N I A O

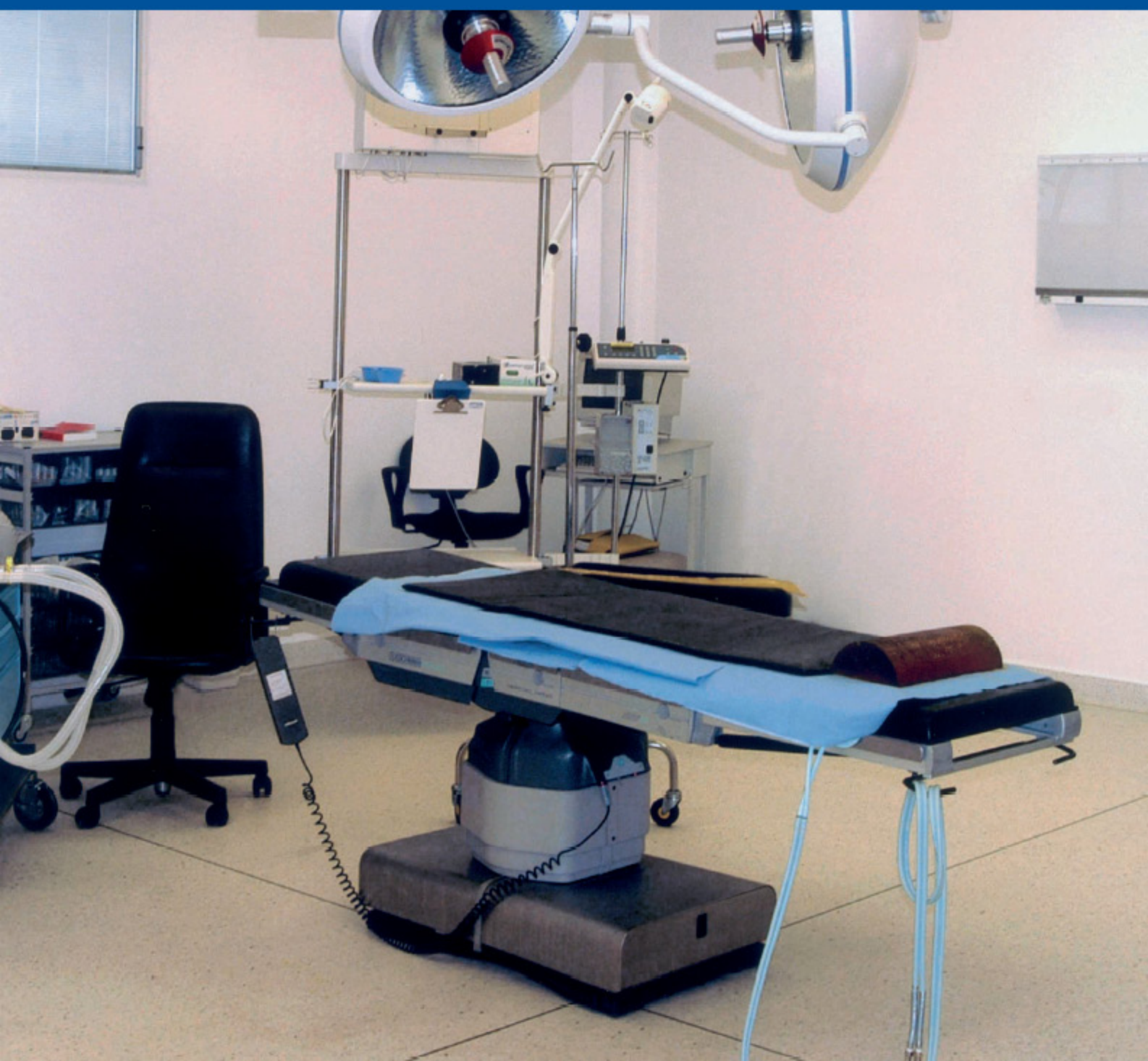
Northern Ireland Audit Office

The Use of Operating Theatres

in the Northern Ireland Health and PersonalSocial Services

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL

NIA 111/02, HC552 10 April 2003



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for Northern Ireland

Ordered by the House of Commons
to be printed 9 April 2003

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HC 552
NIA 111/02

BELFAST: The Stationery Office

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J M Dowdall
Comptroller and Auditor General

Northern Ireland Audit Office
9 April 2003

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List of Abbreviations

A&E	Accident and Emergency
ATICS	Anaesthetics, Theatre and Intensive Care Services
BADS	British Association of Day Surgery
BCH	Belfast City Hospital
Boards	Health and Social Services Boards
CABG	Coronary Artery By-Pass Graft
C&AG	Comptroller and Auditor General
CAH	Craigavon Area Hospital
CREST	Clinical Resource Efficiency Support Team
DHSSPS	Department of Health, Social Services and Public Safety
DNA	Did Not Attend
ENT	Ear, Nose and Throat
HCHS	Hospital and Community Health Services
HDU	High Dependency Unit
HPSS	Health and Personal Social Services
HRG	Healthcare Resource Group
HSA	Health Services Audit
HSS	Health and Social Services
ICT	Information and Communication Technologies
ICU	Intensive Care Unit
IT	Information Technology
LHSCG	Local Health and Social Care Group
NAO	National Audit Office
NHS	National Health Service
NIAO	Northern Ireland Audit Office
PAC	Public Accounts Committee, Northern Ireland Assembly
RBHSC	Royal Belfast Hospital for Sick Children
RGH	Royal Group of Hospitals
RVH	Royal Victoria Hospital
TMS	Theatre Management System
Trusts	Health and Social Services Trusts
Wte	Whole Time Equivalent

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EXECUTIVE SUMMARY

Background

1. 13 acute hospital Trusts, incorporating 21 hospitals and using 102 operating theatres, provide surgical and medical services in Northern Ireland (paragraph 1.4).

2. The Northern Ireland Audit Office (NIAO) examined the use made of these operating theatres, and particularly, issues relating to the management and control of theatres and the availability of resources and theatre management information, the planning and organisation of theatre activity, and the measurement and monitoring of utilisation. Part 1 of this report details the methodology used during the examination. This included measuring the extent to which operating theatres are organised and managed, against accepted good practice criteria (paragraphs 1.16 and 1.17)

Main Conclusions and Recommendations

On Theatre Management and Control

3. We welcome and acknowledge that there have been developments in the management and control of some acute hospital operating theatre departments since our survey of hospitals at the start of our review. However, there is considerable scope for further improvements and restructuring of theatre service management to ensure that theatres are running at their optimum efficiency and effectiveness and are capable of providing the best possible service (paragraph 2.82).

4. The fragmented theatre management structures within the Royal Victoria Hospital (RVH) do not facilitate the efficient and effective use of its 20 theatres. We consider that the Anaesthetics, Theatre and Intensive Care Services (ATICS) Directorate of the RVH has, on the whole, an effective theatre management structure, supported by a proper management information system that facilitates the efficient and effective use of its 15 theatres. However, there is considerable scope for improving the management of the theatres in the Cardiac Surgery Unit. We strongly recommend that the Trust consider integrating the disparate theatre management structures and functions presently in place at the hospital (paragraphs 2.29, 2.39 and 2.50).

5. Extending the 'real time' computerised theatre management system within the ATICS Directorate to include the Cardiology Directorate's Cardiac Surgery Unit, the Surgical Directorate's Burns and Plastic Surgery Unit and the Ambulatory Care Directorate's Day Procedures Unit would also be a useful measure towards integrating structures and functions. We understand that the RGH Trust is to develop a business case for rolling out this system to other theatres outside the ATICS Directorate (paragraph 2.50). However, even this system could be developed further, to include a computerised theatre planning system and a costing facility for the improved financial management of theatre resources, as part of an integrated theatre management system (paragraph 2.88).

6. We share the concerns of the Cardiac Surgery Steering Group, that there has been a considerable drop in the number of cardiac surgery procedures performed in recent years, although significant resources have now been made available to increase activity levels to 1,000 procedures per annum

by 2003-04. When we last reviewed Coronary Heart Disease in Northern Ireland in November 1996, we applauded the action taken by the Department in allocating additional funding to cut waiting lists. The Westminster Committee of Public Accounts then urged the Department to give high priority to the further reduction of waiting lists for cardiac surgery. The Department has pointed out that the nature of cases has changed and the lower level of throughput and reduced numbers of procedures undertaken for a number of years has reflected this. We note the number of patients undergoing cardiac surgery is increasing again and we welcome the action taken to enable patients to receive treatment outside Northern Ireland, but we are disappointed that action taken by the Department and other bodies has not been sufficient to ensure that the number of procedures which had been assessed and recognised as necessary over many years, has been achieved (paragraph 2.42).

7. The efficiency of theatre service management in both the RVH's Burns and Plastic Surgery Unit and the Day Procedures Units is lessened, in the absence of a fully operational Theatre Users' Committee with an active Theatre Manager role to monitor and manage performance, though we understand that improvements have taken place since December 2002. The Department needs to ensure that it has a clear plan of action to implement the findings and recommendations of the National Burn Care Review (2001), in addition to any recommendations arising from this wider NIAO study (paragraphs 2.48 and 2.49).

8. All theatre departments should have a Theatre Manager in post, of sufficient seniority and authority, who must review, regularly, how theatres are being used by clinicians and present theatre utilisation reports to their respective Theatre Users' Committee (TUC) for discussion and any necessary corrective action. 91 per cent of theatre management units have a Theatre Manager. 16 of these review and report to their Theatre Users' Committee on theatre utilisation (paragraphs 2.7 and 2.83).

9. While TUCs exist in most hospitals, their key role in ensuring the efficient and effective use of theatres is in much need of development, and we have recommended in our report, action that each acute hospital Trust should take (paragraph 2.84).

10. Whilst we found that policies and procedures had been documented in some hospitals, to various degrees, there was not universal coverage. We would encourage all theatre departments to formally document their

procedures, where this has not already been done. This will help theatre management to organise theatre activity (paragraph 2.85).

11. We found that systems for the planning and monitoring of theatre activity in most acute hospitals were basic, paper-based, labour-intensive, and limited in their capacity (eg Antrim Hospital, paragraph 2.81). Data collection and reporting on theatre use from these paper-based systems is vulnerable to error (eg Belfast City Hospital, paragraph 2.53). Because theatre costing facilities are not developed within hospitals' existing theatre management information systems, we were unable to make any unit cost comparisons between hospitals or within a hospital over a number of years (paragraph 2.86).

12. We recommend that hospitals providing theatre services should acquire or develop proper, integrated, computerised theatre management systems, compatible with their patient administration systems, and which would facilitate the generation of theatre schedules, theatre lists, etc. From such systems, detailed, accurate and timely management information reports, including unit cost information, could be produced for comparative purposes. We agree with the Department that, due to the resource implications for the introduction of such systems, it is essential to first set out the full costs and benefits in a comprehensive business case (paragraph 2.17). Such an analysis must incorporate the advantages to be achieved through systems being able to produce uniform information which enables activity to be comprehensively compared with other providers. However, the Department needs to consider investing in their implementation more widely rather than leaving individual Trusts to 're-invent the wheel'. We welcome the action being taken at some Trusts (eg Altnagelvin) to introduce new systems, although we would urge that Trust to ensure that the system being developed is compatible with systems elsewhere in Northern Ireland (paragraphs 2.74, 2.87 and 2.90).

13. Guidance on operating theatres was issued by the Department's Clinical Resource Efficiency Support Team (CREST) in 1991. We recommend that the Department arranges, either through CREST or another forum, to update its guidance, recognising the developments that have taken place since 1991 (paragraph 2.91).

On The Planning and Organisation of Theatre Sessions

14. Consultant surgeons, consultant anaesthetists, theatre nursing staff and theatre support staff need to function as a team to ensure that surgical / theatre services are provided in the most efficient and effective manner, recognising the contribution made by each person involved, without whom the theatre at best may run inefficiently and at worst may not be able to run at all. We urge Trusts to promote an ethos of collaboration, team work and open communication amongst all of their surgical and theatre services staff, and especially co-operation in the co-ordination of leave, which is essential in order to optimise theatre use (paragraph 3.14).

15. We have made a series of recommendations on procedures which should be in place. These relate to how management should deal with the cancellation of operating theatre sessions, the submission of theatre lists, the allocation of theatres, the monitoring and reallocating of theatre sessions when theatre time is not used to its full potential, and the procedures which should be in place whereby a sanction can be applied by hospital management where there is evidence of persistent late cancellation or underutilisation of sessions (paragraph 3.15).

16. We commend the attempts that are being made at individual hospitals to minimise the impact of higher priority, unplanned emergency procedures on planned elective surgery, by introducing units dedicated to elective surgery. We note that these solutions have not been routinely shared throughout the HPSS and we accept that resources may not currently allow them to be introduced in smaller units. However, we welcome the recent Departmental proposals to extend the opportunities for safe-guarding elective surgery through the development of a further two protected elective facilities and we urge the Department to try to make available the necessary resources for an expansion of this policy. The use of protected elective surgery units was strongly endorsed by our consultant advisers (paragraph 3.25).

On The Measuring and Monitoring of Operating Theatre Utilisation

17. We recognise that, to staff and resource all possible sessions within a hospital's available physical theatre capacity, would have significant implications that may not be cost effective or practicable in resource terms. However, sizeable spare theatre capacity of 37 per cent is a key

issue, which has to be viewed in the context of Northern Ireland's waiting lists and waiting times which are currently the worst in the United Kingdom. **Subject to the availability of staff and other resources, there is spare, physical theatre capacity to accommodate initiatives to reduce these waiting lists (paragraph 4.13).**

18. During 2001-02, 36 per cent of cardiac surgery theatre sessions were cancelled, mainly due to the unavailability of beds in the cardiac intensive care unit (ICU). This is due to an increased demand on intensive care facilities as clinical advances have meant that older and sicker patients have been admitted. The Department told us that these patients do well, but make greater use of intensive care facilities after their operation (paragraph 2.33). During our review, we noted that few cardiac surgery patients were routinely fast-tracked. The Trust indicated that this was due to staff shortages. In view of the wide recognition that this process has been given, we recommend that the RVH should endeavour to increase its use of fast-tracking by planning for the separation of overnight recovery facilities and care for lower risk cardiac patients, from the existing Cardiac ICU for higher risk patients. The Trust has announced plans to have a new cardiac high dependency unit operational early in 2003 and fast tracking will be introduced at this stage (paragraphs 4.16 and 4.19).

19. It is important that Trusts are able to benchmark their performance against other providers and without timely and reliable data this will not be possible. The primary data recorded by theatre nursing staff must also be capable of being relied upon by the Department if it is to comprehensively fulfil its monitoring and planning roles. Although the Department told us that there has been some improvement in the recording of utilisation data, there is still evidence of some hospitals not disclosing data correctly, and of inconsistency throughout the HPSS, which gives us cause for concern about the validity of some of the theatre utilisation data published annually by DHSSPS. In view of the high cost of developing, operating and publishing statistical information, it is essential that data collection is accurate, prompt, complete and consistently recorded. Although the Department advised us of an on-going audit strategy and of a stringent validation process, there is a strong need for clearer guidance to be provided by the Department on the completion of returns and for the Department to monitor more closely, the data received from and quality assured by, Trusts before publishing it (paragraphs 4.22 to 4.24).

20. The Department has advised us of the action taken over the past two years to resolve problems in intensive care and high dependency provision, including the provision of additional intensive care beds and high dependency beds, although our advisers thought these numbers should be increased. The Department has also launched comprehensive workforce reviews and better planning of scheduled theatre time (for example, to reduce the number of case cancellations caused by sessions overrunning) (paragraph 4.26).

21. We have recommended action where cancellations of planned procedures are considered to be a problem (paragraph 4.27) and where the rates of patients not turning up for admission to hospital and not letting the hospital know beforehand, are excessive. There were 4,654 of these in 1999-2000. The Department intends to issue guidance requiring all Trusts to implement good practice as a matter of routine (paragraphs 4.29 and 4.34).

22. Work is currently under way on reducing waiting lists and waiting times. The Department considers that, until waiting times for operations are shorter, the introduction of booked admissions, such as those being developed in England (paragraph 4.32), is unrealistic, although it told us that a service improvement project is currently looking at the feasibility of booked admissions. The Department should consider introducing, in Northern Ireland, a programme similar to the National Booked Admissions Programme for England, in the light of the outcome of that project (paragraph 4.36).

23. The Department should review, with CREST, the 1991 guidance on the use of pre-admission assessment screening clinics. Given the relatively high incidence of case cancellations attributed by hospitals to patients being unfit for surgery, serious consideration should be given by all hospitals to a cost benefit analysis of pre-admission assessment arrangements as a means of reducing last minute cancellation of operations that have been planned and staffed. This could include the use of nurse-led pre-admission assessment clinics as a cost effective option. Where feasible, Trusts should also consider the use of anaesthetic pre-admission assessment. We commend the action taken by the RGH and Altnagelvin Trusts to introduce pre-operative assessment, particularly if the RGH Trust can show that the use of waiting list funds in this way, has had a positive effect on waiting lists (paragraphs 4.44 and 4.45).

24. Constant overruns of theatre lists by individual surgeons can result in the cancellation of operations, which in turn, can have a traumatic effect on the patients involved. The incidence and reasons for constant overruns of theatre lists by individual surgeons, including when surgeons arrive late or do not turn up at all, should be monitored closely by each hospital's clinical management. We recognise that many of these overruns will be unavoidable. However, where there is good evidence that an individual consultant regularly under- or over-runs sessions, the Theatre Director should consider whether theatre sessions should be reallocated (paragraph 4.49). We suggest that the Department keeps under review the impact of practices introduced elsewhere, for example the review of consultants' performance against targets to see whether these have a beneficial effect which could then be usefully introduced in Trusts (paragraphs 4.50 and 4.53).

25. We recommend that, as part of the development of proper integrated computerised theatre management systems and the enhancement of HRG costing information, Trusts should consider the advantages of having a costing facility for the calculation of theatre unit costs, to improve the financial management of theatre resources and facilitate internal and inter-Trust comparisons, although the Department's view is that the current use by Trusts of primarily commercial costing packages, to distribute overhead costs to patient treatment services and specialties in line with Departmental costing guidance is sufficient (paragraphs 4.66 and 4.67).

On Theatre Resources

26. Our examination of the problems confronting operating theatre managers and clinicians showed that bed availability and bed management are major issues which affect the efficient running of theatres, the use of resources and, most importantly, the availability of treatment for patients. We recommend that the Department puts into place, where it is possible to do so within Northern Ireland structures and responsibilities, the best practice set out in the report of the National Audit Office on bed management and the follow-up report of the Westminster Committee of Public Accounts. We understand that the Department intends to issue such material in the near future (paragraphs 5.15 and 5.16).

27. The HPSS cannot operate effectively and efficiently without appropriately qualified, appropriately graded staff in post. This is particularly true

within operating theatres. The current level of consultant under-staffing is of concern. It would be advantageous to have greater flexibility in the hours worked by theatre nursing, medical and support staff. We welcome the action that the Department has taken to set out a definitive strategy for meeting its overall workforce commitments in the future. In view of the great importance which it rightly puts on getting appropriately qualified and trained staff in place where and when they are required, the Department needs to ensure that progress on this front is monitored and pressure maintained at the highest level, to prevent slippage and to provide support in pressing for appropriate funding (paragraphs 5.45 to 5.47).

28. The situation in hospitals in Northern Ireland in relation to day surgery appears to be improving, and the scope for day surgery procedures is in line with that currently prevailing in Great Britain. However, there appears to be further scope for increasing the volume and range of day surgery procedures, particularly in light of the expected day surgery targets currently prevailing in Great Britain. Any transfer of appropriate surgery from inpatient beds to day surgery should release some of the currently hard-pressed inpatient surgical beds in Northern Ireland's acute hospitals. We recommend that the Department keeps the rate of appropriate day surgery under review (paragraphs 5.51 and 5.55).

Part 1: Introduction and Scope of the Northern Ireland Audit Office Examination

Introduction

1.1 In Northern Ireland, health and personal social services are commissioned by Health and Social Services (HSS) Boards (Boards) and delivered by HSS Trust (Trusts). The four Boards – Eastern, Northern, Southern and Western – currently plan and commission these services for the people who live in their areas. Most requirements are met by the 19 Trusts in Northern Ireland, including the Northern Ireland Ambulance Service HSS Trust which operates on a regional basis. Of the 18 other Trusts, some provide acute hospital services only, some community services only, and some provide both. Other providers include voluntary and private sector bodies.

1.2 In April 2002, 15 Local Health and Social Care Groups (LHSCG) were established to bring together providers of local primary and community services and representatives of acute hospitals. It is intended that these Groups will take on the commissioning role from April 2003. Proposals have also been announced recently by the Minister on the modernisation of hospitals and the restructuring of health and social services[1]. In addition to the introduction of LHSCGs, these proposals include the replacement of the four Boards with a single Regional Authority with strategic planning, workforce planning and regional service commissioning responsibilities, and the combining or replacement of Trusts.

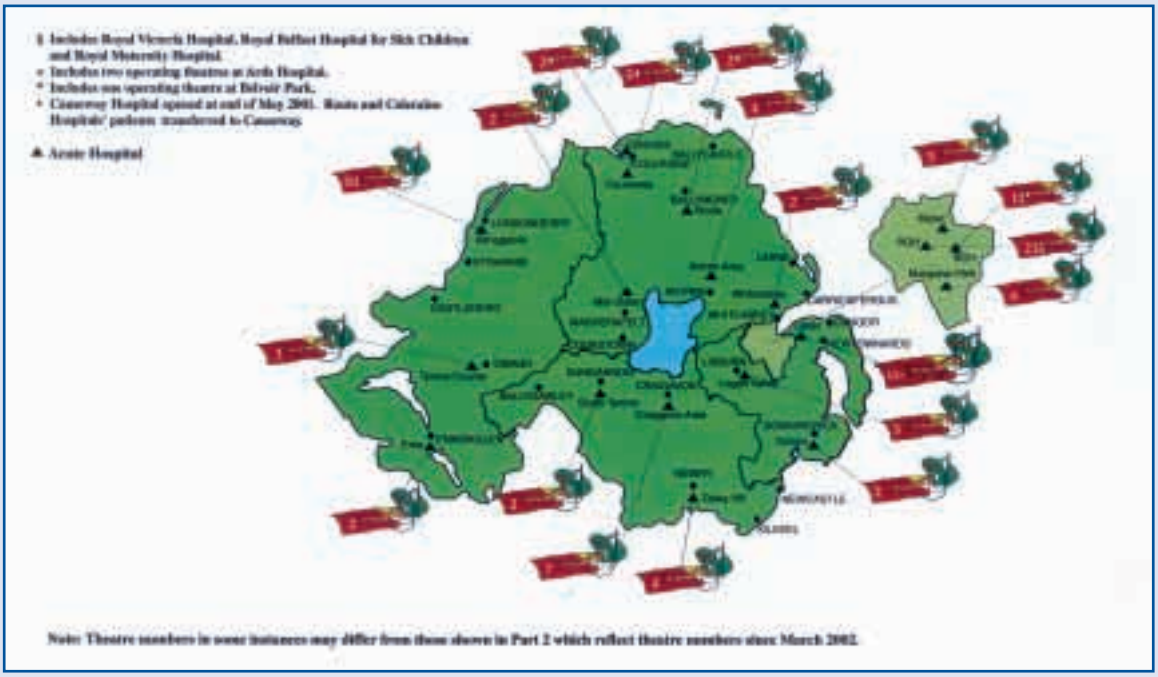
1.3 Figure 1 shows the location of each Board, Trust and hospital, and the number of operating theatres within each hospital during 2001-02.

1.4 With the transfer of services from the Coleraine and Route Hospitals to the new Causeway Hospital in 2001, surgical and medical services ('acute' services) are now provided by 21 hospitals, within 13 acute Trusts which, between them, have a total of 102 operating theatres. These offer a variety of surgical procedures within a range of surgical specialties.

1.5 Private surgical services are provided within Northern Ireland at the Ulster Independent Clinic in Belfast, at the North West Independent Clinic at Ballykelly near Londonderry, and in some hospitals and clinics.

1 Developing Better Services: Modernising Hospitals and Reforming Structures, DHSSPS, June 2002

Figure 1: Location and Number of Operating Theatres within each Hospital in 2001-02



Expenditure Trends

1.6 The total cost of running Northern Ireland's hospital and community health services (HCHS) in 1999-2000 was £943 million. Nearly £557 million related to acute hospitals providing mainly intensive surgical or medical care.[2]

1.7 The Acute Hospitals Review Group set up by the Department has reported that, between 1983-84 and 1998-99, National Health Service (NHS) per capita expenditure in England rose by 57 per cent compared to 35 per cent in Northern Ireland. However, comparative figures show that HCHS expenditure in Northern Ireland, whilst at £557 per capita in 1999-2000 was lower than North East England, Scotland and the Republic of Ireland, it was higher than in several other regions of the United Kingdom (see Figure 2). Spending on acute services was higher in 1999-2000 than any other region, apart from Scotland.

[2] Report of the Acute Hospitals Review Group, June 2001

Figure 2: Per Capita Expenditure by a Sample of Regions (1999-2000)

Region	HCHS £/head	Acute £/head	Acute as % of Total HCHS spend
Wales	539	326	60.5
Northern Ireland	**557**	**329**	**59.1**
Mersey	459	254	55.3
South West England	522	288	55.2
North East England	587	321	54.7
Scotland	629	336	53.4
Republic of Ireland	605	315	52.1
North West England	477	239	50.1

Source: Acute Hospitals Review Group Report, June 2001

1.8 The Department pointed to the need for health and social care resources varying throughout the United Kingdom according to the incidence of disease and the age, sex and socio / economic deprivation profile of the population, and that these issues are not taken into account by simple per capita analysis. As Northern Ireland has more deprivation, and therefore greater need, there is a consequential higher use of services and a corresponding higher level of spending.

1.9 It is recognised that the Health and Personal Social Services (HPSS) in Northern Ireland has had to work with less resources than it would have wished and at times, it has been subjected to funding reductions, for example, the three per cent service reduction imposed by the Government in 1996-97. Such a reduction had a significant impact on hospital waiting lists at that time and this has had repercussions through to the present day. Given these constraints, the efficiency with which resources are used in Northern Ireland's acute hospitals and elsewhere, is of great importance.

1.10 This report deals with one specific area of acute hospital activity and records the results of an examination by the Northern Ireland Audit Office (NIAO) of the use of operating theatres in the 21 hospitals providing acute services in the public sector in Northern Ireland.

Background

1.11 Operating theatres are used for the prevention, diagnosis, treatment, relief or cure of disease. Patients may be admitted either as emergencies (non-elective admissions) or from a waiting list (elective admissions) and the operative procedures performed may be relatively simple and take a few minutes or be very complicated and take many hours.

1.12 The length of time which patients wait, before they are put on a waiting list, and the length of time they remain on that list before they receive treatment, have been under much public scrutiny recently, and many hospitals have had to accommodate a much higher proportion of emergency procedures compared to elective procedures. Long waiting times may seem to be a consequence of poor theatre utilisation. However, the situation is more complex. Other issues affect waiting times for surgery, including:

- bed capacity, including the availability of intensive care and high dependency unit beds;
- the availability of surgeons, anaesthetists and appropriately trained nursing staff;
- the availability of theatre support staff such as technicians, porters and orderlies;
- the emergency workload;
- the use of day case procedures;
- the growth in demand for hospital services year on year;
- the increasing needs of an ageing population;
- increasing complexity in surgery, with continuing medical and scientific developments; and
- community care issues, including the unavailability of beds due to delayed discharge.

1.13 Any examination of the efficiency and effectiveness of theatre utilisation has, therefore, to be set in the context of waiting list performance and considered in the light of these other related issues.

The NIAO Examination

1.14 A preliminary examination, carried out by NIAO, indicated that one of the central elements in the planning of admissions from the in-patient waiting list is the availability of theatre time. Decisions relating to the use of operating theatres are, in turn, influenced by the availability of staff and beds and by the volume and nature of emergency cases.

1.15 It was also apparent that there was significant unused theatre capacity in many hospitals - at least 37 per cent of all available theatre time during the working week is not used (see paragraph 4.10) - and that some of the staffed theatre time was unused (see paragraph 4.14). It is recognised that, to fully utilise the physical capacity in operating theatres would require considerable additional resources in terms of staff and availability of beds. However, as the use and management of operating theatres represents a key issue in the use of hospital resources generally, we hope that this review will be a timely contribution to the current initiatives being undertaken by the Department of Health, Social Services, and Public Safety (DHSSPS) to reduce waiting lists and times, and to improve overall efficiency at the local level.

1.16 Our examination covered the Department, the four Boards and the 21 hospitals providing acute services. It focused on the extent and the efficiency with which operating theatres are being used, and addressed the following related main issues:

- the management and control of hospital operating theatres, and the availability of theatre management information **(Part 2)**;
- the planning and organisation of theatre activity **(Part 3)**;
- the measurement and monitoring of theatre utilisation **(Part 4)**; and
- theatre resources **(Part 5)**.

1.17 These main issues were examined against good practice criteria derived from various sources, including guidance and recommendations from the Association of Anaesthetists, the Association of Surgeons and the British Orthopaedic Association[3], the Bevan Report[4], issued by the NHS Management Executive in response to a report on the subject by the National Audit Office (NAO)[5] and the Department's Clinical Resource Efficiency Support Team (CREST).[6]

3 Efficiency of Theatre Services, Association of Anaesthetists of Great Britain and Ireland, the Association of Surgeons of Great Britain and Ireland and the British Orthopaedic Association, 1989.
4 The Management and Utilisation of Operating Departments, Professor Bevan, for NHS Management Executive, 1989.
5 Use of Operating Theatres in the NHS, NAO, 1987 [HC143, 1987-88].
6 Management of Operating Theatres in Northern Ireland, 1991.

1.18 The NAO, the Westminster Committee of Public Accounts, the Audit Commission for England and Wales and the Accounts Commission for Scotland have also reported on matters relating to operating theatres in recent years[7] and the Health Services Audit (HSA) Directorate of DHSSPS commissioned a value for money review of Anaesthetics, Pain Relief and Critical Care, from which a regional report was issued earlier this year[8] . **We have drawn heavily from these sources, where good practice guidelines expressed and conclusions and recommendations made, also appeared to apply equally well in the Northern Ireland context.**

1.19 The CREST report and guidance, issued to the HPSS in May 1991, recognised that under-utilisation of operating theatres was a major problem, and that this meant that operating theatres were very expensive to run. The main CREST recommendations on the efficiency of theatre services are summarised at Appendix 1.

1.20 Since our review, other organisations have released guidance on good practice within the operating theatre environment. These include the Audit Commission[9] and the NHS Modernisation Agency[10].

1.21 Our examination, which commenced in mid-2000, was aided by a questionnaire survey of the 13 Trusts that provide acute hospital services in Northern Ireland, and the four commissioning Boards. It also included in-depth enquiries and validation at six hospital sites – Royal Victoria, Belfast City, Ulster, Craigavon Area, Altnagelvin and Antrim Hospitals. We are content that, as these are the largest concentrations of hospital services in Northern Ireland, our findings and recommendations are relevant to other, smaller, sites with operating theatres.

1.22 All Boards and Trusts responded and completed questionnaires were received from 22 separate theatre management units (see Appendix 2).

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7 - Use of Operating Theatres in England, a Progress Report , NAO, 1990 [HC 306, 1990-91] with associated Westminster Committee of Public Accounts Reports and Treasury Minutes.
- Anaesthesia under Examination: The Efficiency and Effectiveness of Anaesthesia and Pain Relief Services in England and Wales, Audit Commission, December 1997.
- Full House: Theatre Utilisation in Scottish Hospitals, Accounts Commission for Scotland, June 1999.
- Critical to Success: The Place of Efficient and Effective Critical Care Services within the Acute Hospital; Audit Commission, October 1999.
- Inpatient Admissions and Bed Management in NHS Acute Hospitals, NAO, Feb 2000 [HC 254, 1999-2000], with associated PAC Report.
- Inpatient and Outpatient Waiting in the NHS, NAO, July 2001 [HC 221, 2001-02]

8 Anaesthetics, Pain Relief and Critical Care services in Northern Ireland: Regional Summary, HSA- DHSSPS, May 2002

9 Operating Theatres: A Bulletin for Health Bodies, Audit Commission for England & Wales and District Audit, 2002.

10 Step Guide to Improving Operating Theatre Performance, Operating Theatre and Pre-Operative Assessment Programme, NHS Modernisation Agency, July 2002

Each of the following parts to this report relate the findings of our survey and enquiries to recognised best practice in the areas under consideration.

1.23 Key personnel at the Department and at each of the four Boards were consulted, along with the Chief Officers of each of the four Area Health Councils which were established to look after the interests of patients. We also visited the Ulster Independent Clinic to establish private sector theatre management practice and we are grateful for their assistance.

1.24 Finally, we were able to obtain very welcome and valuable independent advice and comment during our examination from Professor George W Johnston and Dr S Morrell Lyons, consultant clinicians no longer working as such in the HPSS.

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Part 2: Theatre Management and Control

CREST Guidance

2.1 The guidance issued by CREST in 1991, which endorsed the concepts put forward in the 1989 "Efficiency of Theatre Services" guidance of the Association of Anaesthetists, the Association of Surgeons and the British Orthopaedic Association (see paragraph 1.17 and Appendix 1) considered that the most vital element in the improvement of operating theatre efficiency is the development of an effective theatre services management structure. It recommended the appointment of a Theatre Director, a Theatre Manager, a Theatre Users' Committee, and the establishment and implementation of guidelines for theatre utilisation. It also recognised the important role of computerised data collection systems in the collection of information for management and operational requirements.

Good Practice

2.2 The following exemplars of good practice are largely drawn from these sources:

Theatre Director

Good Practice

2.3 A Theatre Director should be responsible for the establishment and implementation of basic guidelines for efficient theatre utilisation, which should be established locally and agreed by all groups of theatre users. These guidelines should include the organisation of theatre lists, the allocation of any spare capacity, setting up management arrangements for emergency and urgent cases, and facilitating the organisation and supervision of staff training.

2.4 The Theatre Director, who should not hold any other position with the potential for conflicting responsibilities, should be responsible to the Trust through the Director of Clinical Services. He or she must have complete control of the theatre services budget and thereby be the budget holder for all routine supplies and theatre staff, and those services which are under his or her exclusive control. To properly carry out these responsibilities, financial control and information systems need to be firmly established. If adequately supported by a Theatre Manager, the position can be a part-time appointment held normally by a consultant.

2.5 **Our survey** found that the role of Theatre Director is usually performed by a Clinical Director holding responsibility for theatre service provision - either a consultant surgeon or consultant anaesthetist - in association with the Directorate Manager. The Theatre Director usually chairs the Theatre Users' Committee (see paragraph 2.8).

Theatre Manager

Good Practice

2.6 The Theatre Manager was usefully described by the Accounts Commission for Scotland in its 1999 report (see paragraph 1.18) as playing a key role in the planning and organisation of the theatre department, often being the main link between that department and theatre users. "Informal communication between the Theatre Manager and theatre users is common, with surgeons and anaesthetists engaging directly in discussions with the Theatre Manager about the utilisation of the theatre department. Often, problems can be raised and resolved in this manner. However, while the Theatre Manager is accountable for the efficient running of the theatre department, much depends on how others use theatre resources". An effective Theatre Users' Committee can help to overcome this.

2.7 **Our survey**, as updated to reflect the current position, found that 20 of the 22 theatre management units (91 per cent) have a Theatre Manager, responsible for the planning and organisation of the theatre department and accountable for its efficient running. 16 of these review and report to their Theatre Users' Committee on theatre utilisation (see Figure 3).

Theatre Users' Committee

Good Practice

2.8 If the delivery of theatre services is to be comprehensive and effective, there clearly needs to be a good working relationship between theatre departments and their users. CREST gave its support to the establishment of a strong and active Theatre Users' Committee, representing all the relevant specialties, to ensure that this liaison took place. It was seen to be important that the Committee, to which the Theatre Manager should report, should meet regularly and be the forum for making decisions on the management of theatres.

Figure 3: The Theatre Users' Committee and its Responsibilities in Northern Ireland Hospitals

Units	Theatre Manager (TM)	Theatre Users' Committee (TUC)	TM Report to TUC?	TUC Terms of Reference?	Type of Report Specified?	Utilisation Reviewed by TUC?	TUC Authority to take Action?	TUC involved in Policy Development?	TUC in Review of Policy?	Theatre Policy / Guidelines in Place?
Altnagelvin	√	√	√					√	√	√
Antrim	√	√	√	√	√		√	√		√
Belfast City	√	√	√			√	√	√	√	√
Coleraine	√	√	√			√	√			
Craigavon Area	√	√	√				√			
Daisy Hill	√									
Downe	√	√								√
Erne	√	√	√	√			√	√		√
Lagan Valley	√	√								
Mater	√	√	√			√	√	√	√	√
Mid-Ulster	√	√	√	√	√	√	√	√	√	√
Musgrave Park	√	√	√		√	√	√			
RBHSC	√	√	√		√	√	√	√		
Royal Burns Unit										
Royal Day Procedures		√								√
Royal Maternity	√	√	√	√			√	√	√	√
RVH – ATICS	√	√	√	√	√	√		√	√	√
RVH – Cardiac	√	√ *				√		√		
South Tyrone	√	√	√	√	√	√	√	√	√	√
Tyrone County	√	√	√	√		√	√	√		√
Ulster	√	√	√	√	√	√		√	√	√
Whiteabbey	√	√	√			√	√	√	√	√
TOTALS	**20**	**20**	**16**	**8**	**7**	**12**	**13**	**14**	**9**	**14**

Source: Trust responses to NIAO Survey as updated by DHSSPS

* Function undertaken by Intensive Care Users' Committee (see paragraph 2.37)

2.9 Currently, 20 theatre management units (91 per cent) have a Theatre Users' Committee (see Figure 3). These are chaired by a Clinical Director – the Theatre Director - who is either a consultant surgeon or a consultant anaesthetist. The organisation and effectiveness of the Committees vary:

- some meet regularly to deal with routine theatre management issues, whilst others only meet when a major problem develops or a new issue arises;
- only eight reported having a terms of reference;
- only seven have specified explicitly the type and frequency of reports required on theatre utilisation;
- theatre utilisation is reviewed by only 12;
- 13 reported having the authority to take action where theatre utilisation is considered not to be efficient or effective; and
- 14 reported being involved in the development of a theatre policy document / operations manual, though only nine reported involvement in any subsequent reviews.

2.10 In some hospitals, the role of the Committee might be filled in other ways, for example, by direct discussion between the Theatre Manager and the clinical directors or individual consultants using the theatres. Regular Directorate meetings can also be responsible for theatre services, although the use of theatres is not always on the agenda and the Theatre Manager might not report to the meetings.

Theatre Policies

Good Practice

2.11 The Theatre Users' Committee should be responsible for the development of a range of policies and guidelines, which should be subject to regular review. These would encompass such matters as the starting and finishing times of theatre sessions, the allocation of sessions, the distribution of activity within the facilities available, and arrangements for emergency operations.

2.12 Currently, only 14 of the 22 respondents (64 per cent) have a theatre policy / guidelines document (see Figure 3).

Management Information

Good Practice

2.13 Before theatre management is able to plan and take decisions concerning the most efficient and effective use of theatre resources, it must have good quality information available to it on such matters as theatre activity, waiting lists and resources.

2.14 The methods by which data is collected can vary from purely manual procedures, which may or may not be transferred to a computer spreadsheet package for analysis and the production of management reports, to a less labour-intensive, fully computerised system, which records data and produces theatre utilisation reports. Different commercial computer packages are available or bespoke systems can be developed in-house. However, most involve the manual completion of data input forms and the keying in of the data to a computer. Inevitably, this increases the opportunity for error. More advanced 'real time' systems are now available that allow direct input of detailed information relating to each procedure through computers in each theatre.

2.15 The nature of the information produced by computerised systems is similar. At the basic level, it includes:

- comparisons of session start and finish times with planned times;
- the number of cancelled operations; and
- comparisons of the number and nature of procedures actually performed with those expected.

2.16 Advanced systems will permit operating departments to schedule the use of theatres and prepare lists and other orders relating to the proposed surgery and anaesthesia. They can facilitate the financial management of the theatre by allocating staff and consumable costs, and distributing overhead costs where it is inappropriate to allocate these to an individual operation, thereby providing a cost for each operative procedure (see paragraphs 4.60 to 4.67). Systems can also cover the scheduling and booking of patients and theatre inventory stock control. Other systems provide patient care profiles and clinical and anaesthetic audit information.

2.17 The Department has commented that there are significant resource implications for the introduction of such systems and that their introduction has to be set against the context of existing budgetary

constraints. A business case setting out the costs and benefits would also have to be undertaken before any investment could be made.

2.18 Whichever system is adopted, users of theatre services need to take full responsibility for decisions made over the use of resources, and to be able to do this, they need regular, reliable and meaningful information on theatre utilisation. Theatre departments need to review, regularly and in conjunction with the Theatre Users' Committee, the nature, extent and adequacy of the information produced.

2.19 **Our survey** revealed a wide variation in the means by which management information on theatre activity is gathered (including comparisons of session starting and finishing times with planned times, and the number of cancelled operations). This variation, which also includes the extent to which the information is reviewed and used to influence decisions, is outlined in Figure 4.

2.20 In the case of Musgrave Park, which specialises largely in elective orthopaedics, we were pleased to note the conclusion drawn by the Inter-Authority Comparisons and Consultancy Health Services Management Centre of the University of Birmingham, that its in-house computerised information system and control mechanisms are amongst the best to be found in the United Kingdom within that specialty.

Figure 4: Types of Management Information Systems in Northern Ireland Hospitals

Units	Computer	Computer + Manual	Manual	No System	Data Recorded	Report on Utilisation	Sent to Theatre Users	Reviewed by TUC	Reviewed by Clinical Directors	Reviewed by Surgeon	Reviewed by Anaesthetist
Altnagelvin			√		√	√			√	√	
Antrim		√ Package			√	√					
Belfast City			√		√			√	√		
Coleraine			√		√	√					
Craigavon Area		√ In-House			√	√	√		√	√	√
Daisy Hill				√							
Erne			√		√	√			√	√	√
Lagan Valley	√ In-House						√		√	√	√
Mater		√ In-House			√	√	√	√	√	√	√
Mid-Ulster			√		√	√	√	√	√	√	√
Musgrave Park	√ In-House				√	√	√	√	√	√	√
RBHSC	√ In-House				√	√	√	√	√	√	√
RVH – Burns & Plastics			√						√		
RVH – Day Procedures				√							
Royal Maternity			√		√	√		√			
RVH – ATICS	√ Package				√	√	√	√	√	√	√
RVH – Cardiac			√		√				√	√	
South Tyrone			√		√		√	√	√	√	√
Tyrone County			√		√	√		√	√	√	√
Ulster		√ Package			√	√					
Whiteabbey		√ In-House			√		√	√			
TOTALS	4	5	10	2	17	13	9	10	14	12	10

Source: Trust responses to NIAO Survey as updated by DHSSPS

Hospital Operating Units

2.21 We undertook a more detailed examination of theatre service management structures and control arrangements at the following six hospital sites:

- Royal Victoria Hospital;
- Belfast City Hospital;
- Ulster Hospital;
- Craigavon Area Hospital;
- Altnagelvin Hospital; and
- Antrim Area Hospital.

The results of the examination at each site are reported below:

Royal Victoria Hospital

2.22 The Royal Victoria Hospital (RVH), along with the Royal Belfast Hospital for Sick Children (RBHSC) and the Royal Maternity Hospital, is part of the Royal Group of Hospitals (RGH), which has a total of 27 operating theatres. RBHSC, which has 4 operating theatres, and the Royal Maternity, which has 3, each manage their own theatres.

2.23 The Royal Victoria Hospital has 20 operating theatres, which are managed across four separate theatre management units, under several Directorates. This theatre configuration is shown in Figure 5.

Figure 5: Royal Victoria Hospital: Theatre Configuration, November 2002

Theatre Management Unit	No. of Theatres	Directorate
ATICS	15	Anaesthetics, Theatre & Intensive Care Services
Day Procedures Unit	1	Ambulatory Care
Burns and Plastic Unit	1	Surgical
Cardiac Surgery Unit	3	Cardiology

The Anaesthetics, Theatre and Intensive Care Services Directorate (ATICS)

Theatre Configuration

2.24 The 15 theatres in the ATICS Directorate include:

Figure 6: Royal Victoria Hospital: ATICS Theatre Management Unit

Location	No. of Theatres	Specialities
Theatre Block A	6	2 Fracture; 1 Neurosurgery; 1 Vascular; 1 General Surgery; 1 Emergency
New Theatre Suite	4	1 Oral; 1 General; 1 Thoracic; 1 Vascular
Eyes & Ears Clinic	4	2 Ophthalmic; 2 ENT
Day Procedures Unit	1	1 Ophthalmic

2.25 The role of Theatre Director is performed by the Directorate's Clinical Director – a consultant anaesthetist. The Theatre Services Co-ordinator of the Directorate's 15 theatres is the designated Theatre Manager. The Directorate has a Theatre Users' Committee with clear, formal terms of reference, chaired by the Clinical Director and including the Directorate Manager, the Theatre Users' Co-ordinator and other user Clinical Directors. It meets monthly and there is a quarterly review of performance by the Directorate Manager and the Theatre Manager, with a report back on theatre utilisation to the Committee.

2.26 There is an active theatre services management function in the ATICS Directorate, where performance measurement and management continues to be developed and improved with the support of a 'real time' computerised theatre management system (TMS) introduced in April 1999 and funded under the Private Finance Initiative.

2.27 A theatre policy document has been developed, including a policy for compiling theatre lists and booking emergency cases. This is reviewed by the Theatre Users' Committee and compliance reviewed monthly by a Risk Management Committee.

2.28 The Theatre Users' Committee has no executive powers. However, theatre users acknowledge and accept the accuracy and integrity of the performance information generated by the TMS. This system provides a full range of utilisation reports, including utilisation by specialty, theatre and consultant; the number of cancelled operations; start and finishing times, including the timing of the various stages in a procedure; session utilisation in hours, etc. Data audits are performed to ensure the completeness and accuracy of data information. However, other theatre management units within the RGH are not included in TMS.

NIAO Conclusions and Recommendations – ATICS

2.29 We consider that the Royal Victoria Hospital's ATICS Directorate has, on the whole, an effective theatre management structure supported by a proper management information system that facilitates the efficient and effective use of its 15 theatres.

2.30 However, in view of the importance of this role, we are of the view that it is more appropriate that the role and responsibilities of Theatre Manager should rest at a more senior staff management level within the Directorate and we suggest that the Directorate Manager would be best placed to perform this role, assisted by the Theatre Services Co-ordinator.

2.31 There is scope for putting the full range of performance information available from TMS to fuller, more effective use in monitoring and managing performance. We noted, during our review, that the TMS system was being developed with external consultancy assistance from the Inter-Authority Comparisons and Consultancy Health Services Management Centre of the University of Birmingham, to provide for more effective performance management. In view of the importance of ensuring that any system is up-to-date, we welcome this positive action. The RGH Trust has since informed us that the consultants have now validated the TMS as a robust information system providing reliable management information (see paragraph 2.87).

The Cardiac Surgery Unit

2.32 The Cardiac Surgery Unit in the Royal Victoria Hospital provides a regional cardiac service for the four area Boards. It has three theatres which are managed by the Cardiology Directorate.

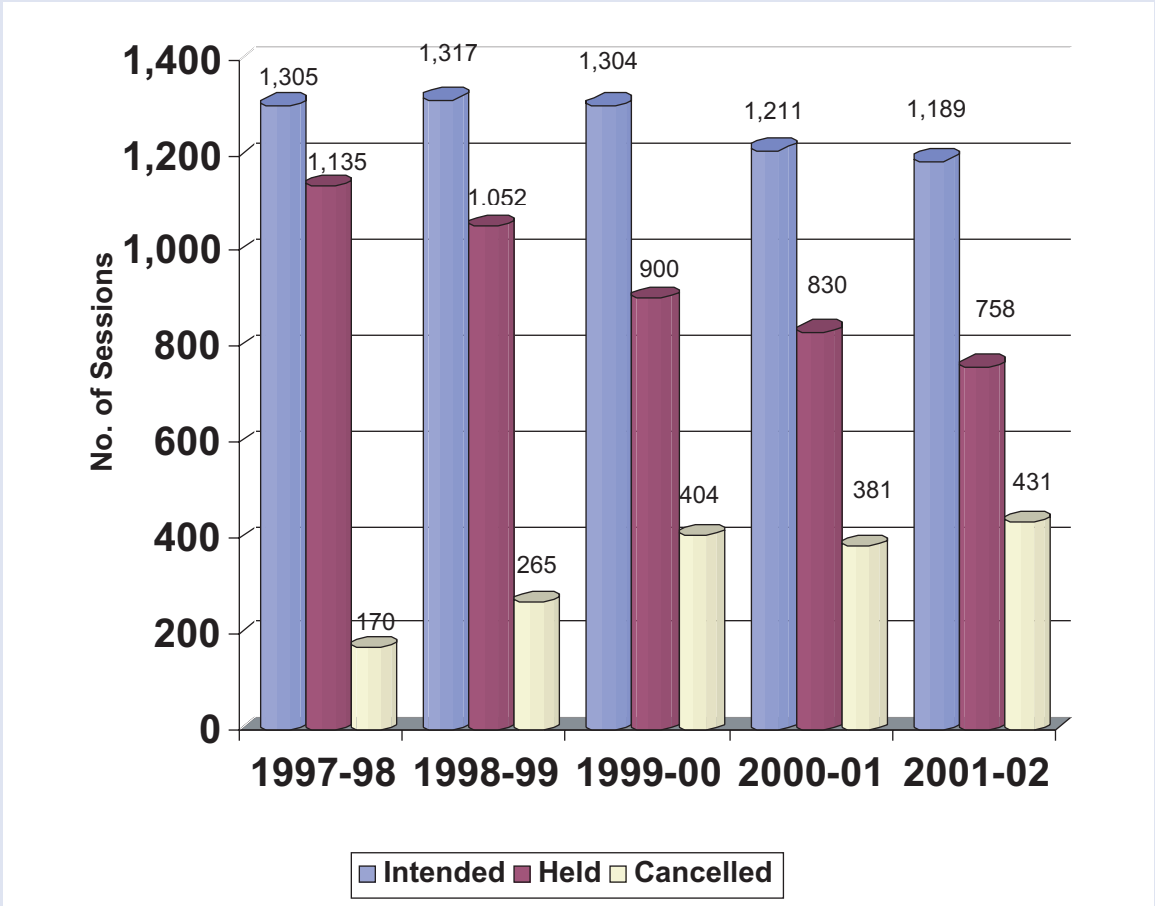
2.33 Cardiac surgery services at the Royal Victoria Hospital have been under considerable pressure for the past few years. Much of this pressure is due to an increased demand on intensive care facilities, as clinical advances have meant that older and sicker patients have been admitted. The Department told us that these patients do well, but make greater use of intensive care facilities after their operation. This, in turn, has slowed the flow of patients, leading to fewer procedures being performed. Consequently, productivity in recent years has fallen from 1,150 procedures undertaken (in 1,135 scheduled sessions held) in 1997-98 to 835 procedures (in 758 scheduled sessions held) in 2001-02. The Department also informed us that these patients are more vulnerable to ill health and other factors which leave them unfit for surgery and so the rate of cancelled sessions is also on the increase (see Figure 7).

2.34 In March 2002, there was a waiting list of 852 cases (638 inpatients and 214 outpatients) for cardiac surgery. Area Boards are very concerned about the reduction in the number of procedures performed by the RVH Cardiac Surgery Unit in recent years. Boards are having to purchase cardiac services elsewhere in Great Britain for their most urgent cases and, on the basis of the additional travel and accommodation costs necessary for relatives, at greater cost.

2.35 In September 2000, the then Minister for Health, Social Services and Public Safety had established a review of cardiac surgery in order to identify the significant factors contributing to the decreased throughput in surgery at the Royal Victoria Hospital and to recommend measures that should be taken to improve services. The review[11] recommended, as a priority, that the number of cardiac surgery procedures should be increased and maintained at the agreed target level of 1,100, of which 800 procedures should be coronary artery by-pass graft procedures (CABG). The Department developed an action plan to be implemented over a three-year period and it told us that, in line with that plan, a number of actions had been implemented. These included the enhancement of nurse staffing numbers so that theatres and cardiac surgery intensive care units were now fully staffed. Additional resources were invested in this area, including £1.95 million which was made available for the planned replacement of ageing equipment at the Cardiac Surgery Unit and in June

11 Review of Cardiac Surgery in Northern Ireland, DHSSPS, October 2001

Figure 7: Royal Victoria Hospital: Cardiac Surgery: Rate of Cancelled Sessions in Recent Years



Source: DHSSPS Annual Hospital Statistics

2002, a further £0.7 million was made available for the resourcing of adequate staffing cover, including the re-grading of D Grade nurses and the employment of additional specialist technical staff.

2.36 We have noted that the Department's Priorities for Action proposals for 2002-03[12] require Boards and Trusts to continue implementation of the action plan, including sustaining access to cardiac surgery for an additional 150 people, over and above the original planned levels of provision for 2001-02, by 31 March 2003. Until capacity at the RVH can be increased to the target level (see paragraph 2.35), additional cardiac surgery procedures are being purchased outside the HPSS for patients who are able and willing to travel. During 2001-02, 251 patients benefited from this initiative. Provision has been made for a further 250 patients to receive their surgery in units outside Northern Ireland during 2002-03. In addition, the

12 Priorities for Action, 2002-03, DHSSPS, March 2002

Department has since told us that it anticipates that the Trust will undertake some 900 procedures in 2002-03 (an increase of 65 (7.8 per cent) on the number undertaken in 2001-02).

2.37 The responsibilities of Theatre Director for the Cardiac Surgery Unit rest with the Clinical Director of the Cardiology Directorate. The Senior Cardiac Theatre Sister is the designated Theatre Manager who maintains a theatre policy folder and reports to the Directorate Manager who is responsible for the theatre budget. The Cardiac Surgery Unit does not have a dedicated Theatre Users' Committee. However, the Intensive Care Users' Committee includes the management of theatres. Although the Department told us that, given the pressures on the service, theatres have been managed via weekly planning meetings, we would question whether this arrangement provides the optimum means of managing cardiac theatre usage.

2 38 Theatre utilisation data is maintained manually, by the Theatre Manager, on a daily basis. This manual information system runs the risk of being inefficient, time consuming, prone to error and to being incomplete. At the time of our audit, the accuracy of the data maintained was uncertain and no data audits were performed to validate the accuracy of the data. We understand that the Trust now undertakes a reconciliation of the detailed manual data used for management and planning to the summary data on activity recorded by the RVH Patient Administration System.

NIAO Conclusions and Recommendations – Cardiac Surgery Unit

2.39 There is considerable scope for improving the management of the three theatres in the Cardiac Surgery Unit. The Department has assured us that the Intensive Care Users' Committee at the RVH monitors and manages the cardiac surgery operating theatres. In view of the importance of this function, we would urge the Trust to closely monitor these arrangements, to ensure that Directorate management and theatre users are fully and regularly represented (also see paragraph 2.50).

2.40 We consider it more appropriate that the role and responsibilities of Theatre Manager in the Unit should be exercised by a more senior staff member within the Directorate. We have been informed that resources were identified in an agreed investment plan arising from the Cardiac Surgery review for the post of cardiac surgery nursing co-ordinator (H

grade). The post-holder will have the lead responsibility for co-ordinating cardiac surgery staffing and service, theatre management and supporting the Intensive Care Users' Committee.

2.41 Because of its manual nature, the efficiency of the Unit's information systems is likely to be compromised, and the systems are time consuming, prone to error, and unreliable as an accurate source of information on theatre utilisation. We recommend, therefore, that the Cardiology Directorate should consider a computerised, 'real time' theatre management system for the Cardiac Surgery Unit (see paragraphs 2.26 and 2.50). This recommendation was endorsed by the Cardiac Surgery Steering Group which recommended, in the report of its Review of Cardiac Surgery, that a theatre management system should be installed in cardiac theatres to allow staff to monitor efficiency and theatre utilisation. However, the Department has commented on the resource implications of this recommendation (see paragraph 2.17).

2.42 We share the concerns of the Steering Group, that there has been a considerable drop in the number of cardiac surgery procedures performed in recent years, although the Department told us that significant resources have now been made available to increase activity levels to 1,000 procedures per annum by 2003-04. When we last reviewed Coronary Heart Disease in Northern Ireland in November 1996[13], we applauded the action taken by the Department, in allocating additional funding to cut waiting lists, which permitted the employment of two additional cardiac surgeons, and we noted that, in 1995-96, 1,369 procedures had been carried out, 807 of which were CABGs. The Westminster Committee of Public Accounts then urged the Department to give high priority to the further reduction of waiting lists for cardiac surgery[14]. The Department has pointed out that the nature of cases has changed and the lower level of throughput and reduced numbers of procedures undertaken for a number of years has reflected this. We note the number of patients undergoing cardiac surgery is increasing again and we welcome the action taken to enable patients to receive treatment outside Northern Ireland, but we are disappointed that action taken by the Department and other bodies has not been sufficient to ensure that the number of procedures which had been assessed and recognised as necessary over many years, has been achieved.

13 Coronary Heart Disease in Northern Ireland, NIAO, November 1996 [HC 72]
14 Coronary Heart Disease in Northern Ireland, 5th Report of the Westminster Committee of Public Accounts, 1997-98 Session, November 1997 [HC 381]

Burns and Plastic Surgery Unit

2.43 Management of the single theatre of the Burns and Plastic Surgery Unit is the responsibility of the hospital's Surgical Directorate, and is in need of development.

2.44 Two consultant surgeons now regularly use the theatre. The Ward Sister has responsibility for the day-to-day running of the ward and the theatre in the Unit and for manually recording and maintaining theatre utilisation data. There is no Theatre Users' Committee to which she can report. There is little or no performance management or performance measurement of the theatre's activities.

Day Procedures Unit

2.45 This Unit has a single theatre for general and ophthalmic surgery only. The theatre management of the Unit is the responsibility of the Ambulatory Care Directorate, and not the ATICS Directorate, where there is another day procedures unit with a single theatre for ophthalmic surgery. In our view, the theatre management of the Unit is in need of development. As with the Burns and Plastic Surgery Unit, there has been little or no performance management or performance measurement of the theatre's activities.

2.46 The Theatre Sister, who is responsible for the day-to-day running of the Unit, recorded theatre utilisation data manually, although we have been told that, with effect from December 2002, the management of the day surgery theatre has come under the management of the ATICS Directorate and will have a real time theatre management system. This theatre will now only be used for ophthalmic surgery with the two sessions of general surgery being performed in a new day procedures unit in the new RVH development, under the managerial control of Ambulatory Services. Ophthalmic utilisation data is reported to the Ophthalmic Directorate and general surgery utilisation to the Ambulatory Care Directorate.

2.47 The day procedures units in the Ambulatory Care and ATICS Directorates have a Users' Committee which has Surgical and Ophthalmic Directorate representation but no Anaesthetic representation. It is chaired by a consultant physician from the Endoscopy Service and meets monthly. However, the Users' Committee, which does not have any formal terms of reference, does not review or monitor the theatre utilisation performance of the two units. Theatre utilisation data for the day procedures unit within ATICS is reviewed by the ATICS Theatre Services

Committee, which has also been monitoring activity within the Ambulatory Care Unit since December 2002.

NIAO Conclusions and Recommendations – Burns and Plastic Surgery and Day Procedures Units

2.48 The efficiency of theatre service management in both the Burns and Plastic Surgery Unit and the Day Procedures Units is lessened, in the absence of a fully operational Theatre Users' Committee with an active Theatre Manager role to monitor and manage performance, though we understand that improvements have taken place since December 2002. We recommend that each of the Directorates responsible should take measures to ensure that theatre management in their surgical units is comprehensive and that management responsibilities, as set out in this report, are appropriately allocated. We welcome the transfer of management responsibility of the Day Procedures Unit to the ATICS Directorate (see paragraphs 2.46 and 2.50).

2.49 The National Burn Care Review[15], published in 2001, considered the provision of burn care services. It concluded that there was considerable variation in the current provision of burn care across the United Kingdom in terms of organisation, staffing, facilities and workload, and that the majority of burns units did not have the staffing levels or infrastructure required to comply with current guidelines and standards. The Committee responsible for the Review made a series of recommendations and suggestions for improvement. The Department needs to ensure that it has a clear plan of action to implement the findings and recommendations of this Review, in addition to any recommendations arising from this wider NIAO study.

NIAO Overall Conclusions and Recommendations on Theatre Management at the Royal Victoria Hospital

2.50 The fragmented theatre management structures within the Royal Victoria Hospital do not facilitate the efficient and effective use of its 20 theatres. We have already commented favourably on theatre management in the ATICS Directorate (see paragraph 2.29), but we strongly recommend that the Trust consider integrating the disparate theatre management structures and functions presently in place at the Hospital. The merger of

15 Standards and Strategy for Burn Care, A Review of Burn Care in the British Isles, National Burn Care Review Committee, 2001.

theatre management of the Cardiac unit with that of the ATICS Directorate has been particularly endorsed by our independent advisers. Extending the 'real time' computerised theatre management system within the ATICS Directorate to include the Cardiology Directorate's Cardiac Surgery Unit, the Surgical Directorate's Burns and Plastic Surgery Unit and the Ambulatory Care Directorate's Day Procedures Unit would also be a useful measure towards integrating structures and functions. We understand that the RGH Trust is to develop a business case for rolling out this system to the other theatres outside the ATICS Directorate.

Belfast City Hospital

2.51 Belfast City Hospital (BCH) has 11 theatres – six main theatres, one renal theatre, two theatres for mainly Ear, Nose and Throat (ENT) procedures and two for day procedures. A Theatre Manager monitors theatre usage and a Theatres Users' Committee meets weekly to discuss day-to-day issues within theatres. A separate Lead Clinicians' Forum represents all specialties and meets monthly. This deals with strategic issues in relation to surgery and theatres. The Clinical Director of Surgery sits on both committees and provides the link between them. There is no formal theatre policy document, but documented procedures are in place in relation to notification of theatre lists, reallocation of sessions, and possible sanctions.

2.52 The theatre management information system at the hospital is totally manual. Daily theatre sheets are completed in each of the 11 theatres by nursing staff and these are summarised weekly. Because the system is manual, management reports are not generated on theatre activity, although the Theatre Manager reviews the manual forms in terms of day-to-day usage. A review by NIAO of the forms for February 2000, revealed addition and transposition errors from the source theatre sheets to the summary sheets.

NIAO Conclusions and Recommendations – Belfast City Hospital

2.53 BCH's manual, paper-based theatre management information systems are vulnerable to error. The hospital should investigate the introduction of a computerised, integrated system for the planning and

monitoring of theatre activity, subject to the normal requirements for a business case (see paragraph 2.17). This should allow comprehensive management reports to be generated so that any problems can be identified early and addressed quickly.

Ulster Hospital

2.54 The Ulster Hospital has twelve theatres – six main theatres, two paediatric theatres, two maternity theatres and two theatres for day procedures (located at Ards Hospital). The Clinical Director and the Directorate Manager of the Hospital's Anaesthetics, Theatres, and Intensive Care Directorate have a strategic role in the management of the hospital's theatres, including responsibility for monitoring effective utilisation. A Theatre Manager deals with day-to-day issues in theatres and, within each theatre, the Theatre Sister has a role in the management of resources.

2.55 A Theatre Users' Committee is in place representing all specialties, although in the past three years, it has met infrequently (twice a year). The Department has said that it is now meeting bi-monthly.

2.56 A review of Anaesthetics, Pain Relief and Critical Care Services, undertaken in early 2000 on behalf of the Department's Health Services Audit Directorate, noted that the Theatres Users' Committee was not well attended and advised that the arrangements for the group needed to be reviewed in an attempt to improve the management of theatre issues between directorates and specialties. The Committee identified the reasons for poor attendance as being related to the timing of the meetings and the fact that no real decisions were made. Also, the Committee did not have authority to act where utilisation problems were identified. The Trust has advised the Department that attendance at meetings has now improved and the Committee has more authority to make decisions.

2.57 Our review noted that documented theatre policies and procedures are in place. These have been consolidated within a Handbook of Good Practice for Waiting List Management.

2.58 The Hospital's theatre management information system is part-manual and part-computerised. Theatre utilisation data for each of the hospital's twelve theatres is recorded manually by the theatre nursing staff and is subsequently input to a database on a stand-alone computer. Monthly summary information reports are then generated and discussed.

2.59 The Ulster Hospital's own internal review of theatre utilisation in 1997 noted the need for a "general manager" role for theatre sisters to provide a focus within theatres for ensuring efficient and effective utilisation. The Trust has confirmed that this recommendation has now been implemented and theatre sisters now have clear lines of responsibility and accountability.

NIAO Conclusions and Recommendations – Ulster Hospital

2.60 We welcome the strengthening of the role of the Theatre Users' Committee in recent years. It is important that its remit includes the ongoing monitoring of theatre utilisation, based on the receipt of accurate management information reports, the identification of problems, and the authority to take measures to remedy these. All specialties should be represented, and there should be a system in place whereby Committee decisions are endorsed and disseminated to staff throughout the Directorates.

2.61 While summary management information is available from the stand-alone database, there is a need for a proper, integrated theatre management information system, compatible with the Hospital's patient administration system. This would facilitate, for example, the generation of theatre lists and the production of detailed management information reports. As with all such proposed improvements, the costs and benefits should be established through a business case (see paragraph 2.17).

Craigavon Area Hospital

2.62 Craigavon Area Hospital (CAH) has seven theatres – five main theatres and two theatres in its day procedure unit.

2.63 The Clinical Director - a consultant anaesthetist - performs the role of Theatre Director, and there is a Theatre Manager who has a clear remit for monitoring theatre usage and co-ordinating with clinical specialties to ensure that theatre services are used efficiently and effectively, within budget, and in accordance with agreed quality standards.

2.64 A Theatre Users' Committee meets quarterly and covers relevant issues, for example, leave planning, the use of all-day lists for major surgery, the monitoring of session overruns etc. The Committee does not have formal terms of reference. However, in practice, it has the authority to take action where utilisation is considered inefficient. A focus group for day surgery also feeds into the Theatre Users' Committee. No documented theatre policy is in place but there are accepted procedures which are adhered to, concerning notification of lists, cancellation, etc.

2.65 The hospital's theatre management information system is part-manual, part-computerised, and was developed in-house. Theatre utilisation data is routinely recorded, manually, by theatre staff and subsequently input to a database. Printed management reports can be generated on theatre activity, but often the manual records are not fully completed, and so these reports are not comprehensive. An Information Technology (IT) Committee is being established to develop a co-ordinated IT approach across the whole hospital. The potential for including a computerised, integrated theatre management system will be considered as part of this on-going development.

NIAO Conclusions and Recommendations – Craigavon Area Hospital

2.66 CAH's Theatre Users' Committee should be provided with a clear, formal terms of reference.

2.67 Whilst there are understood procedures operating in relation to notification of sessions, cancellations, and reallocations, we recommend that these procedures be set out and formalised within a theatre policies document.

2.68 The existing theatre management information system needs development to ensure greater completeness and accuracy with a more integrated approach. The Department's concerns about the resource implications of such developments have been noted (see paragraph 2.17).

Altnagelvin Hospital

2.69 Altnagelvin Hospital currently has ten theatres, including a dedicated emergency theatre. Seven of these are in the hospital's main theatre block, two form a Day Case Unit and one is a Protected Short Stay Unit. Altnagelvin has sub-regional specialties in trauma and orthopaedics and ophthalmology, for which three theatres are allocated. There is also a theatre in the Labour Ward for caesarean sections, which is not available for general use. The Clinical Director of the hospital's Critical Care Directorate – a consultant anaesthetist - performs the role of Theatre Director. The role of Theatre Manager was, until recently, performed by the Clinical Services Manager of the Clinical Care Directorate. Since our examination, the dedicated post of Theatre Manager has been created and the post filled.

2.70 To address the day to day running of its theatres, the Trust established a Theatre Users' Committee. Chaired by the Clinical Director of Critical Care, it is comprised of that Clinical Director and the Clinical Services Manager of Critical Care, the main clinical specialty directors (the consultant surgeon users), and the Theatre Co-ordinating Sister. The Theatre Users' Committee is not part of the formal organisation structure and management arrangements of Altnagelvin Hospital Trust and it has no formal terms of reference or executive powers. It does not review theatre utilisation, this being reviewed 'ad hoc' by the Clinical Director and the Clinical Services Manager of Critical Care. The Committee meets 'as required', but in recent years it has seldom met, meeting for the first time, since 1997, in August 2000. The Committee's effectiveness and standing needs to be developed and improved.

2.71 The management structures at Altnagelvin Trust provide for formal service delivery planning and performance meetings (three times a year) between the Hospital Executive and individual directorates, including the Critical Care Directorate, which has full managerial responsibility for theatres management. These meetings address theatre utilisation issues at the strategic level along with other considerations and have authority to make executive decisions. Issues of theatre performance are, however, continuously under review at weekly, informal meetings between the Director of Business Services and the Clinical Director and Clinical Services Manager. A Theatre Policy / Operating Manual has been developed and compliance would be reviewed by the Theatre Users' Committee, particularly when problems arise.

2.72 Theatre data collection and reporting systems at Altnagelvin Hospital are entirely manual - based. They are limited, inefficient, time consuming and prone to error. However, the Trust has recognised the need for a more comprehensive data collection system and has evaluated the systems in place in a number of other Trusts to assess their suitability for Altnagelvin theatres. At the time of our review, the hospital was looking at a computerised theatre system in place in Letterkenny Hospital as an interim theatre information system solution. We have since been informed by the Trust that a computerised theatre system, based on the Letterkenny system, has been implemented in all specialties for work done in the main and daycase theatres, but not yet for general surgery carried out in the protected short stay facility.

NIAO Conclusions and Recommendations – Altnagelvin Hospital

2.73 There is scope for improving theatre management and control, and a need for more active and effective performance management, supported by improved performance measurement, at Altnagelvin Hospital. There is a need to strengthen the role of the Theatre Users' Committee, which should meet regularly and have a formal terms of reference, which should include the on-going monitoring and review of theatre utilisation based on the receipt of accurate, timely management information reports, the identification of problems, and the executive authority to take measures to remedy any such problems identified. There needs to be a system in place, whereby decisions of the Committee are endorsed and disseminated to relevant staff throughout the hospital.

2.74 There is a need for a proper, integrated, computerised theatre management information system, compatible with the hospital's patient administration system, for planning and monitoring theatre activity. This would permit the generation of theatre schedules, theatre lists, etc., and facilitate the production of detailed management information reports on theatre utilisation including the number and reasons for cancelled procedures and sessions (see paragraphs 4.26 and 4.27). We welcome the action being taken at Altnagelvin to introduce a new system, though we would urge the Trust to ensure that the system being developed, is compatible with systems elsewhere in Northern Ireland, to enable benchmarking to take place (see paragraphs 4.54 to 4.56 and 4.59).

Antrim Hospital

2.75 Antrim Hospital has five multi-purpose theatres: four main theatres and one day case theatre. The Department has advised that, as a result of a reduction in the service contribution made by junior doctors in training, in line with guidance from various Royal Colleges, the use of one of the four main theatres was significantly reduced. Additional consultant staffing would be required to reinstate usage of this theatre to the level previously achieved.

2.76 The role of Theatre Director is performed by the Clinical Director of the Surgical Directorate. The senior Theatre Sister is the designated Theatre Manager. This function was previously the responsibility of a more senior nursing grade – the Theatre and Anaesthetic Manager, who resigned and was not replaced. The hospital has a Theatre Users' Committee which is chaired by the Clinical Director of the Surgical Directorate - a consultant surgeon - and includes a consultant anaesthetist, other user representatives, the Clinical Services Manager, and the Theatre Manager. Although it has a formal terms of reference and meets quarterly, it is not as effective as it could be. Theatre utilisation is not reviewed by the Theatre Users' Committee, but rather on an ad hoc basis by the Clinical Director and the Clinical Services Manager.

2.77 A Theatre Policy document has been developed by the Theatre Users' Committee and compliance is reviewed as required, usually annually, by the Chairperson of the Committee, the Clinical Services Manager, and the Theatre Manager.

2.78 Antrim Hospital uses both manual- and computer-based information systems to collect data and report on theatre utilisation. These theatre management systems are inadequate. The computer application system used (a commercial package) is limited and out-of-date compared to the 'real time' theatre management commercial packages currently available. It is heavily reliant on the input of manually prepared information, yet no data audits are performed to validate the accuracy of data generated. The package is underdeveloped and underutilised and it does not meet the hospital's theatre management information requirements. Key staff are not familiar or experienced with its full capabilities, and reports generated are not being fully used to monitor theatre utilisation on a regular, routine basis. Performance measurement and management is conducted on an ad hoc basis. The quarterly theatre utilisation returns to the Department (the Körner returns) for its annual Hospital Statistics

publication are derived from the hospital's manual records. Validation work carried out during our examination showed that the theatre utilisation data provided for 1999-2000 was inaccurate and unreliable (see paragraphs 4.22 and 4.23).

NIAO Conclusions and Recommendations – Antrim Hospital

2.79 We have recommended that the role and responsibilities of Theatre Manager rest with a more senior staff member than was the case during our review, and we are glad to note that the Trust has now re-graded the Theatre Sister to a higher grade and revised her Job Description in order to clarify and strengthen her role.

2.80 We are of the view that, as theatre utilisation is not reviewed by the hospital's Theatre Users' Committee, this Committee is not as effective as it could be. We have been informed by Antrim Hospital since our site examination that:

- it recognises that a more formal approach to the work of the Committee is essential, and that work has already been undertaken to ensure that greater focus is brought to its work;
- in future, theatre utilisation will be reviewed regularly by the Committee, which will have authority to take action where it considers theatre utilisation not to be efficient or effective.

2.81 Theatre management information systems are inadequate. The United Hospitals Trust has acknowledged the difficulties in these systems and has informed us that the issue of an improved system will be addressed through its Information Management Group. The Department has noted the significant resource implications and the difficult budget position and has pointed to the prior need for a business case setting out the costs and benefits (see paragraph 2.17).

NIAO Overall Conclusions and Recommendations – Theatre Management and Control

2.82 We welcome and acknowledge that there have been developments in the management and control of some acute hospital operating theatre departments since our survey of hospitals at the start of our review. However, there is considerable scope for further improvements and restructuring of theatre service management in Northern Ireland's acute

hospitals in order to ensure that operating theatres are running at their optimum efficiency and effectiveness and are capable of providing the best possible service.

Theatre Manager

2.83 We recommend that all theatre departments should have a Theatre Manager in post, of sufficient seniority and authority, who must:

- review regularly how theatres are being used by clinicians; and
- present theatre utilisation reports to regular meetings of the Theatre Users' Committee for discussion and any necessary corrective action.

Theatre Users' Committee

2.84 While Theatre Users' Committees exist in most hospitals, their key role in ensuring the efficient and effective use of theatres is in much need of development. Accordingly, we recommend that each acute hospital Trust takes action to ensure that its Theatre Users' Committee:

- is incorporated as an integral part of the Trust's formal management structure;
- has been given clear terms of reference which formally set out its role and responsibilities for theatre management issues;
- clearly communicates what data on theatre utilisation is expected to be presented at its meetings;
- receives regular reports from the Theatre Manager on the use of theatres and that these result in the regular review of theatre sessions;
- is involved in the development and review of theatre policy and, where it recommends change, that it subsequently reviews compliance; and
- has the authority to take corrective action where it considers that theatre resources could be used more efficiently and effectively. As a final sanction, it should have the authority to reallocate theatre sessions where there is continuous poor utilisation.

Theatre Policy and Procedures

2.85 Whilst we found that policies and procedures had been documented in some hospitals, to various degrees, there was not universal coverage. We would encourage all theatre departments to formally document their procedures, where this has not already been done. This will help theatre management to organise theatre activity. A policy document should state clearly:

- the role of the Theatre Users' Committee and the arrangements for consulting with it;
- what arrangements and criteria exist for compiling theatre lists;
- what arrangements are in place for booking and cancelling sessions;
- how theatre staff are advised of the details of the lists and how changes are made to the lists;
- the latest time for receipt of the list in the theatre department, beyond which no changes can be made;
- what arrangements exist for reallocating sessions in the theatre timetable, if priorities change, or where poor utilisation is identified; and
- how emergency cases are to be fitted in to the timetable.

Management information

2.86 We found that systems for the planning and monitoring of theatre activity in most acute hospitals were basic, paper-based, labour-intensive, and limited in their capacity. Data collection and reporting on theatre use from these paper-based systems is inherently prone to error. Because theatre costing facilities are not developed within hospitals' existing theatre management information systems, we were unable to make any unit cost comparisons between hospitals or within a hospital over a number of years. This subject is covered in more detail in paragraphs 4.60 to 4.67.

2.87 We recommend that hospitals providing theatre services should acquire or develop proper, integrated, computerised theatre management systems, compatible with their patient administration systems, and which would facilitate the generation of theatre schedules, theatre lists, etc. From such systems, detailed, accurate and timely management information reports, including unit cost information, could be produced for comparative purposes. We agree with the Department that, due to the resource implications for the introduction of such systems, it is essential to first set out the full costs and benefits in a comprehensive business case (see paragraph 2.17). Such an analysis must incorporate the advantages to be achieved through systems being able to produce uniform information which enables activity to be comprehensively compared with other providers.

2.88 The computerised 'real time' theatre management system installed in the Royal Victoria Hospital's ATICS Directorate provides a good model for other sites to consider (see paragraph 2.31). However, even TMS could

be developed further to include a computerised theatre planning system and a costing facility for the improved financial management of theatre resources, as part of an integrated theatre management system.

2.89 Theatre Directors and Theatre Managers should specify their theatre planning system requirements to facilitate the preparation and amendment, when necessary, of theatre schedules and daily theatre lists. Theatre users should be consulted on what information they want from the system and what format reports should take. Theatre Managers can play a key role here. Providing theatre users with reports highlighting theatre utilisation at both specialty and individual consultant level should encourage them to use theatre resources more efficiently and effectively.

2.90 When successful theatre management systems are developed, the Department needs to consider investing in their implementation more widely rather than leaving individual Trusts to 're-invent the wheel'. More generally, in taking forward any new IT strategy, the Department needs to work with Trusts to ensure they have a clear understanding of the likely timing and impact of any new systems, and of the costs and benefits of implementing interim solutions in the short term. It is essential that consideration be given, by Trusts, to how the data collected can be compared to that collected by other Trusts. In this way, performance can be properly assessed and good practice disseminated.

2.91 Finally, the CREST guidance on operating theatres (see paragraph 2.1) was issued in 1991. We recommend, therefore, that the Department arranges, either through CREST or another forum, to update its guidance, recognising the developments that have taken place since 1991 (see also paragraph 5.45).

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Part 3: Planning and Organisation of Theatre Sessions

3.1 Our review led us to ascertain how operating theatre lists are planned, what influences the extent of activity during theatre sessions and what arrangements are in place for coping with emergency procedures. We sought to establish how efficiently theatre activity is organised and whether any improvements are possible, in the knowledge that proper planning should lead to optimum efficiency in the use of resources, whilst helping to maximise patient throughput, and thereby reduce waiting lists and waiting times for patients.

Session Planning
Planning the Theatre List

Good Practice

3.2 The ultimate aim of any operating department should be to optimise the use of its expensive theatre facilities and its highly trained staff in a way that takes into account clinical priorities and up-to-date waiting lists, to which all surgeons should have access. Surgeons need to determine, in consultation with anaesthetists and theatre managers, how many patients can be operated on during the time that is available each day, taking into account the nature and complexity of the procedures to be performed and whether extra time is needed during the session for teaching junior staff. This is usually a manual process, though some computerised theatre management systems are available, which have a scheduling module to facilitate session booking by surgeons.

3.3 **Our review** of planning procedures showed that all hospital timetables are planned on the basis of fixed weekly timetables. Surgeons have, indeed, access to up-to-date waiting lists. However, theatre management reported that some surgeons can over-estimate the number of procedures to be carried out and this can lead to overruns in the operating schedule. A contributory factor to this can be not allowing for teaching time for junior doctors. We found that, apart from the Orthopaedics Information System developed in-house at the Musgrave Park Hospital, computers were not being used for planning purposes at any hospital (see paragraphs 2.85 to 2.89).

Notification of Theatre Lists

Good Practice

3.4 CREST supports the practice of preparing operating lists on the day before surgery. This is based on the premiss that the later the theatre list is submitted, the more accurate it is likely to be. However, there is a balancing act to be done here, between later submission which is of

benefit to the surgeons, and notification which is too late for theatre management to be able to plan theatre resources effectively. Late notification can lead to operations being cancelled, particularly if specialist equipment or supplies are required for the procedure in question. Good practice has recommended that theatre lists should be submitted to the theatre manager and the anaesthetists by 2.00 p.m. on the day before surgery.

3.5 **Our review** found that most hospitals have a policy on when theatre lists should be submitted by theatre users. This is usually the day before surgery. However, of the 16 hospitals which told us that they had a policy on list submissions, there was compliance with the policy in only 10 cases. Eleven hospitals advised us of a late notification problem.

Allocation of Theatre Sessions

Good Practice

3.6 Theatre sessions usually last for a morning or an afternoon, although in some circumstances, they might last for a full day. Good practice guidance has recommended that the theatre timetable is reviewed regularly by the theatre users' committee and by management, and that management should exercise the right to reschedule individual sessions, where this will result in resources being better used. By reviewing the position regularly, it will be clear where sessions are not being used to their full potential and the theatre manager can then take action to reschedule the timetable. The late starting or early finishing of sessions, if occurring regularly, could trigger such a rescheduling. This could lead to session times being offered to specialties which clearly need additional theatre time, for instance, to tackle their waiting lists.

3.7 We found that theatre sessions in Northern Ireland, in common with practice in other parts of the United Kingdom, are generally allocated to individual consultants, and that theatre timetables are largely based on historical patterns. Most hospitals review how individual sessions are being used by monitoring session under- and over-runs. However, for the most part, little remedial action is taken (see paragraphs 4.46 to 4.48).

Co-ordination of staff leave

Good Practice

3.8 The co-ordination of surgeons', anaesthetists' and theatre nursing staff leave is an important aspect in ensuring the efficient use of theatres. It should be possible to minimise the late cancellation of sessions as a result

of annual leave, because most leave is planned in advance. In these circumstances, theatre resources should be capable of being re-allocated, particularly in the case of elective procedures. CREST has supported the recommendation by the Association of Anaesthetists and others, for a fixed period of notice (perhaps three weeks) for cancellation of any operation list. "Cancellation in less than this time would mean that the session would be regarded as underutilisation by the surgeon". The Theatre Director should co-ordinate leave and the reasons for all cancellations at short notice should be established by the Theatre Director and the Theatre Users' Committee.

3.9 **Our review** found that there are clear procedures in most hospitals for giving adequate notice to the theatre department of impending cancellation of sessions, with communication and liaison between medical and nursing staff regarding planned absences. Whilst there is general compliance with these procedures, we noted a number of exceptions in the course of our site visits.

Altnagelvin Hospital

3.10 At Altnagelvin Hospital, a rota of staffed theatre sessions is organised and prepared by the Clinical Director at the start of each month. This rota, which shows the proposed anaesthetic and surgeon cover for the planned theatre sessions, taking account of planned anaesthetist leave, is issued to the consultant surgeons, the theatre sisters, and the Clinical Services Manager who is responsible, with the theatre sisters, for organising the nursing rota. The nursing rota is issued one week in advance, although our independent advisers recommend that this should be one month in advance.

3.11 The Clinical Director requires advance notice of planned leave by surgeons and nurses so that the monthly schedule can be adjusted and the anaesthetist cover re-deployed, if necessary. This advance notice is not always given. Persistent non-compliance by some consultant surgeons has resulted in anaesthetic cover being scheduled for sessions that subsequently could not be held because of surgeons taking leave, leaving the Clinical Director with the problem of trying to re-deploy the available anaesthetic cover elsewhere at little notice. This redeployment has not always been possible, resulting in a waste of resources and a potentially viable session not being held.

Royal Victoria Hospital – Cardiac Surgery Unit

3.12 The RVH's Cardiac Surgery Planning Group meets each Thursday to plan cardiac theatre usage for the week ahead. Planned leave by medical and

nursing staff is notified at these meetings. However, we noted that there were no cross-cover arrangements for consultant surgeons' leave. The Trust explained that there are currently insufficient resources to cover elective sessions when a surgeon is on leave. Study leave for professional meetings can cause session staffing difficulties at times, and can result in sessions being cancelled. At the time of our audit, we noted that there was not the full representation and participation of key staff in weekly planning meetings, that is needed to ensure that the cardiac services run efficiently and effectively. However, the Trust has stated that there is now full participation by all key staff of the cardiac team.

Craigavon Area Hospital - example of good practice

3.13 The Craigavon Area Hospital has developed a system of co-ordinating annual leave which endeavours to concentrate annual leave- taking by theatre staff in the period from July to mid-August each year, with one main theatre closing during that period. This arrangement, which relies on the co-operation of all theatre staff, means that there is reduced theatre activity for six weeks, but the arrangement attempts to minimise the disruption caused by staff leave to theatre activity during the rest of the year.

NIAO Conclusions and Recommendations – Session Planning

3.14 Consultant surgeons, consultant anaesthetists, theatre nursing staff and theatre support staff need to function as a team to ensure that surgical / theatre services are provided in the most efficient and effective manner. The co-operation of all staff in the co-ordination of leave is essential in order to optimise theatre use. Our independent advisers put emphasis on the contribution made by each person involved in operating theatres, without whom the theatre at best may run inefficiently and at worst may not be able to run at all. It is essential that each person accepts the importance of the contribution of the other team members, so that there is efficient use of the facility and the maximum benefit of the greatest number of patients. We note and support the emphasis placed in the Review of Cardiac Surgery on the need for a multi-disciplinary approach and we urge Trusts to promote an ethos of collaboration, team work and open communication amongst all of their surgical and theatre services staff.

3.15 We recommend that:

- procedures should exist, clearly set out in the theatre policy document, for notifying the theatre department of the

cancellation of sessions. This provides the opportunity to offer the session to another user. The Theatre Director and the Theatre Manager should be in a position to monitor compliance with these procedures and should also have available a record of the period of notice of session cancellations, so that it will be evident which sessions were cancelled with insufficient notice to enable reallocation where other commitments allow it;

- Theatre Directors should review, with surgical staff, any instances of regular non-compliance with the target time for submitting theatre lists, to minimise the potential disruption to the smooth and continuous use of theatres;
- the Theatre Users' Committee should review theatre allocation practices and explore alternative methods of theatre allocation where problems are seen to exist with the present arrangements. More flexibility may need to be introduced into the process and hospitals should be prepared to introduce changes to traditional practices where, by doing so, efficiency could be improved;
- the theatre department should designate a specific individual, possibly the Theatre Manager, as having responsibility for reallocating, where possible, any theatre sessions which have been cancelled;
- where theatre time has been allocated but is not being used to its full potential, that specified individual, in conjunction with the Theatre Users' Committee, should have the full authority to reallocate sessions. In view of the potential sensitivity of such action in such circumstances, this authority should come from Trust management; and
- where there is evidence of persistent late cancellation or underutilisation of sessions, there must be a process whereby a sanction can be applied by the hospital management.

Emergency Admissions

3.16 Operations carried out outside the planned schedule, which is in force from Monday to Friday, are usually the result of unplanned emergencies, though some will be planned theatre work which over-runs allotted session time. In all acute hospitals, unplanned, urgent, emergency work takes priority over planned elective work. To meet the impact of emergency work, HPSS hospitals have introduced a variety of arrangements, including:

- dedicated emergency theatres which are available 24 hours a day;
- sessions which have been allocated solely for emergency use during normal working hours but with an on-call team outside these hours; and
- an on-call rota for covering all out-of-hours emergencies.

3.17 CREST has strongly recommended that a dedicated theatre should be provided for urgent and emergency surgery. Of the six hospital sites visited during this study, four now have a dedicated emergency theatre (Royal Victoria – ATICS Directorate, Altnagelvin, Ulster and Craigavon Area). (In the event of urgent or emergency surgery not commencing until mid-morning, staff at Craigavon Area are deployed in other theatres until required.) The other two hospitals (Antrim and Belfast City) now have dedicated emergency theatre sessions with arrangements in place outside of these sessions, to ensure 24-hour access to theatres in an emergency. Antrim Hospital has a dedicated emergency theatre available at all times apart from Monday to Friday, 9.00 am to 2.00 pm, though there are access arrangements to cover emergencies during this time. Belfast City Hospital has a dedicated theatre open every afternoon, with access arrangements to cover emergencies outside these times.

3.18 In recent years, the increase in medical and surgical emergency admissions during the Winter has created pressures on bed availability in acute hospitals resulting in the cancellation of planned elective surgery. Hospitals have responded to these Winter pressures by placing a temporary embargo on planned elective surgery and anticipating greater demand from medical emergencies. Over the past three years, all but the most urgent elective surgery has been cancelled during Winter peaks, to ensure that beds were available for emergency medical admissions and in some hospitals, these pressures are being experienced outside the Winter period.

Measures to Minimise the Impact of Emergencies

3.19 We believe that Trusts could use their knowledge of patterns of emergency admission to help them to plan the number and type of inpatient admissions more effectively. During our review, we identified the following good practice initiatives.

Diagnosis and Treatment Centres

3.20 The NHS Plan, introduced in July 2000, announced a programme of investment in Diagnosis and Treatment Centres in England. These centres

are a new way of delivering elective care, which can move a significant amount of elective work out of acute hospitals into dedicated units. The intention is to separate scheduled surgery and diagnosis from unscheduled care and thereby concentrate on getting waiting times down. With their work insulated from emergency pressures, they can serve as a reliable and dedicated high volume service which can safely, quickly and conveniently provide routine diagnosis and scheduled and booked care. These centres are set to increase the number of people that can be treated in a single day or with just a short stay. Altnagelvin Hospital has been operating a similar type of protected elective unit since 1999.

Protected Elective Units

3.21 Altnagelvin Hospital's Protected Elective Unit (which has one theatre and one room, providing two weekly sessions of nurse-led pre-operative assessment) was set up as a separate, dedicated, integrated surgical unit to undertake a range of cold, elective, mainly day case procedures. It was opened in March 1999 and has one consultant anaesthetist, a staff grade surgeon and seven nurses. In its first year alone, the Unit treated 125 inpatients and 889 day cases. This represents a significant waiting list management initiative by the hospital, aimed at reducing inpatient / day case waiting lists. The Unit has the distinct advantage of being separated from main theatre activity within the hospital and as such, it cannot be interrupted by emergency surgical cases having to take priority over elective surgery.

Departmental Proposals

3.22 The Minister announced, in June 2002[16], proposals to develop the Lagan Valley Hospital as a protected elective centre for planned surgery for Greater Belfast and a second major protected elective centre in a local hospital west of the Bann. A dedicated Day Procedure Unit at the Erne Hospital has also been announced, which will have the capacity to carry out a minimum of 300 additional elective day case procedures a year.

Perioperative Care System

3.23 Craigavon Area Hospital has been researching a system of perioperative care, in place in other parts of the world, as a new system of elective surgical care, and has presented it as a model to other hospitals. This system of care is similar to that provided by the Protected Elective Unit at Altnagelvin Hospital and the proposed Diagnosis and Treatment Centres of the NHS Plan.

16 Developing Better Services: Modernising Hospitals and Reforming Structures, DHSSPS, June 2002

3.24 The main features of the perioperative system are:

- a perioperative clinic for pre-operative assessment, nurse care planning and commencement of discharge planning;
- a perioperative unit adjacent to main theatres, where patients are admitted on the morning of surgery rather than occupying an inpatient bed from the previous day; and
- transfer to a recovery ward directly after surgery.

NIAO Recommendation – Emergency Admissions

3.25 We commend the attempts that are being made at individual hospitals to minimise the impact of higher priority, unplanned emergency procedures on planned elective surgery, by introducing units dedicated to elective surgery. We note that these solutions have not been routinely shared throughout the HPSS and we accept that resources may not currently allow them to be introduced in smaller units. However, we welcome the recent Departmental proposals to extend the opportunities for safe-guarding elective surgery through the development of a further two protected elective facilities and we urge the Department to try to make available the necessary resources for an expansion of this policy. The use of protected elective surgery units was strongly endorsed by our consultant advisers.

3.26 We recommended that the Department consider establishing a forum, representative of hospitals' theatre management, that would meet regularly with a view to the routine sharing and dissemination of experiences, solutions and examples of good practice such as noted above (see paragraph 4.59). The Department's view is that a forum is not necessarily the most appropriate mechanism to achieve this recommendation. We can accept this, providing a suitable alternative is adopted to ensure that such dissemination takes place.

Special Theatres

Good Practice

3.27 The use of single specialty theatres should be kept to a minimum and theatres should not be exclusively reserved for particular specialties or individual consultants. A case may exist for single user theatres because of specialised theatre needs, for example, an ultra-clean laminar flow theatre for joint replacement, or one with fixed operating or monitoring equipment as in neurosurgery or cardiac surgery. However, even in the

case of cardiac surgery or neurosurgery, these specially equipped theatres should be available to other specialties when not in use. This principle would also apply to laminar flow theatres.

3.28 We are pleased to report that we found, in the course of our site visits, no evidence of theatres being exclusively reserved for particular specialties or individual consultants – that, while theatres may be earmarked for individual specialties, theatre policy requires that they would be made available to other specialties when not in use. In any event, present pressures on hospital services, precludes the exclusive use of special theatres for particular specialties or individual consultants.

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Part 4: Measuring and Monitoring Operating Theatre Utilisation

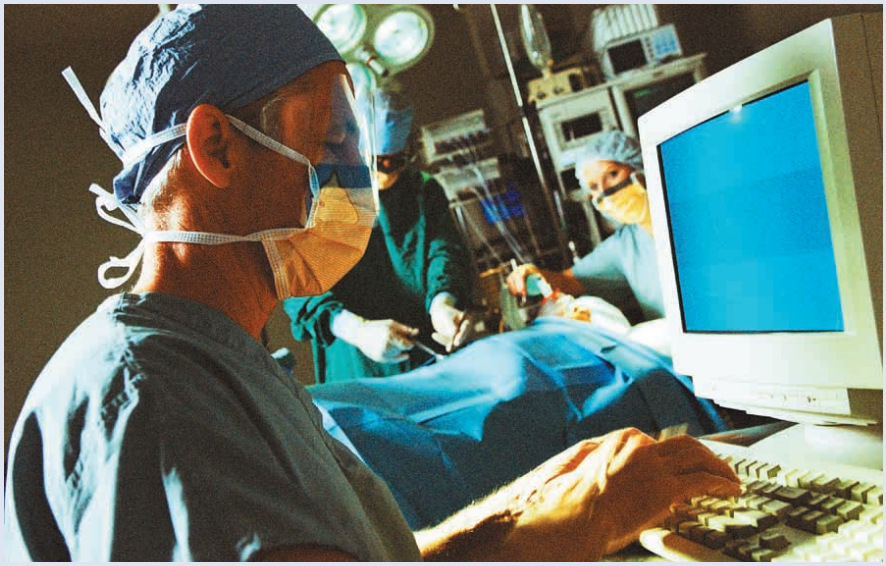
Theatre Utilisation

4.1 In the late 1980s, key reports on theatre utilisation in England were produced by the National Audit Office and by the NHS Management Executive (the Bevan Report) (see paragraph 1.17). These reports showed that theatres were only being scheduled for use for about 70 per cent of a normal working week, and that only around three-quarters of that scheduled time was actually being used (ie only 50 to 60 per cent of the total available capacity). The Bevan Report recommended that hospitals should aim to use 90 per cent of planned theatre time. These findings highlighted the potential for improvement in how theatres are utilised.

4.2 In order to ascertain the extent to which operating theatres in hospitals in Northern Ireland are used, and thereby, the extent of spare capacity, we established for each hospital:

- the actual use of available physical capacity during the day on weekdays;
- the extent to which scheduled time was actually used;
- the frequency and spread of case cancellations, with an examination of the reasons for the last minute cancellation of operations; and
- the position regarding starting and finishing sessions on time, where data was collected, comparing planned and actual start and finish times for individual sessions at the six hospital sites visited.

4.3 We examined the extent to which individual hospitals were benchmarking the use of their theatres and unit cost performance against peer hospitals in the HPSS, the NHS and the private sector.



Theatre Scheduling

4.4 The standard practice in Northern Ireland is for operations to be scheduled for either the morning or the afternoon on a weekday. The Department told us that it would not be viable for operating theatres to be used over a 24-hour period. It considered that patients would not accept being admitted and discharged in the middle of the night and the increased numbers of clinical and other staff required (including porters, laboratory staff, radiographers etc) would not be available in Northern Ireland. Our independent advisers also pointed to the need for theatres to be left unused for short periods for infection control purposes. With some exceptions, in reality, theatres are rarely used beyond the fixed ten half-day sessions each week. However, emergency work can take place at any time.

4.5 In common with other parts of the United Kingdom, scheduled sessions are usually allocated to individual surgeons and are planned well in advance. However, there may be occasions when theatres are needed at other times and time may be specifically set aside for maintenance, cleaning, and training.

DHSSPS Statistics on Theatre Utilisation

4.6 Since 1992, DHSSPS has published annual HPSS performance guides and tables showing performance of the HPSS against standards of care and treatment set out in The Charter for Patients and Clients, published in that year. The tables showed how Trusts and Boards performed, each financial year, against the targets and standards set out in the Charter. They include a range of performance data for each Trust, including the waiting times to go into hospital, the number of patients not admitted to hospital within one month of a cancelled operation, non-attendance for in-patient treatment and for outpatient appointments etc.

4.7 Whilst this performance data continues to be collected and analysed by the Department, publication of the annual performance tables has been discontinued since 1999-2000, pending the development, by the Department, of a new performance management framework, aimed at improving the assessment of HPSS service performance. Following consultation on proposals issued in "Best Practice – Best Care"[17] , the Minister announced, in June 2002, a series of measures aimed at improving the quality of services. Included in this is the intention to set up a new body, the Health and Social Services Regulation and Improvement Authority, to regulate and monitor the HPSS.

17 Best Practice – Best Care, DHSSPS, April 2001

4.8 The Department collects, analyses and publishes annual Hospital Statistics. These statistics include data on the availability and use of operating theatres – providing, for each hospital, the total number of scheduled sessions, the number held and cancelled, and the number of cases operated on. The Department's statistics are based on quarterly Körner returns made by Trusts.

4.9 These statistics should enable hospitals to regularly compare how effectively they use their theatres and to facilitate the Department in monitoring the position. However, they do not compare the scheduled sessions intended, and those actually held, with the potential weekday sessions available (i.e. the physical capacity).

Spare Capacity - Use of Available Weekday Capacity

4.10 We compared, in Figure 8, the number of sessions held in 2001-02 with the potential weekday sessions available for each hospital in that year, assuming 10 sessions were available each week for each operating theatre over 48 working weeks per year. We found that some 37 per cent of available weekday capacity was not used. Of the 48,760 operating theatre sessions available in the 106 theatres open at some stage in Northern Ireland's acute hospitals during 2001-02, only 30,582 sessions (63 per cent) were actually held. Specifically, we noted the following particular instances of spare capacity.

Figure 8: Operating Theatres: Actual Use of Theatre Capacity – 2001-02

Hospital	No. of Operating Theatres **	Capacity (Sessions Available) (ie No. x 480)	Sessions Held	Sessions Held as Percentage of Sessions Available %
Musgrave Park	6	2,880	2,358	82
Lagan Valley	3	1,440	1,150	80
Royal Victoria	17	8,160	6,167	76
Mid-Ulster	2	960	713	74
Altnagelvin	10	4,800	3,298	69
Antrim	4	1,920	1,225	64
Downe	2	960	617	64
Daisy Hill	4	1,920	1,207	63
Royal Children	3	1,440	898	62
South Tyrone $	2	960	583	61
Ulster	10	4,800	2,860	60
Tyrone County	3	1,440	861	60
Craigavon	7	3,360	1,927	57
Mater	5	2,400	1,307	54
Belfast City	11	5,280	2,754	52
Ards	2	960	485	51
Whiteabbey	2	960	478	50
Royal Maternity	1	480	241	50
Erne	2	960	452	47
Causeway ***	5	2,200	717	33
Belvoir Park	1	480	58	12
Coleraine ***	2	n/k	55	n/k
Route ***	2	n/k	171	n/k
Totals	**106 *****	**48,760**	**30,582**	**63***

Source: DHSSPS Hospital Statistics 2001-02

* Shaded entries show below average usage.

** Theatre and session numbers may differ from those shown in Part 2, due to the exclusion, for the purposes of compliance with Körner guidance on data recording, of a range of facilities including obstetric delivery rooms containing a delivery bed, X-ray rooms, rooms which are only to carry out endoscopy, etc. DHSSPS also note that it is not always desirable or possible, because of their location or other factors, to use available theatre space in some specialties, such as maternity or paediatrics, for other services.

*** Causeway Hospital opened at the end of May 2001. Route and Coleraine Hospitals sessions transferred to Causeway. Causeway capacity figures are approximate.

$ Operating theatres closed for part of the year. Day case sessions now being held. A third theatre was closed during the year. Sessions available are therefore based on two open theatres.

South Tyrone Hospital

4.11 Acute medical and associated services were transferred, for a temporary period, from South Tyrone Hospital to Craigavon Area Hospital by a Ministerial decision during 1999-2000, pending reorganisation of the HPSS. Whilst patient throughput was reduced within the three operating theatres recently acquired by South Tyrone, two of the theatres remain operational – one main theatre and the day procedures theatre. Currently, sessional capacity in the two remaining theatres has increased. From November 2001, ophthalmology day surgery commenced with two additional sessions commencing in 2002 and from November 2002, GP endoscopy commenced with one session a week. Against a potential for 960 sessions in the two theatres open (and a further 480 with the theatre closed), 583 sessions were actually held in 2001-02.

Antrim Hospital

4.12 The Department told us that the use of Antrim Hospital's five theatres has been significantly curtailed due to the need to comply with guidance from various Royal Colleges in respect of junior doctors in training undertaking parallel lists (see also paragraph 2.75). This has meant the loss of most of the 480 potential sessions each year in one of the theatres.

NIAO Conclusions and Recommendations - Spare Capacity

4.13 The extent of spare week-day capacity must take account, not only of planned staff leave entitlement, but also time that has to be set aside for cleaning, maintenance, audit and training. We recognise that, to staff and resource all possible sessions within a hospital's available physical theatre capacity, would have significant implications that may not be cost effective or practicable in resource terms. However, sizeable spare theatre capacity of 37 per cent is a key issue, a conclusion which has been endorsed by our consultant advisers. It has to be viewed in the context of Northern Ireland's waiting lists and waiting times which are currently the worst in the United Kingdom (see paragraph 5.48). **Subject to the availability of staff and other resources, there is spare, physical theatre capacity to accommodate initiatives to reduce these waiting lists.**

Use of 'Scheduled' Sessions

4.14 The number of theatre sessions held was compared with the number of sessions intended during 2001-02 (within the overall capacity shown in Figure 8). The results, which are illustrated in Figure 9, show that the

average for all hospitals is above Bevan's target of 90 per cent (see paragraph 4.1) and that the majority of the hospitals exceeded that target.

Figure 9: Operating Theatres: Actual Use of Scheduled Sessions –2001-02

Hospital	Sessions Intended	Sessions Cancelled	Sessions Held	Sessions Held as Percentage of Sessions Intended %
South Tyrone *	541	11	583	108
Craigavon	1,927	-	1,927	100
Downe	617	-	617	100
Route	171	-	171	100
Royal Maternity	241	-	241	100
Altnagelvin *	3,333	39	3,298	99
Causeway ***	718	1	717	99
Lagan Valley	1,153	3	1,150	99
Mater1,	310	3	1,307	99
Mid- Ulster	722	9	713	99
Antrim	1,249	24	1,225	98
Belvoir Park	59	1	58	98
Musgrave Park *	2,400	-	2,358	98
Daisy Hill	1,240	33	1,207	97
Ulster	3,039	179	2,860	94
Ards	522	37	485	93
Coleraine	60	5	55	92
Belfast City	3,052	298	2,754	90
Royal Victoria	7,002	835	6,167	88
Whiteabbey	564	86	478	85
Tyrone County*	1,040	163	861	83
Erne *	571	94	452	79
Royal Children	1,176	278	898	76
Totals	**32,707**	**2,099**	**30,582**	**94 ****

Source: DHSSPS Hospital Statistics 2001-02

* No explanation provided for column entries which do not add up. The Department said that this could be due to unscheduled theatre sessions which are not included in the sessions intended but which are included in the sessions held. However, this does not explain those cases where the number of sessions held is lower than those intended, yet no sessions are recorded as cancelled.

** Shaded entries show below average usage

*** Causeway Hospital opened at the end of May 2001

Sessions Cancelled

4.15 While the average overall rate of sessions cancelled in 2001-02 was 6 per cent, there was a wide variation in usage by individual specialties. Figure 10 outlines this variation for the eight major specialties in Northern Ireland's hospitals.

Session Cancellations – Cardiac Surgery

4.16 During 2001-02, there was a very high cancellation rate of cardiac surgery theatre sessions, with 431 out of 1,189 sessions (36 per cent) cancelled. The main reason for the cancellations was the unavailability of beds in the cardiac intensive care unit. In particular, the unavailability of intensive care beds and the increased length of stay caused by long-term cardiac surgery patients, was a major problem, one which has been borne out by the experiences of our independent advisers. The unique circumstances of cardiac surgery are covered in detail in paragraphs 2.32 to 2.42.

Figure 10: Range of Session Cancellations in Major Specialties in 2001-02

Specialty	Range %
Cardiac Surgery	36
Plastic Surgery	9
ENT	8
General Surgery	5
Gynaecology	5
Ophthalmology	5
Urology	2
Trauma & Orthopaedics	1

Source: NIAO Analysis of DHSSPS Hospital Statistics

Fast-Tracking

4.17 The fast-tracking of cardiac surgery patients has been recognised in parts of the United Kingdom and abroad for some time. The process involves providing for patients, previously identified as being suitable to particular shorter surgery procedures, short-term intensive care in a recovery unit, either separate to, or separate within, the cardiac surgery intensive care unit.

4.18 The concept was pioneered at St Thomas' Hospital in England more than a decade ago and was approved by the Department of Health in Great Britain in 2000[18] . DHSSPS's "Review of Cardiac Surgery" report in 2001 recommended the expansion of fast-tracking "through the use of agreed and applied protocols including the designation of cardiac surgery intensive care unit beds for these patients"[19] .

NIAO Conclusion and Recommendation – Cardiac Session Cancellations

4.19 During our review, we noted that few cardiac surgery patients were routinely fast-tracked. The Trust indicated that this was due to staff shortages. In view of the wide recognition that this process has been given, including by the Department's own review and by our own independent advisers, we recommend that the Royal Victoria Hospital should endeavour to increase its use of fast-tracking by planning for the separation of overnight recovery facilities and care for lower risk cardiac patients, from the existing Cardiac ICU for higher risk patients. The Trust has announced plans to have a new cardiac high dependency unit operational early in 2003 and fast tracking will be introduced at this stage.

Körner Returns

4.20 In the course of our visits to the six main hospital sites, we sought to verify the statistics published by the Department on theatre utilisation. We observed that none of the hospital sites visited were disclosing theatre utilisation data, fully in accordance with Departmental guidance.

4.21 Contrary to Departmental guidance:

- all hospital sites, apart from Craigavon Area Hospital, are incorrectly including sessions as *scheduled sessions intended*, - even though it is known in advance that they will not be held, because of audit or planned staff absences (annual leave and study leave) - and then recording them as *cancelled sessions*. (Altnagelvin Hospital does not keep a record of the reasons for the cancellation of sessions.) The Department's guidance on the completion of the Körner return advises that "the number of scheduled sessions cancelled relates to the number of sessions which were intended to be made available, but which were not held. If it is known in

18 Modernising Critical Care Services, Health Service Circular 2000/17.
19 Review of Cardiac Surgery in Northern Ireland, DHSSPS, October 2001.

advance that it is impossible for a session to be held, it should not be planned and hence cannot be cancelled e.g. public holidays or annual leave, which are known sufficiently in advance";

- some hospitals (e.g. Antrim Hospital) were not including *day surgery sessions* in their Körner returns;

- some hospitals were including dental and accident and emergency (A&E) sessions in their returns.

Since our audit, the Department has told us that the last two occurrences above, have been corrected.

NIAO Conclusions and Recommendation – Körner Returns

4.22 It was apparent, in the course of our site visits, that there are differing interpretations of the Department's guidance by the theatre nursing staff who record the primary data on theatre utilisation for their hospital's Körner returns. It is important that Trusts are able to benchmark their performance against other providers and without timely and reliable data this will not be possible. Data must also be capable of being relied upon by the Department if it is to comprehensively fulfil its monitoring and planning roles.

4.23 Although the Department told us that there has been some improvement in the recording of utilisation data, there is still evidence of some hospitals not disclosing data correctly, and of inconsistency throughout the HPSS, which gives us cause for concern about the validity of some of the theatre utilisation data published annually by DHSSPS. In view of the high cost of developing, operating and publishing statistical information, it is essential that data collection is accurate, prompt, complete and consistently recorded. There is a strong need, therefore, for clearer guidance to be provided by the Department on the completion of Körner returns and for hospitals to ensure that theatre nursing and other staff are instructed and fully conversant on the proper recording of theatre utilisation data, as required by the Department. We were advised of an ongoing audit strategy within the Department's Regional Information Branch, which recently commissioned an independent audit of hospital returns. The audit recommended a collaborative approach between the Branch and the Trusts to ensure the quality of information and updated definitions and guidance and the Branch is currently working on the implementation of these recommendations. We welcome this latest action.

4.24 The Department told us that Körner returns undergo a stringent validation process where any changes in the data over time are queried with the Trusts. All data is also signed off by Trust Chief Executives prior to publication. Nonetheless, there is a need for the Department to monitor more closely the data received from, and quality assured by, Trusts before publishing it.

Case Cancellations

4.25 Some surgical procedures can be cancelled, even after the theatre list has been completed and sent to the theatre department. We reviewed this in our survey and found that the most common reasons for cancellation were, in order of ranking:

- the patient did not turn up for surgery (patients not attending for either outpatient or inpatient appointments throughout the health services are usually referred to as DNAs (Did Not Attend));
- the intended bed was occupied by a new emergency admission;
- there was a shortage of intensive care / high dependency beds.

A full list of the reasons for cases cancelled at the last minute, in ranking order, is provided at Appendix 3.

NIAO Conclusion and Recommendations - Cancellations

4.26 We recognise that there are limitations to possible action to prevent cases being cancelled because emergency cases take priority. The Department has advised us of the action taken over the past two years to resolve problems in intensive care and high dependency provision. During that time, an additional 10 intensive care beds and 21 high dependency beds were put in place, though our advisers thought these numbers should be increased. The Department has also launched a series of comprehensive workforce reviews across the main HPSS professional groups, the aim being to provide an analysis of the current workforce and of current and future recruitment and retention issues. They will also encompass issues such as the number of staff required to meet service demands and the number of training places needed. Long-term planning to resolve problems of capacity in intensive care and high dependency units, continuous review of workforce planning to ensure that properly trained staff are available when they are needed, and the better planning of

scheduled theatre time (for example, to reduce the number of case cancellations caused by sessions overrunning) will bring about improvements, and we would expect this activity to be the normal part of the Department's management and overseeing role.

4.27 Where cancellations of planned procedures are considered to be a problem, hospitals need to think about such measures as:

- pre-assessment clinics (see paragraphs 4.37 to 4.45);
- maintaining a list of patients who can attend at short notice; and
- requesting patients to confirm their intention to attend for their procedure.

Information on cancellations should be submitted to the theatre users' committee and consideration should be given by the Department to the setting of targets for reducing cancellation rates.

4.28 The HPSS Charter for Patients and Clients states that, if a patient's operation is cancelled on the date of admission to hospital, the patient should be admitted for treatment within one month. We note that the performance tables published by the Department for 1999-2000 reported that 110 patients (one per cent), whose operations were cancelled on their date of admission, were not readmitted within one month. This rate has been increasing in recent years. However, no performance tables have been published since 1999-2000. We note that the latest cancelled operations standard included in the NHS Plan for England (July 2000) states "if a patient's operation is cancelled by the hospital on the day of surgery for non-clinical reasons, the hospital will have to offer another binding date within a maximum of the next 28 days or fund the patient's treatment at the time and hospital of the patient's choice". The guarantee in this standard, which has been in place since April 2002, will be extended from April 2003 to cover patients cancelled at "the last minute" (ie those cancelled on the day of admission or later). This principle has not yet been introduced in the HPSS in Northern Ireland. The Department told us that this would require additional resources which are currently not available.

DNAs

4.29 In 1999-2000, there were 134,362 elective (i.e. non-emergency) admissions to hospitals. Of these, 4,654 patients (over 3 per cent) did not turn up for admission and did not let the hospital know beforehand that they would not be attending[20]. Appendix 4 gives a breakdown for each hospital Trust. Statistics for more recent years have not been published.

4.30 Patients need to be told of their responsibility to advise the hospital if they are unable to attend for treatment, so that resources are not wasted. There will clearly be some good reasons for non-attendance, for example, elderly patients might not feel well enough to attend. However, there are other reasons for non-attendance which could be prevented with a more pro-active approach being taken by appointments personnel. For example, to lessen the risk of people forgetting about their appointments, simple improvements could be made by reminding people in advance, and through the use of explanatory leaflets.

4.31 Our survey showed that periods of notification for patients to attend for operation varied from five days to six weeks, although it is normally two weeks. Notification is by letter or telephone.

NHS National Booked Admissions Programme

4.32 In a recent report by the Westminster Committee of Public Accounts[21] attention was drawn to the belief of the NHS Executive in England that a more important way of reducing non-attendance was to improve systems so that people could book their appointments more at their discretion. As part of their National Booked Admissions Programme, the NHS Executive had funded (in 1998) 60 pilot schemes to implement electronic systems which allowed people to book their outpatient consultation when they were at their general practitioner, and book their hospital operation when they were in the outpatient department. The systems also issued reminders two or three days ahead. These new systems were beginning to show improvements in the figures for patients not attending.

4.33 A further wave of projects was funded in April 2000, which required every acute Trust in England to introduce the benefits of pre-booked hospital appointments and operations in at least two specialties by March 2002 and another wave of schemes was launched in September 2001, focussing on mainstreaming booking and requiring progress towards the NHS Plan target that, by the end of 2005, all outpatient appointments and elective admissions to hospital will be pre-booked.

20 HPSS Performance Tables for 1999-2000, DHSSPS

21 Inpatient Admission, Bed Management and Patient Discharge in NHS Acute Hospitals, Westminster Committee of Public Accounts, January 2001 [HC 135]

NIAO Comment and Recommendation – DNAs

4.34 In relation to the impact of DNAs on operating theatre usage, we recommend that serious consideration be given to introducing, as a minimum, the following good practice suggested by the NHS Management Executive in 1994[22] :

- giving patients at least three weeks notice;
- requesting patients to confirm they are attending, e.g. by telephoning to confirm their intention to attend;
- telephoning patients who do not reply within seven days;
- maintaining a list of patients who do not reply within seven days; and
- replacing any selected patients who decline their offer of admission with a patient available at short notice.

The Department said that some Trusts already operate such practices and we understand that it intends to issue guidance requiring all Trusts to introduce these measures as a matter of routine.

4.35 In its recent guidance on appointment booking[23], the NHS Modernisation Agency recommended five change principles for successful booking, thereby putting into practice the redesign of care around patients' needs by providing certainty and choice:

- focus on patient needs
- improve the booking process
- match demand and capacity
- improve communications
- make it mainstream

4.36 Work is currently under way on reducing waiting lists and waiting times. The Department considers that, until waiting times for operations are shorter, the introduction of booked admissions is unrealistic, although it told us that a service improvement project is currently looking at the feasibility of booked admissions. We recommend that the Department considers whether to introduce, in Northern Ireland, a programme similar to the National Booked Admissions Programme for England, in the light of the outcome of that project.

22 Good Practice in Operating Theatre Management, NHS Management Executive, 1994
23 Ready, Steady, Book, NHS Modernisation Agency, 2001

Pre-admission Assessments

4.37 Cases can be cancelled at the last minute because patients are found to be unfit for surgery. Pre-admission assessments can be used to detect those patients who, for one reason or another, are deemed to be unsuitable or unfit for surgery or who no longer require treatment, particularly when there are long waiting times for treatment. They can also prove useful in reducing late cancellations by patients and in allaying a patient's fears about the forthcoming operation.

Good practice

4.38 The 1989 report on the Efficiency of Theatre Services by the Association of Anaesthetists and Surgeons (see paragraph 1.17) recommended the use of pre-admission assessment clinics. However, the CREST guidance of 1991 qualified its endorsement of this particular recommendation because such clinics ".....were shown to have major drawbacks".

4.39 We found that there is no consistency in the use of pre-admission assessment clinics. Although a few consultants do hold them, nine hospital sites reported not using them.

Royal Victoria Hospital

4.40 Most of the procedures cancelled in the year ended 31 March 2001 (some 22 per cent of total unplanned cancellations), were due to patients being unfit for surgery.

4.41 An external review of Anaesthetics, Pain Relief and Critical Care Services at the RGH Trust concluded, in October 2000, that:

- "the arrangements currently in place for undertaking pre-operative assessment are limited and at times appear to be leading to reduced theatre efficiency and the cancellation of operations. Patients referred for surgery are assessed for fitness for anaesthesia and medical suitability for surgery pre-operatively on the day of surgery by an anaesthetist. Assessment prior to admission does not occur as a rule. Some, but not all specialties, use pre-admission assessment (ENT, Ophthalmology, Paediatrics and the Dental Day Procedure Unit); and

- "there is scope for the development of pre-operative assessment clinics for inpatients in all other specialties as part of the outpatient appointment, or within an agreed period of time before admission (10 days to 2 weeks). This should reduce the

need to admit patients the day before surgery, improve the use of inpatient beds, and prevent cancellations due to the anaesthetic unsuitability of the patient."

4.42 RGH management accepted the review's recommendation that it should examine the feasibility of developing appropriate pre-operative assessment arrangements for inpatients prior to admission. The Trust's management indicated that anaesthetic nurses, under supervision, would be able to develop this service across the Trust. The recommendation was to be implemented by January 2002. We have since been informed by the Trust that an amount of waiting list funding made available to the Trust by the Eastern Board in 2000-01, was actually used for the establishment of a pre-assessment clinic.

Altnagelvin Hospital

4.43 Nurse-led pre-admission assessment is being used at Altnagelvin Hospital.

NIAO Conclusions and Recommendations - Pre-admission Assessment

4.44 We recommend that the Department reviews, with CREST, the 1991 guidance on the use of pre-admission assessment screening clinics. We recognise that the introduction of pre-admission clinics diverts resources, particularly medical staff, away from other activities, and the benefits of such screening need to be viewed and evaluated in this light. However, given the relatively high incidence of case cancellations attributed by hospitals to patients being unfit for surgery, we recommend that serious consideration be given by all hospitals to a cost benefit analysis of pre-admission assessment arrangements as a means of reducing last minute cancellation of operations that have been planned and staffed. This could include the use of nurse-led pre-admission assessment clinics as a cost effective option. On the basis of our independent advice, we would also recommend that, where feasible, Trusts should also consider the use of anaesthetic pre-admission assessment.

4.45 We commend the action taken by the RGH and Altnagelvin Trusts to introduce pre-operative assessment, particularly if the Trust can show that the use of waiting list funds in this way, has had a positive effect on waiting lists.

Starting and Finishing Sessions on Time

4.46 The efficient running of operating theatres relies on a tight scheduling of theatre sessions which, in turn, is dependant on keeping to start and finish times, where possible. Deviating from the planned start and finish times in theatres can result in frustrating delays. Although some of the reasons for not keeping to these times are unavoidable, others can be avoided. These include instances where, for example:

- the previous theatre list has overrun;
- members of the theatre team have arrived late;
- the theatre list has changed at short notice; and
- patients are not ready to be collected from the ward at the previously planned time.

4.47 **Our review** found that most hospitals compare start and finish times of individual theatre sessions with those planned, and session under- and over-runs are monitored. However, most hospitals indicated that they are not analysed at individual consultant level and that no remedial action is taken.

4.48 Of the six main hospital sites visited, only one (Altnagelvin Hospital) did not routinely monitor the under- and over-run of theatre sessions. Craigavon Area Hospital was the only hospital visited where there was evidence that problems of session overruns had been actively addressed by its theatre utilisation committee, which resolved that cumulative over-runs of more than 3.5 hours in six months could result in the withdrawal of a session from a consultant.

NIAO Conclusion and Recommendation – Session Times

4.49 Constant overruns of theatre lists by individual surgeons can result in the cancellation of operations, which in turn, can have a traumatic effect on the patients involved. It is therefore very important for the incidence and reasons for overruns, including when surgeons arrive late or do not turn up at all, to be monitored closely by each hospital's clinical management. We recognise that many of these overruns will be unavoidable. However, where there is good evidence that an individual consultant regularly under- or over-runs sessions, the Theatre Director should consider, in discussion with the theatre users' committee, whether theatre sessions should be reallocated.

Measuring and Monitoring Theatre Use at Individual Consultant Level

Good Practice

4.50 The general surgical directorate of a hospital Trust in England has increased the number of patients treated, using fewer beds, by setting comprehensive targets for consultants[24]. Each consultant's performance is reviewed quarterly against targets set specific to their sub-specialty. These include agreed service pathways covering individuals' outpatient and inpatient care and the amount of work to be carried out on a day–case basis. They also cover outpatient access times, waiting times in clinics, non-attendance and cancellation rates, inpatient waiting times and the percentage admitted within three months.

4.51 Each consultant has an agreed budget for radiology, pharmacy and laboratory services. Targets in areas of clinical governance cover incidents and accidents, complaints, audits, training and development, protocols for any new techniques and service accreditation standards. Targets on theatre use address overruns, cancellations, and administrative errors on theatre lists. This system of target setting is under consideration as a part of the rewards initiatives for NHS consultants, recently announced by the Department of Health (GB) following rejection by the profession of the proposed new consultants' contract.

4.52 The Department intended to introduce, on a pilot basis, a system of monthly monitoring in 2002-03. Under this, Trusts submit a monthly return showing the extent to which they are meeting waiting list targets.

NIAO Recommendation – Measuring and Monitoring Theatre Use

4.53 We note the Department's intention to monitor, on a monthly basis, compliance with waiting list targets, along with a range of other targets. However, we also urge it to consider, with Trusts, the merits of adopting a target-based system of measuring and monitoring theatre use. We have been told that the Department does not believe that consultant-level monitoring, by the Department, is necessary, as this is done by Trusts. However, we suggest that the Department keeps under review the impact of practices introduced elsewhere (for example, see paragraph 4.50) to see whether these have a beneficial effect, which could then be usefully introduced in Trusts.

24 Health Services Journal, 29 March 2001

Benchmarking

4.54 Benchmarking is a useful tool, enabling organisations to compare their own performance in chosen areas with their peers.

4.55 Most hospitals reported that they compare their theatre performance with that of other hospitals in Northern Ireland and that they have considered setting up benchmarking clubs with other hospitals of a similar type in the UK. Comparisons at local level are facilitated by the annual publication, by the Department, of theatre utilisation data in its Hospital Statistics report, though there is a reduction in the comparative information available to Trusts with the cessation, also by the Department, of the publication of indicators of performance in performance tables linked to the Charter for Patients and Clients (see paragraph 4.7).

4.56 Of the Trusts responsible for the six hospital sites visited, the Royal Group of Hospitals, Altnagelvin and Ulster Community and Hospitals Trusts participate in a national benchmarking club run by CHKS, a health performance analysis company which provides activity performance data, including theatre utilisation data, for comparison with peer hospitals elsewhere in the United Kingdom. Belfast City Hospital has recently enrolled with the benchmarking group of the British Association of Day Surgery. Antrim Hospital has also participated in the benchmarking of day surgery. The Craigavon Area Hospital is a member of the National Performance Advisory Group and the Newchurch Clinical Benchmarking Company.

Private Practice – the Ulster Independent Clinic

4.57 NIAO visited the Ulster Independent Clinic to compare private sector theatre management practice with practice within the HPSS. The Clinic exerts strong management and control over the use, by participating consultants, of its three theatres, increasing to five theatres early in 2003. It claims to operate a very efficient theatre booking, scheduling, and charging system, with the allocation of theatre sessions to participating consultants on a 'first come, first served' basis, and it considers that the regime which operates there does not tolerate last minute cancellations, sessions not starting on time, overruns on procedures, or delayed discharges, which in some cases, arise from inefficiency.

4.58 The services provided by the Clinic are entirely focussed on, and driven by, the expectations of the patient who, in paying privately for treatment,

demands an efficient, high quality service. Unlike the HPSS, private sector provision is said to guarantee the primacy of the paying patient, although the Department told us that it recognised and accepted that this is not necessarily in the best interests of all members of the community who require treatment. We agree with the Department, that the environment is different from that within the HPSS and that the benchmarking of HPSS theatre service provision against private sector provision would not be considered appropriate or valid for several reasons, including the absence of emergency pressures at the Clinic, and the fact that the Clinic can exercise complete choice and control over the operations undertaken there.

NIAO Conclusion and Recommendation – Benchmarking

4.59 Our review found that there is no forum for the sharing of theatre management experience by hospitals within the HPSS. Accordingly, we recommended that the Department actively encourage and facilitate the establishment of such a forum to enable the theatre management of each hospital to meet periodically to discuss common problems and issues and for the sharing of good practice. The Department's view is that a forum is not necessarily the most appropriate mechanism to achieve this recommendation. We can accept this, providing a suitable alternative is adopted to ensure that such sharing takes place and that theatre management also has the authority to take appropriate action (see also paragraph 3.26).

Unit Cost Comparisons

4.60 Specialty costing has in the past been used as the basis for comparative reference costs within the HPSS. Each Trust submits annual specialty costing data to the Department which identifies the average unit cost of inpatient, day case and outpatient activity.

4.61 We tried to compare theatre unit costs for each acute Trust, as a measure of efficiency, using the Inpatient Surgery specialty costing data provided by each Trust, but we found that no valid or meaningful comparisons could be made. Specialty costs are only accepted as a crude measure of unit cost, masking significant differences in case mix, clinical practice and costing methodology.

4.62 Theatre costs are influenced by the ratio of emergency to elective work undertaken by a Trust, the extent of out-of-hours work and the

complexity of case mix. Each of these factors contributes to produce a significantly different theatre cost profile, especially for a major regional trauma centre such as the Royal Victoria Hospital. This profile will, therefore, not provide a consistent and comparable measure of efficiency.

4.63 The costing methodology used by each Trust will also have a significant effect on the theatre cost within a specialty. As theatres are not a distinct specialty but a patient treatment service, the surgery specialty cost breakdown data provided by Trusts do not always reflect the full cost of the theatre service provided. As well as overhead costs, they may, or may not, include the cost of drugs, medical and surgical disposables or prosthesis / implantables as direct or indirect costs – these may be recorded as ward costs depending upon the costing methodology adopted by individual Trusts.

4.64 It was due to these and other accepted criticisms of specialty costs that, following the NHS White Paper "The New NHS Modern and Dependable" and the subsequent HPSS "Fit for the Future" proposals, the Department decided to recommend the use of Healthcare Resource Groups (HRGs), developed by the National Casemix Office, to produce reference costs rather than specialty costs, as the basis for national comparative reference costs. In March 2002, the Department published its first schedules of reference costs – one for acute services and one for community services. These provide unit cost information in respect of all surgical specialties and some community services. The Department plans to extend these in future years to provide unit cost information across the whole range of acute and community services.

4.65 HRGs provide the ability to make meaningful comparisons of performance across like-type providers within the HPSS and across the United Kingdom by providing a standard framework for adjusting for differences in casemix, by grouping clinically similar treatments that consume similar resources. Consequently, HRGs, and the reference costs derived from them, though not perfect, provide a far better measure of efficiency. Although reference costs are an advance on specialty costs, there remain significant difficulties in attempting to separately analyse theatre costs.

4.66 We note that advanced theatre control and information systems are available as commercial packages, and that some of these have a costing facility that can record financial management of the theatre by allocating staff and consumable costs and distributing overhead costs that cannot be allocated to an individual operation, to provide a cost for each operative

procedure. These can be linked to the financial management systems of other bodies. The Department's view is that the current use by Trusts of primarily commercial costing packages, to distribute overhead costs to patient treatment services and specialties in line with Departmental costing guidance, is sufficient.

NIAO Conclusions and Recommendations- Unit Costs

4.67 We found that the theatre management information systems in most hospitals are in much need of development (see paragraphs 2.86 to 2.90). Accordingly, we recommend that, as part of the development of proper integrated computerised theatre management systems and the enhancement of HRG costing information, Trusts should consider the advantages of having a costing facility for the calculation of theatre unit costs, to improve the financial management of theatre resources and facilitate internal and inter-Trust comparisons. To this end, the Department would need to work with Trusts to ensure a common, consistent approach. The need for a business case setting out the costs and benefits of any such development have, quite rightly, been raised by the Department (see paragraph 2.17).

Information and Communications Technology Strategy

4.68 In July 2002 the Department issued its proposals[25], for consultation, on the modernisation of health and social care through the widespread use of Information and Communications Technologies (ICT) based on its ICT Strategy Vision issued in 2001. The focus of the Strategy is aimed at using ICT to improve the experience of health and social care for those receiving and delivering care. Included are proposals on:

- "electronic care communications – replacing paper-based communications and delivering faster referrals, results, appointments and decisions about care …..;
- "electronic care records - helping to promote multi-professional care and introduce new ways of delivering care by moving away from the dependence on paper records…. allowing care professionals to share access to key care data; and
- "electronic information – using electronic services to support improvements in quality and equality of care by providing relevant information and advice on best practice and modern care guidance both for care professionals and for the public".

25 NI HPSS: Information and Communications Technology Strategy, Consultation Paper, DHSSPS, July 2002

NIAO Recommendation - Integrated Computerised Theatre Management Systems

4.69 Although consultation on the Department's ICT Strategy has closed, we recommend that the Department considers carefully our conclusions and recommendations on the acquisition and development of proper integrated computerised theatre management systems and the enhancement of HRG costing information to provide theatre unit costs in implementing the next stage of its Strategy (also see paragraph 2.17).

Part 5 : Theatre Resources

5.1 Aside from the theatres themselves, NIAO examined the other key resources associated with the carrying out of surgical procedures, namely, bed availability and staffing levels, in the light of current waiting list performance. We reviewed the extent to which balance had been achieved between them and we also examined the impact of day surgery.

NIAO Survey of Boards

5.2 In our survey of each of the four Area Health Boards, we asked for each Board's views on the main difficulties faced by the acute hospital Trusts in each Board area, in the efficient management and use of their operating theatres. The main difficulties cited by the Boards included:

- the increasing impact of emergency pressures resulting in medical patients being admitted to surgical beds with a consequential reduction in elective surgical activity because of the unavailability of beds for elective cases;
- inadequate intensive care unit (ICU) and high dependency unit (HDU) provision with insufficient beds;
- the delay in discharge from hospital beds;
- the unavailability of consultant anaesthetists;
- insufficient nursing staff;
- the under-use of day procedures; and
- capacity problems.

5.3 The Boards told us of the following examples of initiatives taken to help overcome these difficulties:

- the setting up of a dedicated short-stay elective day case surgical unit;
- the development of Emergency Admissions Co-ordination Centre arrangements to accommodate winter emergency pressures;
- the funding of ICU and HDU capacity;
- improved discharge co-ordination arrangements; for example, community initiatives, and dedicated patient transport to speed discharge from hospital;
- the funding of additional consultant anaesthetists and the introduction of more flexible working patterns;
- increased pre-operative assessments; and
- an increase in elective base-line capacity.

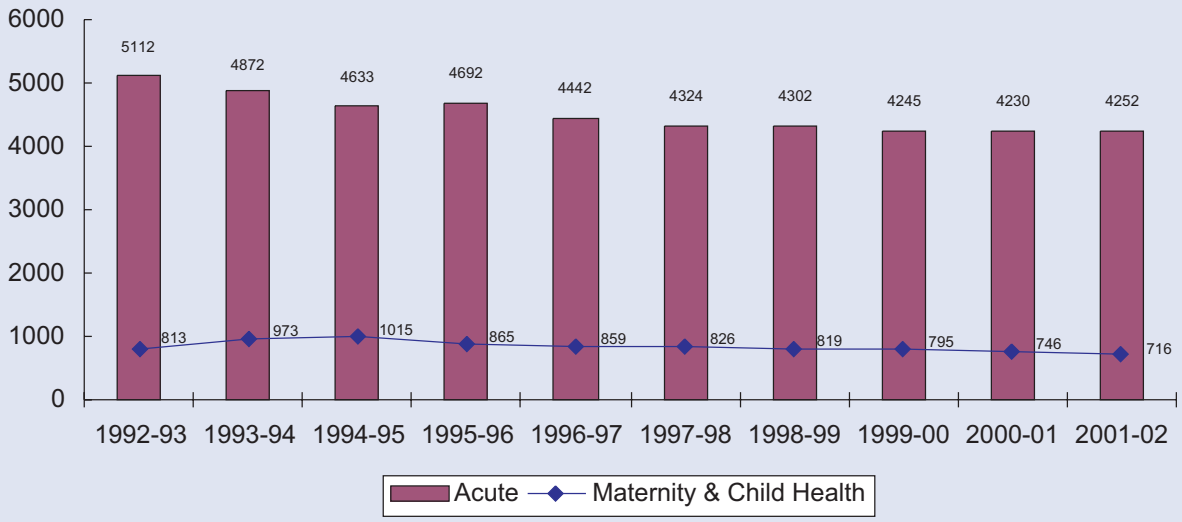
Beds

Bed Capacity

5.4 In line with the NHS, the Department's policy in recent years has been to reduce the number of hospital beds but to achieve an overall increase in the number of patients treated by improving the efficiency with which the remaining beds are used. During the last ten years, acute bed numbers in Northern Ireland fell by 17 per cent and maternity and child care bed numbers by 12 per cent (29 per cent since 1994-95) (Figure 11), while the number of patients treated has increased every year (ordinary admissions by 19 per cent and day cases by 91 per cent over the period) (see Figure 12).

5.5 This increase in HPSS activity includes significant increases in emergency admissions and inpatient and daycase elective work. In 2001-02, 458,203 inpatients were treated in Northern Ireland hospitals, of which 328,135 (72 per cent) were ordinary inpatients and the balance of 130,068 (28 per cent) were day cases.

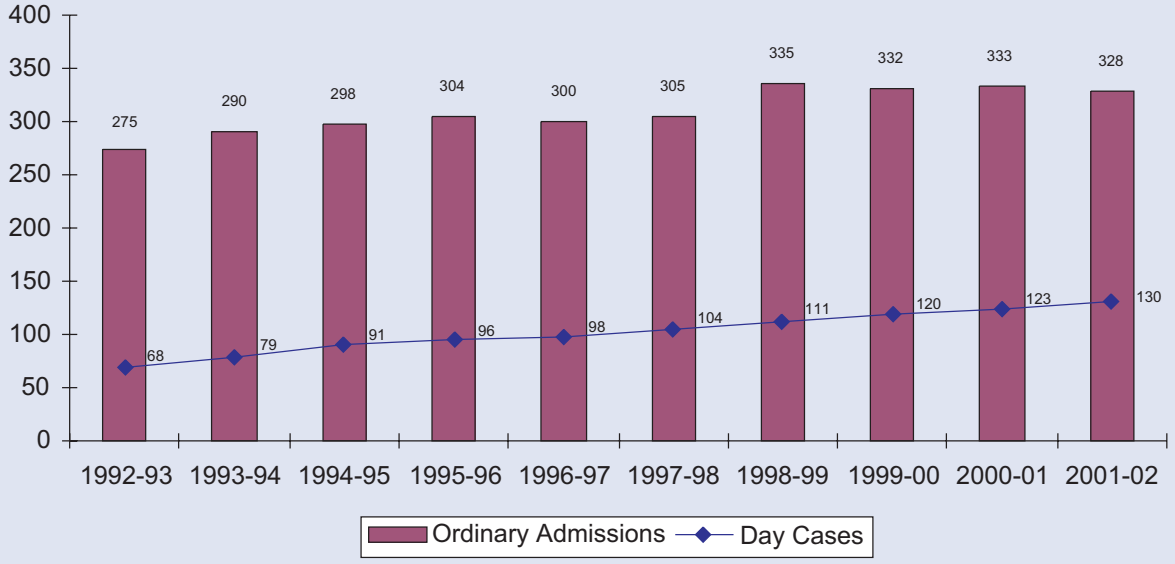
Figure 11: Available Beds by Trust / Provider, 1992-93 to 2001-02



Note: **Between 1992-93 and 1994-95, the 'sick babies' specialty was included in the Maternity and Child Health programme of care; thereafter, the specialty is included in the Acute programme of care.**

Source: DHSSPS Hospital Statistics

Figure 12: Inpatients Treated by Trust / Provider, 1992-93 to 2001-02 (,000)



Source: DHSSPS Hospital Statistics

5.6 The increase in activity, matched by the decline in the number of beds, is not peculiar to Northern Ireland. In a recent report on Inpatient Admission, Bed Management and Patient Discharge in NHS Acute Hospitals[26], the Westminster Committee of Public Accounts noted that bed reductions "have reflected changes in medical practice, such as the growth in day case surgery and shifts in the way care is provided, for example a growth in community beds." The Committee pointed out that "the biggest fall has been in general beds, essentially for older people. In spite of a compensating increase in the nursing home sector, two thirds of beds are occupied by people over 65. A key factor in delayed discharge of these patients is delay in assessing their ongoing care needs and difficulties in finding them places in community facilities. The cost to the NHS of continuing to accommodate these patients is around £1 million each day." The National Beds Inquiry [27], published by the Government in February 2000, recorded that bed numbers in the United Kingdom fell more sharply since 1979 than in almost any other country.

5.7 This situation is replicated in Northern Ireland, where the problems caused by the unavailability of beds due to delayed discharge of patients from acute hospitals have increased the pressures on all services. This was recognised by the then Minister in April 2002 when she told the

26 Inpatient Admission, Bed Management and Patient Discharge in NHS Acute Hospitals, Westminster Committee of Public Accounts, January 2001 [HC 135]

27 Shaping the Future NHS: Long Term Planning for Hospitals and Related Services – Consultation Document on the Findings of the National Beds Inquiry, Department of Health (GB), February 2000

Northern Ireland Assembly, in response to a question on the impact bed-blocking had on waiting lists "It is not possible to establish the precise impact of delayed discharges on waiting lists. In general terms, however, the capacity of the hospital service to treat new patients, either in terms of planned (elective) procedures or medical admissions can be reduced if hospitals are coping with significant numbers of inpatients who are medically fit for discharge, but cannot leave hospital until suitable community care arrangements are put in place."[28] As shown in paragraph 5.11 and Appendix 3, the unavailability of beds due to delayed discharge was also reported by Trusts as a significant problem.

5.8 DHSSPS has also recognised that reductions in bed numbers have significantly diminished the capacity of hospitals to keep pace with the unexpected growth in demand for hospital care. Running fewer beds, more intensively, also makes it more difficult to cope with exceptional circumstances when they do occur[29].

5.9 Over recent years, a series of cases have been highlighted by the local media, of patients having to wait for long periods on hospital trolleys in A&E departments before being admitted to wards because beds were not available to cope with demand. Against this background of resource constraint, it is crucial that hospitals ensure that their limited bed capacity is used properly.

Bed Occupancy

5.10 The Westminster Committee of Public Accounts' Report (see paragraph 5.6) pointed to the research carried out by the Department of Health (GB) which showed that there is a clear relationship between high bed occupancy and the risk of cancelling elective admissions. The research established that this risk becomes very pronounced at occupancy levels above 83 per cent and that this was particularly true of smaller hospitals with smaller bed bases. There is no national target set on bed occupancy for the NHS in England. In 2001-02, bed occupancy rates at Trust level in the Acute Services programme of care ranged from 61.7 per cent (Green Park Healthcare – due to its elective profile) to 91.9 per cent (Mater Infirmorum).The average across all hospitals was 82.2 per cent (see Figure 13).

28 NI Assembly Written Answer, 12 April 2002 [AQW 2701/01]
29 Facing the Future: Building on the Lessons of Winter 1999-2000, DHSSPS, April 2000

Figure 13: Bed Occupancy, 2001-02

Trust	Average Available Beds	Average Occupied Beds	% Occupancy
Mater Infirmorum Hospital	156.3	143.6	91.9
Ulster Community & Hospitals	408.9	363.4	88.9
Down Lisburn	229.9	201.6	87.7
United Hospitals Group	550.8	473.7	86.0
Belfast City Hospital	574.0	484.2	84.4
Craigavon Area Hospital Group *	364.2	305.1	83.8
Causeway **	234.4	195.3	83.3
Royal Group of Hospitals	756.3	621.5	82.2
Altnagelvin Group	368.0	285.7	77.6
Newry & Mourne	171.7	131.1	76.4
Sperrin Lakeland	221.3	157.5	71.2
Green Park Healthcare	216.6	133.6	61.7
Northern Ireland	**4,252.4**	**3,496.3**	**82.2*** **

Source: DHSSPS Hospital Statistics

Note: * South Tyrone and Loane House Hospitals transferred from Armagh and Dungannon Trust to Craigavon Area Hospital Trust at end of November 2000.

**** Causeway Hospital opened at the end of May 2001.**

***** Shaded areas show Trusts with occupancy levels above 83 per cent.**

5.11 **Our survey** found that, for 1999-2000, after DNAs (see paragraph 4.25 and Appendix 3), the main reasons for the cancellation of surgical procedures were because beds were unavailable as they were occupied by new emergency cases, and / or because there was a shortage of intensive care and high dependency beds. Beds being unavailable because of the delayed discharge of patients (sometimes referred to as bed-blocking) is also a significant cause of cancellation. This occurs primarily because funds are not available to enable patients to transfer to residential or nursing accommodation, or to ensure that community care packages are in place for those who want to return home.

Departmental Review

5.12 The Department's report on the problems that had occurred during the winter of 1999-2000, when hospital services were severely stretched, as

the result of flu-related problems,[30] revealed a number of matters which had to be addressed. Central to these were the problems of the levels of acute bed provision, where it was accepted that bed occupancy was running too close to full capacity throughout the year, with no flexibility when periods of sustained pressure arose; and the fact that intensive care, particularly paediatric intensive care and high dependency beds, were under severe pressure all year round.

5.13 Following the events of the winter of 1999-2000, the Department initiated a major programme of work on a range of areas designed to improve the capacity of the HPSS to cope with pressure of demand. As mentioned earlier in the report, these included an expansion in intensive care and high dependency unit beds, a new initiative on waiting lists, a review of community care provision and, more recently, plans for the establishment of protected elective facilities in a number of locations and an expansion in capacity at the Mater, Antrim and Craigavon Area Hospitals. The Department also told us that the system of planning for winter pressures has also been improved.

Acute Hospitals Review Group

5.14 The Acute Hospitals Review Group, in its June 2001 report on acute hospital services in Northern Ireland, concluded that Northern Ireland does not need more acute beds, and that "it would be more advantageous to invest additional money in doctors and nurses and in modern equipment and medicines rather than in maintaining or adding to the current number of acute beds." Against a public and professional perception that there are not enough acute beds at present, it recommended a phased reduction of at least 500 beds by the year 2010, to be achieved through a combination of progressively lower average lengths of stay, and increases in the proportion of the treatment undertaken on a day case basis. The Group saw no argument for any significant increase in bed occupancy rates over their current levels though there might be justification for increasing capacity at a very small number of hospitals which would need to be offset elsewhere.[31] This point was not endorsed by the Department in its recent proposals for hospital services (Developing Better Services – see paragraph 1.2) and the Department does not accept that bed capacity could be reduced for the foreseeable future.

30 Facing the Future: Building on the Lessons of Winter 1999-2000, DHSSPS, April 2000
31 Acute Hospitals Review Group Report, June 2001

NIAO Conclusion and Recommendation on Bed Management

5.15 Our examination of the problems confronting operating theatre managers and clinicians showed that bed availability and bed management are major issues which affect the efficient running of theatres, the use of resources and, most importantly, the availability of treatment for patients.

5.16 We recommend that the Department puts into place, where it is possible to do so within Northern Ireland structures and responsibilities, the best practice set out in the report of the National Audit Office on bed management[32] and the follow-up report of the Westminster Committee of Public Accounts[33]. We understand that the Department intends to issue such material in the near future.

Staffing - Medical

5.17 The availability of medical staff (consultant surgeons and consultant anaesthetists) is one of the most important factors in maximising theatre use and consequently in reducing waiting lists and times. We therefore examined the main imbalances caused by current medical staffing levels.

5.18 Recent figures released by the Department showed that there is currently a shortfall of 69 consultants in the HPSS. The unavailability of medical staffing accounted for many of the decisions to cancel planned operating sessions because of annual leave, study leave, sick leave, court appearances and attendance at conferences. Leave entitlements limit the working year of both anaesthetists and surgeons and, clearly, due recognition needs to be given to this issue when examining theatre utilisation efficiency.

5.19 **Our survey** found that the current medical staffing levels were not considered by the majority of hospitals to be sufficient to maximise theatre use and to reduce waiting lists and waiting times. Consequently, we examined medical staffing levels at the six main hospital sites visited.

32 Inpatient Admissions and Bed Management in NHS Acute Hospitals, NAO, February 2000 [HC 254]
33 Inpatient Admission, Bed Management and Patient Discharge in NHS Acute Hospitals, Westminster Committee of Public Accounts, January 2001 [HC 135]

NIAO Site Visit Findings

Antrim

5.20 There has been a shortage of consultant anaesthetists at Antrim Hospital resulting in the truncation of theatre lists, and their cancellation at times. Sessions have been cancelled when surgeons take leave, since no one is available to take up lists due to other scheduled commitments (for example, outpatients clinics / teaching and other responsibilities).

5.21 Funding had been received from the Northern Board for the recruitment of three additional consultant anaesthetists. However, it was only after several attempts that the Trust was able to recruit two consultants, and the remaining post is still vacant. Since our visit, one long - term consultant surgeon locum has been replaced by a substantive consultant surgeon posting.

Altnagelvin

5.22 There has been a shortage of consultant anaesthetists which has resulted in sessions not being scheduled. At the time of our visit, two consultant anaesthetists had recently been appointed. A third appointment had been deferred for a year.

Royal Victoria – ATICS Directorate

5.23 Within the present funded complement of anaesthetist staffing (44 whole time equivalent (WTE) consultant anaesthetists in post) there are not enough anaesthetic sessions to meet surgical demands (13 per cent short of hospital's surgical expectations at the time of our visit), resulting in planned 'cancellations'.

5.24 Insufficient anaesthetist cover is dealt with by cancellation or by the use of anaesthetist trainees who are usually registrars. Consultant anaesthetists are re-deployed, where possible, if a surgical list is cancelled.

5.25 Anaesthetist staffing is up to full quota on an historical basis but a case could be made for more staff (consultant or non-consultant career grade). The scope for more flexibility and teamwork in the deployment of existing anaesthetic staffing is being explored.

Ulster

5.26 In recent years, the Ulster Hospital's funded medical staff complement was insufficient to maximise theatre usage, and thereby had an effect on its waiting lists. The Trust developed business cases for new consultant posts in order to tackle waiting lists. Two new consultants have been appointed – General Surgery and Orthopaedics - and this resulted in the appointment of an additional consultant anaesthetist.

Belfast City

5.27 Medical staffing at the Belfast City Hospital is largely based on historical levels, with some changes in recent years in terms of the balance between specialties. Both surgeons and anaesthetists largely work set patterns but some flexibility has been introduced with the use of flexible sessions.

5.28 The hospital believes that, to have any impact on theatre throughput in the long term, will require additional medical staff, rather than relying on existing staff to work overtime. During our review, the Clinical Director of Surgery estimated that an additional general surgeon, a vascular surgeon and an urologist were needed. Such additional posts would also require further consultant anaesthetist cover. The Department has pointed to the need for additional financial resources to cover these.

Craigavon Area Hospital

5.29 Since July 2000, Craigavon Area Hospital (CAH) has absorbed all acute work from South Tyrone hospital and all elective work is now carried out by staff employed by Craigavon Area Hospital Trust. At the time of our visit, CAH needed a locum consultant anaesthetist and an additional consultant general surgeon. A locum consultant from South Tyrone Hospital was undertaking general surgery lists.

5.30 Because of the high volume of urgent and emergency work handled by Craigavon Area Hospital, elective waiting lists are high and rising, even though medical staffing levels are almost up to complement. To make inroads into the waiting lists would require additional funding for additional staff. Any waiting list funding initiatives have involved existing staff working extra hours.

Staffing - Theatre Nurses

5.31 The availability of appropriately trained nursing staff is another crucial factor in making the best use of available theatre time and other resources.

5.32 **Our review** found that there is a shortage of theatre nursing staff in most hospitals, with recruitment proving difficult. These shortages cause significant utilisation problems, particularly in Belfast (Royal, Ulster and Belfast City Hospitals) and in Londonderry (Altnagelvin Hospital).

RVH Cardiac Surgery Unit

5.33 An example of this nursing staff shortage is provided by the RVH Regional Cardiac Surgery Unit where we noted, until recently, a significant shortage of cardiac theatre nursing staff, with the associated problems of recruitment and retention of trained and newly qualified theatre nurses. Against a complement of 33.48 staff (wte), 23.26 (69 per cent) were in post at 30 June 2000 - a shortage of 10 staff (wte). This had fallen further to 21.99 staff (wte) (66 per cent) in post by September 2002. We have been assured that, following a successful recruitment campaign, there will be under 3 (wte) vacant nursing posts in December 2002.

5.34 Annual sickness rates have been on the increase in recent years although the rates fell again in 2001-02 – see Figure 14.

Figure 14: RVH Cardiac Surgery Unit: Annual Theatre Nursing Staff Sickness Rates

Year	Staff Nurse %	Nursing Auxiliary %
1997-98	4.0	3.3
1998-99	3.5	3.8
1999-00	5.5	9.2
2000-01	4.9	19.0
2001-02	2.9	6.5

5.35 There have also been very high staff turnover rates in recent years in respect of qualified, fully trained cardiac theatre nursing staff, as illustrated in Figure 15:

Figure 15: RVH Cardiac Surgery Unit: Staff Turnover Rates – Qualified Fully Trained Theatre Nursing Staff

Year	Staff Turnover WTE	Rate %
1997-98	6	25
1998-99	9	36
1999-00	8	33
2000-01	7	29
2001-02	1.7	7

5.36 At the time of our audit, there was a shortage of theatre support orderlies, who were proving difficult to recruit. Because of this shortage, theatre nursing staff were, at times, having to perform support orderly duties, for example, the washing of instruments. However, the Department told us that there are now sufficient orderlies to provide this service.

5.37 Our consultants emphasised the importance of having greater flexibility in the hours worked by theatre nursing staff and, in addition to this, the Department has pointed to the need for more flexibility by medical and support staff.

Department's View on Nursing Levels

5.38 The Department's report arising from its recent Review of Cardiac Surgery concluded that "staffing levels, particularly nurse staffing, are the major underlying problem in the cardiac surgery unit and are directly responsible for the unit's difficulty in functioning at optimal capacity. Recruiting and retaining nurses presents a major challenge. Stressful workload, long working hours, poor morale and inadequate levels of remuneration all contribute to recruitment and retention problems." The report recommended immediate action to enhance nurse staffing levels, review remuneration, and strengthen medical support to the cardiac surgery unit.[34]

5.39 The Department informed us that it considered that nursing levels are now a greater impediment to additional theatre performance, than the shortage of anaesthetists and outlined its views on training and recruitment.

34 Review of Cardiac Surgery in Northern Ireland, DHSSPS, October 2001

Training

5.40 In recent years, the training process for pre-registration student nurses had become more academic than practical with little emphasis on time in the theatre and experiences of the perioperative environment being restricted to 'follow through' visits with most students spending only two weeks of their entire training in theatre, and, therefore, not being fully aware of the nature of a theatre nurse's job and the career opportunities that existed. Consequently, nurse students in hospital were supernumerary and could not be called on in times of crisis, as employee trainees could have been in the past.

5.41 However, as part of the training programme provided by the Queen's University of Belfast and the University of Ulster, all students are now allocated to theatres for a 4-6 week period, during which time they are supported by a mentor and, depending on their knowledge base and competency, they participate actively within the theatre team. New training arrangements have also been developed by the Department with Queen's University, including partnership arrangements between hospitals and the University, whereby each trainee nurse will have a parent hospital for placement purposes, with reinstatement of theatre placements in training programmes.

Recruitment Initiatives

5.42 In an attempt to address the current shortage of theatre nursing staff, there have also been a number of recruitment initiatives, including:

- a three - month supernumerary training programme, introduced by the ATICS Directorate at the Royal Victoria Hospital to recruit nurses to the perioperative environment;
- a 'back to work' recruitment initiative aimed at trained nurses who had left nursing;
- the recruitment of qualified, fully trained nursing staff from overseas (eg from Australia and the Philippines); and
- significant increases in the number of nurses in training.

Overall Workforce Strategy

5.43 In May 2002, DHSSPS published its strategy on managing and developing people in the HPSS[35]. In this, the Department recognised that the cost of not having the right people in the right places, doing the right things in

35 The Employer of Choice, DHSSPS, May 2002

the right way, is very substantial. The widespread shortages of skilled staff in key areas "have been compounded by high staff turnover, the inappropriate use of fixed term and temporary contracts, over reliance on agency staff and increases in sickness absence. As well as placing a financial burden on the service, this self-perpetuating situation places a burden on the staff who are in work."

5.44 The strategy sets out priorities and action required across six strategic areas: workforce planning; retention, return, recruitment and reward; improving working lives; equality and fairness; education and training; and employee relations. It takes account of the latest Programme for Government agreed by the Assembly, including the Department's "Investing for Health" strategy aimed at improving health and well-being in Northern Ireland.

NIAO Conclusions and Recommendations on Staffing

5.45 The HPSS cannot operate effectively and efficiently without appropriately qualified, appropriately graded staff in post. This is particularly true within operating theatres. The current level of consultant under-staffing is of concern. However, on a related issue, independent advice received by NIAO suggested that the practice of employing locums to cover leave, as advocated by CREST (see Appendix 1, paragraph 6) needs to be updated. Our consultants also suggested that it would be advantageous to have greater flexibility in the hours worked by theatre nursing staff and we note the Department's wish to have this extended to medical and support staff.

5.46 We welcome the action that the Department has taken to set out a definitive strategy for meeting its overall workforce commitments in the future. This establishes the Department's priorities and objectives to take its policies forward, and the framework within which uni-disciplinary workforce planning groups are required to work to generate plans for their particular areas. The Department has now published a review of Nursing and Midwifery staffing through its workforce planning initiative.

5.47 In view of the great importance which it rightly puts on getting appropriately qualified and trained staff in place where and when they are required, the Department needs to ensure that progress on this front is monitored and pressure maintained at the highest level, to prevent slippage and to provide support in pressing for appropriate funding.

Waiting Lists

5.48 In recent years, Northern Ireland has had the longest hospital waiting lists in the United Kingdom (see Figure 16). The problem is exacerbated by a number of factors, which will be analysed and discussed in a future report on Inpatient and Outpatient Waiting. The efficiency and extent to which operating theatres can be used to their optimum, is likely to have a direct impact on waiting lists and the length of time which patients have to wait for treatment.

Figure 16: Comparative Inpatient Waiting Lists, 2000

Waiting List Measure	Northern Ireland	England	Scotland	Wales
Number of people on inpatient waiting lists per 1,000 population	28.0	20.7	16.1	27.2
Number of people waiting more than 12 months per 1,000 population	5.62	0.97	0.23	3.85

Source: Acute Hospitals Review Group Report, June 2001

Day Case Surgery

5.49 Most patients prefer not to stay overnight in hospital if it can be avoided and nowadays, more operations can be carried out without the need for an overnight stay. This type of surgery is referred to as day case surgery. The choice between treatment on an in-patient or day case basis is frequently a delicate question of clinical judgement, but has important resource implications. On a unit cost comparison, evidence shows lower unit costs for day surgery as compared to in-patient surgery for the same condition.

5.50 In 1992, the Royal College of Surgeons of England suggested that day surgery was considered the best option for 50 per cent of all patients undergoing elective surgical procedures[36] and the NHS Management Executive Day Surgery Task Force in England targeted this figure for realisation by the end of 1999.

36 Report of the Working Group on Guidelines for Day Case Surgery, The Royal College of Surgeons of England, 1992

5.51 The Audit Commission for England and Wales reported, in 1990, that day surgery is less common in England and Wales than in many countries and is very unevenly distributed.[37] Ten years on, the British Association of Day Surgery (BADS), based on a survey it conducted in the year 2000 of 120 NHS Trusts, reported that the situation was still much the same. Despite significant progress in day case rates since 1990, BADS observed that there was still marked variations in day case rates across England and Wales.[38] However, BADS has advised that, in Great Britain, the currently reported rate of day surgery is upwards of 65 per cent and the national target has now risen to 75 per cent of elective surgery. In Scotland, the Accounts Commission reported in 1998 that, whilst considerable progress had been made, there was significant scope for more to be achieved.[39]

5.52 In 2001-02, of the 458,203 inpatients from all programmes of care treated in Northern Ireland hospitals, 130,068 (28 per cent) were treated as day cases. Within the acute services programme of care, 128,366 (34 per cent) of the 383,131 patients were discharged the same day. Of the 99,720 **elective** surgical episodes in 2001-02, 63,234 (63 per cent) were day cases and the remainder inpatients.

5.53 The Department sets annual percentage day case surgery targets for 13 specific procedures and monitors them. Until 1999-2000, these were published as Performance Tables under the Charter for Patients and Clients. Since then, the statistics have been collected but not published. Performance against targets for each hospital Trust for 2001-02 is summarised at Appendix 5.

5.54 The Northern Ireland average has equalled or exceeded the 2001-02 target in 12 of the 13 procedures, with the exception being arthroscopy procedures. However, within some procedures, there is a wide disparity in performance against targets between hospitals, with noteable under-performance against targets by some hospitals in the following procedures – carpel tunnel, hernia repair, nasal septum/turbinate, and varicose veins.

NIAO Conclusions and Recommendations – Day Surgery

5.55 The situation in hospitals in Northern Ireland in relation to day surgery appears to be improving, and the scope for day surgery procedures is in line with that currently prevailing in Great Britain. However, there appears to be further scope for increasing the volume and range of these

37 A Short Cut to Better Services, Audit Commission for England and Wales, October 1990
38 Journal of One Day Surgery, BADS, Autumn 2000, 10: 7-8.
39 Better by Day (update) – Day Surgery in Scotland: Accounts Commission for Scotland, August 1998

procedures, particularly in light of the expected day surgery targets currently prevailing in Great Britain (see paragraph 5.51). Any transfer of appropriate surgery from inpatient beds to day surgery should release some of the currently hard-pressed inpatient surgical beds in Northern Ireland's acute hospitals. We recommend that the Department keeps the rate of appropriate day surgery under review.

5.56 Trusts need to be aware of the different performance in day surgery and need to question why some hospitals are able to undertake procedures without an overnight stay. There will be good reasons for some, possibly because of other medical complications. However, there may be other opportunities, by discussing practices with other hospitals, for the pattern of treatment to be adjusted without an adverse effect on the patient's health.

Appendix 1
(paragraphs 1.19 & 2.1)

Management of Operating Theatres in Northern Ireland

Report by Clinical Resource Efficiency Support Team, May 1991

Summary of Recommendations:

1. The concepts outlined in the September 1989 report, Efficiency of Theatre Services, produced by the Association of Anaesthetists of Great Britain and Ireland and the Association of Surgeons of Great Britain and Ireland with the British Orthopaedic Association, are recommended to all those involved with theatre management.

2. The most vital element in the improvement of operating theatre efficiency is development of an effective management structure which includes the appointment of a Theatre Services Director in addition to a Theatre Superintendent or Theatre Manager, and a strong and active Theatre Users' Committee.

3. Consideration should be given to a high dependency nursing unit to receive patients operated upon late in the day or at night under urgent and emergency surgery.

4. Special Theatres should not be wholly reserved for particular specialties. Even in the case of cardiac surgery or neurosurgery or where laminar flow theatres are involved, theatres should be available to other specialties when not in use. The appropriate allocation of special theatres is an important task for the Theatre Director and Theatre Manager.

5. Leave entitlements limit the working year of both anaesthetists and surgeons, but to avoid the impression that this leads to correctable inefficiency, the appointment of locum cover during holidays, or additional permanent staff, is recommended.

6. Pre-operative out-patient assessment clinics have major drawbacks. The most important single feature is good liaison between individual surgeons and anaesthetists, which should allow potential anaesthetic risk patients to be identified in advance.

7. A fixed period of notice (perhaps 3 weeks) should be required for cancellation of any operation list. Cancellation in less than this time

would mean that the session would be recorded as underutilisation by the surgeon. Cancellation more than 3 weeks in advance would mean that the session was the responsibility of the Theatre Director.

8. Computerised data collection systems have an important part to play in the collection of information for management purposes as well as operational requirements.

Appendix 2
(paragraph 1.22)

NIAO Survey Questionnaire

Questionnaires were issued to 13 HSS acute hospital Trusts.
22 responses were received. Details are as follows:

HSS Trusts	No. of Responses	Details
Belfast City Hospital Hospital	1	Belfast City Hospital
Craigavon Area Hospital Group	1	Craigavon Area Hospital
Newry & Mourne	1	Daisy Hill Hospital
Armagh & Dungannon	1	South Tyrone Hospital
Ulster Community & Hospitals	1	Ulster / Ards Hospitals
Causeway	1	Coleraine / Route Hospitals
Green Park Healthcare	1	Musgrave Park Hospital
Altnagelvin Hospitals	1	Altnagelvin Hospital
Mater Infirmorum	1	Mater Hospital
Down Lisburn	2	Downe Hospital Lagan Valley Hospital
United Hospitals	3	Antrim Hospital Whiteabbey Hospital Mid-Ulster Hospital
Sperrin Lakeland	2	Erne Hospital Tyrone County Hospital
Royal Group of Hospitals	6	Royal Maternity Hospital Royal Belfast Hosp for Sick Children Royal Victoria Hospital (RVH) 'ATICS' Directorate RVH Cardiac Unit RVH Burns & Plastic Surgery Unit RVH Day Procedures Unit
Total No. of Responses	22	

Appendix 3
(paragraphs 4.25 & 5.12)

Reasons Given for 'Last Minute' Case Cancellations

(in ranking order)

Reasons:	Ranking Score
Did not attend (DNA)	30
Bed occupied by a new emergency	23
Shortage of Intensive Care / High Dependency Unit beds	19
Lack of anaesthetists	17
Study leave (consultant surgeons and anaesthetists)	15
Beds occupied by outstanding dischargers	15
Sick leave (consultant surgeons and anaesthetists)	13
Deterioration in patient's condition	12
Session overruns	11
Annual leave (consultant surgeons and anaesthetists)	11
Lack of time due to emergency patients	10
Shortage of theatre nurses	9
Court appearances (consultant surgeons and anaesthetists)	6
Sick leave (nurses)	6
Study leave (other support staff)	6
Annual leave (nurses)	5
Shortage of other support staff	5
Annual leave (other support staff)	4
Other reasons	4
Study leave (nurses)	3
Lack of equipment and supplies	3
Sick leave (other support staff)	2

Appendix 4
(paragraph 4.29)

Non-Attendance for Inpatient Admissions (DNAs)

HSS Trust:	Inpatient elective admissions* % of patients who did not attend for elective admission	
	Total number of referrals	% who did not attend
Ulster Community & Hospitals	16,630	6
Green Park Healthcare	7,618	5
Belfast City Hospital	21,606	4
United Hospitals	16,174	4
Armagh & Dungannon	5,363	4
Royal Group	34,457	3
Altnagelvin Hospitals	16,065	3
Craigavon Area Hospital Group	11,363	3
Sperrin Lakeland	6,722	3
Causeway	5,028	3
Down Lisburn	6,868	2
Mater Infirmorum	6,566	2
Newry & Mourne	4,422	2
Northern Ireland - Total	158,882	-
Northern Ireland – Average	-	3

Source: HPSS Performance Tables for 1999 -2000

Note: Shaded entries denote Trusts with above average DNA rates

*These figures relate to elective waiting list and booked admissions and do not include planned admissions. Both ordinary and day case inpatient admissions are included.

Appendix 5
(paragraph 5.52)

Day Case Surgery: 2001-02
Percentage of Patients who had Treatment without Staying Overnight

Trust	Arthroscopy Knee & Other Joints (target = 85%)		Bronchoscopy (target = 80%)		Carpal tunnel (target = 65%)		Cataract Extraction (target =77%)		Circumcision (target = 80%)		Correction of Squint (target = 5%)		Cystoscopy (target = 85%)	
	Total Procedures	%day cases	Total Procedures	%day cases	Total Procedures	%day cases	Total Procedures	%day cases	Total Procedures	%day cases	Total Procedures	%day cases	Total Procedures	%day cases
Belfast City Hospital	-	-	1,009	92	11	36	-	-	40	88	-	-	1,523	81
Green Park Healthcare	692	63	-	-	120	73	-	-	-	-	-	-	-	-
Ulster Community & Hospitals	26	38	62	92	81	73	-	-	128	89	-	-	523	95
Royal Group	4	0	190	21	19	53	4,100	77	43	65	326	34	226	93
Mater Infirmorum	-	-	1	0	24	63	1,392	98	33	73	27	96	622	78
Down Lisburn	-	-	-	-	60	90	131	100	44	68	14	100	400	93
Causeway	-	-	25	92	38	89	-	-	55	96	-	-	255	94
United Hospitals	-	-	163	87	85	84	-	-	72	75	-	-	553	81
Craigavon Area Hospital	-	-	170	85	88	90	328	100	70	84	-	-	698	81
Newry & Mourne	-	-	-	-	50	92	-	-	30	90	-	-	322	93
Altnagelvin Hospitals	234	68	186	92	26	73	1,229	89	77	79	104	94	658	85
Sperrin Lakeland	-	-	37	84	44	61	-	-	57	81	-	-	202	91
NI Totals / Average	**956**	**63**	**1,846**	**83**	**646**	**78**	**7,180**	**85**	**649**	**82**	**471**	**53**	**5,982**	**85**

Trust	Endoscopy of Gastric Intestinal Tract (target = 93%)		Ganglion Excision (target = 85%)		Inguinal Hernia Repair * (target =25%)		Laparoscopic Sterilisation (target = 75%)		Operations on Nasal Septum /Turbine (target = 25%)		Varicose Veins (target = 28%)	
	Total Procedures	%day cases	Total Procedures	%day cases	Total Procedures	%day cases	Total Procedures	%day cases	Total Procedures	%day cases	Total Procedures	%day cases
Belfast City Hospital	1,815	84	8	75	101	6	147	84	312	7	30	10
Green Park Healthcare	-	-	37	65	-	-	-	-	-	-	-	-
Ulster Community Hospitals	3,676	97	46	91	331	73	188	83	15	7	106	77
Royal Group	4,452	88	8	50	201	27	198	71	227	6	66	2
Mater Infirmorum	1,939	93	19	84	109	11	-	-	26	100	48	33
Down Lisburn	2,386	95	30	97	176	15	161	86	44	100	105	39
Causeway	1,031	95	29	93	113	54	128	95	45	100	27	67
United Hospitals	4,931	92	58	90	323	37	335	77	165	38	128	59
Craigavon Area Hospital	3,165	95	33	97	185	66	232	94	90	4	49	55
Newry& Mourne	1,269	97	7	100	103	14	93	91	49	88	102	8
Altnagelvin Hospitals	2,609	94	30	83	232	66	199	79	69	4	201	67
Sperrin Lakeland	2,008	97	30	97	182	37	109	17	25	4	114	44
NI Totals / Average	**29,281**	**93**	**335**	**87**	**2,056**	**43**	**1,790**	**79**	**1,067**	**25**	**976**	**47**

Source: DHSSPS

Note: Shaded statistics show Trusts which did not meet Department's targets for listed procedures

* Mater Infirmorum Trust stated that this target could not be met prior to September 2001 due to the lack of appropriate facilities within the Trust's Day Procedures Unit. Since the move to a new Unit, day cases account for approximately 19 per cent of completed cases (September 2001 to September 2002).

List of NIAO Reports

Title	NIA No.	Date Published
2001		
National Agricultural Support: Fraud	NIA29/00	9 January 2001
A Review of Pathology Laboratories in NI	NIA31/00	8 February 2001
Road Openings by Utilities	NIA35/00	22 February 2001
Water Service: Leakage Management and Water Efficiency	NIA49/00	5 April 2001
The Management of Social Security Debt Collection	NIA71/00	28 June 2001
Belfast Action Teams: Investigations into Suspected Fraud within the Former Suffolk Action Team	NIA72/00	2 July 2001
Building Maintenance in the Education and Library Boards		
Brucellosis Outbreak at the Agricultural Research Institute	NIA02/01	27 September 2001
2002		
Northern Ireland Tourist Board Accounts 2000/01	NIA 45/01	26 February 2002
Travelling People: Monagh Wood Scheme		
Indicators of Educational Performance and Provision	NIA 48/01	21 February 2002
NIHE: Housing the Homeless	NIA55/01	21 March 2002
Repayment of Community Regeneration Loans	NIA 59/01	28 March 2002
Investing in Partnership - Government Grants to Voluntary Bodies	NIA 78/01	16 May 2002
Northern Ireland Tourist Board: Grant to the Malone Lodge Hotel	NIA83/01	20 May 2002
LEDU: The Export Start Scheme	NIA 105/01	2 July 2002
Compensation Payments for Clinical Negligence	NIA 112/01	5 July 2002
Re-Roofing of the Agriculture and Food Science Centre at Newforge	NIA 24/02	17 October 2002
The Management of Substitution Cover for Teachers	NIA 53/02	12 December 2002
2003		
The Sheep Annual Premium Scheme	NIA 75/02	6 February 2003
The PFI Contract for the Education and Library Board's New Computerised Accounting System	NIA 99/02	20 March 2003
Areas of Special Scientific Interest	NIA 103/02	27 March 2003
Financial Auditing and Reporting: 2001-2002	NIA 107/02	2 April 2003

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