The review team commended the proactive approach to patient information demonstrated by staff. Verbal explanations are supported with appropriate information materials. A large and comprehensive range of information is available. Of particular note is the locally developed guide to kidney failure. The review team established that good verbal communication occurs between staff and patients, with patients and carers being involved in decisions about treatment and changes in treatment.

Example of a local initiative

At meetings held twice a year in Dumfries and Stranraer, pre-dialysis patients and their carers are able to meet staff, and learn more about renal failure. Good links exist between the renal unit and the Kidney Patients' Association. In addition, informal study days for both patients and carers are held at venues outwith the hospital.

The review team commended the role of the pre-dialysis nurse specialist in providing each patient with an individualised starter pack on renal failure. Informal home visits are arranged for pre-dialysis patients at a time to suit the patient and, where appropriate, the carer.

Transportation for Haemodialysis

The majority of patients are collected from home within half an hour of their allocated pick-up time, although there are delays in collecting of patients at the end of dialysis. It was noted that the Trust is attempting to address these issues. Although the unit does not document reasons for delays of more than an hour, staff are aware of delays and contact the Scottish Ambulance Service if patients have not been collected within an hour. It was reported that the provision of a local Scottish Ambulance Service co-ordinator has facilitated improvement in the transportation service, and it is hoped that these improvements will continue.

The review team noted that a recent reorganisation of appointment times for haemodialysis appears to have reduced delays from appointment time to beginning the dialysis session.

Due to the location of Dumfries & Galloway Royal Infirmary Renal Unit in the east of the region, haemodialysis patients from the west of the region have longer travelling times to and from dialysis. The review team noted the desire of the unit to establish a renal satellite unit in Stranraer, although plans for this are not yet formalised.

Audit: Information/Data Collection

Information systems are in place for the continuous collection of the Scottish Renal Registry core data set to facilitate audit, although it was noted that these systems

are not integrated. Multiple databases are used internally for the collection of these data. In addition, the lack of a direct electronic link between the renal unit and the Scottish Renal Registry results in the data being manually transferred from one system to the other. It is recognised that this is time-consuming and labour-intensive.

The review team commended the special interest of staff in the unit in the treatment of acute renal failure, and noted the comprehensive collection of audit data in this area.

3 Detailed Findings Against the Standards

Standard 1 - Clinical Management/Treatment 1: Haemodialysis

All people on haemodialysis achieve the Renal Association targets set for adequacy. There is regular audit of haemodialysis adequacy (see Standard 14).

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: The target for haemodialysis adequacy is a Urea Reduction Ratio not less than 65% or stable Kt/V not less than 1.2 (dialysis and residual renal function) for thrice-weekly dialysis. This is achieved in a minimum of 85% of patients. Where Kt/V is measured, the method used to calculate is documented.

STATUS: Audit data provided by the unit demonstrated that this criterion is met in all patients who have been on dialysis for more than 3 months. The calculation for Kt/V is no longer used.
Met

2: Reasons for patients not achieving the target haemodialysis adequacy are documented and appropriate action taken.

STATUS: Reasons for patients not achieving the target haemodialysis adequacy are documented by nursing staff on the Haemodialysis Adequacy Schedule and on the nursing Kardex. The review team noted that this information is not documented in the medical notes.
Met

There is a clear process in place for the review of patients who do not achieve the target adequacy, with appropriate action being taken.

3: Haemodialysis is offered thrice-weekly unless there are specific circumstances.

STATUS: All haemodialysis patients are offered dialysis thrice-weekly.
Met

4: Quality of water for dialysis and/or dialysis fluid is monitored monthly and meets Renal Association targets for microbial count.

STATUS: The quality of water for dialysis is monitored quarterly and meets Renal Association targets for microbial count. Due to the use of a central water treatment plant, it was reported that results for the quality of water are consistently good and staff confirmed that for this reason the water quality is not monitored more frequently.
Not met

5: The percentage of patients achieving the Renal Association Standards for pre-dialysis potassium, phosphate, and calcium is calculated at a minimum of 3-monthly intervals.

STATUS: The percentage of patients achieving the Renal Association standards for pre-dialysis potassium, phosphate and calcium is calculated monthly. However, due to the incompatibility of databases, biochemical results must be transferred manually to the renal database (Proton) in order to calculate these percentages.
Met

The review team commended the organisation of the pre-dialysis clinic. Each patient is seen during a half-hour appointment, allowing potassium, phosphate and calcium levels to be monitored and controlled before the patient starts dialysis treatment. There is particular emphasis on the control of phosphate with a monthly meeting held to discuss this area of patient care. The meeting is attended by the dedicated phosphate nurse, staff grade nephrologist and dietician.

Standard 2 - Clinical Management/Treatment 2: Peritoneal Dialysis

All people on peritoneal dialysis achieve the Renal Association targets set for adequacy. There is regular audit of peritoneal dialysis adequacy (see Standard 14). There is safe and effective management in place for prevention of peritonitis.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: The target for peritoneal dialysis adequacy is a total weekly creatinine clearance (dialysis and residual renal function) not less than 50 l/week/1.73m² and/or weekly urea Kt/V exceeds 1.7 by 8 weeks after beginning peritoneal dialysis. This is maintained in a minimum of 85% of patients.

STATUS: Audit data provided by the unit demonstrated that this criterion is met.
Met

2: Reasons for patients not achieving the target peritoneal dialysis adequacy are documented, and appropriate action taken.

STATUS: Reasons for patients not achieving the target peritoneal dialysis adequacy are documented in medical notes and the minutes of monthly multidisciplinary meetings. There is a clear process in place to facilitate immediate action. The review team noted the good communication that exists between nursing and medical staff.
Met

3: The percentage of patients achieving the Renal Association Standards for potassium, phosphate and calcium is calculated at a minimum of 3-monthly intervals.

STATUS: The percentage of patients achieving the Renal Association Standards for potassium, phosphate and calcium is calculated 3-monthly for review at the Renal Business Meeting.
Met

4: The use of disconnect systems is standard unless contra-indicated.

STATUS: The use of disconnect systems is standard for all patients.
Met

5: Peritonitis rates are not more than one episode/18 patient-months.

STATUS: The review team commended the low rate of peritonitis. It was felt that the low rate might be due to the higher than average number of patients choosing automated peritoneal dialysis (APD) as their preferred mode of treatment.
Met

Standard 3 - Clinical Management/Treatment 3: Haemoglobin in Patients on Dialysis

All people on haemodialysis or peritoneal dialysis achieve targets set for haemoglobin levels after 3 months of dialysis. Transfusion is avoided wherever possible.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: The target is a haemoglobin concentration not less than 10g/dl (haematocrit is not less than 30%) after 3 months of dialysis. This is achieved in a minimum of 85% of patients.

STATUS: Audit data provided by the unit on the day of the visit demonstrated that this criterion is met for both haemodialysis and peritoneal dialysis patients. The review team noted that while the percentage of haemodialysis patients achieving the target fluctuates from month to month, it typically remains at around 85%.
Met

2: Reasons for patients not achieving the target haemoglobin are documented, and appropriate action taken.

STATUS: Reasons for patients not achieving the target haemoglobin are documented in the computerised database in addition to case notes. There is a local protocol and clear guidelines for the management of anaemia, of which all staff are aware and follow. In addition, formal monthly meetings take place to facilitate the management of anaemia.
Met

3: Iron status is monitored at a minimum of 6-month intervals.

STATUS: The review team confirmed that iron status is routinely monitored 3-monthly, or more frequently if required. Hypochromic red cell count is used as the measure of iron status.
Met

4: The number of patients receiving blood transfusions is monitored.

STATUS: The number of patients receiving blood transfusions is monitored.
Met

Standard 4 - Clinical Management/Treatment 4: Dialysis Access

All people requiring dialysis have timely surgery for access.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: Permanent access is available at the first dialysis in a minimum of 60% of patients who present at the renal service more than 3 months before requiring dialysis.

STATUS: Audit data provided by the unit demonstrated that this criterion is met, despite
Met issues with regard to limited access to theatre and theatre time.

2: Reasons for patients not having permanent access available at their first dialysis are documented.

STATUS: Staff interviews confirmed that reasons for patients not having permanent
Not met access available at their first dialysis are not documented in all cases due to time constraints.

3: There are adequate dedicated theatre sessions (Reference Guideline: one weekly theatre session per 120 patients (approximately) on dialysis – National Service Standard 3).

STATUS: There are no dedicated theatre sessions for dialysis access. The review team
Not met noted that this is a significant issue for the renal unit, particularly in respect to the high percentage of patients having permanent catheters as haemodialysis access. It was also noted that the lack of dedicated theatre sessions results in cancelled operations for renal patients.

The review team noted that medical staff spend a considerable amount of time liaising with surgeons to ensure people are on theatre lists for vascular access surgery. It was reported that surgical staff are looking into the possibility of using the day care centre for vascular access surgery.

Desirable Criteria

4: A minimum of 70% of patients have arteriovenous fistulae or vein graft as their permanent haemodialysis access.

STATUS: Audit data provided by the unit demonstrated that this criterion is not met. A
Not met major contributing factor for this was felt to be the lack of theatre sessions for vascular access surgery.

5: Permanent catheters are used as haemodialysis access in a maximum of 20% of patients.

STATUS: Audit data provided by the unit demonstrated that this criterion is not met.
Not met The review team was concerned to note the high percentage of patients with permanent catheters for haemodialysis access. Concerns were raised about patients presenting late for dialysis who receive a permanent catheter, but do not go on to have this replaced with an arteriovenous fistula or vein graft. In addition, it was recognised that permanent catheters lead to higher rates of infection, can result in damaged blood vessels and result in the use of expensive medication to unclot blood vessels.

Standard 5 - Clinical Management/Treatment 5: Nutritional Status

All patients receiving dialysis or with low creatinine clearance have nutritional status regularly assessed, evaluated and documented.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: All patients are assessed at least 6-monthly to identify those at risk of malnutrition.

STATUS: The review team confirmed that all patients are assessed at least 6-monthly to identify those at risk of malnutrition. The renal dietician assesses all haemodialysis and peritoneal dialysis patients. Medical staff are responsible for assessing patients with low creatinine clearance. The majority of patients are referred to and seen by the dietician.
Met

2: Patients identified as at risk have nutritional goals set, documented and monitored in accordance with Renal Nutritional Group Standards.

STATUS: The review team confirmed that this criterion is met. Nutritional goals are now documented on the nutritional database, with work in progress to transfer previous paper documentation and record cards onto the database.
Met

3: Reasons why patients identified as at risk do not achieve nutritional goals are documented, and appropriate action taken.

STATUS: Reasons why patients identified as at risk do not achieve nutritional goals are documented on the nutritional database. Appropriate action is taken following discussion between medical and nursing staff and the dietician at multidisciplinary meetings. All action to be taken is recorded in the minutes of these meetings.
Met

4: There is a designated dietician with a recognised postgraduate qualification and/or renal experience.

STATUS: There is a designated renal dietician with a recognised postgraduate qualification and renal experience. However, the review team noted that there is no cover available when the dietician is on leave.
Met

Desirable Criteria

5: Baseline anthropometry is documented for all patients at the beginning of dietetic treatment by an individual trained in the technique.

STATUS: The review team noted that baseline anthropometry is not documented for all patients at the beginning of dietetic treatment. However, it was noted that efforts are now being made to carry this out for all pre-dialysis patients. The results of anthropometry are documented on the nutritional database. Anthropometry is carried out by the renal dietician who is trained in the technique.
Not met

Standard 6 - Clinical Management/Treatment 6: Drug Therapy

All people with chronic renal failure or on renal replacement therapy receive appropriate drug therapy and advice on their medicines.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1.1: There are protocols for: Management of anaemia; Treatment of peritonitis; Immunisation for Hepatitis B.

STATUS: There are protocols in place for the management of anaemia, treatment of peritonitis and immunisation for hepatitis B. However, the review team noted that there is no formal schedule for updating these protocols.
Met

1.2: In addition, for transplant units there are protocols for: Immunosuppressive regimens; Cytomegalovirus and pneumocystis infection prophylaxis; Renal vein thrombosis prophylaxis; Management of delayed graft function.

STATUS: Dumfries & Galloway Royal Infirmary is not a transplant unit. However, the review team noted that staff were not fully aware of the protocols which are held at the Western Infirmary Transplant Unit, Glasgow. It was felt that dissemination of these protocols to staff at Dumfries and Galloway Royal Infirmary Renal Unit might be beneficial for when patients are returned to the care of the unit.
Not applicable

2: All patients' prescriptions are reviewed to ensure their drug therapy is appropriate for their circumstances.

STATUS: The review team confirmed that the prescriptions for all patients on peritoneal dialysis are reviewed regularly by medical staff to ensure drug therapy is appropriate for each patient's circumstances. Haemodialysis patients' prescriptions are reviewed by medical staff 4-6-monthly. Changes to patients' prescriptions are recorded in patients' drug and appointment diaries. However, it was reported that these are not kept up-to-date in all cases. The review team noted that review of haemodialysis patients prescriptions was previously supported by the home visit programme; however, at the time of the review visit, home visits were no longer taking place routinely.
Met

3: Information and advice about the use of drugs in chronic renal failure or in dialysis patients is available to healthcare professionals and renal patients.

STATUS: Patients are provided with leaflets about their drugs in addition to a verbal explanation. Patients may also ring the pharmacy helpline or renal unit for further information. The review team noted that in the past, much of the information about the use of drugs has been disseminated to haemodialysis patients via the home visit programme, and expressed concerns about the withdrawal of this service. However, the team commended the role of the pre-dialysis nurse specialist who is responsible for visiting pre-dialysis patients at home.
Met

Information and advice is available to healthcare professionals by way of the Renal Drug Handbook which is kept on the ward. This handbook is also recommended to other relevant wards by renal unit staff. Information and advice is also available to staff from pharmacy.

4: There is a designated pharmacist with a recognised postgraduate qualification and/or renal experience.

STATUS:
Not met

There is no designated renal pharmacist. It was noted that the pharmacist who was previously responsible for covering renal in-patients has moved to another area of the hospital.

Standard 7 - Clinical Management/Treatment 7: Access to Multidisciplinary Team

All people with end stage renal failure have access to a multidisciplinary team.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

- 1: In addition to the regular medical and nursing staff, patients are referred to the following services when required: physiotherapy; pharmacy; dietetics; occupational therapy; designated social worker with a recognised postgraduate qualification and/or renal experience; primary healthcare team; community hospitals (where applicable); transplant co-ordinator/ liaison nurse; counselling service; clinical psychology; liaison psychiatry.

STATUS:
Met

The review team confirmed that patients are referred to the relevant services when required, although it was reported that there are delays in access to the counselling service, clinical psychology and liaison psychiatry due to long waiting times. It was noted that the posts for occupational therapy and designated renal social worker are funded for 2 years and 4 years respectively by the British Kidney Patients' Association. It is hoped that the Trust will continue to fund these posts after this time.

The review team commended the provision of a local transplant link nurse one day per week. This nurse accompanies patients to the Western Infirmary Transplant Unit, Glasgow, for their pre-transplant assessment. This was felt to be beneficial not only to the patient, but also to the renal unit in receiving feedback of the assessment.

- 2: Dialysis patients are regularly and confidentially reviewed by a multidisciplinary team including medical and nursing staff, dieticians and pharmacists.

STATUS:
Not met

Dialysis patients are reviewed regularly and confidentially on a monthly basis, principally by medical and nursing staff and the renal dietician. In addition, the social worker also attends when available. However, it was noted that there is no pharmacy involvement in the regular review of patients.

Standard 8 - Transplantation 1: Assessment for Transplantation

All dialysis patients are assessed for suitability of transplantation within three months of starting dialysis.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: All patients are assessed for transplantation within 3 months of starting dialysis and those suitable are referred to a Transplant Centre.

STATUS: Staff interviews confirmed that a system has recently been put in place to ensure that all patients are assessed for transplantation within 3 months of starting dialysis. Those suitable are referred to the Western Infirmary Transplant Unit, Glasgow. It was noted that the transplant link nurse is responsible for monitoring the progress of patients' assessments for transplantation.
Met

2: Patients referred are seen by a nephrologist and surgeon from the Transplant Centre.

STATUS: Patients referred are seen by a nephrologist and surgeon at the Western Infirmary Transplant Unit, Glasgow.
Met

3: Decisions regarding the patient's assessment at the Transplant Centre are communicated in writing, to the patient, the GP and, where appropriate, the carer.

STATUS: Decisions regarding the patient's assessment at the Transplant Centre are communicated in writing to the patient, the GP and, where appropriate, the carer. The review team noted that this is a recent development.
Met

4: All patients on dialysis are reviewed annually for their suitability for transplantation.

STATUS: The review team commended the monthly review of all patients on dialysis for their suitability for transplantation.
Met

5: All patients on the waiting list are informed of the outcome of their annual review either orally or in writing.

STATUS: All patients on the waiting list are informed of the outcome of their annual review in writing. The review team noted that this is a recent development.
Met

6: The percentage of dialysis patients on the waiting list for transplantation is monitored and reviewed annually.

STATUS: The review team commended the frequent review of the percentage of dialysis patients on the waiting list for transplantation. This is monitored monthly when the updated list of patients arrives at the unit from the tissue typing service.
Met

7: The unit takes part in the Renal Donor Sharing Scheme operated by UK Transplant.

STATUS: Dumfries & Galloway Royal Infirmary Renal Unit takes part in the Renal Donor Sharing Scheme operated by UK Transplant.
Met

8: Type 1 diabetic patients with renal failure are considered for combined pancreas and kidney transplant.

STATUS: Type 1 diabetic patients with renal failure are considered for combined pancreas and kidney transplant, and are referred directly to the Royal Infirmary of Edinburgh Transplant Unit.
Met

Standard 9 - Transplantation 2: Kidney Retrieval

The removal and use of cadaver kidneys for transplantation is carried out to optimise the quality of future renal function.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: Kidneys are retrieved by a transplant surgeon experienced in the procedure.

STATUS: Dumfries & Galloway Royal Infirmary is not a transplant unit.
Not applicable

2: Cold storage time is below 24 hours, where possible.

STATUS: Dumfries & Galloway Royal Infirmary is not a transplant unit.
Not applicable

3: Reasons for cold storage exceeding 24 hours are documented.

STATUS: Dumfries & Galloway Royal Infirmary is not a transplant unit.
Not applicable

4: Documentation of damage to retrieved kidneys is sent with the donor kidney to the transplant unit.

STATUS: Dumfries & Galloway Royal Infirmary is not a transplant unit.
Not applicable

5: A minimum of 70% of donor kidneys from people on artificial ventilation, who are confirmed to be dead by brain stem testing, function immediately.

STATUS: Dumfries & Galloway Royal Infirmary is not a transplant unit.
Not applicable

6: The percentage of kidneys that never function is no more than 5% for people on artificial ventilation, who are confirmed to be dead by brain stem testing.

STATUS: Dumfries & Galloway Royal Infirmary is not a transplant unit.
Not applicable

Standard 10 - Transplantation 3: Survival Rates

Patient and transplant survival rates following kidney transplantation are within acceptable limits.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: Following live related donor kidney transplantation: Patient survival rate is a minimum of 95% at 1 year; Transplant survival rate is a minimum of 93% at 1 year.

STATUS: Dumfries & Galloway Royal Infirmary is not a transplant unit.

Not applicable

2: Following first cadaver kidney graft transplantation: Patient survival rate is a minimum of 95% at 1 year and a minimum of 80% at 5 years; Transplant survival rate is a minimum of 85% at 1 year and a minimum of 66% at 5 years.

STATUS: Dumfries & Galloway Royal Infirmary is not a transplant unit.

Not applicable

3: Transplant patients are reviewed regularly by a nephrologist or transplant surgeon.

STATUS: Follow up of transplant patients is shared with the Western Infirmary Transplant Unit, Glasgow. Patients are also reviewed regularly by a nephrologist at Dumfries & Galloway Royal Infirmary Renal Unit.

Met

Standard 11 - Patient Focus 1: Out-patients

Waiting times for new patient appointments are within acceptable limits and clinic letters are sent out with minimum delay.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: New patients are offered an appointment to be seen within 1 month of referral.

STATUS:
Not met Audit data provided by the unit demonstrated that this criterion is not met. A contributing factor for this is limited clinic time available due to insufficient medical staff. The review team confirmed that referrals are prioritised by medical staff to ensure all urgent cases are seen quickly.

2: Clinic letters are sent to the GP within 2 weeks of being seen by a nephrologist.

STATUS:
Not met Audit data provided by the unit demonstrated that whilst a large percentage of clinic letters are sent to the GP within 2 weeks of being seen by a nephrologist, not all are sent within this time period.

3: Changes in medication are communicated to the GP via the patient using a written note or by updating a drug booklet.

STATUS:
Met Changes in medication are communicated to the GP via the patient using a drug management booklet. This is followed up with a letter to the GP, and a phone call in urgent cases. It was reported that changes in patients' medication are not always kept up-to-date in the drug management booklet. It was also reported that some GPs are reluctant to act on changes noted in the drug management booklet due to questions around its validity.

Standard 12 - Patient Focus 2: Provision of Patient Information

All people with chronic renal failure or on renal replacement therapy, and carers where appropriate, are given information to help them make informed choices.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

- 1: All people diagnosed with chronic renal failure, and carers where appropriate, are provided with appropriate information materials which are evidence-based, identify treatment options, possible outcomes, risks, possible side-effects, and sources of further information.

STATUS:
Met

The review team commended the proactive approach to patient information demonstrated by staff. Verbal explanations are supported with appropriate information materials. A large and comprehensive range of written, audio-visual, internet and Braille information is available. Of particular note is the locally developed guide to kidney failure. Carers are encouraged to attend clinic visits and are included in all discussions and decisions about treatment where appropriate. The review team commended the role of the pre-dialysis nurse in providing each patient with an individualised starter pack about renal failure.

Two meetings are held in Dumfries and Stranraer each a year for pre-dialysis patients to meet staff and learn more about renal failure. Good links exist between the renal unit and the Kidney Patients' Association.

- 2: Medical and nursing staff discuss possible treatment options which may include home and hospital dialysis, CAPD and APD, cadaver and live donor transplantation, with patients, and carers where appropriate, at a dedicated appointment or home visit.

STATUS:
Met

Possible treatment options are discussed at informal home visits by the pre-dialysis nurse. These are arranged at a time to suit the patient and, where appropriate, their carer. Patients are also seen monthly at the pre-dialysis clinic. Carers are also encouraged to attend clinics. In addition, informal study events for both patients and carers are held outwith the hospital.

- 3: Patients, and carers where appropriate, are involved in decisions about treatment and changes in treatment.

STATUS:
Met

The review team confirmed that both patients and carers are involved in decisions about treatment and changes in treatment.

Desirable Criteria

- 4: There is a designated pre-dialysis nurse specialist.

STATUS:
Met

There is a designated pre-dialysis nurse specialist. It was noted that this post is currently funded by the British Kidney Patients' Association.

Standard 13 - Patient Focus 3: Transportation for Haemodialysis

Delays for patients attending for dialysis are minimised through reasonable measures taken by the Trust.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: 50% of all patients using hospital transportation are collected from home within half an hour of their allotted pick-up time, and all are collected within one hour.

STATUS: Audit data provided by the unit demonstrated that this criterion is met. The review team noted that the unit plan to carry out an annual audit of transportation.
Met

2: 50% of all patients begin dialysis within half an hour of appointment time, and all begin within one hour.

STATUS: Audit data provided by the unit demonstrated that 50% of patients begin dialysis within half an hour of appointment time, and the vast majority begin within an hour. The review team noted that the unit has recently moved from having two set appointment times to staggered appointment times. It is reported that there has been an improvement in the amount of time patients wait before beginning dialysis since this change was introduced.
Not met

3: 50% of all patients using hospital transportation are collected within half an hour of the end of dialysis, and all are collected within one hour, provided they are clinically fit.

STATUS: Audit data provided by the unit demonstrated that whilst more than 50% of patients using hospital transportation are collected within half an hour of the end of dialysis, not all patients are collected within an hour. It was recognised that there are issues around the collection of patients following dialysis and it was reported that the unit is attempting to address these issues.
Not met

4: Reasons for delays of more than an hour are documented.

STATUS: Whilst reasons for delays of more than an hour are documented by the Scottish Ambulance Service, they are not currently documented by the unit. However, staff demonstrated a good awareness of the reasons for delays, and ring the Scottish Ambulance Service if patients have not been collected within a reasonable time. The review team noted that information on delays is monitored by the Ambulance Liaison Working Group. This group is attended by a nurse from the renal unit. It was reported that the provision of a local co-ordinator for the Scottish Ambulance Service has resulted in an improved service, and it is hoped that improvements will continue.
Not met

5: Patients who wait for hospital transport do so in comfortable surroundings.

STATUS: The review team confirmed that the waiting area for those waiting for hospital transport is comfortable. However, due to the fact that there are no staff present in this room, it was noted that patients prefer to wait elsewhere in the hospital so that staff are able to see whether they have been collected or not.
Met

Desirable Criteria

6: Within the constraints of population density and geography, a unit is available within half an hour's travelling time for patients.

STATUS:
Not met

The review team concluded that this criterion is not currently met. It was recognised that geographical constraints prevent patients from being within half an hour's travelling time of the current unit at Dumfries & Galloway Royal Infirmary. Concern was expressed for patients from the west of the region, who currently travel in excess of 1.5 hours each way, three times a week, for dialysis in Dumfries. The review team noted the desire of the unit to establish a satellite unit in Stranraer, although plans for this have not been formalised.

Standard 14 - Audit: Information/Data Collection

There is continuous data collection to facilitate regular national audit through the Scottish Renal Registry.

Dumfries & Galloway Royal Infirmary Renal Unit

Essential Criteria

1: There are information systems in place for continuous collection of the Scottish Renal Registry core data set to facilitate audit.

STATUS: Information systems are in place for continuous collection of the Scottish Renal Registry core data set to facilitate audit. However, it was noted that there are multiple databases for the collection of a variety of information, which are not integrated. It was also noted that there is no direct electronic link between the renal unit and the Scottish Renal Registry. This results in data being manually transferred from one system to another. It was recognised that this is time-consuming and labour-intensive.

Met

The review team commended the computer package which has been developed by the renal and clinical audit departments for clinical audit. This system enables staff to track the progress of patients in their treatment.

2: The unit takes part in comparative audits of dialysis and transplantation through the Scottish Renal Registry and, where appropriate, UK Transplant.

STATUS: The review team confirmed that this criterion is met.

Met

3: There is data collection of the following, where appropriate, to facilitate regular audit: Haemodialysis adequacy (monthly for hospital dialysis and every 3 months for home dialysis); Peritoneal dialysis adequacy (6-monthly); Haemoglobin levels (monthly for hospital dialysis and every 3 months for peritoneal and home dialysis); Peritonitis (occurrence, investigation, treatment and cause); Type and time of access surgery; Immediate function of cadaver kidneys; Patient and transplant survival rates.

STATUS: The review team confirmed that all the required data are collected routinely.

Met

Desirable Criteria

4: There is collection of incidence, management and outcome data on acute renal failure.

STATUS: The review team commended the collection of audit data on acute renal failure. It was noted that the renal unit has a special interest in acute renal failure.

Met

1 Appendix — Glossary of Abbreviations

Abbreviation

| | |
|------|--|
| APD | Automated Peritoneal Dialysis |
| CAPD | Continuous Ambulatory Peritoneal Dialysis |
| EPO | Erythropoietin |
| GP | General Practitioner |
| HDU | High Dependency Unit |
| ITU | Intensive Therapy Unit |
| MRSA | Methicillin Resistant <i>Staphylococcus aureus</i> |
| SRR | Scottish Renal Registry |
| URR | Urea Reduction Ratio |

Appendix — Review Team Members 2

Details of Review Visit

The review visit to Dumfries & Galloway Royal Infirmary Renal Unit, Dumfries & Galloway Acute & Maternity Hospitals NHS Trust was conducted on 23 July 2002. The review team members for this visit were:

Professor Alison MacLeod (Team Leader)

Honorary Consultant Physician/Nephrologist, Grampian University Hospitals NHS Trust

Sister Anne Allan

Clinical Ward Manager, Highland Acute Hospitals NHS Trust

Mrs Caroline Arnott

Ward Manager, Fife Acute Hospitals NHS Trust

Mr Tony Collins

Lay Representative, Grampian

Dr Morag Gorrie

Associate Specialist, North Glasgow University Hospitals NHS Trust

Ms Leonora Johnston

Lay Representative, Glasgow

Miss Margaret Nicol

Pharmacy Manager, Ayrshire & Arran Acute Hospitals NHS Trust

Clinical Standards Board for Scotland Personnel

Ms Rona Smith

Senior Project Officer, Clinical Standards Board for Scotland

Mrs Fiona Russell (nee Dymitrenko)

Project Officer, Clinical Standards Board for Scotland

3 Adult Renal Services Project Group — Appendix

Dr Brian Junor (Chairman)

Consultant Nephrologist, Western Infirmary, North Glasgow University Hospitals NHS Trust

Mr Murat Akyol

Consultant Surgeon, Lothian University Hospitals NHS Trust

Mrs Caroline Arnott

Ward Manager, Fife Acute Hospitals NHS Trust

Dr Gordon Baird

General Practitioner, Dumfries & Galloway

Mrs Megan Casserly

Lay Representative, Greater Glasgow

Mrs Rhona Duncan

Renal Dietician, Ayrshire & Arran Acute Hospitals NHS Trust

Mr James Dunleavy

Renal Pharmacist, Lanarkshire Acute Hospitals NHS Trust

Mr Sandy Glass

Lay Representative, Highland

Dr Chris Isles

Consultant Physician, Dumfries & Galloway Acute & Maternity Hospitals NHS Trust

Professor Alison MacLeod

Honorary Consultant Physician/Nephrologist, Grampian University Hospitals NHS Trust

Ms Lesley Logan

Project Manager, National Services Division

Mrs Maureen Perry

Specialist Nephrology Nurse, Tayside University Hospitals NHS Trust

Dr Keith Simpson

Consultant Physician, North Glasgow University Hospitals NHS Trust

The Board member specifically working with the Adult Renal Services Project Group was **Professor John Cromarty**, Trust Chief Pharmacist, Highland Acute Hospitals NHS Trust.

Dr David Steel (Chief Executive), **Mr Sean Doherty** (Review Team Manager), **Ms Rona Smith** (Senior Project Officer), **Mrs Fiona Russell** (nee Dymitrenko; Project Officer) and **Miss Josephine O’Sullivan** (Project Administrator) from the CSBS provided support.

4 Timetable of Visits — Appendix

| Organisation Reviewed | Dates |
|--|-------------------|
| NHS Ayrshire & Arran Crosshouse Hospital, Kilmarnock | 2 October 2002 |
| NHS Dumfries & Galloway Dumfries & Galloway Royal Infirmary, Dumfries | 23 July 2002 |
| NHS Fife Queen Margaret Hospital, Dunfermline | 21 August 2002 |
| NHS Glasgow (North) Glasgow Royal Infirmary Including: Falkirk & District Royal Infirmary (satellite unit) Stobhill Hospital, Glasgow (satellite unit) | 26 June 2002 |
| Western Infirmary Including: Gartnavel General Hospital, Glasgow (annex) Inverclyde Royal Hospital, Greenock (satellite unit) | 12 June 2002 |
| NHS Grampian Aberdeen Royal Infirmary Including: Dr Gray's Hospital, Elgin (satellite unit) Peterhead Community Hospital (satellite unit) Chalmers Hospital, Banff (satellite unit) | 23 October 2002 |
| NHS Highland Raigmore Hospital, Inverness | 29 May 2002 |
| NHS Lanarkshire Monklands Hospital, Airdrie | 10 July 2002 |
| NHS Lothian Royal Infirmary of Edinburgh Including: Borders General Hospital, Melrose (satellite unit) Western General Hospital, Edinburgh (satellite unit) | 19 September 2002 |
| NHS Tayside Ninewells Hospital, Dundee | 5 September 2002 |