Auditing for the Australian Capital Territory

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PA9702

11 December 1997

The Speaker
ACT Legislative Assembly
South Building
London Circuit
CANBERRA ACT 2601

Dear Mr Speaker

In accordance with the Authority contained in the *Auditor-General Act 1996*, I transmit to the Legislative Assembly my Report titled *"Management of Nursing Services".*

This audit was undertaken with the assistance of Professor Deborah M Picone, Executive Director, New South Wales College of Nursing, and Clinical Associate Professor, Department of Surgery, University of Sydney.

Peter Hade, Assistant Auditor-General, managed and conducted the audit.

Yours sincerely

John A Parkinson

TABLE OF CONTENTS

MANAGEMENT OF NURSING SERVICES

1. REPORT SUMMARY

1.1. INTRODUCTION

Nursing costs are a substantial component of total hospital costs. In The Canberra Hospital there are approximately 1,150 nurses making up 45% of the hospital workforce, and involving expenditure of $52m. For Calvary Hospital, there are 270 nurses (approximately 52% of the workforce) with expenditure of $12.7m.

According to national data, the cost per casemix adjusted separation and the nursing cost per casemix adjusted separation, for public hospitals in the ACT are the highest and the second highest respectively in Australia.

Because of the significance of the expenditure and the national data implications it was decided that a performance audit of the management of nursing services should be undertaken.

1.2. OBJECTIVES OF THE AUDIT

The objective of the audit was to provide independent opinions to the Legislative Assembly on whether:

- the nursing services provided in ACT public hospitals are effective; and
- the services are provided efficiently and economically.

The independent opinions formed on the objectives of the audit are set out in the shaded box on *page 3* of the Report.

1.3. BASES FOR AUDIT OPINION

The bases on which each audit opinion was formed are set out following:

1.4. EFFECTIVENESS

The opinion that ***the nursing services are effective*** is based on the following findings:

- The nursing services provided in The Canberra and Calvary Hospitals are consistent with best contemporary clinical practice *(Chapter 2);* and

- Senior nurse managers and clinicians demonstrated considerable competence, commitment and professionalism *(Chapter 2)*.

Comment

The audit findings support the general public perception that the standard of nursing care in the two ACT public hospitals is high.

It is clear that, to some extent, the effectiveness of nursing services in the ACT public hospitals comes about because staff are quite highly skilled and experienced.

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1.5. EFFICIENCY AND ECONOMY

The opinion that ***although the number of nurses working in wards and clinical units is generally at efficient levels, nursing costs are higher than interstate comparisons because of the nursing staff profile and other reasons*** is based on the findings set out on the following pages.

AUDIT OPINIONS

Effectiveness

- Nursing services are provided effectively.

Efficiency and Economy

- Although the number of nurses working in wards and clinical units is generally at efficient levels, nursing costs are higher than interstate comparisons because of the nursing staff profile and other reasons.

Other significant issues

- the cost of nursing services in The Canberra Hospital is adversely affected by the method of managing nursing services within the clinical services structure;
- the cost of nursing services is also affected by the lack of planning of clinical services in the ACT;
- improvements in the organisation of clinical services, particularly in The Canberra Hospital, have the potential to save up to $2m; and
- the latest available comparative national information on the casemix adjusted cost of nursing services in Australian public hospitals is likely to be unreliable.

Ward Staffing Levels

- nursing services at The Canberra and Calvary Hospitals are provided efficiently at the ward and clinical unit level; staffing numbers allocated to wards and units are not excessive for patient requirements and are comparable with those in other jurisdictions *(Chapter 3);*

Salary Costs

- the average direct annual salary cost per nurse[1] is higher in the ACT ($46,700 at Canberra and $48,900 at Calvary) than in benchmark NSW hospitals ($44,800) *(Chapter 4);*

- the difference in the average salary cost per nurse results in higher costs to the ACT of approximately $3m annually *(Chapter 4);*

- a high proportion of nursing staff are at the top steps of the salary incremental ranges; this is a major contributor to the ACT's higher costs; it is estimated that this factor increases costs by at least an annual $1.8m *(Chapter 4)*;

- a smaller proportion of lower paid enrolled nurses also contributes to the ACT's higher costs by at least $0.5m per annum *(Chapter 4)*;

Sick Leave

- at the time of the audit, staff at The Canberra Hospital took an average of 13.2 days of sick leave per year compared with 8 days in Calvary Hospital and 9 days in NSW hospitals *(Chapter 5);*

[1] In this audit, the average direct annual salary cost is calculated by adding wage and salary costs, on costs (penalties) and casual staff costs, and dividing by the average nurse FTE.

- the audit estimated that there were potential savings of up to 18 nurses ($0.760m annually) if sick leave relief arrangements in The Canberra Hospital were consistent with those in Calvary and NSW; because of the high level of skill and experience of nursing staff, this should not cause any reduction in the quality of nursing services currently being provided in The Canberra Hospital *(Chapter 5)*; and

Workers Compensation

- the number of workers' compensation cases in The Canberra Hospital is considerably in excess of other hospitals *(Chapter 5).*

Comment

In general, the Nursing hours Per Patient Day (an efficiency indicator) for units at both hospitals and other indicators were within acceptable benchmark ranges. This evidenced that the number of staff allocated to wards and clinical units was consistent with good nursing practice and comparable with benchmark NSW hospitals.

The audit did not find any activities performed or inputs consumed which were not relevant to the achievement of the main nursing and hospital outcomes.

Rostering and staffing of wards were managed well in both hospitals. This suggests that the number of nurses working in wards is unlikely to be a significant reason for ACT costs being higher.

The audit findings show that average nurse salary costs in the ACT are higher than in the benchmark

NSW hospitals. The differences appear to flow mainly from low staff turnover.

Low staff turnover in the ACT public hospitals has resulted in very high proportions of nurses at the top ends of incremental ranges, particularly for Level 1 Registered Nurses. Within Level 1 there are eight increment grades. At the time of the audit Level 1 Registered Nurses[2] at the 8th year of the incremental scale (i.e. at the top of the Level 1 increment scale) made up about 62% of total Level 1 Registered Nurses in The Canberra Hospital and 66% in Calvary. In comparison, the proportion is usually 10% to 20% in hospitals in Sydney. The high proportions of nurses at the top end of the incremental range effectively pushes up nurses' average direct salary costs.

Enrolled Nurses, who are under the direct supervision of Registered Nurses, typically make up between about 18% and 23% of nurses employed in NSW hospitals. The Canberra and Calvary percentages are lower than NSW at 14% and 13 % respectively.

Enrolled Nurses do not carry out as wide a range of tasks as Level 1 Registered Nurses. Consequently, if and when reductions to staffing occur the reductions have tended to fall on the less versatile Enrolled Nurses.

Two other factors which push up nursing costs in the ACT were identified - the high level of sick leave in The Canberra Hospital and workers' compensation costs.

The audit found in The Canberra Hospital that at the time of the audit the average sick leave per nurse was 13.2 days per year. In Canberra, unlike most other hospitals, all absences on sick leave were routinely

[2] Non executive Registered Nurses work in one of four Levels starting at Level 1. Most nurses in wards are Level 1 nurses. Within each level, there are several increment grades. Details are set out in *Chapter 4*.

replaced with other nurses, casual or agency staff. (This practice ceased from April 1997). In other hospitals, such as Calvary, staff on leave are replaced only if the workload requires it. Because of The Canberra Hospital's replacement practice, the overall number of nurses is higher in Canberra Hospital than in hospitals with similar patient workloads.

As well, The Canberra Hospital has a high number of nurses on workers' compensation. This level could possibly be linked to the higher age of the ACT public hospital nurse workforce and also to the physical demands of the nursing profession. Workers' compensation arrangements under Comcare are more generous than interstate public hospitals and in the private sector. Consequently, the ACT public hospitals have substantially higher workers' compensation premiums than their interstate colleagues.

Finally, the use of the 10.8.8 roster system at The Canberra Hospital undoubtedly results in higher costs in that hospital *(see Chapter 3)*. As the 10.8.8 roster was agreed to by Government as part of enterprise bargaining in 1996, the audit did not review its cost and benefits.

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1.6. OTHER SIGNIFICANT FINDINGS

The opinion that ***the cost of nursing services in Canberra Hospital is adversely affected by the method of managing nursing services within the clinical services structure*** is based on the following findings:

- Within the clinical services structure at The Canberra Hospital there is no single person who has overall responsibility for the resource management of the nursing service *(Chapter 2);*

- Responsibility for managing nursing staff is largely the responsibility of the nurse manager of each clinical group; this arrangement has led to increased administrative costs and there was also some evidence of a loss of economies of scale without offsetting gains in efficiency or effectiveness *(Chapter 2).*

Comment

The current arrangements for nursing management in The Canberra Hospital do not facilitate a *whole of hospital* approach to be adopted to ensure that the nursing resources available are utilised cost effectively. There is limited flexibility to transfer nursing staff between divisions or units.

A financial result of this is that when rostered nurses are absent for some reason from a division or unit calling in of casual or relief pool staff has occurred routinely generating extra costs.

If temporarily transferring staff between units was an available option it is likely that the occasions of calling in relief or casual staff would be significantly reduced.

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The opinion that ***the cost of nursing services is also affected by the lack of planning of clinical services in the ACT*** is based on the following finding:

- The audit identified that there is currently no overall plan which established objectives and priorities for the delivery and development of health services for the ACT *(Chapter 6).*

Comment

The lack of clinical services planning in the past has resulted in some duplication of clinical services between Calvary Hospital and The Canberra Hospital. These issues are now being addressed by the Department of Health and Community Care.

The Department of Health and Community Care has advised that a 10 year strategic plan for health services will be completed this financial year.

Effective clinical services planning will facilitate the efficiency of ACT health services by better specifying the services which each hospital is to provide.

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The opinion that ***Improvements in clinical management, particularly in The Canberra Hospital, have the potential to save up to $2m*** is based on findings which are set out in *Chapter 8*.

Comment

Wards and units were visited during the audit to assess ward layout and design, equipment, workflow patterns and to meet clinical staff. In general, the design of wards was reasonable and the bed numbers ensured an efficient deployment of clinical staff.

The nurse consultant to the audit made a series of suggestions on the management of clinical services to bring these towards consistency with best practice in other Australian hospitals.

If adopted, (and assuming no change in the level of activity) it is estimated that there would be potential annual savings of approximately $2m in operating expenses at The Canberra Hospital.

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The opinion that the latest available ***comparative national information on the casemix adjusted[3] cost of nursing services in Australian public hospitals is likely to be unreliable*** is based on findings presented in *Chapter 9.*

Comment

The first national report on health sector performance indicators was prepared by the Australian Institute of Health and Welfare and published in 1996. The report titled *Public Hospitals - The State of Play* stated that ACT casemix adjusted nursing costs are much higher in ACT public hospitals than in other Australian jurisdictions.

It is difficult however to draw a definitive conclusion regarding the significance of cost variations published in *Public Hospitals-The State of Play* because of technical deficiencies in the data as outlined in *Chapter 9*.

There is no doubt that ACT costs are higher than interstate benchmarks but the relative and absolute significance of the variations is difficult to quantify. Such an assessment would require a benchmarking exercise which controls for systematic technical and clinical variations.

1.7. CONCLUSION

There is no doubt that nursing costs in the ACT public hospitals are higher than interstate comparisons. However the difference is unlikely to be as high as the national data suggests.

[3] Casemix adjusted costs take into account the relative complexity of the different cases treated at hospitals in order to remove differences due to different case loads.

There appear to be several reasons to explain the higher ACT costs.

First, because of low turnover in the ACT and the nurse remuneration award structure, there are more nurses in the highest increment levels than in the benchmark NSW hospitals which were used in the audit. In addition, the proportion of enrolled nurses is less. Taken together, these factors increase the average cost per nurse in the ACT by about 5%.

Secondly, the high level of unproductive time at The Canberra Hospital, mainly through high levels of sick leave, which was being routinely replaced at the time of the audit, resulted in the overall number of nurses being higher than required. The audit estimated that this factor required approximately 20 extra nurses in the ACT.

The lack of planning of clinical services in the ACT has also had an impact on costs through the duplication of some services.

None of these factors is likely to be amenable to "quick fix" solutions.

In the short term, The Canberra Hospital should be able to address the high levels of sick leave through better monitoring and management of sick and other leave. Improved management of leave should result in existing staff being available over time to take on increased levels of activity in the hospital, thereby reducing the need for additional resources to match future increases in activity.

Improved management of compensation cases should also be reflected in lower premiums and in less staff being unavailable for work.

Clearly the knowledge and clinical experience of the staff is a factor in ACT nurses being regarded as effective. If, however, costs are to be contained in the future, there should be the opportunity to utilise this greater level of experience in the ACT to meet increasing activity levels without increasing costs unduly.

There is probably limited scope for either hospital to make significant changes to its staff profile in the short term. While there can be an emphasis on recruiting entry level Enrolled and Registered Nurses to replace staff leaving through natural attrition, it is unlikely that the high numbers in the top increment ranges can be reduced significantly by this method quickly.

A strategy emphasising recruiting entry level Enrolled and Registered Nurses to replace senior nurses through natural attrition can of course be put in place quickly however the benefits would not be gained until the natural attrition departures reach higher levels than at present. This could be several years into the future.

Completely realigning the staffing profile quickly at either hospital is likely to result in heavy redundancy costs being incurred, perhaps more than offsetting the cost benefits achievable from the realignment.

Perhaps a strategy which combines a limited and targeted voluntary redundancy scheme over a period of years combined with taking opportunities as they arise from natural attrition may be the only viable and sustainable option available.

While the current award structure may continue to form the basis of the employment of permanent staff, mechanisms which enable the hospitals to act more

flexibly in setting staff remuneration and periods of employment should also be investigated (e.g. contract employment).

Economies and efficiencies which result from addressing the matters identified can be used to enable both hospitals to meet increases in demand for nursing services in the future or to meet other Government priorities.

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1.8. FUTURE ACTIONS

To address the audit findings which need be addressed it is considered that the following actions should take place:

- the current functions, structures and delegations for management of the nursing service at Canberra Hospital should be reviewed;

- the requirement for the current number of nurse manager positions in The Canberra Hospital should be assessed periodically;

- a staff scheduling and budgeting system should be implemented in Calvary Hospital to streamline current staff management processes and facilitate timely, accurate staffing and financial information;

- the hospitals should identify cost effective strategies to alter the staffing profile including increasing the enrolled nurse component of the profile to 18%. Maintenance of the current quality of nursing services should be a component of any strategy considered;

- a system should be developed in The Canberra Hospital to monitor the daily replacement of sick

leave and to monitor staff who are developing unacceptable patterns of sick leave;

- sick leave and annual leave relief allocation methodologies in both hospitals should be reviewed consistent with the findings of this report;

- the hospitals should annually make available to staff forecast fluctuations in bed demand, operating and diagnostic service usage. This approach will significantly improve the efficiency of staffing allocation to clinical units;

- the Department of Health and Community Care should ensure that its proposed 10 year Strategy Plan for Health Services is completed this financial year and implementation of the plan should be prompt;

- The Canberra Hospital should continue to work to reduce its workers' compensation costs and support staff in returning to work;

- the clinical service suggestions in *Chapter 8* should be reviewed; and

- The Canberra and Calvary Hospitals should develop partnerships with appropriate interstate hospitals to undertake cost benchmarking reviews. The reviews should ensure comparison and exchange of information that is based on reliable and consistent data.

It is acknowledged that those with management responsibility for the operation of the ACT's hospitals may identify different and more effective means to address the audit's findings than those suggested here. The main issue is that the findings which should be addressed are effectively addressed.

2. MANAGEMENT OF NURSING SERVICES

2.1. INTRODUCTION

The audit reviewed the organisation and management of nursing services in Canberra and Calvary Hospitals. This chapter provides the results of the review.

2.2. SIGNIFICANT FINDINGS

In both hospitals:

- ***senior nurse managers and clinicians demonstrated considerable competence, commitment and professionalism. The nursing services which are provided meet professional standards of quality and competence and are consistent with best contemporary clinical practice.***

Canberra Hospital

- ***the clinical organisational structure has resulted in increased administrative costs and there was some evidence of a loss of economies of scale without gains in efficiency or effectiveness; and***
- ***there is no single person who has overall responsibility for the resource management of the nursing service.***

Calvary Hospital

- ***the Calvary Hospital nurse management structure functions efficiently. The Director of Nursing Services has overall responsibility for the resource management of the nursing service.***

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2.3. CANBERRA HOSPITAL

The Nursing Service

Quality of Services

During the audit, discussions were held with nurse managers and nurses in most areas of the hospital. Several wards were visited. The audit found that senior nurse managers and clinicians led by the Executive Director of Nursing demonstrated considerable competence, commitment and professionalism. The Nursing Division of the Canberra Hospital has been active in its support of devolved clinical management, is innovative and at the cutting edge of several health management initiatives.

The nurse services which are provided meet professional standards of quality and competence and are consistent with best contemporary clinical practice.

Divisional / Unit structure

The hospital has recently restructured to a divisional/unit structure. The intended purpose of the restructure was to improve the operational efficiency of the clinical units.

In this structure there is a separation of the corporate and operational (clinical) levels of hospital management with decentralisation of management to clinical units. The units are organised on the basis of traditional medical specialties ie medical, mental health, surgical and women's and children's health, rather than body systems, and are managed jointly by medical and nursing heads.

There is already some evidence that the restructure has achieved its aims of increasing the involvement of clinicians in resource management, and improving the collaboration between medical and nursing staff.

Evaluation of the Revised Organisational Structure

While the structure is only in its beginning, the audit found that there are considerable tensions emerging between the divisional/unit medical/nurse heads and the corporate structure.

There were early signs of the '*divisional silo mentality*' which can exist in divisional structures, where the needs of the division were seen to be more important than those of other divisions and of the hospital as a whole. As a result, there was reduced deployment flexibility across units and dysfunctional competition between the clinical units and hospital management is emerging. At this stage there is no apparent evidence of improvements in organisational efficiency.

The structure has resulted in increased administrative costs and there was some evidence of a loss of economies of scale without gains in efficiency or effectiveness.

Information systems

Basic information systems are poor in terms of consistency and quality of information. It was extraordinarily difficult during this review to collect and compile basic accurate information which would enable an analysis of the hospital and related nursing activities. Such information systems are standard in well managed hospitals elsewhere in Australia.

Management of nursing services

The audit found that there is no single person who has overall responsibility for the resource management of the nursing service. As well, there is no *whole of hospital approach* to the management of casual and relief pool staff. Instead resource management is the responsibility of the nurse managers in each of the divisions.

Under the current functions, structures and delegations, the Executive Director of Nursing (who is responsible to the hospital General Manager) does not have many of the powers and responsibilities usually associated with such a position. For example, the responsibilities for resource management, staffing levels and staff replacement are delegated to the division / unit nurse managers rather than to the Executive Director.

Nurse Managers

The current ACT nurses award has a Clinical Nurse Consultant (Level 3) who is a ward based nurse manager and nurse managers who manage across a number of units. This structure is well regarded by the nursing staff and appears to be effective. The ratio of these first-line management positions as a part of the total staffing profile is no higher than interstate.

In discussions there was, however, agreement that there is potential to rationalise and improve the efficiency of several of these positions over time. The requirement for the current number of nurse manager positions in Canberra Hospital should therefore be assessed periodically.

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2.4. CALVARY HOSPITAL

Management of the nursing service

The Calvary Hospital management structure functions efficiently. The Director of Nursing Services has overall responsibility for the resource management of the nursing service.

As with Canberra Hospital, senior nurse managers and clinicians demonstrated considerable competence, commitment and professionalism. The nurse services which are provided meet professional standards of quality and competence and are consistent with best contemporary clinical practice.

Information systems

Basic information systems are poor in terms of consistency and quality of information. The provision of information for the audit, whilst time consuming for nurse managers due to the lack of appropriate management information systems, was timely.

If a suitable staff scheduling and budgeting system were implemented in Calvary Hospital current staff management processes could be streamlined and the availability of timely, accurate staffing and financial information would be facilitated.

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2.5. CONCLUSION

Senior nurse managers and clinicians at both hospitals demonstrated considerable competence, commitment and professionalism.

The nursing services which are provided meet professional standards of quality and competence and are consistent with best contemporary clinical practice.

While there are clinical benefits in the divisional/ unit approach at The Canberra Hospital, it is considered that aspects of its implementation have led to some inadequacies in the effective management of the nursing service.

The current functions, structures and delegations for management of the nursing service at Canberra Hospital should be reviewed with the purpose of developing a system which, while retaining the benefits of the new divisional/unit arrangements, ensures that dysfunctional aspects are avoided.

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3. REVIEW OF WARDS AND CLINICAL UNITS

3.1. INTRODUCTION

Each of the wards and clinical units in Canberra and Calvary Hospitals was reviewed and assessed against benchmark data from comparable NSW hospitals using the following criteria:

- activity levels;
- staffing allocation;
- clinical profile (unit casemix) and
- workload characteristics.

This Chapter outlines the results of the assessments.

3.2. SIGNIFICANT FINDINGS

- ***nursing services at The Canberra and Calvary Hospitals are provided efficiently at the ward level; and***
- ***staffing numbers in wards are not excessive for patient requirements and are comparable with those in other jurisdictions.***

3.3. CLINICAL UNIT ASSESSMENTS OF ACTIVITY LEVELS

The audit found that with the exception of the Intensive Care Unit in The Canberra Hospital, the Nursing hours Per Patient Day (an efficiency indicator) for units at both hospitals and other indicators were within acceptable benchmark ranges. This indicated that the number of staff allocated to wards and clinical units was consistent with good

nursing practice and comparable with benchmark NSW hospitals.

Nursing hours per patient day (NPPD) is a measure of the efficiency of nursing services provided to patients in a ward. The measure relates the total hours of nursing care provided to the number of patients in a ward.

The NPPD varies between wards, depending on the complexity of the cases being treated in a ward. Generally, the more complex the cases, the higher the NPPD in a ward.

3.4. STAFFING ALLOCATION SYSTEMS GENERALLY

Nursing staffing systems are processes and procedures which are used to determine the number of nurses to be allocated to a ward. The systems take into account the number of patients and the degree of dependency. Nursing staffing systems are composed of five major components:

- nominal staffing level standards required to provide clinical care;
- business plans;
- roster plans;
- daily assignment; and
- management reporting and control.

The standards of clinical care establishes the critical workload-to-staff relationships used to formulate clinical unit staffing levels. There are several assumptions inherent in nurse staffing systems:

- there is a small group of float or agency nurses who are not permanently assigned to a specific unit;

- nurses who are normally assigned to nursing units must expect limited reassignment to similar units; and

- the nursing staffing function is consolidated in a central staffing office with overall responsibility for nurse staffing including; the establishment of rosters, authorisation of overtime and agency nurses, assignment of float personnel, and reassignment of staff.

3.5. REVIEW OF ROSTERS AND STAFFING ALLOCATION

Rosters in The Canberra and Calvary Hospitals were reviewed to determine whether:

- staffing allocations matched workload requirements;

- daily staffing allocations were balanced;

- staffing allocation continued to match workload requirements once rosters were operationalised;

- staff requests were accommodated;

- rostering practices met industrial awards and enterprise agreements; and

- staff leave entitlements were accommodated.

The rostering practices and systems were found to be both efficient and well operationalised. The rostering and staffing allocation process in both hospitals were found to match the working hours of funded staff in providing 24-hour a day clinical coverage.

In The Canberra Hospital, the rosters are developed on a repeating pattern for each cycle utilising the PROACT rostering system. Calvary does not use an automated staff scheduling system.

Each unit reviewed reflected, on most occasions, a pattern which demonstrated a good fit of available staffing to planned unit workload, taking into account:

- expected weekly patterns of admissions and discharges;
- predictable fluctuations in unit census;
- hospital and industrial policies regarding rostering requirements;
- known holiday and downtime activity in the hospital; and
- personal preferences of nursing staff where possible.

Roster Patterns

The roster patterns at the two hospitals are different. The Canberra Hospital operates a 10.8.8 roster (two 8 hour shifts in the day and evening, and an overnight shift of 10 hours). Calvary operates with a triple 8 roster, where there are three non overlapping 8 hour shifts.

The 10.8.8 roster is more expensive than the 8.8.8 roster as it requires the employment of additional staff to fill the shifts. However, it is seen by some nurses as providing a higher level of patient care on night shifts by providing uninterrupted care through the night.

The 10.8.8 roster at The Canberra Hospital was agreed to by Government as part of enterprise bargaining in 1996. For this reason, the audit did not review the costs and benefits associated with this method of rostering.

The audit was advised that under the roster system at The Canberra Hospital, 2 hours of shift overlap were intended to be used for staff development activities.

The Executive Director, Nursing Services at The Canberra Hospital advised:

The Canberra Hospital operates a 10.8.8 roster. As identified in the audit, the two hour overlap between the morning and afternoon shifts is intended to be used for staff development. Until mid 1997, study leave relief was provided for each nurse for 4 days per year. That relief has now been removed and study days are built into rosters. Whilst some staff development programs are now scheduled to be conducted during the overlap of staff there is potential for improved use of this time.

3.6. CENSUS FORECASTING

A significant deficiency noted was the absence of census forecasting. Accurate hospital in-patient census forecasting would achieve considerable benefits through improved efficiency and increased bed utilisation. An accurate one year forecast can produce the following benefits:

- regulate workload distribution;
- reduce nursing unit staffing requirements without reducing the overall nurse patient ratio;
- increase patient throughput;
- enable an efficient nursing unit maintenance and renovation programme; and
- provide accurate revenue projections.

These benefits are obtained through a process of census fluctuation planning. The principle is that the number of available beds, operating rooms and clinical staff are decreased and increased as the census fluctuates.

Factors which affect bed demand include leave, school vacations, senior medical staff annual leave,

annual clinical meetings, public holidays (Easter and Christmas); and increases in clinical activity during winter months.

If the hospital provides staff members with information on anticipated fluctuations in bed demand, operating services and diagnostic services well in advance, say a year ahead, staff members are encouraged to select desirable vacation times within the forecast closed-unit or low activity periods on a first-come, first-served basis.

It is considered therefore that the hospitals should make available to staff annually anticipated fluctuations in bed demand, operating and diagnostic service usage. This approach would significantly improve the efficiency of staffing allocation to clinical units.

Canberra Hospital management commented:

The recommendation that the Hospital make available annual fluctuations in bed demand and operating suite and diagnostic service utilisation is now being addressed.

3.7. CONCLUSION

It was concluded that rostering and staffing of wards was managed well in both hospitals. Nursing services at The Canberra and Calvary Hospitals are provided efficiently at the ward level. Staffing numbers in wards are not unreasonably excessive for the patient requirements and are comparable with those in other jurisdictions however there are several areas where improvements could be made.

4. AVERAGE SALARY COST PER NURSE

4.1. INTRODUCTION

This chapter reviews the average annual salary cost per nurse at Canberra and Calvary Hospitals and compares them with benchmark hospitals in NSW.

4.2. SIGNIFICANT FINDINGS

- ***the average direct annual salary cost per nurse is higher in the ACT ($46,700 at Canberra and $48,900 at Calvary)) than in benchmark NSW hospitals ($44,800);***
- ***the difference in the average salary cost per nurse results in higher costs to the ACT of approximately $3m annually;***
- ***a high proportion of nursing staff are at the top steps of the salary incremental ranges; this is a major contributor to the ACT's higher costs; it is estimated that this factor increases the ACT's costs by at least an annual $1.8m ; and***
- ***a smaller proportion of lower paid enrolled nurses also contributes to the ACT's higher costs by at least $0.5m per annum.***

4.3. STAFFING DATA

The table below summarises the average nurse staffing information for 1996-97:

Average number of Full Time Equivalent (FTE) nurses 1996-97 [4]

Category	Canberra[5]	Calvary
Productive nursing staff[6]	834	231
Non productive[7]	264	24
Total paid nurses	1080	255

For The Canberra Hospital, the data covers the four clinical divisions which provide hospital services. It does not cover other units where nurses are employed e.g. Watson Hostel, Hennessy House and ACT Pathology.

4.4. AVERAGE SALARY COST PER FULL TIME EQUIVALENT NURSE

Nurse remuneration costs (including on-costs but excluding superannuation)) were collected from The Canberra and Calvary Hospitals and the average costs per Full Time Equivalent (FTE) nurse were calculated for each hospital.

These costs were compared with a benchmark cost per nurse obtained from several comparable NSW[8] hospitals. The result of the comparison is shown in the following table.

4 Includes casual nurses.

5 Average through 1996/97.

6 Productive nursing staff is the average number of nurses actually working on any day. It represents the number of nurses needed for the hospital to be able to be run under ordinary conditions.

7 Non productive staff are nurses who on any day are paid but are not working. See *Chapter 5*. Usually, most non productive staff are on recreation leave or sick leave.

8 NSW was selected for the benchmark comparison because of the availability of data and because the geographic proximity results in similar industrial conditions. In addition, NSW was the state with the lowest costs per casemix adjusted separation in the national hospital data collection. (see *Chapter 8).*

Average cost per FTE nurse - 1996-97 - Comparison

NSW benchmark	Canberra	Calvary
$44,800[9]	$46,700	$48,900

On the basis of this information, the average costs per nurse are about 4% and 9% higher in The Canberra and Calvary Hospitals respectively than the NSW hospital benchmark. Overall the difference is 5%.

Using the number of FTE nurses at the end of 1996-97, the differences result in higher costs in the ACT of approximately $3m[10]. This amount is made up of :

Hospital	Higher Costs $m
Canberra	2.052
Calvary	1.045
Total	3.097

Rate of Remuneration for ACT and NSW Nurses

Although they are set by different awards, the rates of remuneration for NSW and ACT nurses, particularly for Enrolled Nurses and Level 1 to Level 3 Registered Nurses are similar.

While the particular rates of pay will differ marginally at times, the differences are unlikely to be large enough to be the cause of significant differences between average nurse costs in NSW and the ACT.

The current ACT Nurses salary scale is provided in *Appendix 1* to this Report.

[9] The data has been adjusted for award increases in NSW.

[10] This amount was estimated by multiplying the difference between the average cost per nurse in the NSW benchmark ($44,800) and each of the ACT average costs (Canberra: $46,700; Calvary: $48,900) by the number of nurses - 1080 and 255 respectively.

4.5. REASONS FOR HIGHER ACT SALARY COSTS

The higher average salary costs in the ACT in both hospitals were found to result from the following main factors:

- the high proportions of nursing staff in the top incremental ranges because of low staff turnover and;
- lower proportions of enrolled nurses in the hospital staff profiles.

These factors are discussed following:

****

Proportion of nurses in the top incremental ranges

The audit found that the nurse staffing profile at the ACT public hospitals is generally more experienced than interstate profiles, particularly for Registered Nurses at Level 1 and Level 2.

The table on the following page shows the proportion of nurses for each Level at each increment range.

The proportions of nurses at the top increments in each level are high. For example, Level 1.8 Registered Nurses (i.e. at the top of the increment scale) make up about 62% of total Level 1 Registered Nurses in The Canberra Hospital and 66% in Calvary. (Level 1 Registered Nurses make up the largest numbers of nurses in each hospital with 603 in Canberra and 140 in Calvary). In comparison, the proportion is usually 10% to 20% in hospitals in Sydney.

% Of Nurses At Each Level/Range
Canberra and Calvary Hospitals - 1996-1997

Nurse level/range	Canberra %	Calvary %
Enrolled Nurse 1	2	3
Enrolled Nurse 2	4	2
Enrolled Nurse 3	3	7
Enrolled Nurse 4	3	5
Enrolled Nurse 5	**88**	**83**
TOTAL	100	100
Registered Nurse Level 1.1	-	0
Registered Nurse Level 1.2	5	7
Registered Nurse Level 1.3	9	9
Registered Nurse Level 1.4	7	2
Registered Nurse Level 1.5	6	8
Registered Nurse Level 1.6	4	2
Registered Nurse Level 1.7	7	6
Registered Nurse Level 1.8	**62**	**66**
TOTAL	100	100
Registered Nurse Level 2.1	15	9
Registered Nurse Level 2.2	3	15
Registered Nurse Level 2.3	8	6
Registered Nurse Level 2.4	**74**	**70**
TOTAL	100	100
Registered Nurse Level 3.1	19	6
Registered Nurse Level 3.2	7	6
Registered Nurse Level 3.3	5	13
Registered Nurse Level 3.4	**69**	**75**
TOTAL	100	100

Low staff turnover

The staff profile reflects the stability of the ACT nursing workforce and the geographical isolation of the ACT. Hospitals in Sydney and other larger capital cities tend to have greater turnover of nurses. For example, the annual nurse turnover rate in the ACT is approximately 2.5% while the average rate in NSW is approximately 17%.

The ACT's older, more experienced and more mature clinical workforce should result in higher standards of patient care. However, there are also drawbacks. The stability of the workforce slows down the entry

of younger, more recently trained nurses who can introduce new ideas and practices.

As well, older nurses tend to be more prone to workplace injury because of the physical demands of nursing work. This may be some of the explanation why the ACT has a high level of nurses undergoing graduated return to work through worker's compensation.

Financial Impact

The financial impact of this factor is estimated to be at least $1.8m annually for the ACT[11]. The impact for each hospital is set out in the following table:

Hospital	**Higher Costs $m**
Canberra	1.327
Calvary	0.532
Total	**1.859**

****

4.6. LOWER PROPORTIONS OF ENROLLED NURSES

Enrolled nurses are nurses who have completed tertiary education at an institute of technology or technical and further education, or received training within the hospital. Their duties involve less clinical skill and training and are carried out under the supervision of registered nurses.

[11] As most of the effect of this factor would be for RN Level 1 nurses, the average FTE numbers of Level 1 nurses for 1996-97 were used: Canberra 603; Calvary 140. The audit estimated the average cost per RN Level 1 to be approximately $45,700 per annum for Canberra and $47,300 for Calvary. Reducing the average cost per FTE RN Level 1 nurse to $43,500 (to provide more of a mid range estimate) results in the overall cost falling by approximately $1.858m. Because the numbers of increment steps are fewer, differences in the average costs for the other Levels are unlikely to be as high as for Level 1.

The table following presents the percentages of enrolled nurses at the ACT public hospitals, together with comparisons from NSW hospitals.

Percentage of Enrolled Nurses 1996-97

NSW	Canberra	Calvary
18% - 23%	14%	13%

In major hospitals in NSW, enrolled nurses typically make up between about 18% and 23% of nurses. Canberra and Calvary each have a lower percentage of enrolled nurses than the NSW hospital average.

Financial Impact

Increasing the proportion and number of enrolled nurses without reduction elsewhere would only increase expenditure. If the overall number of nurses is to remain the same, reductions in the numbers of Registered Nurses would be required to offset an increased number of enrolled nurses.

Increasing the proportion of Enrolled Nurses to 18% would involve increases in numbers of about 40 (Canberra) and 10 (Calvary).

If these increases were matched by reductions in the number of Registered Nurses, for example, there would be savings of approximately $500,000[12] in the ACT.

Hospital	Higher Cost $m
Canberra	0.400

[12] The average cost per Enrolled Nurse is approximately $36,700 and the average cost per Registered Nurse is approximately $48,300. Assuming savings of approximately $10,000 per nurse results in a total of $500,000.

Calvary	0.100
Total	0.500

Comment

Hospitals could benefit financially by increasing the Enrolled Nurse component of the nursing staff profile to 18% through increasing the proportion of enrolled nurses. It is recognised that achieving a complete change in proportions cannot be achieved immediately and, in fact, a complete change may not be appropriate however a process of change towards a more standard population of enrolled nurses should be commenced.

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4.7. CONCLUSION

The audit findings show that average nurse salary costs in the ACT are higher than in the benchmark NSW hospitals. The differences appear to flow mainly from low staff turnover.

ACT public hospitals also have a smaller proportion of lower paid enrolled nurses which contributes to the difference in costs.

5. UNPRODUCTIVE TIME

5.1. INTRODUCTION

In earlier chapters, it was reported that:

- the number of nurses working in wards was comparable with benchmark hospitals (*Chapter 3*); and
- the average salary cost per nurse was approximately 5% higher than benchmarks (*Chapter 4*).

This chapter reports on the costs for times when nurses are not working in wards but are still paid, such as when they are on leave.

5.2. SIGNIFICANT FINDINGS

- ***staff at The Canberra Hospital take an average of 13.2 days of sick leave per year compared with 8 days in Calvary Hospital and 9 days in NSW hospitals; and***
- ***the audit estimated that there were potential savings of up to 16 nurses ($0.760m annually) if sick leave relief arrangements in The Canberra Hospital were consistent with those in NSW and Calvary; if the sick leave arrangements were altered there should not be a negative impact on the high quality of nursing services presently provided because of the long experience of current nursing staff;***
- ***adjustments in ward nurse allocations in Calvary Hospital would provide potential savings of approximately $140,000; and***

- ***the level of workers' compensation cases in The Canberra Hospital is considerably in excess of other jurisdictions.***

5.3. UNPRODUCTIVE TIME

A factor which has an impact on the overall cost of nursing services is the cost of paying nurses for time when they are not working. This time is referred to in this Report as unproductive time.

In general, nursing staff who are not working mostly need replacement so that the level of service can continue to be provided. Replacement, however, should not be automatic as there can be a variety of legitimate reasons why replacement may not be essential.

There are many reasons why staff may not be working. For example, they may be on paid recreation leave or sick leave or on leave without pay.

If a hospital has higher than average, or unusual levels of staff on paid leave, and the absent staff are replaced, its staff costs will be higher than other hospitals.

The audit reviewed data from the hospitals on the level of unproductive time for 1996-97 to determine whether the levels were appropriate and consistent with the benchmark hospitals.

5.4. LEVEL OF RECREATION LEAVE AND SICK LEAVE

These two types of leave are discussed first because allowances for them are included in wards' budgets.

The table following shows the recreation leave and sick leave taken in the two hospitals in 1996-97.

Recreation leave and sick leave - days per person 1996-97

	Canberra Days	Calvary Days
Recreation leave	29.6	21.2
Sick leave	13.2	8.0

Recreation leave

Recreation leave at The Canberra Hospital averaged 29.6 days per nurse and at Calvary 21 days per nurse. As the award entitlement is up to 35 days per year for staff who work on shifts, these levels are not unexpected.

Sick leave

Canberra Hospital

With the level of sick leave at The Canberra Hospital at 13.2 days per nurse per year, an average of 50.6 shifts were lost each day

In New South Wales hospitals, nurses average 9 days of sick leave per year.

At the time of conducting the audit (April 1997), there were no established procedures in Canberra Hospital to review either the daily requests for replacement of sick leave or staff who were developing an unacceptable pattern of sick leave. The audit did not review the reasons for the high level of sick leave taken at Canberra Hospital.

The Executive Director of Nursing Services at The Canberra Hospital advised:

The Hospital agrees that there were no established procedures in place before early 1997. Within the particular devolved structure at the Hospital, the responsibility to review and manage sick leave, provide relief and replacement rests with the first line clinical managers and first line managers, under the direction of the nursing directors of the service teams. During 1997 the level of sick leave has been deemed unacceptable by the executive and a slow improvement is now evident.

Further, since April 1997, sick leave is no longer automatically replaced. Sick leave relief is dependent upon workload.

Comment

As a result of the review of sick leave the audit considers that a system should be developed in Canberra Hospital to monitor the daily replacement of sick leave and to monitor staff who are developing unacceptable patterns of sick leave.

Calvary Hospital

The average level of sick leave of 8.0 days per person per year is considered to be reasonable. The audit found that Calvary has systems in place to review both the daily requests for replacement of sick leave and staff who are developing an unacceptable pattern of sick leave.

5.5. ALLOCATION OF RECREATION LEAVE AND SICK LEAVE RELIEF

In planning the staffing budgets for wards, hospitals usually include an allowance for recreation leave and sick leave which staff may take through the year. This allocation is included in the ward budget and enables nurses to be replaced by casual or agency

staff if necessary. The practice of providing budget for relief positions is known as "backfilling".

While backfilling is provided for recreation leave, in general, Australian hospitals do not provide relief for all time taken on short term sick leave.

In practice, the decision to replace sick staff or to continue without a replacement depends on the patient care requirements at the time. Where the sick leave is likely to be extended, other arrangements are made.

In NSW hospitals, the sick leave relief allocation to wards is usually 9 or 10 days per year.

In The Canberra Hospital, at the time of the audit, it was the practice to replace all nurses who were on short term sick leave with casual and on-call relief nurses. Effectively, funding was provided to replace the 13.2 days of sick leave taken per nurse.

As mentioned above, The Canberra Hospital has advised that since April 1997 sick leave is no longer automatically replaced as sick leave relief is now dependent on workload.

In contrast, at Calvary an allocation of 10 days per year is provided as backfill for all sick and special leave. Backfilling usually depends on workload requirements on a case by case basis.

5.6. REVIEW OF LEAVE RELIEF ALLOCATION

Using data collected from the hospitals, the audit reviewed the leave relief staffing methodologies in The Canberra and Calvary Hospitals. As part of this analysis, each unit's staffing profile was reconstructed in order to match the nursing resources with the patient service demand.

The audit carried out an analysis of ward staff workloads and completed a daily staffing plan for

each clinical unit based on the likely number of patients and their nursing dependencies. Included in the plans were allowances for recreation leave and sick leave relief. These allowances are included in the budget for the ward.

The Canberra Hospital

The audit daily staffing plan analysis factored in sick leave relief allocation of 2 weeks per nurse. As well, there were some minor adjustments to recreation leave relief which did not have an effect on the overall budgeted number of nurses.

On this basis, if the sick leave allocation of 10 days was applied in The Canberra Hospital, there would be a potential efficiency of 18[13] positions. This would involve savings of approximately $760,000 per annum.

Calvary Hospital

In the analysis, the Calvary Hospital relief pool was allocated to units. The daily staffing plan analysis factored in sick leave relief allocation of 2 weeks per nurse. This allowance is already used in Calvary Hospital.

The review found that if the proposed plan for 1997-98 was followed, there was a potential saving of 2.9 nurses ($140,000)[14], mainly from small adjustments to unit nurse allocations. As the Calvary roster planning only provides sick and recreation leave relief as required, there is not the same quantum of savings which could be achieved in Canberra Hospital.

[13] The estimate was made by adding an allowance of 10 days per nurse to the productive staff requirements of each ward (assessed to be 855.05 FTE). This estimate was calculated to be 34.2 days additional FTE for sick leave relief. Subtracting this amount from the average actual FTE used on sick leave in 1996-97 (50.65 days) results in a reduction of 16.4 days.

[14] 2.9 FTE by the average cost per FTE of $48,582.

Because of the more experienced staff profile in Canberra and Calvary Hospitals *(*see *Chapter 4*), it is considered that altering the approach to sick leave would not have a negative impact on the high quality of nursing services presently provided. The audit therefore considers that sick leave and annual leave relief allocation methodologies be reviewed consistent with the findings of this report.

5.7. OTHER TYPES OF LEAVE

The table below presents the total average number of nurses per day on non-productive activities in 1996-97.

Other types of leave - days per person 1996-97

Type of leave	Canberra	Calvary
Long service leave	5	3
Maternity leave	4	1
Special leave	4	1

Long service leave

For Canberra, this is equivalent to 5 days per person per year and 3 for Calvary. The higher amount for The Canberra Hospital is probably associated with the higher level of maternity leave in that hospital.

Because of the lower staff turnover in the ACT, nurses' entitlements to long service leave are generally higher than in NSW metropolitan hospitals leading to more long service leave being taken in the ACT than in NSW.

Maternity leave

The average of 4 days for The Canberra Hospital is higher than with Calvary. It is likely that the nurses

at Calvary are generally older than those at Canberra. The level is also probably higher than in comparable NSW metropolitan hospitals.

Special leave

The breadth of reasons for being able to utilise special leave is unique to the Commonwealth and the ACT. In most other jurisdictions, many absences which are taken on special leave in the ACT would be handled using recreation leave.

The amount of special leave is roughly consistent with the level of special leave taken in the ACT Public Service generally.

Comcare

The table shows the number of nurses who are not able to work effectively in their jobs because they have suffered injury. The status of these persons varies but in general, they are undertaking a graduated return to work, or are employed on light or non-nursing duties.

Number of Comcare cases FTE 1996-97

	Canberra	Calvary
Comcare	52	7

Under the Comcare arrangements, these staff are paid the normal salaries which they received prior to becoming injured. This will include any shift penalties to which staff were entitled. Although salaries will be reimbursed by Comcare, the level of payment to Comcare cases is reflected in the premium paid to Comcare. In 1996-97 the Comcare premium for The Canberra Hospital was $9.8m.

The level of Comcare cases in The Canberra Hospital is considerably in excess of those in other jurisdictions. The level of cases in Calvary Hospital is not exceptional. As a result, The Canberra Hospital has to meet higher Comcare premiums than hospitals in other jurisdictions.

The Hospital has taken steps to reduce the incidence of compensation cases. For example, lifting machines have been made available in wards. As well, it is managing the existing cases with a view to supporting the return to work of the staff affected.

5.8. CONCLUSION

The high level of unproductive time at The Canberra Hospital, mainly for sick leave, together with the policy of routinely replacing staff for all leave taken, contributes significantly to the cost of nursing services.

As well, the more generous conditions of service e.g. special leave, add to the higher costs in comparison with other jurisdictions.

Action can and has been taken to reduce the high level of sick leave, and to decide whether staff need to be replaced on all occasions.

The Hospital should continue to work to reduce its workers, compensation costs and support staff in returning to work.

6. ACT CLINICAL SERVICES PLANNING

6.1. INTRODUCTION

Hospitals and clinical service groups had developed objectives and performance measurements for their areas however to put these into an ACT wide context the audit sought to be provided with an overall strategic plan relating to acute care services. This Chapter reports that a plan of this nature does not currently exist and suggests some principles which could be adopted for the development of such a plan.

6.2. SIGNIFICANT FINDING

- ***There was no plan available which established objectives and priorities for the delivery and development of health services for the ACT;***
- ***However the Department of Health and Community Care has advised that a 10 year strategic plan will be completed this financial year.***

6.3. NEED FOR A CLINICAL SERVICES PLAN

At the time of the audit, there was no clinical services plan available. Such a plan should establish objectives and priorities for the delivery and development of health services in the ACT. There was evidence that there has been a lack of clinical services planning in the ACT in the past.

As a result, there has been some duplication of clinical services between Calvary Hospital and The Canberra Hospital.

The Department of Health and Community Care has taken a strategic approach to better utilise public hospital resources. In the last two years, it has

entered into purchase agreements with the two hospitals. Under these agreements, the type, number and price of services to be provided are specified. In addition, some services are located specifically at one or other of the hospitals. For example, in orthopaedic surgery, all elective surgery is performed in Calvary, while all emergency work is carried out at The Canberra Hospital. All paediatric services, and the more complex perinatal and foetal services are provided at Canberra.

A clinical services plan approach would facilitate the efficiency of ACT health services by better specifying the particular services which each hospital is to provide. This will enable the hospitals to target staff and facilities efficiently for those services rather than for a wider or broader range of services.

As well, the plan should enable the hospitals to provide staff with some certainty of direction of health services.

There was concern among staff that until the ACT develops a clinical services plan, health services will continue to suffer the vagaries of short term solutions and 'knee jerk' reactions.

6.4. CLINICAL SERVICE PLANNING

Typically, a clinical service plan should include reviews of:

- in-patient services provided, including clinical, teaching and research activities;
- patient flows;
- capability of the service;
- bed capacity and utilisation;
- factors affecting utilisation;

- clinical groups engaged in the provision of services;
- ambulatory services;
- future service provision requirements;
- possible private sector involvement in delivery of services; and
- projected patient demands for acute services based on historical trends and projected hospital developments.

6.5. GUIDING PRINCIPLES

The following four principles are suggested which if adopted, would usefully underpin the planning process:

- each patient, regardless of entry point and treatment location, will receive the best coordinated evidenced based health care. Area wide services will be provided in association with patient's local doctors, community health professionals and support services;
- the organisation and delivery of clinical services will focus on how patient care is delivered rather than clinical or management structures;
- ACT facilities will develop a complementary rather than competitive model in the organisation, delivery and planning of clinical care; and
- be realistic in terms of resource allocation.

The Chief Executive of the Department of Health and Community Care commented :

In general terms the Department supports the overall thrust of Chapter 6 in its call for improved planning and coordination of care. These are objectives that the Department has adopted in its strategic vision and has sought to address through its restructure, business plans and purchasing role.

The Department has recognised the need for an overall services plan and is currently finalising a 10 year Strategic Plan for Health Services in the ACT.

The plan will, importantly, take a broad view of service needs rather than restrict itself to only clinical services. The final plan will be completed this financial year and will include all the points raised in paragraph 6.4.

It should be noted that the Department's planning priorities for both generic and clinical health services are set out in its health services purchasing contracts (commenced 1996-97). These planning priorities have been developed using data sourced in the development of the 10 year strategic plan.

Canberra Hospital management commented:

As noted in the audit, the hospital does not have a completed clinical services plan. However, this matter is in the process of being addressed.

6.6. CONCLUSION

Although there is currently no ACT wide clinical services plan in place, the Department of Health and Community Care is finalising a Strategic Plan for Health Services in the ACT which is to be completed this financial year. This plan should be of significant benefit in improving the efficiency of delivery of health services in the ACT.

While the plan should deal with issues at a strategic level, it will be up to the hospitals to translate the strategic plan into clinical service plans for patients.

7. MANAGEMENT OF CLINICAL SERVICES

7.1. INTRODUCTION

During the audit the nurse consultant to the audit visited most wards and units to assess ward layout and design, equipment, workflow patterns and to meet clinical staff. Discussions were held with nurse managers and ward nurses.

In general, the design of units was reasonable and the bed numbers ensured an efficient deployment of clinical staff.

This Chapter provides comments and suggestions in relation to several important maters which were identified during the discussions and inspections.

The consultant made a series of suggestions on the management of clinical services to bring these towards consistency with best practice in other Australian hospitals. These suggestions sometimes go beyond nursing issues specifically.

If adopted, (and assuming no change in the level of activity) it is estimated that there would be potential annual savings of approximately $2m in operating expenses at The Canberra Hospital.

As many of these suggestions relate to hospital and clinical practice rather than nursing specifically, they will require consideration by the hospital clinical and administrative executive teams.

7.2. THE CANBERRA HOSPITAL

Discretionary Beds

It was noted that three medical units have reduced bed availability. The reasons for this decision are not clear. The beds are described as emergency beds and

appear to be operated at the discretion of staff. As a result, access to beds may be unnecessarily restricted.

The wards operating this system are listed below:

Wards Operating Discretionary Beds

Ward Location	Specialty	Bed Numbers [15]	Emergency Beds
6A	Endocrinology/Cardiology/ Rheumatology	28	2
8B	Respiratory Medicine	24	2
7A	Gastroenterology Unit	24	2

The system of aligning bed availability to nursing staffing is supported. However, from an examination of the current level of staffing within these units there is no reason for restricting access to these beds on a routine basis.

It is suggested that the routine practice of restricting access to medical beds on wards 6A, 8B, & 7A be ceased and that a policy be developed to align bed availability to nursing staff.

Renal Services

Canberra Hospital provides a significant renal service. The Renal Service, which is well resourced both in medical and nursing allocation, operates three dialysis centres:

- Maintenance Haemodialysis Unit (12 chairs)
- Continuous Ambulatory Peritoneal Dialysis (CAPD) Unit

[15] Including emergency beds.

- Satellite Dialysis Centre Training Centre

There is considerable scope for improving efficiency in the delivery of Renal Services by incorporating home dialysis training and CAPD training into one centre.

It is suggested that the Renal Service review the number of dialysis centres and consider the development of single centre for haemodialysis and CAPD training.

Acute Aged Care Unit

This unit provides acute geriatric and psychogeriatric services. The ward design is inadequate for the clinical work. The hospital has already agreed to a major refurbishment of the unit.

It is suggested that immediate priority be given to a major works refurbishment program for Ward 12A. Until this program of work is completed the morning staffing should be increased by 1 nurse per shift.

Gastroenterological Unit

The gastroenterological unit is a major tertiary referral service for the ACT. The ward is extremely busy and highly complex to manage. The current skills mix is inadequate for this task with an excessive ratio of enrolled nurses to registered nurses.

It is suggested that the skills mix of the gastroenterological unit be modified by decreasing the ratio of enrolled nurses to registered nurses.

Operating Room and Surgical Bed Management

Surgical services were reviewed with particular attention to operating room scheduling and bed

utilisation. It is considered that management practices are significantly lagging behind best surgical practice in Australian teaching hospitals. There is considerable scope for improvement in the management of surgical services.

It is suggested that theatre scheduling be completely revised and that theatres be allocated to surgical teams rather than individual surgeons, theatre scheduling should take account of specialist instrument requirements, full day theatre sessions should be implemented, and major surgical cases be undertaken at the beginning of the week rather than late in the week.

It is also suggested that:

- Consideration be given to introducing financial disincentives for medical practitioners who cause inefficiencies in operating rooms by being habitually late for operation starting times; disincentives are in place in some NSW hospitals;

- A perioperative ward be established;

- A Monday to Friday surgical unit be established; and

- Specific theatre sessions be established for day only surgery and the pre-admission clinic adopt contemporary best medical practice.

The Surgical Division plans to implement a number of innovative practices and collaboration between medical and nursing clinician managers was impressive.

Intensive Care Unit

The Intensive Care Unit (ICU) is a twelve bed medical and surgical unit providing critical care services for children and adults requiring ventilation; airway management; continuous infusion of vasoactive drugs; haemodialysis/haemofiltration; intracranial pressure monitoring; management of high risk post operative patients and management of severe metabolic, fluid or electrolyte imbalance/derangement.

The unit also provides:

- a 24 hour retrieval service;
- monitoring and education of patients receiving total parenteral nutrition; and
- consultative services for in-patients with tracheostomies, central venous access or complex drug regimens.

The nursing hours per patient day for the ICU were up to 40% higher than the three comparative units. Additionally a high percentage of patients using critical care beds are in fact surgical high dependency patients.

There appears to be considerable scope for the incorporation of a surgical high dependency unit into the ICU. Additionally on current numbers and casemix of patients, the unit will be able to accommodate planned cardiac surgical post-operative recovery within current resources.

It is suggested that a surgical high dependency unit be established within The Canberra Hospital ICU and that post-operative cardiac surgery patients be managed within the unit.

The Canberra Hospital commented:

The audit states that the nursing hours per patient day in the Intensive Care Unit were up to 40% higher than in 3 comparative units.

Ventilated and some other patients are nursed 1:1 in all hospitals. Presumably the 40% higher figure included the support staff on duty in the unit, and, based on 10 patients requiring 1:1 nursing in The Canberra Hospital, there would be on duty an additional 2 team leaders, 1 "float" nurse, 1 clinical nurse consultant, 1 educator between the intensive care unit and another acute unit, 1 manager between the intensive care unit and the emergency department and 1 equipment nurse.

This high level of support is under review.

Emergency Department

The Emergency Department is designated as a major trauma centre for the ACT and the South Eastern Region of NSW. One third of the presentations are children and the current admission rate from the Emergency Department to the Hospital is 30%.

However, 65% of presentations are primary care patients attending for services which could be provided by a general practitioner. This is considered an inefficient use of specialised medical and nursing resources.

It is suggested that a primary care and nurse practitioner clinic be established in the Emergency Department to improve the use of resources.

Paediatric Services

The paediatric service is the major referral centre for the ACT and South East region. The service provides a comprehensive paediatric in-patient and surgical service through paediatric units, surgical, isolation and babies. The service also provides a neonatal intensive care unit for newborns.

Current paediatric in-patient services are poorly organised with units operating at a considerable diseconomy of scale. Nurse managers and Clinical

Nurse Consultants (CNCs) consider a significant restructure of paediatric in-patients services is required. The position is summarised in the following table.

Paediatric In-Patient Unit Organisation

Unit Location	Sub-Specialty	Nurse Numbers	Beds	Occupancy
4P4	Medical/Surgical Infants	16.7	14.2	74%
4P1	Paediatric Medical	20.3	18	78%
4P3	Paediatric Surgery	18.2	15	70%
5A	Adolescent Paediatric Isolation	19.3	14	82%

It is suggested that paediatric in-patient services be consolidated from four to three wards. This plan be developed by paediatric nurse managers, CNC and paediatricians. Implementation of this plan should wait until the appointment of the Chair in Paediatrics.

Equipment Storage

The audit found that in some instances the design of clinical departments is not conducive to the efficient deployment of clinical staff. In particular, the storage of equipment such as lifting machines, bed frames, wheelchairs and other equipment has led to a loss of bed capacity in some wards in the hospital and less than optimal ward management costs. It is estimated that space for approximately 24 beds has been lost in existing wards throughout the hospital as a result of equipment storage in the wards.

It is suggested that a central storage and supply system be established for the management of clinical equipment. After the establishment of this system wards should be reorganised where necessary.

7.3. CALVARY HOSPITAL

High Dependency/Stepdown Unit

The High Dependency/Stepdown Unit is a twelve (12) bed unit which mainly provides cardiology services. The Unit also provides Intensive Care Services. There are 4 intensive care/coronary care beds with the capacity to manage ventilated patients. Under its agreement with the Department of Health and Community Care, the Hospital provides services for a maximum of two ventilated patients at any time.

The unit was benchmarked against three similar public sector critical care units in New South Wales. The nursing hours per patient day (12.7) are consistent with a high dependency unit, but significantly higher than benchmark nursing hours per patient day for stepdown beds. For 1995-96 there were only 34 ventilated patients.

It was noted that patients are discharged home direct from the Coronary Care Unit, suggesting that the Unit provides services, in part, for low dependency patients. This is an expensive use of resources.

It is suggested that the role and activity level of the ICU/High Dependency/Stepdown unit be reviewed by the Department of Health and Community Care.

The Emergency Department

The Emergency Department receives all categories of patients except major trauma (which are received at The Canberra Hospital). The current admission rate from the Emergency Department to Hospital is 15%. All neurosurgery, and some paediatric patients are transferred to The Canberra Hospital.

The units physical and functional capacity is hopelessly inadequate for the designated role and function. The hospital has requested an allocation of capital funds to undertake a major refurbishment of the unit.

Triage data for a one month period, identifies that approximately 63% of presentations were for primary care patients attending for services that could be provided by a general practitioner.

This is an inefficient use of specialised medical and nursing resources.

It is suggested that a primary care and nurse practitioner clinic be established in the Emergency Department to improve the use of resources.

Special Care Nursery and Delivery Suite

The Special Care Nursery, in 1995-96 reported an average occupancy of 48%. The Delivery Suite, due to a decreased number of births had nursing hours per patient day of 23.7, significantly higher than interstate benchmarks.

It is likely that the declining birth rate in the ACT has resulted in low occupancy rates in the obstetrics and gynaecology units. However it is understood that the number of maternity admissions to Calvary has increased significantly in the recent past.

Maternity Services, with the three geographically discrete work areas, requires separate staffing.

The occupancy rate for Obstetrics and Gynaecology Units are identified in the table on the following page:

Occupancy Rate 1995-96 Obstetrics and Gynaecology

Ward Location	Comments	Bed Number	1995-96 Occupancy
Special Care Nursery	Level 2 nursery which functions in collaboration with the NICU at the Canberra Hospital	12	48%
Ward 3S	Antenatal/Postnatal Unit	20	63.8%
Delivery Suite	Deliveries for public and private patients	5	1,363 births

The statistics suggest that consideration needs to be given to concentrating perinatal and foetal services at The Canberra Hospital.

8. NATIONAL DATA ON HOSPITAL AND NURSING COSTS

8.1. INTRODUCTION

This chapter reviews the national data collected on hospital and nurse costs.

8.2. SIGNIFICANT FINDINGS

- ***there is no doubt that ACT nursing costs are higher than interstate benchmarks but the relative and absolute significance of the variations is difficult to quantify.***

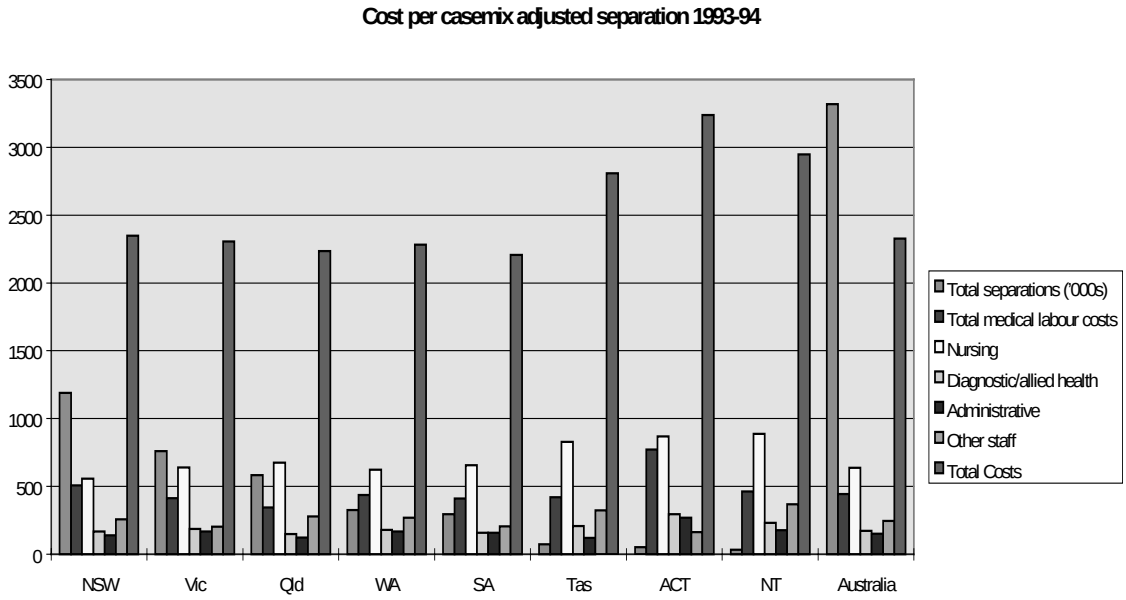
8.3. COSTS PER CASEMIX ADJUSTED SEPARATION

Total costs and nurse costs per casemix adjusted separation may be used as indicators of the efficiency of hospital services and nursing services provided in a jurisdiction.

In these indicators, the number of hospital separations i.e. the number of patients, is adjusted for the complexity of cases of the patients to provide a consistent basis for comparing hospital costs, including nurse costs.

8.4. HOSPITAL COST PER CASEMIX ADJUSTED SEPARATION

The graph below shows the hospital costs per casemix adjusted separation for each state and territory in 1993-94. The total costs ranged from $2,208 in South Australia to $3,237 in the ACT, with the national average being $2,327.



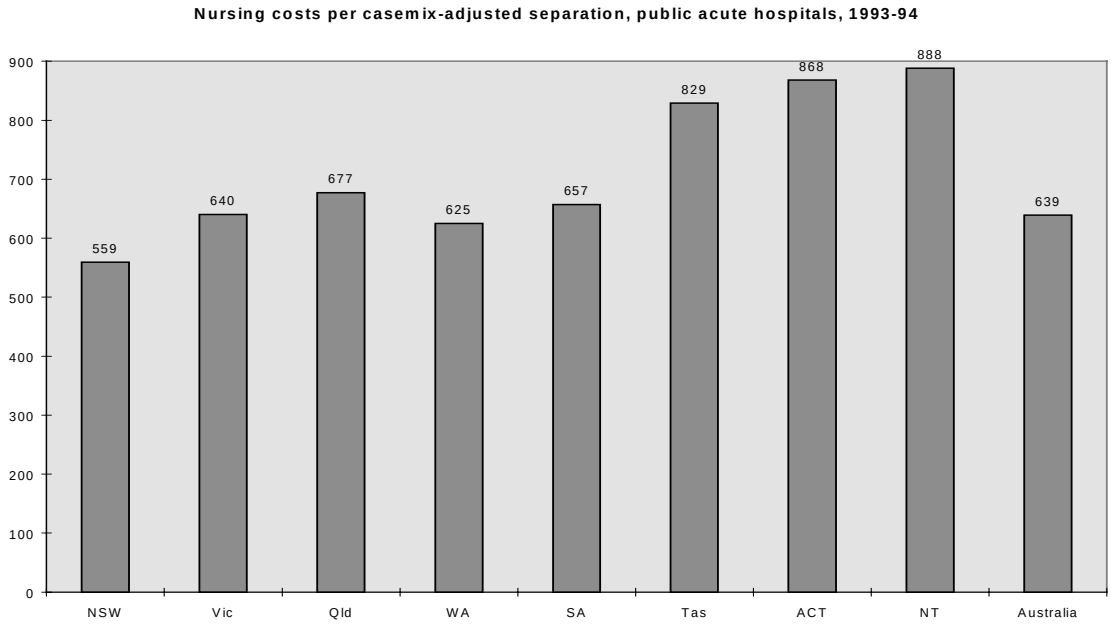
These data relate to AN-DRG v3.0 cost weights and are derived from several inter-related activities including:[16]

- development of a hospital price index to measure changes in hospital prices from December 1992 to December 1994;
- inclusion of AN-DRG v3.0 service weights based on Australian data in the areas of diagnostic imaging, pathology, operating rooms, critical care and nursing;
- a micro-costing study of 31 AN-DRGs where substantial changes occurred with the development of the v3.0 of the classification;
- cost modelling on the basis of the original study.

[16] Department of Human Services and Health 1996, Australian Casemix Report on Hospital Activity 1994-95, AGPS, Canberra. p20

8.5. NURSING COSTS PER CASEMIX ADJUSTED SEPARATION

The graph below shows the nursing cost data per casemix adjusted separation.



It will be seen that the casemix adjusted cost for the ACT ($868) is the second highest in Australia, after $888 in the Northern Territory. It is considerably in excess of the cost in NSW ($559) and the Australian average ($639).

8.6. INTERPRETATION OF THE COST PER CASEMIX ADJUSTED SEPARATION

The casemix-adjusted cost per separation for ACT is the highest in Australia. On the face of it the ACT cost for total casemix adjusted separation is 39% higher than the Australian average and nursing costs per casemix adjusted separation are 35% higher than the Australian average.

However there are doubts about the usefulness of this comparison, and about the quality of the data.

Usefulness of the data

At the state and territory level, there are significant differences in the numbers and types of hospitals in the public health systems, reflecting the ranges of hospital services provided. In particular, the ACT public hospital system which is composed of only two hospitals is likely to have different characteristics to other larger systems.

Although the casemix weightings should make some allowance for differences between states and territory systems, comparisons would be improved if the ACT hospitals were compared against hospitals of the same size and with the same responsibilities.

Technical Reasons for Casemix-Adjusted Variations

Data Limitations

It is well reported that there are major data limitations associated with this data particularly as this relates to definitions and categories.[17] In 1991-93, in the period on which much of this data is based, it was not uncommon for different definitions to be used to describe the one concept. For example, there were two definitions of the term 'principal diagnosis'.

More recently the systematic exclusion of sub-acute episode types from the 1993-94 and 1994-95 data, but not from the 1991-92 or 1992-93 data has resulted in certain anomalies, especially in relation to AN-DRG 941 Rehabilitation.

[17] Department of Human Services and Health 1996, Australian Casemix Report on Hospital Activity 1994-95, AGPS, Canberra. p22

Non-standardisation of in-patient fractions

One of the major methodological issues in determining average cost per case-mix adjusted separation is the estimation of in-patient fractions (IFRACs). IFRACs are the proportions of in-patients (who require higher levels of hospital treatment) to the proportion of out-patients. This value will range from 0% to 100%, and therefore it has considerable influence over the final average cost.

For the AN-DRG v3.0 costs, Victoria, Queensland, South Australia, ACT and Western Australia provided hospital level data. For the remaining hospitals, the IFRAC was estimated by using the HSAC conversion of non-admitted patients services into admitted patient bed-days.[18] The two issues arising from this are, first, that a consistent approach to estimating IFRACs was not used for all jurisdictions, and secondly, where HASAC is used, it is a ratio established on the basis of hospital practices in 1971.

Visiting Medical Officer Dispute

There was a Visiting Medical Officer dispute in the ACT in 1993-94, which effectively reduced hospital in-patient activity by an estimated 2,000 separations.

Data Quality in General

In March 1995, the Australian Institute of Health and Welfare conducted a survey of the State and Territory health authorities to evaluate the likely availability and quality of data used in national benchmarking exercises. The study found that data

[18] AIHW. 1996. First national report on health sector performance indicators: public hospitals-the state of play. Canberra: AIHW p 87

is frequently not of a sufficiently high quality to use for national comparisons.

8.7. CONCLUSION

Given the technical reasons for cost variations it is difficult to draw a definitive conclusion regarding the significance of cost variations published in the first national report on health sector performance indicators: *Public hospitals-the state of play.*

There is no doubt that ACT costs are higher than interstate benchmarks but the relative and absolute significance of the variations is difficult to quantify. Such an assessment would require a benchmarking exercise that controls for systematic technical and clinical variations.

To overcome the problem of the reliability of available data for comparative purposes it is suggested that Canberra and Calvary Hospitals develop partnerships with appropriate interstate hospitals to undertake cost benchmarking reviews. The reviews should ensure comparison and exchange of information which is based on reliable and consistent data.

Appendix - ACT Nurse Remuneration as at 1 July 1997 **

Registered Nurse Level 1*	Registered Nurse Level 3
$29,614	$44,798
$30,963	$45,811
$32,315	$46,824
$33,663	$47,835
$35,014	
$36,362	Registered Nurse Level 4
$37,713	$53,235
$39,063	$56,430
	$60,365
	Enrolled Nurse*
Registered Nurse Level 2*	$27,185
$40,411	$27,725
$41,312	$28,265
$42,212	$28,805
$43,111	$29,344

* Level 1 and 2 Registered Nurses and Enrolled Nurses usually receive shift penalties which add about 20% to 30% to the salaries in this table .

** The figures shown are annual increments.

Annexure

Reports Published in 1992

1 Information Technology Management Policies in the ACT Government Service

2 Financial Audits with Years Ending to 30 June 1991

3 GAO Annual Management Report for Year Ended 30 June 1992

4 ACT Board of Health - Management of Information Technology

5 Budget Outcome Presentation and the Aggregate Financial Statement for the Year Ended 30 June 1992

6 Financial Audits with Years Ending to 30 June 1992

Reports Published in 1993

1 Management of Capital Works Projects

2 Asbestos Removal Program

3 Various Performance Audits Conducted to 30 June 1993
- **Debt Recovery Operations by the ACT Revenue Office**
- **Publicity Unaccountable Government Activities**
- **Motor Vehicle Driver Testing Procedures**

4 Various Performance Audits
- **Government Home Loans Program**
- **Capital Equipment Purchases**
- **Human Resources Management System (HRMS)**
- **Selection of the ACT Government Banker**

5 Visiting Medical Officers

6 Government Schooling Program

7 Annual Management Report for the Year Ended 30 June 1993

8 Redundancies

9 Overtime and Allowances

10 Family Services Sub-Program

11 Financial Audits with Years Endings to 30 June 1993

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12 Reports were issued prior to 1992. Details can be obtained from the Government Audit Office.

Annexure (continued)

Reports Published in 1994

1 Overtime and Allowances - Part 2

2 Department of Health - Health Grants
- Management of Information Technology

3 Public Housing Maintenance

4 ACT Treasury - Gaming Machine Administration
- Banking Arrangements

5 Annual Management Report for Year Ended 30 June 1994

6 Various Agencies - Inter-Agency Charging
- Management of Private Trust Monies

7 Various Agencies - Overseas Travel - Executives and Others
- Implementation of Major IT Projects

8 Financial Audits with Years Ending to 30 June 1994

9 Performance Indicators Reporting

Reports Published in 1995

1 Government Passenger Cars

2 Whistleblower Investigations Completed to 30 June 1995

3 Canberra Institute of Technology - Comparative Teaching Costs and Effectiveness

4 Government Secondary Colleges

5 Annual Management Report for Year Ended 30 June 1995

6 Contract for Collection of Domestic Garbage/Non-Salary Entitlements for Senior Government Officers

7 ACTEW Benchmarked

8 Financial Audits With Years Ending to 30 June 1995

Reports Published in 1996

1 Legislative Assembly Members - Superannuation Payments/Members' Staff - Allowances and Severance Payments

2 1995 Taxi Plates Auction

3 VMO Contracts

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12 Reports were issued prior to 1992. Details can be obtained from the Government Audit Office.

Annexure (continued)

4 Land Joint Ventures

5 Management of Former Sheep Dip Sites

6 Collection of Court Fines

7 Annual Management Report For Year Ended 30 June 1996

8 Australian International Hotel School

9 ACT Cultural Development Funding Program

10 Implementation of 1994 Housing Review

11 Financial Audits with Years Ending to 30 June 1996

Reports Published in 1997

1 Contracting Pool and Leisure Centres

2 Road and Streetlight Maintenance

3 1995-96 Territory Operating Loss

4 ACT Public Hospitals - Same Day Admissions
Non Government Organisation - Audit of Potential Conflict of Interest

5 Management of Leave Liabilities

6 The Canberra Hospital Managements Salaried Specialists Private Practice

7 ACT Community Care - Disability Program and Community Nursing

8 Salaried Specialists' Use of Private Practice Privileges

9 Fleet Leasing Arrangements

10 Public Interest Disclosures - Lease Variation Charges
- Corrective Services

11 Annual Management Report for Year Ended 30 June 1997

12 Financial Audits with Years Ending to 30 June 1997

13 Management of Nursing Services

12 Reports were issued prior to 1992. Details can be obtained from the Government Audit Office.

Availability of Reports

Copies of Reports issued by the ACT Auditor-General's Office are available from:

ACT Government Audit Office
Scala House
11 Torrens Street
BRADDON ACT 2601

or

PO Box 275
CIVIC SQUARE ACT 2608

Phone (02)62070833 / Fax (02)62070826