Raigmore Hospital
Renal Unit (Highland)

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.

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Setting the Scene 1

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 **Raigmore Hospital Renal Unit** managed by **Highland Acute Hospitals NHS Trust**. This review visit took place on **29 May 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 Trust[1] 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.

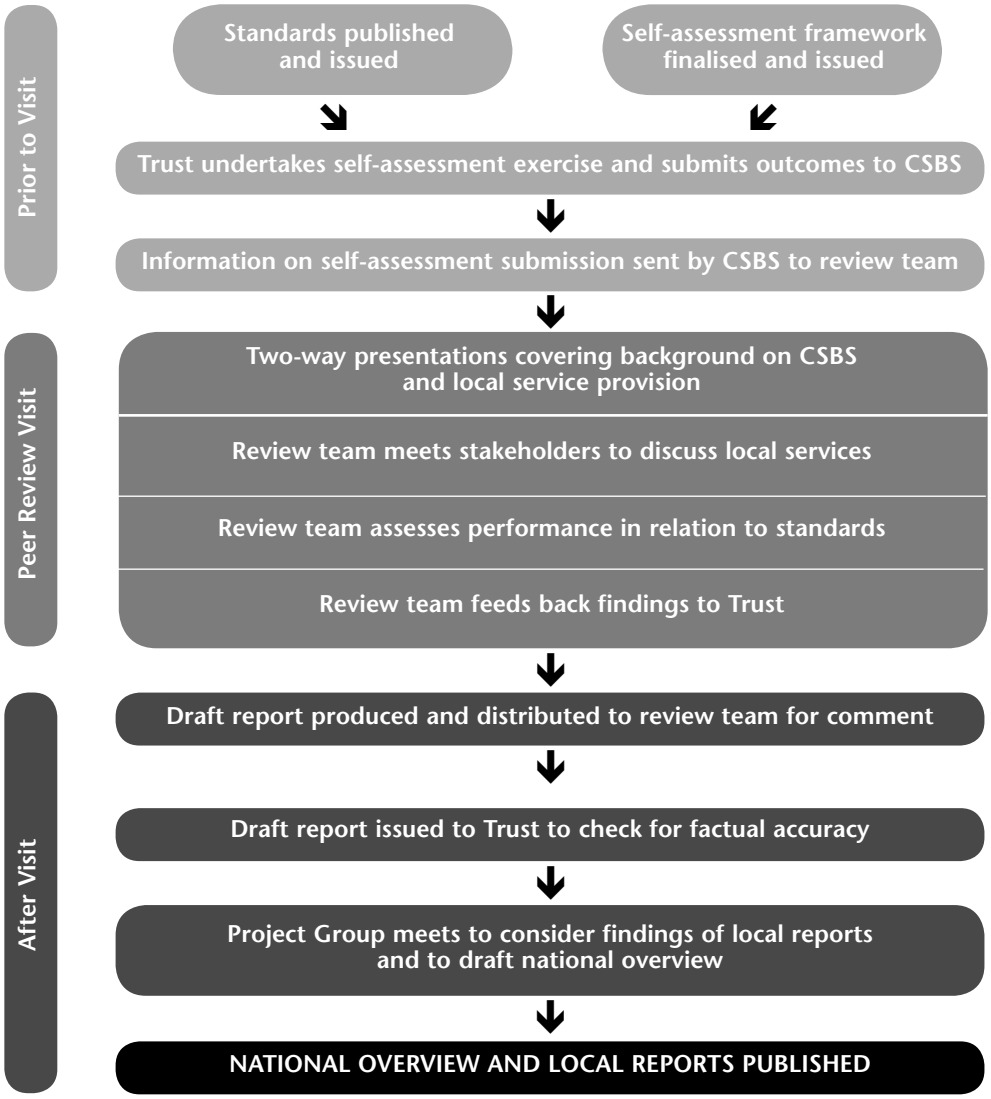
Assessment Categories

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

Highland is a large geographical area situated in the north of Scotland and has a population of around 208,600. The city of Inverness is the largest urban area in the region, although most of the population live in rural areas which may be remote, including islands. 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

Highland 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 Highland.

Clinical services are provided through two Trusts, Highland Acute Hospitals NHS Trust and Highland 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 Highland NHS Board: www.show.scot.nhs.uk/hhb.

Raigmore Hospital Renal Unit, Inverness 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 Highland Acute Hospitals NHS Trust:

- At the time of the visit there were 138 patients receiving renal replacement therapy. There were 32 new patients during the previous year. The number of patients on different forms of renal replacement therapy are as follows:

- hospital haemodialysis	44
- home haemodialysis	1
- continuous ambulatory peritoneal dialysis (CAPD)	21
- automated peritoneal dialysis (APD)	11
- renal transplant	61

Patients with suspected renal failure are referred to Raigmore Hospital for renal investigation. For patients requiring renal replacement therapy, dialysis is started at Raigmore Hospital, with treatment continued at home where appropriate. Transplant patients are typically referred to the transplant unit at Aberdeen Royal Infirmary. In the case of live related or combined pancreas and kidney transplants, patients are referred to the transplant unit at the Royal Infirmary of Edinburgh. Follow-up of transplant patients is undertaken at Raigmore Hospital.

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

- The referral population covered by Raigmore Renal Unit is approximately 250,000 and includes the Isles of Lewis and Harris.

- The 18 months prior to the review visit saw a 50% increase in patients requiring haemodialysis and a 20% increase in patients on peritoneal dialysis. This is consistent with an overall rise in incidence across Scotland.

- There is a lack of computerised information systems resulting in much of the audit data being collected using manual systems.

- Funding for the transplant co-ordinator comes from the National Services Division. The role forms part of the link with Aberdeen Royal Infirmary Transplant Unit.

- At the time of the visit there was an outstanding vacancy for a vascular surgeon.

- Haemodialysis patients travelling to Raigmore Hospital from Wick must currently travel 2.5 hours each way three times a week for dialysis. Due to shared transportation there can be long waiting times for collection at the end of dialysis for these patients. This issue is currently being addressed with the acceptance of a business case for a four-space satellite unit in Wick. It is anticipated that this unit will be commissioned in January 2003. However, it was noted that seven patients still travel a similar distance three times per week from Ballachulish and Fort William.

- Several other new developments to the service were highlighted during the visit:
  - a second consultant nephrologist took up post in March 2002;
  - the appointment of a renal dietician in 2001 has seen an improvement to the dietetic service offered to renal patients;
  - seven new staff nurses have recently been appointed;
  - modification of the unit is planned, featuring two new dialysis spaces, increased office space and modifications to the theatre;
  - development of the pre-dialysis clinic; and
  - installation of a central water treatment plant by September 2002.

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 indicated that the adequacy target is met for patients who have been on dialysis for more than 3 months. The review team commended the system of thorough review of patients who do not achieve the target adequacy.

The review team was concerned that the microbial count of water for dialysis is not currently monitored, but noted that plans are in place to begin monitoring in September 2002 when installation of a central water treatment plant is due to be completed.

Peritoneal Dialysis

Audit data provided by the unit indicated that all patients on peritoneal dialysis achieve the essential limits for adequacy detailed in this standard. Should patients not achieve the target, however, a comprehensive system of documentation and review is in place.

A challenge for the Trust is the higher than average rate of peritonitis. Contributing factors for this include the geography and rural nature of the surrounding area. This results in an older age range of patients and patients' desire to continue dialysis at home in the form of continuous ambulatory peritoneal dialysis (CAPD). Patients with recurrent peritonitis who, in other circumstances might be transferred to hospital haemodialysis, typically remain on peritoneal dialysis to avoid long travelling times.

Haemoglobin in Patients on Dialysis

Audit data provided by the unit indicated that the haemoglobin targets are achieved in a minimum of 85% of patients. A comprehensive system of review is in place for patients failing to meet haemoglobin targets.

Dialysis Access

Audit data provided by the unit indicated that the percentage of patients having permanent access available at their first dialysis is outwith the target set by the standard. Contributing factors include a lack of dedicated theatre time for access surgery, presenting the Trust with a particular challenge. The review team noted that there is no formal audit of access availability and felt that this would be beneficial to the unit in assessing the need for dedicated theatre time. Long waiting times were also reported for radiological backup in the case of failing fistulae.

The review team was impressed with the percentage of patients having working fistulae and the low number of permanent catheters used.

Nutritional Status

The review team commended the improvements introduced to the dietetic service since the appointment of a renal dietician in May 2001. Comprehensive dietetic assessments are undertaken on a regular basis for all patients, and there is good awareness amongst staff of local protocols. Nutritional goals are set, documented and monitored in accordance with Renal Nutritional Group Standards. Baseline anthropometry is carried out and documented for all patients at the beginning of dietetic treatment. The review team noted the good communication between medical and nursing staff and the dietician.

Example of a local initiative

The review team commended the redesign of the dietetic record card, which is comprehensive and facilitates improved monitoring of patients.

Drug Therapy

There is good awareness of local protocols, as well as those used by Aberdeen Royal Infirmary Transplant Unit for immunosuppressive regimens. However, the review team noted the lack of pharmaceutical input into the development of local protocols. All patients' prescriptions are reviewed by medical staff, and both medical and nursing staff provide patients with information and advice about their medication.

Example of a local initiative

The review team commended the use of a form which in-patients on the ward sign when they receive a copy of the electronic Immediate Discharge Letter, to confirm that medical and nursing staff have provided an explanation of their drugs, and that they have understood what they have been told.

A challenge to the Trust is the provision of a designated pharmacy input to the renal unit. There is currently no regular pharmaceutical input into the renal unit. However, it was noted that the pharmacist reviews the medication of patients on the medical ward where renal in-patients are seen.

Access to Multidisciplinary Team

It was reported that there is easy access to most members of the multidisciplinary team. However, there is no designated renal social worker and the review team was informed that the full potential of the contribution which could be made by the available social work service was not being realised. The review team established that while the review of dialysis patients is not multidisciplinary, good communication exists between the medical and nursing staff and the dietician. There is no pharmaceutical input into the multidisciplinary team.

Assessment for Transplantation

The review team commended the systems that are in place to ensure frequent review of dialysis patients for transplantation. The review team was pleased to note that good communication exists between medical and nursing staff and patients, with the patient fully involved throughout the assessment process. However, it was noted that patients who are not suitable for transplant do not receive notification of this in writing.

A challenge to the Trust is to encourage familiarisation with the transplant unit and team at Aberdeen Royal Infirmary for patients who are referred. At the time of the visit, patients on the transplant list do not visit the transplant unit until they are called for transplantation.

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. However, it was noted that a second consultant took up post in March 2002, and it is anticipated that this will help to reduce waiting times. It was also noted that some patients are admitted directly if travelling long distances or if clinically required, which the review team concluded would have an impact on waiting time data, since these patients would be excluded from the audit data. The review team acknowledged that urgent cases are all seen within 2 weeks of referral.

The review team was impressed to note that all clinic letters are sent to the GP within 2 weeks of the patient being seen by the nephrologist.

Provision of Patient Information

The review team commended the written information provided to patients, in particular a locally developed guide to kidney failure. The review team also established that good verbal communication exists between staff and patients.

A challenge identified by the review team is the provision of a designated pre-dialysis nurse specialist.

Transportation for Haemodialysis

The review team commended the high proportion of patients who are picked up from home within half an hour of their allotted pick-up time. The team was also pleased to note the recent appointment of seven new staff nurses which it is hoped will help to improve the number of patients beginning dialysis within half an hour of appointment time. However, it was noted that there are issues around the collection of patients within 1 hour following the end of dialysis. A contributing factor was felt to be geographical constraints; patients from Wick share transport for practical reasons. This often results in longer waiting times for patients being collected following the end of dialysis, due to the need to wait until all patients from this area complete dialysis.

Example of a local initiative

The review team welcomed the acceptance of a business case for a four-space satellite unit in Wick, which will help to improve the travelling times for dialysis patients in this area. It is hoped that this unit will be commissioned in January 2003.

Challenges to the Trust are the recording of reasons for delays of more than an hour in transportation and beginning dialysis, and the provision of a comfortable area for patients to wait for hospital transportation. The review team was pleased to note that the Trust is addressing the latter, with plans in place to refurbish the area during mid-2002.

Audit: Information/Data Collection

The review team identified issues around the collection of data for audit. Manual systems are in place to ensure the continuous collection of the Scottish Renal Registry core data set. The unit also takes part in comparative audits of dialysis and transplantation through the Scottish Renal Registry. However, it was recognised that the manual systems of data collection are time consuming and labour-intensive. The review team noted that no computerised information systems are in place for the collection of these data. Data are sent to the Scottish Renal Registry national database via the computerised system at the Aberdeen Royal Infirmary Renal Unit.

The review team was encouraged to note that the unit is reviewing whether to audit the type and time of access surgery. It was felt that this would be beneficial to the unit in assessing its need for dedicated theatre access.

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).

Raigmore Hospital Renal Unit, Highland

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:	
Met	Audit data provided by the unit demonstrated that this criterion is met for patients who have been on dialysis for more than 3 months. Staff interviews confirmed that the Kt/V measurement is not used.

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

STATUS:	
Met	Reasons for patients not achieving the target haemodialysis adequacy are documented in the haemodialysis book and case notes. For patients not achieving the target haemodialysis adequacy, a careful examination of the patient is carried out, with both access and dialysis prescription being reviewed.

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

STATUS:	
Met	All haemodialysis patients are offered dialysis three times per week.

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

STATUS:	
Not met	Staff interviews confirmed that the microbial count is not currently checked. However, it was noted that plans are in place for a central water treatment plant to be installed in September 2002. The review team was reassured that the microbial count will be monitored following installation of the new treatment plant.

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:	
Met	Monthly calculation of the percentage of patients achieving the Renal Association Standards for pre-dialysis potassium, phosphate, and calcium began in March 2002. The review team was assured that calculation of these percentages would continue on a monthly basis. It was noted that collation and calculation of this information is manual due to a lack of IT systems, and that the resource previously available for the collation of audit data is no longer available to the renal unit.

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.

Raigmore Hospital Renal Unit, Highland

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:	It was noted that all patients currently achieve the target peritoneal dialysis adequacy. However, should patients not achieve the target, a comprehensive system is in place for documentation of reasons.
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 2-monthly.
Met	

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

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

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

STATUS:	Audit data provided by the unit demonstrated that this criterion is not met. A contributing factor for this is the higher than average percentage of patients on continuous ambulatory peritoneal dialysis. Reasons for this include the geography and rural nature of the surrounding area, which results in an older age range of patients and patients' desire to continue dialysis at home. Patients with recurrent peritonitis who, in other circumstances might be transferred to hospital haemodialysis, typically remain on peritoneal dialysis to avoid long travelling times.
Not met (insufficient evidence)	

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.

Raigmore Hospital Renal Unit, Highland

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

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

STATUS: **Met**	Reasons for patients not achieving the target haemoglobin are well documented in case notes. Patients not achieving the target are carefully monitored on the ward round or at monthly clinics, with a full review of clinical status and erythropoietin/iron regimen being undertaken.

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

STATUS: **Met**	Staff interviews confirmed that ferritin levels are checked 1 week after a patient receives intravenous iron; thereafter they are monitored 2-monthly.

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

STATUS: **Met**	The number of patients receiving blood transfusions is monitored, with the reasons for the transfusion being documented in case notes.

Standard 4 - Clinical Management/Treatment 4: Dialysis Access

All people requiring dialysis have timely surgery for access.

Raigmore Hospital Renal Unit, Highland

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: **Not met**	Audit data provided by the unit demonstrated that this criterion is not met. The review team noted that a contributing factor is the lack of dedicated theatre sessions for dialysis access. The review team was also informed of issues around waiting times for radiological backup in the event of failing fistulae.

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

STATUS: **Met**	Reasons for patients not having permanent access available at their first dialysis are recorded in case notes. The review team noted that there is currently no formal audit of access availability.

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

STATUS: **Not met**	There are currently no dedicated theatre sessions for dialysis access. Patients requiring access are currently put on the vascular or general surgery list. The team noted that at the time of the visit there were 138 patients receiving renal replacement therapy, with 77 receiving dialysis.

Desirable Criteria

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

STATUS: **Met**	Audit data provided by the unit demonstrated that over 70% of patients have arteriovenous fistulae or vein graft as their permanent haemodialysis access.

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

STATUS: **Met**	Audit data provided by the unit demonstrated that permanent catheters are used as haemodialysis access in a very low percentage of patients.

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.

Raigmore Hospital Renal Unit, Highland

Essential Criteria

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

STATUS: **Met**	All patients are seen regularly by the renal dietician for assessment to identify those at risk of malnutrition. Staff interviews confirmed that protocols are in place for dietary assessment and are routinely followed. Staff demonstrated a good awareness of these protocols.

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

STATUS: **Met**	All patients who have been identified as at risk have nutritional goals set, documented and monitored in accordance with Renal Nutritional Group Standards. A revised dietetic record card was introduced a month before the review visit. The review team noted that the new card is comprehensive and allows for improved monitoring of patients. In addition, nutritional goals are documented in the patients' case notes.

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

STATUS: **Met**	Reasons why patients identified as at risk do not achieve nutritional goals are documented on the dietetic record card. Protocols are in place for action to be taken if patients do not achieve nutritional goals. Staff demonstrated good awareness of these protocols and confirmed that they are routinely followed.

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

STATUS: **Met**	A designated renal dietician took up post in May 2001. The review team commended the improvements introduced to the service since this appointment. It was noted that holiday cover for the renal dietician is provided on an ad hoc basis.

Desirable Criteria

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

STATUS: **Met**	Baseline anthropometry is documented for all patients at the beginning of dietetic treatment by the renal dietician, and 6-monthly thereafter for haemodialysis patients. The review team confirmed that the renal dietician is trained in the technique.

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.

Raigmore Hospital Renal Unit, Highland

Essential Criteria

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

STATUS:	
Met	Protocols exist for the management of anaemia, treatment of peritonitis and immunisation for hepatitis B. Medical and nursing staff showed a good awareness of these protocols. It was noted that there had been no pharmaceutical input into the development of the protocols.

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:	
Not applicable	Although not a transplant unit, the review team confirmed that staff at Raigmore Renal Unit, Inverness, demonstrated a good knowledge of the immunosuppressive regimens from Aberdeen Royal Infirmary Transplant Unit.

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

STATUS:	
Met	All patients' prescriptions are reviewed by medical staff during the haemodialysis ward round or in the out-patient clinics.

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:	
Met	Information and advice about the use of drugs in chronic renal failure or in dialysis patients is available to patients through verbal communication from medical and nursing staff. The review team commended the use of a form which in-patients on the ward sign when they receive a copy of the electronic Immediate Discharge Letter, to indicate their understanding of what has been explained to them about their drugs. However, it was noted that this form is not used in the renal unit itself. Advice for healthcare professionals is in the form of literature specific to renal prescribing. Access to a pharmacist is available if required.

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

STATUS:	
Not met	There is no designated pharmacist with a recognised postgraduate qualification and/or renal experience. The review team noted that there is no regular pharmaceutical input into the renal unit, although the medicines information pharmacist deals with requests for information and resources.

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

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

Raigmore Hospital Renal Unit, Highland

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: **Not met**	Patients are referred to the relevant services when required, with the exception of pharmacy and counselling. The review team expressed concern that referrals to the social worker appear to be on an ad hoc basis, and that the full potential of the service was not being realised.

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

STATUS: **Not met**	Staff interviews confirmed that dialysis patients are regularly reviewed by a multidisciplinary team comprising medical and nursing staff and dietician. The review team noted that the renal dietician is not involved in the review of all patients, but confirmed that good communication exists between medical and nursing staff and the dietician. There is also no pharmacist in the multidisciplinary team. It was reported that, although there can be issues with regard to confidential review of patients due to the configuration of the unit, patients are able to be reviewed confidentially where required.

Standard 8 - Transplantation 1: Assessment for Transplantation

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

Raigmore Hospital Renal Unit, Highland

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: **Met**	A rigorous system is in place to ensure that all patients are assessed for transplantation within 3 months of starting dialysis. Those suitable are referred to a Transplant Centre. A formalised protocol exists for referral of suitable patients to the Royal Infirmary of Edinburgh Transplant Unit for combined kidney/pancreas transplant.

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

STATUS: **Not met**	Patients referred are seen at Raigmore Hospital, Inverness, by a transplant surgeon from Aberdeen Royal Infirmary Transplant Unit. However, the review team noted that patients are not seen by a nephrologist from the Transplant Centre.

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: **Not met**	Patients are only notified in writing if they are suitable for transplant; if they are not suitable they are informed verbally whilst attending the clinic. The review team noted the good communication that exists between medical staff and patients, with the patient fully involved throughout the assessment process.

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

STATUS: **Met**	Staff interviews confirmed that all patients are reviewed at least annually for their suitability for transplantation. This is done at the 6-monthly review of the transplant list, during the haemodialysis monthly ward round and at out-patient clinics.

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

STATUS: **Met**	All patients are informed orally of the outcome of their annual review. If there is a change in the patient's status, this is communicated to the patient in writing.

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

STATUS: **Met**	The percentage of dialysis patients on the waiting list for transplantation is monitored and reviewed on a 6-monthly basis.

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

STATUS: **Met**	Raigmore Hospital Renal Unit takes part in the Renal Donor Sharing Scheme operated by UK Transplant.

8: Type 1 diabetic patients with renal failure are considered for combined pancreas and kidney transplant.	
STATUS: **Met**	Type 1 diabetic patients with renal failure are reviewed for combined pancreas and kidney transplant in the out-patient clinic or haemodialysis ward round, and are referred to the Royal Infirmary of Edinburgh Transplant Unit if suitable. The protocol from the Royal Infirmary of Edinburgh Transplant Unit is used and staff demonstrated a good awareness of this.

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.

Raigmore Hospital Renal Unit, Highland

Essential Criteria

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

STATUS: Raigmore Hospital is not a transplant unit.
Not applicable

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

STATUS: Raigmore Hospital is not a transplant unit.
Not applicable

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

STATUS: Raigmore Hospital 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: Raigmore Hospital 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: Raigmore Hospital 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: Raigmore Hospital 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.

Raigmore Hospital Renal Unit, Highland

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: **Not applicable**

Raigmore Hospital is not a transplant unit.

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: **Not applicable**

Raigmore Hospital is not a transplant unit.

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

STATUS: **Met**

Staff interviews confirmed that transplant patients are reviewed regularly by a nephrologist. Information regarding the patient's progress is passed on to the transplant unit.

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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.

Raigmore Hospital Renal Unit, Highland

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 standard is not met, although the review team confirmed that urgent cases are seen within 2 weeks. The review team noted that these data were collected over a period when only a single consultant was available and felt that this could be a contributing factor to the higher waiting times. A second consultant has recently taken up post and it is anticipated that this will help to reduce waiting times from referral to appointment. Staff interviews also confirmed that some patients are admitted directly if travelling long distances or if clinically required. The review team concluded that this would have an impact on waiting time data, since these patients would be excluded from the audit data.

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

STATUS: **Met**	Staff interviews confirmed that all clinic letters are sent to the GP within 2 weeks of the patient being seen by a nephrologist.

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

STATUS: **Met**	The review team was confident that changes in medication are communicated to the GP via the patient in writing.

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.

Raigmore Hospital Renal Unit, Highland

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 locally developed guide to kidney failure which is given to patients, and their carers where appropriate. This guide is also available in large print. In addition, a selection of other information, literature and videos, are available to patients. Feedback from patients indicated that they feel the information they receive to be comprehensive.

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**	Pre-dialysis clinics with extended appointment times are run for the purpose of discussing all possible treatment options with patients. The advantages and disadvantages of each option are also pointed out.

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

STATUS: **Met**	Staff and patient interviews confirmed that patients, and carers where appropriate, are involved in decisions about treatment and changes in treatment.

Desirable Criteria

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

STATUS: **Not met**	There is no designated pre-dialysis nurse specialist.

Standard 13 - Patient Focus 3: Transportation for Haemodialysis

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

Raigmore Hospital Renal Unit, Highland

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: **Met**	Audit data provided by the unit demonstrated that this standard is met, with nearly all patients using hospital transportation being collected from home within half an hour of their allotted pick-up time.

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

STATUS: **Not met**	Audit data provided by the unit demonstrated that 50% of all patients begin dialysis within half an hour of appointment time. However, not all patients begin dialysis within 1 hour. A contributing factor for this was felt to be staff shortages. The review team was encouraged to learn that this issue has recently been addressed, with new nursing staff due to start in June 2002.

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: **Not met**	Audit data provided by the unit demonstrated that while 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 1 hour. Geographical problems were felt to be a contributing factor. The review team was pleased to note that plans are in place to open a small satellite dialysis unit in Wick and was confident that this would help to reduce the waiting time for patients being collected at the end of dialysis.

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

STATUS: **Not met**	Reasons for delays of more than 1 hour are not currently documented.

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

STATUS: **Not met**	Although adequate, the area where patients wait for hospital transport was not considered to be comfortable. However, the review team was encouraged to note that plans are in place to refurbish the area during mid-2002.

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 the provision of a unit within half an hour's travelling time for all patients. However, concern was expressed for patients from the north and south-west of the region who currently travel in excess of 2.5 hours each way, three times a week, for dialysis in Inverness. The review team acknowledged efforts made by the Trust to address this issue, and welcomed plans to open a satellite unit in Wick, which will improve the travelling time for patients in the north of the region.

Standard 14 - Audit: Information/Data Collection

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

Raigmore Hospital Renal Unit, Highland

Essential Criteria

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

STATUS: **Not met**	Although manual systems are in place for the continuous collection of the Scottish Renal Registry core data set, there are currently no computerised information systems.

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

STATUS: **Met**	The unit takes part in comparative audits of dialysis and transplantation through the Scottish Renal Registry.

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: **Not met**	The review team confirmed that there is currently no audit of the type and time of access surgery, although it was noted that this is under review.

Desirable Criteria

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

STATUS: **Met**	The review team confirmed that these data are being collected and audited.

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 *Staphylococcus aureus*
SRR	Scottish Renal Registry
URR	Urea Reduction Ratio

Review Team Members — Appendix 2

Details of Review Visit

The review visit to Raigmore Hospital Renal Unit, Highland Acute Hospitals NHS Trust was conducted on 29 May 2002. The review team members for this visit were:

Dr Brian Junor (Team Leader)
Consultant Nephrologist, Western Infirmary, North Glasgow University Hospitals NHS Trust
(Chairman of the Renal Services Project Group)

Sister Stella Adam
Sister, Grampian University Hospitals NHS Trust

Mrs Doreen Bell
Lay Representative, Fife

Mrs Adele Cook
Lay Representative, Dumfries & Galloway

Miss Aileen Currie
Renal Pharmacist, Fife Acute Hospitals NHS Trust

Dr Alison Severn
Locum Consultant Nephrologist, Tayside University 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 Appendix — Adult Renal Services Project Group

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 Appendix — Timetable of Visits

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	26 June 2002
Including: Falkirk & District Royal Infirmary (satellite unit)	
Stobhill Hospital, Glasgow (satellite unit)	
Western Infirmary	12 June 2002
Including: Gartnavel General Hospital, Glasgow (annex)	
Inverclyde Royal Hospital, Greenock (satellite unit)	
NHS Grampian	
Aberdeen Royal Infirmary	23 October 2002
Including: Dr Gray's Hospital, Elgin (satellite unit)	
Peterhead Community Hospital (satellite unit)	
Chalmers Hospital, Banff (satellite unit)	
NHS Highland	
Raigmore Hospital, Inverness	29 May 2002
NHS Lanarkshire	
Monklands Hospital, Airdrie	10 July 2002
NHS Lothian	
Royal Infirmary of Edinburgh	19 September 2002
Including: Borders General Hospital, Melrose (satellite unit)	
Western General Hospital, Edinburgh (satellite unit)	
NHS Tayside	
Ninewells Hospital, Dundee	5 September 2002