

Australian Medical Workforce Advisory Committee

# **THE UROLOGY WORKFORCE IN AUSTRALIA**

**SUPPLY, REQUIREMENTS AND PROJECTIONS**

**1995 - 2006**

**AMWAC Report 1996.4**

**May 1996**

© Australian Medical Workforce Advisory Committee 1996

ISBN 0 7310 0764 6

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without the prior written permission of the Australian Medical Workforce Advisory Committee.

Enquiries concerning this report and its reproduction should be directed to:

Executive Officer  
Australian Medical Workforce Advisory Committee  
c/- New South Wales Department of Health  
Locked Mail Bag 961  
NORTH SYDNEY NSW 2059

Telephone: (02) 9391 9933

Suggested citation:

Australian Medical Workforce Advisory Committee (1996), *The Urology Workforce In Australia*, AMWAC Report 1996.4, Sydney

Publication and design by Australian Medical Workforce Advisory Committee.

Cover design and printing by Copybook, Sydney.

## CONTENTS

<b>Abbreviations</b>	<b>v</b>
<b>List of Tables and List of Figures</b>	<b>vi</b>
<b>Terms of Reference of AMWAC and the AMWAC Urology Workforce Working Party</b>	<b>viii</b>
<b>Membership of AMWAC</b>	<b>ix</b>
<b>Membership of the AMWAC Urology Workforce Working Party</b>	<b>x</b>
<b>Introduction, Guiding Principles and Methodology</b>	<b>1</b>
<b>Summary of Findings and Recommendations</b>	<b>4</b>
<b>Description of the Current Urology Workforce</b>	<b>10</b>
The Number of Practising Urologists in Australia	10
Growth in the Urology Workforce	10
Distribution of the Urology Workforce	11
Public Hospital Involvement	16
Age Profile	17
Gender Profile	18
Participation Rate	18
Services Provided and Performed	20
Training Arrangements	24
<b>Adequacy of the Current Urology Workforce</b>	<b>29</b>
Urology Surgeon:Population Ratio	29
Public Hospital Vacancy Rate	31
Elective Surgery Waiting Lists and Waiting Times	31
Waiting Times for Urological Consultations and Procedures	33
Limitations on Public Hospital Urological Work	37
Urologists' Perceptions of Service Levels	38
Conclusions on Adequacy	39
<b>Projections of Requirements</b>	<b>40</b>
Population	40
Changes in Utilisation	40
Changes in Technology and Options for Service Provision	41

<b>Projections of Supply</b>	<b>44</b>
Additions to the Urology Workforce	44
Retirements	44
Work Patterns	44
Female Participation in the Workforce	45
Provision of Services in Rural and Remote Areas	45
<b>Balancing Supply Against Requirements</b>	<b>47</b>
Requirement Trends	47
Supply Trends	48
Projected Balance	48
<b>Recommendations</b>	<b>52</b>
<b>References</b>	<b>54</b>

## Abbreviations

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AHMAC	Australian Health Ministers' Advisory Council
AIHW	Australian Institute of Health and Welfare
AMWAC	Australian Medical Workforce Advisory Committee
Aust	Australia
DHFS	Department of Health and Family Services (Commonwealth)
Diag	Diagnostic
ESWL	Extra-corporeal Shock Wave Lithotripsy
FTE	Full Time Equivalent
GP	General Practitioner
MBS	Medical Benefits Schedule
MWSAC	Medical Workforce Standing Advisory Committee (United Kingdom)
NSW	New South Wales
NT	Northern Territory
Pop	Population
Qld	Queensland
RACS	Royal Australasian College of Surgeons
RARA	Rural and Remote Areas
SA	South Australia
Spec	Specialist
SPR	Surgeon:Population Ratio
Tas	Tasmania
TRD	Temporary Resident Doctor
TURP	Trans Urethral Resection of the Prostate
US	Urological Society of Australasia
Vic	Victoria
VMO	Visiting Medical Officer
WA	Western Australia

## List of Tables

- 1 Urological Society of Australasia members and Medicare urology service providers; by selected years, 1984-85 to 1994-95
- 2 Growth in urology service providers; by State/Territory, 1984-85 to 1994-95
- 3 Distribution of urologists; by State/Territory and geographic location, 1994-95
- 4 Urology practice sites and population; by State/Territory and geographic location, 1995
- 5 Urology hospital sites and population; by State/Territory and geographic location, 1995
- 6 Urologists holding public hospital urology posts; by State/Territory, 1995
- 7 Age profile of urologists; by State/Territory and gender, 1995
- 8 Age profile of US members; by State/Territory and major age group, 1995
- 9 Average hours worked per week by urologists; by State/Territory, 1993
- 10 Estimated hours worked per week by urologists; by age group, 1992-93
- 11 Estimated hours worked per week by urologists; by age group, 1995
- 12 Medicare urologists, services provided and average fees charged, 1994-95
- 13 Urology Medicare providers, services and fees, 1990-91 and 1994-95
- 14 Ten most common Medical Benefits Schedule urological items billed to Medicare; by providers, 1994-95
- 15 Selected Medical Benefits Schedule items, growth in services provided; by specialist urologists and weighted price, 1990-91 and 1994-95
- 16 Hospital separations with a principal diagnosis indicating urology (>000s); by age group, 1992-93
- 17 Urology training positions; by State/Territory and hospital (including New Zealand), 1988 to 1997
- 18 Urology training posts; by State/Territory, 1988 to 1995
- 19 Urology training posts; by State/Territory, 1995
- 20 Urology provider:population ratio, using Medicare data; by selected years, 1984-85, 1988-89 and 1994-95
- 21 Urologist:population ratio, using US full time Australian members; by selected years, 1984-85, 1988-89 and 1994-95
- 22 Urology provider:population ratio, using Medicare data; by State/Territory, 1984-85 and 1994-95
- 23 Characteristics of admissions from elective surgery waiting lists, Australian public hospitals; by urology surgeon and indicator procedure, 1995
- 24 Urology and indicator procedure clearance times for elective surgery waiting lists (months), Australian public hospitals; by hospital type, 1995

- 25 Average waiting time for first urological consultation, public and private rooms; by State/Territory, 1995
- 26 Average waiting time for a urological consultation on a referred urgent condition, public and private rooms; by State/Territory, 1995
- 27 Average waiting time for a urological intervention for a major procedure (eg carcinoma kidney), private and public hospital; by State/Territory, 1995
- 28 Average waiting time for a urological intervention for category 2 diagnosis (eg TURP), private and public hospital; by State/Territory, 1995
- 29 Average waiting time for a urological intervention for category 3 diagnosis (eg reversal of vasectomy), private and public hospital; by State/Territory, 1995
- 30 Urologists= perceptions of limitations on urological work in public hospitals
- 31 Urologists' perceptions of the number of urologists serving their area; by age group
- 32 Urologists' perceptions of the number of urologists serving their area; by State/Territory
- 33 Projected increase in hospital separations with a principal diagnosis indicating urology (>000s); by age group, 1993 to 2016
- 34 Actual year of intended retirement, for urologists 55 years of age and over
- 35 Urologists= intent to positively reduce workload over the next ten years; by age group, 1995
- 36 Urologists who expect an increase or decrease in their practice over the next ten years; by age group, 1995
- 37 Projected requirements for urology services; by hours worked per week, 1995, 2000 and 2006
- 38 Projected supply of urological services, high, low and average retirement rates; by hours worked per week, 1995, 2000 and 2006
- 39 Urology graduate output needed to balance projected supply with projected requirements (1.6% growth per year); by hours worked per week, 1995 to 2006
- 40 Additional urology training posts; by State/Territory, 1996 to 2006

## List of Figures

- 1 Urology practice sites; by State/Territory and geographic location, 1995
- 2 Hospital sites, public and private, of urological services; by State/Territory and geographic location, 1995
- 3 Urologists, average hours worked per week in public hospitals, 1995
- 4 Urologists, full and part time; by age group, 1995
- 5 Projected urology supply and requirements, 1995 to 2006
- 6 Elimination of the potential shortfall - projected urology supply and requirements, 1995 to 2006

## **Terms of Reference of AMWAC and the AMWAC Urology Workforce Working Party**

The Australian Health Ministers' Advisory Council (AHMAC) established the Australian Medical Workforce Advisory Committee (AMWAC) to advise on national medical workforce matters, including workforce supply, distribution and future requirements.

AMWAC held its first meeting in April 1995.

### AMWAC Terms of Reference

1. To provide advice to AHMAC on a range of medical workforce matters, including:
  - the structure, balance and geographic distribution of the medical workforce in Australia;
  - the present and required education and training needs as suggested by population health status and practice developments;
  - medical workforce supply and demand;
  - medical workforce financing; and
  - models for describing and predicting future medical workforce requirements.
2. To develop tools for describing and managing medical workforce supply and demand which can be used by employing and workforce controlling bodies including Governments, Learned Colleges and Tertiary Institutions.
3. To oversee the establishment and development of data collections concerned with the medical workforce and analyse and report on those data to assist workforce planning.

### AMWAC Urology Workforce Working Party Terms of Reference

The AMWAC Urology Workforce Working Party was established as a sub-committee of AMWAC and was asked to provide a report to AMWAC on the optimal supply and appropriate distribution of urologists across Australia, including projections for future requirements.

The Working Party held its first meeting on 15 September 1995 and presented its report to the AMWAC meeting of 27 May 1996. The report was then presented to the October 1996 meeting of AHMAC.

## **Membership of AMWAC**

### Independent Chairman

Professor John Horvath                      Physician, Sydney

### Members

Dr Bruce Armstrong                      Director, Cancer Control Information Centre, New South Wales Cancer Council

Ms Meredith Baker                      Director, National Institute of Labour Studies (Melbourne office)  
Senior Research Fellow, Institute of Economic and Social Research

Ms Meredith Carter                      Director, Health Issues Centre

Dr William Coote                      Secretary General, Australian Medical Association

Dr Susan Griffiths                      General Practitioner, Minlaton, South Australia

Professor John Hamilton                      Dean, Faculty of Medicine, University of Newcastle

Professor Ross Kalucy                      President, Medical Board of South Australia

Dr John Loy                      First Assistant Secretary, Hospitals and Health Financing Division, Commonwealth Department of Health and Family Services

Dr Richard Madden                      Director, Australian Institute of Health and Welfare

Mr Ronald Parker                      Secretary, Tasmanian Department of Community and Health Services

Mr David Phillips                      First Assistant Secretary, Higher Education Division, Commonwealth Department of Employment, Education and Training and Youth Affairs

Mr Abul Rizvi                      Assistant Secretary, Corporate Reform and Migration Strategy Branch, Commonwealth Department of Immigration and Multicultural Affairs

Dr David Theile                      Surgeon, Brisbane (former President, Royal Australasian College of Surgeons)

Mr John Wyn Owen                      Chairman, Australian Health Ministers' Advisory Council  
Director General, New South Wales Health Department

## **Membership of the AMWAC Urology Workforce Working Party**

### Chairman

Dr Peter Brennan                      AHMAC Medical Advisor

### Members

Dr Antony Low                          Vice President  
Urological Society of Australasia

Dr Craig Martin                        Medical Officer, Health Strategies  
Western Australian Department of Health

Dr Don Moss                            Chairman, Board of Urology  
Royal Australasian College of Surgeons

Mr Lindsay Pyne                        Chief Executive Officer  
Royal Hobart Hospital, Tasmania

Dr John Rogers                         President  
Urological Society of Australasia

Ms Joan Dowling                        Policy Officer  
AMWAC

The Working Party would also like to acknowledge the helpful comments provided by Professor John Horvath and Mr Paul Gavel (AMWAC); Dr Ron van Konkelenberg for assistance with the projections analysis; Mr Ross Saunders and Ms Joan Lonergan (DHFS), Mr John Harding and Ms Anne Broadbent (AIHW), and Ms Gail Hill (Urological Society of Australasia) for assistance with data collection.

## **INTRODUCTION, GUIDING PRINCIPLES AND METHODOLOGY**

### **Introduction**

In preparing this report, the Working Party's aim has been to promote appropriate urological services across Australia.

The main objective of the Working Party has been to promote an optimal supply and appropriate distribution of urologists, including projections for future requirements to the year 2006.

### **Guiding Principles**

In compiling this report, the Working Party adopted the following guiding principles:

- the Australian community should have available an adequate number of trained urologists, appropriately distributed to provide the urological services it requires;
- the community is best served when urologists have high standards of qualification and work with a high level of ongoing experience;
- the best assurance of standards is a high quality requirement for entry to practice;
- all Australian citizens must have access to a good standard of urological care irrespective of geography and economic status. In achieving this, convenience to the patient must be balanced against the quality of services that can be distributed to meet that convenience; and
- both public and private sectors must provide an adequate amount and quality of service.

The Working Party defined a urologist as:

A qualified surgeon who is conducting urological consultations, urological surgery, medico-legal consultations on urology or is in a full time or part time academic position relating to this specialty. It will include salaried positions and private practice. It does not include other practitioners who, for one reason or another, undertake urological work as part of their practice; nor does it include the training registrars who hold positions in hospitals or the service registrars who work in urology but are not recognised as being in training positions.

### **Methodology**

The approach of the Working Party has been to analyse existing data sources and to undertake consultation with relevant persons and organisations, in order to make informed comments on the factors affecting the current and future market for urological services.

In estimating workforce numbers, establishing a profile of the workforce and assessing its adequacy, the main sources of data were:

#### 1. Urological Society of Australasia (US)

The US keeps a variety of data, principally on number of Fellows and training posts and age and gender information. In addition the US and AMWAC conducted a survey of Fellows to supplement the existing data held by US. The survey was conducted in November 1995 and had a 78.4% response rate.

#### 2. Australian Institute of Health and Welfare (AIHW)

The principle AIHW data source is the annual Health Labour Force Survey. The Health Labour Force Survey presents national labour force statistics for registered medical practitioners, principally through a survey collected as part of the annual renewal of registration. The survey data used in this report is for 1992-93. This survey had an overall response rate of 88.5%.

#### 3. Department of Health and Family Services (DHFS) Medicare provider database

Medicare provider statistics define medical practitioners according to the predominant services billed to Medicare. The Medicare statistics include all practitioners who have billed Medicare for at least one service during a financial year.

The major deficiency with the use of Medicare data for workforce planning purposes is that data are not available on practitioners who are full time or salaried urologists in the hospital system and/or practitioners who do not render services on a fee for service basis. Medicare data excludes services rendered free of charge to public hospital patients and to Veterans' Affairs patients and compensation cases.

It should also be noted that because the Medicare statistics define providers according to the predominant service billed to Medicare, so providers who are not urology specialists but earn more than 50% of their income from urology procedures will be identified as non specialist urologists.

Wherever possible, distributional data has been interpreted using the rural and remote area (RARA) classification developed by the Commonwealth Department of Health and Family Services (DHFS 1994).

#### 4. AMWAC Public Hospital Specialist Vacancy Survey

AMWAC surveyed Australian public hospitals in July 1995, seeking information on specialist vacancies in anaesthetics, ophthalmology, orthopaedics and urology. The survey sought information on visiting medical officer (VMO) and staff specialist vacancies and vacancies filled by temporary resident overseas trained doctors (TRD). The survey had a 98.8% response rate, with all large metropolitan and rural hospitals responding.

## 5. Australian Bureau of Statistics (ABS)

ABS population data and projections are used as the sole source on population data. In making its population projections ABS uses four different series. The population projections in this report are based on Series A/B, where constant fertility and low overseas migration are assumed (ABS 1994).

## 6. Other sources of data

Two private companies, the Australasian Medical Publishing Company and Permail, collect details on the size and profile of specialist workforces; however the Working Party decided not to use this data as neither source offers complete coverage of the medical workforce and would provide no better picture of the urology workforce than the US, DHFS and AIHW data.

### **Key Assumption**

The Working Party would like to emphasise that the projections on supply and requirements are based on the assumption that there will be no significant change in existing national health structures.

Overseas experience indicates that significant structural changes to the Australian health system, for example the introduction of formalised co-ordinated care (managed care) arrangements or greater substitution of care by other health professionals, could substantially change medical workforce requirements in Australia (AMWAC & AIHW 1996).

## **SUMMARY OF FINDINGS AND RECOMMENDATIONS**

This report describes the characteristics of the current urology workforce, assesses the adequacy of that workforce, and projects workforce supply and requirements to 2006.

The report concludes that the current urology workforce is adequate. The report also concludes that the current projected level of graduate output will not be sufficient to meet expected future requirements, which it is estimated will grow by 1.6% per annum.

As a result minor increases in graduate output are recommended to move expected supply back into balance with projected requirements. This will require the establishment of additional urology training positions; up to a maximum of five extra training positions nationally by 2001 and a total of nine extra training positions nationally by 2006.

### **Description of the Current Urology Workforce**

The current size of the practising specialist urology workforce is 200 (US members). 227 specialist urology service providers are identified in Medicare data, the difference being 27 non specialist providers who earn more than 50% of their income from urology procedures.

New South Wales has the most urologists with 74 (32.6%), followed by Victoria with 60 (26.4%), and Queensland with 43 (18.9%). The Northern Territory does not have any resident urologists.

Medicare data show that since 1984-85 the urology workforce has grown by 31.2% (increasing from 173 in 1984-85 to 227 in 1994-95). Over the same period, US membership increased by 13% (177 in 1984-85 to 200 in 1994-95) and the population increased by 14%.

74.9% (170) of urology providers had their primary practice in a capital city (63.5% of population); 14.5% (33) in other major urban areas (8.2% of population); and the remaining 10.6% (24) in rural and remote areas (28.3% of population). This distribution varied considerably between States and Territories.

90.4% (162) of urologists hold a public hospital position, ranging from 95.7% of urologists in New South Wales to 75.9% in Queensland.

The average age of the urology workforce is 49.7 years and the modal age range is 40 to 49 years (57 urologists or 32.4%). 89 (50.7%) urologists are aged under 50 years, 31 (18.1%) urologists are over 60 years of age, and 55 (31.2%) urologists are in the 50 to 59 year age group.

There are two female urology surgeons, representing 1% of the workforce. Currently, in 1996, there are eight female urology registrars in training, representing 24% of all Australian urology trainees.

At present there are 33 approved training positions throughout Australia, but for 1996 there are a total of 36 advanced trainees with two in research and one in an overseas position. This is a 57% increase in training positions since 1988, from 23 to 36. Six training positions are outside capital cities (16.7%).

The AMWAC/US survey indicated that urology surgeons work an average of 49.8 hours per week. The modal range is between 51 and 60 hours per week (55 urologists).

77% of urologists work more than 40 hours per week. Urologists work more than 40 hours per week on average between the ages of 35 and 60 years of age, with a decline in average hours per week from 60 years onwards. The modal age range (the age range where the greatest number of hours was worked) was 45 to 59 years.

In 1994-95, each urology provider provided, on average, 2,809 Medicare services.

Between 1990-91 and 1994-95, the average number of Medicare services per urology provider increased by 19.6%.

The number of urological services provided increased by 31.2% from 486,189 services in 1990-91 to 637,670 services in 1994-95. In 1994-95, 55.8% (355,820 services) of total urological services were provided by urological surgeons. 20.6% of urological procedures were penile injections mainly provided by GPs. Penile injections have increased from 4,826 in 1990-91 to 47,341 in 1994-95. 12.8% of Medical Benefits Schedule (MBS) urological procedures were vasectomies, the majority of which are provided by general surgeons. It is these procedures that are performed by practitioners other than specialist urologists that account for the large increase in MBS urological procedures.

Selected MBS items (where 80% or more of the service is provided by urologists) showed a 6.7% increase from 78,602 in 1990-91 to 83,830 in 1994-95. The cost of these items (using the 1995 Medicare fee) increased by 6.3% over the same period, suggesting there has been little change in the mixture of cases.

In 1992-93, there were 173,800 hospital separations indicating a urological procedure. 44.6% of all urological procedures were provided to people over 65 years of age.

### **Adequacy of the Current Urology Workforce**

In terms of urology provider to population ratio (SPR), Western Australia has the lowest number of providers to population (1:90,621), whilst Tasmania has the highest (1:68,300). The Australian SPR is estimated at 1:79,400.

Using the Working Party's estimate of the current number of specialist urologists as 200, the Australian specialist urology SPR is 1:90,119 which is below the suggested US SPR of 1:80,000 to 1:85,000. When non specialist urologists are included the provider to population ratio is marginally above this suggested benchmark.

In 1996, in public hospitals, the urology salaried staff vacancies totalled 4 out of 12 salaried positions nationwide, with nine VMO session vacancies out of 310. One TRD was filling a vacancy in Tasmania.

From the AIHW 1995 waiting times survey, urology patients made up 9.8% of the national waiting list: 0.7% as Category 1 (admission desirable within 30 days) and 9.1% as Category 2. The clearance time for urology patients, compared to other specialties, was above average in teaching hospitals and about average in non teaching hospitals. For Category 1 patients the clearance times were within one month for all specialties.

The average waiting times in each State/Territory for a first urological consultation ranged from 2 to 4.6 weeks in private rooms and 1.6 to 28 weeks in public outpatients.

Patients referred with an urgent condition could be seen, on average, within 1.8 to 4.6 days in private rooms and 1 to 12.5 days in public outpatients.

Patients would expect to wait from 1 to 1.4 weeks for intervention for a Category 1 (admission desirable within 30 days) urological diagnosis in private hospitals and 2.5 to 4 weeks in public hospitals.

In the AMWAC/US Survey, 77% (137) of respondents who work in the public system indicated they were experiencing limitations on the work they could do in public hospitals.

33.5% (60) of urologists believe they could do more surgical sessions in public hospitals if resources were made available.

59% (105) of urologists believed that the number of urologists serving their area was satisfactory, 8.4% (15) believed that the numbers were too high and 33.1% (59) believed that the numbers were too low.

On balance, the Working Party concluded that the current urology workforce was adequately meeting demand. Public hospital vacancies and specialist SPR gave some indication of a shortfall but this could be balanced with waiting times, which for urgent or Category 1 patients were considered reasonable. A significant number of urologists expressed intentions to increase their workload if this was made possible by the public hospital system. This would suggest that the relatively long clearance times for Category 2 urology patients could be due to factors other than any inherent workforce shortage.

### **Projections of Requirements**

The population of Australia increased by 14% from 1984-85 to 1994-95. The population as a whole is expected to increase by 23% over the next 20 years.

It is estimated that the demand for urological services in hospitals will increase by 46.7% over the next 20 years, mainly due to the ageing of the population.

Urology is becoming increasingly dependant on technology. In some instances technology has made many operations redundant but on the other hand some technology demands more time in the operating theatre, whereas lithotripsy will probably reduce surgical time. Overall, the Working Party found no evidence to suggest that technology will dramatically increase or decrease the demand for urology but concluded it will change the way urologists practice.

### **Projections of Supply**

It is estimated that an average of nine new specialists will enter the workforce each year up to 1996 and 12 will enter the workforce from 1997 to 2001, a growth of approximately 1.4% per annum.

47.4% (52) of respondents to the AMWAC/US Survey over 55 years of age indicated that they expect to retire at 65 years of age. 46.9% of urologists indicated that they would prefer to reduce their workload over the next ten years.

It is expected that the proportion of women in the workforce will increase; given the increase in the number of female trainees; women represent 1% (2) of the current workforce but 24% (8) of Australian trainees.

### **Balancing Supply Against Requirements**

The Working Party concluded that the minimum annual growth in urological requirements will be 1.6% (population growth and ageing).

Between 1990-91 and 1994-95, urological procedures grew by 31.2% (an annual rate of 9.5%); however, this has to be balanced with a 6.7% increase between 1990-91 and 1994-95 in the Medicare procedures that are provided principally by urologists. This suggests an annual growth rate of 1.6 to 1.7%.

A precise growth in activity was difficult to determine and four scenarios, ranging from annual growth in requirements of 1.6% to annual growth of 9.5% were developed. The Working Party chose 1.6% as the preferred requirement target. This figure equates to growth due to population and ageing of the population; and is also the annual average growth rate for urology Medicare procedures that are provided principally by urologists.

The number of urologists, converted to hours per week, show that supply will increase from a current level of 9,442 hours per week to 10,853 hours per week in 2006; with the upper and lower projection range of 10,319 to 11,560 hours per week.

It is unlikely that the current level of graduate output (of 12 graduates a year from 1996 onwards) will be sufficient to balance future requirements of 1.6% per annum, which would require a graduate output target of 15 by 2006.

If the target of 15 urology graduates by 2006 is desired, an additional nine urology training positions would be required.

## RECOMMENDATIONS

The Working Party recommends:

1. There be an increase in the number of funded urology training positions and trainees to match an expected future growth in activity of 1.6% per year (this includes growth due to population and ageing of the population).
2. That State and Territory health departments undertake negotiations with the US for the establishment of additional urology training positions, initially up to five by 2001, distributed as shown in the following table:

**Additional urology training positions; by State/Territory, 1995 to 2006**

State/Territory	1996	2001	2006	Increase 1996 to 2001	Increase 1996 to 2006
NSW/ACT	12	15	16	3	4
Victoria	10*	10	11	0	1
Queensland	6	8	10	2	4
SA/NT	3	3	3	0	0
Western Australia	3	4	4	1	1
Tasmania	0	1	1	1	1
New Zealand	2#	0	0	-2	-2
AUSTRALIA	36	41	45	5	9

\* includes one research position

# one Australian research position and one Australian overseas position

Urgent consideration be given to establishing a training post in paediatric urology at Westmead Hospital, Sydney; and a further training post in provincial New South Wales (at either Gosford or Orange Base hospitals). Additional posts are also needed in Queensland to address the relative shortage in that state - Greenslopes or Queen Elizabeth II hospitals should be considered. Other additional posts may include Monash Medical Centre, Melbourne and Royal Hobart Hospital.

3. That current funding for training positions be guaranteed to ensure there is no net loss in training positions (recognising the concern that any loss of current training positions would create future urological workforce shortages).
4. State/Territory based urology services working groups, comprising US and State/Territory department of health representatives, be organised to co-ordinate the establishment of the new training positions and to oversee the introduction of any short term measures they may feel are necessary to meet localised service shortfalls (recognising that the increased number of graduates will not make an effective contribution to the urology workforce until 2001).
5. Options to meet localised shortfalls, for consideration by the urology services

working groups include local incentives to increase the current work load of specialist urologists; use of appropriately qualified and skilled overseas trained urologists; and increased skilling and use of general practitioners, particularly in rural areas.

6. That urology requirements and supply projections be monitored annually so that they can be amended if new trends emerge.
7. That this monitoring be coordinated by the US and AMWAC and the results incorporated into the AMWAC annual report to AHMAC. AMWAC will provide all necessary support.

## DESCRIPTION OF THE CURRENT UROLOGY WORKFORCE

As discussed in the Introduction, there are a variety of data sources on the numbers, attributes and distribution of urologists in Australia. While each of these data collections has some deficiency, it is possible to piece together a reasonably accurate and up-to-date profile of the workforce.

In establishing the profile of the current urology workforce the Working Party examined:

- Medicare data on urologists;
- US data on its Fellows and training arrangements;
- distribution of urologists;
- age and gender profiles of the workforce;
- the participation rate; and
- the services provided and performed by urologists.

### The Number of Practising Urologists in Australia

In 1995, the US had 200 non retired, full time, Australian urologist members. Medicare data for 1994-95 identifies 227 practising urologists (see Table 1). This represents 14.2% of surgeons practising in Australia in 1994-95.

After conducting a reconciliation process the Working Party agreed that the current number of practising specialist urologists is 200.

The discrepancy between the number of US members and the number of urologists identified under Medicare is due to the definition of urologist under Medicare which includes non urologists who are providing urological procedures as the major part of their work. This would include a number of general practitioners (GPs) who undertake a large number of urological procedures, eg GPs conducting penile injections.

**Table 1: Urological Society of Australasia members and Medicare urology service providers; by selected years, 1984-85 to 1994-95**

Year	US members	Medicare
1984-85	177	173
1988-89	188	192
1994-95	200	227

Source: US and DHFS

### Growth in the Urology Workforce

Tables 1 and 2 show the growth in the urology workforce since 1984. US has had a growth of 23 (13%) in its membership, and Medicare data shows a growth of 54 (31.2%) in the workforce. Population growth during the same period was 14%.

**Table 2: Growth in urology service providers; by State /Territory, 1984-85 to 1994-95**

Year	NSW	Vic	Qld	SA	WA	Tas	ACT	NT	Aust
1984-85	66	41	27	16	15	5	3	0	173
1994-95	74	60	43	20	19	7	4	*	227
% increase	12.1	46.3	59.3	25.0	26.7	40.0	33.3	-	31.2
% pop. increase	11.0	9.5	23.4	4.3	20.5	7.7	22.0	17.2	14.0

\* number less than 3

Source: DHFS and ABS

### Distribution of the Urology Workforce

The majority of urologists are located in New South Wales (32.6%) and Victoria (26.4%).

Table 3 (using Medicare data) shows the current distribution of urologists between States and Territories and by geographic location. Overall, 74.9% of urologists had their primary practice in a capital city (63.5% of population), 14.5% in other major urban areas (8.2% of population) and the remaining 10.6% in rural and remote areas (28.3% of population).

**Table 3: Distribution of urologists; by State/Territory and geographic location, 1994-95**

State/ Territory	AMWAC/ US survey	Total - Medicare	% of Australia	% capital city	% other major urban	% rural
NSW	70	74	32.6	71.6	13.5	14.9
Victoria	46	60	26.4	78.3	6.7	15.0
Queensland	28	43	18.9	55.8	37.2	7.0
SA	13	20	8.8	100.0	na	0.0
WA	13	19	8.4	100.0	na	0.0
Tasmania	5	7	3.1	42.9	42.9	14.3
ACT	3	4	1.8	100.0	na	0.0
NT	0	0	0.0	0.0	na	0.0
<b>Australia</b>	<b>178</b>	<b>227</b>	<b>100.0</b>	<b>74.9</b>	<b>14.5</b>	<b>10.6</b>

na - not applicable

Source: DHFS and AMWAC/US Survey

This distribution varied considerably between States and Territories with Tasmania and Queensland having a much lower proportion of urologists in capital cities and a higher proportion in other urban areas. This is not surprising given the population distribution in these States.

The proportion of urologists with their primary location in a rural area varies considerably between States and Territories, ranging from 15% in Victoria to 0% in South Australia, Western Australia and Northern Territory. A significant factor is that whilst rural and remote areas comprise 28% of population only 10.6% of urologists are located in a rural or remote area (see Table 3).

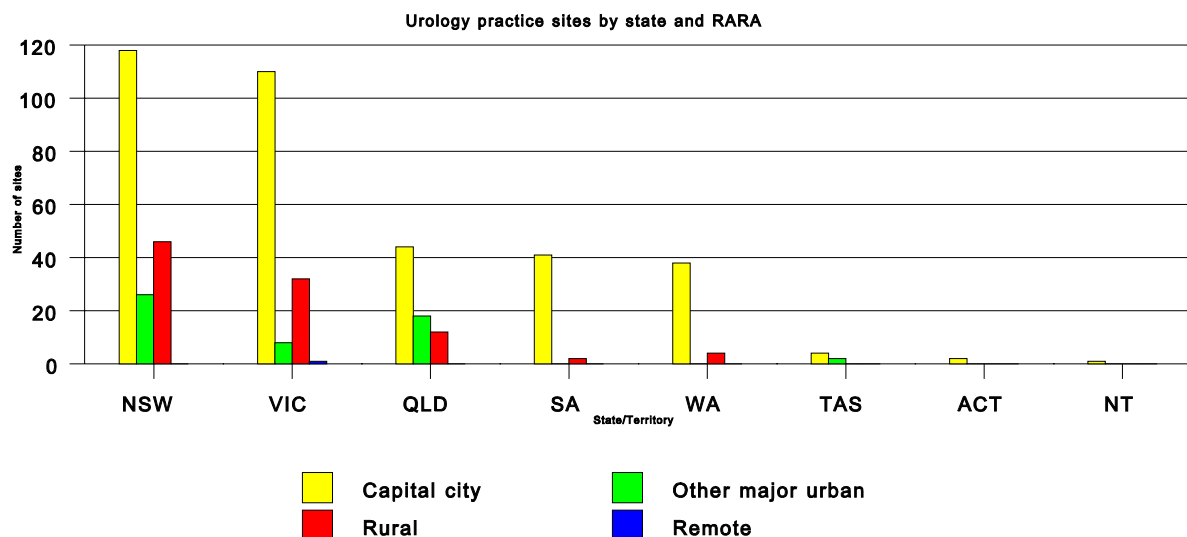
Gadiel and Ridoutt (1994) in their work on the specialist services in rural areas concluded that 11.7% of the specialist urology workforce was located in rural areas.

There have always been a number of urologists in major provincial centres in Victoria, New South Wales and Queensland, but it has often been more difficult to attract a specialist to rural areas. Current potential or actual vacancies exist in some provincial centres in New South Wales and Queensland (for example Wagga Wagga, Taree, Townsville and Cairns), though some of these are serviced by resident and visiting urologists.

The 178 respondents to the AMWAC/US Survey indicated a total of 361 practice sites (Figure 1). 110 worked in two or more sites. 55 worked in three or more sites. 17 gave postcodes of four practice sites and eight worked in five practice sites.

257 (71.2%) of the urology practice sites were in capital cities; 32 (8.9%) were in other major urban areas; 71 (19.7%) were in rural areas and only one (0.2%), in Victoria, was in a remote area as classified under RARA.

**Figure 1: Urology practice sites; by State/Territory and geographic location, 1995**



Source: AMWAC/US Survey

**Table 4: Urology practice sites and population; by State/Territory and geographic location, 1995**

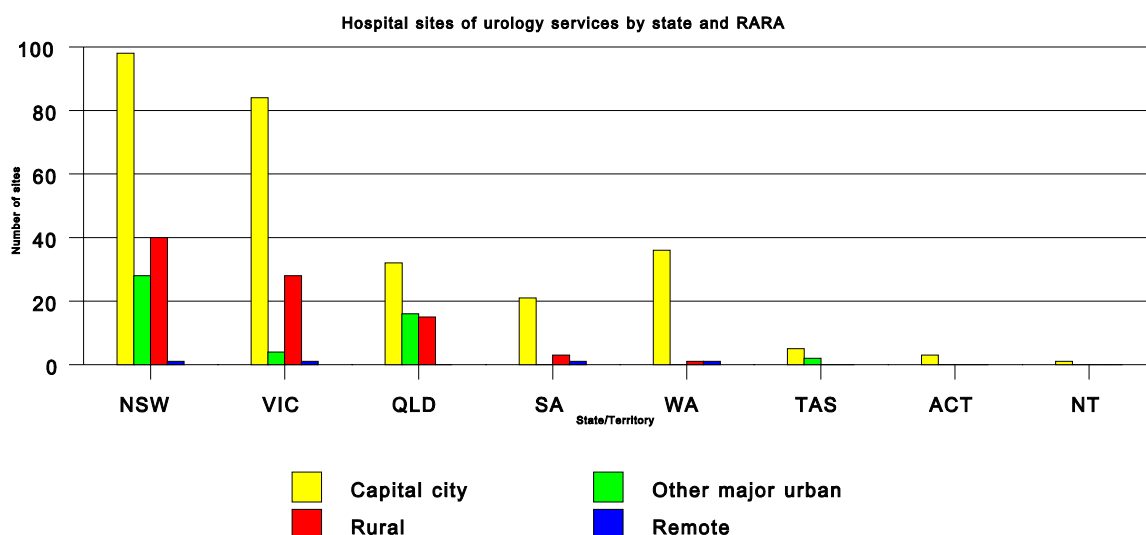
State/ Terr.	Capital city		Other major urban		Rural		Remote	
	% urologists	% pop.	% urologists	% pop.	% urologists	% pop.	% urologists	% pop.
NSW	61.2	62.3	12.7	11.6	26.1	24.6	0	1.5
Vic	76.2	72	1.9	2.6	21	24	0.9	1.4
Qld	64.7	45.9	21.6	20.5	13.7	29.9	0	3.7
SA	90.3	73.1	na	na	9.7	23.6	0	3.3
WA	87.5	72.7	na	na	12.5	18.5	0	8.8
Tas	60	40.1	40	20.6	0	33.8	0	5.5
ACT	100	99.6	na	na	0	0.4	na	na
NT	0	46.4	na	na	0	6.8	0	46.8

Population based on 1994 figures; na - not applicable

Source: US and ABS

Table 4 shows that in New South Wales and Victoria the practice sites follow the population. For the rest of Australia the critical population size required to support a specialist urologist and the geographic spread of the population needs to be considered. For example, 46.8% of the Northern Territory population (77,487 people) but this population is spread over a wide geographic area.

**Figure 2: Hospital sites, public and private, of urological services; by State/Territory and geographic location, 1995**



Source: AMWAC/US Survey

The 178 respondents to the AMWAC/US Survey provided 420 sessions in public and private hospitals (Figure 2). 66.2% of hospital services are provided in capital cities; 11.9% in other major urban areas; 21% in rural areas and 1% in remote areas.

Table 5 shows that in New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory, the hospital sites follow the population profile. For Western Australia, Tasmania and the Northern Territory the critical population size required to support a specialist hospital urological service and the geographic spread of the population needs to be considered.

**Table 5: Urology hospital sites and population; by State/Territory and geographic location, 1995**

State/ Terr.	Capital city		Other major urban		Rural		Remote	
	% urologists	% pop.	% urologists	% pop.	% urologists	% pop.	% urologists	% pop.
NSW	58.7	62.3	16.8	11.6	24	24.6	0.5	1.5
Vic	70.8	72	4.2	2.6	24.2	24	0.8	1.4
Qld	50.9	45.9	25.4	20.5	23.7	29.9	0	3.7
SA	80.8	73.1	na	na	15.4	23.6	3.8	3.3
WA	94.2	72.7	na	na	2.9	18.5	2.9	8.8
Tas	77.8	40.1	22.2	20.6	0	33.8	0	5.5
ACT	100	99.6	na	na	0	0.4	na	na
NT	100	46.4	na	na	0	6.8	0	46.8

Population based on 1994 figures; na - not applicable

Source: US and ABS

The US estimates that, on average, 80,000 to 100,000 people are needed to attract the services of one urologist. Allowing for regional catchment areas, and the need to provide adequate cover, the US considers that ideally, each centre be able to support two urologists. In turn this implies a necessary catchment population of at least 160,000 people. As a result, there are many centres, especially in South Australia and Western Australia, which can never anticipate having a resident urologist, and therefore visiting services are necessary.

Where population size is below the necessary critical mass to support a resident specialist, or there are no specialists interested in establishing a practice in a community large enough to support a resident urology service, a visiting service becomes an appropriate form of service delivery.

Currently, a visiting service is provided to 53 rural and provincial centres/areas on a regular basis by central urologists. This demonstrates a much wider area of coverage of urologists to provincial centres, than may otherwise be apparent.

Provincial centres that are visited by a urologist on a regular basis (weekly, fortnightly or monthly - in addition to those urologists resident in a provincial or rural area)

New South Wales	Armidale	Deniliquin
	Batemans Bay	Dubbo
	Bathurst	Grafton
	Bega	Kurri Kurri
	Bowral	Maitland
	Broken Hill	Murwillumbah
	Casino	Nelson Bay
	Cessnock	Scone
	Coffs Harbour	Tweed Heads
	Cowra	Wyang
Victoria	Benalla	Portland
	Castlemaine	Sale
	Colac	Shepparton
	Echuca	Stawell
	Hamilton	Swan Hill
	Horsham	Wangaratta
	Kyneton	Warragul
	Mildura	
Queensland	North Coast	
Northern Territory	Alice Springs	Darwin
South Australia	Clare	Millicent
	Minlaton	Mt Gambier
	Murray Bridge	Port Lincoln
	Port Pirie	Walleroo
	Yorketown	
Western Australia	Albany	Kalgoorlie
	Bunbury	Mandurah
	Geraldton	Northam

In areas where general surgeons have a major involvement in urology, attempts are made to coordinate that person's work, with supporting regional urologists. The US has created a category of corresponding membership, so the educational activities of the US are available to the general surgeons in those areas, who may not qualify for full US membership. This provides a mechanism for continuing medical education for surgeons who provide part time or support services in urology.

Northern Territory remains a special problem. It previously had a resident urologist in Darwin, but that person has since retired. Visiting services to Alice Springs and Darwin are provided by adult and paediatric urologists on a regular basis.

The above list does not include the resident urologists in provincial centres. Centres with resident urologists in New South Wales include Albury, Gosford, Lismore, Newcastle, Nowra, Orange, Port Macquarie, Tamworth, Wagga Wagga and Wollongong. In Queensland, there are resident urologists in Bundaberg, Buderim, Cairns, Coolangatta, Mackay, Nambour, Rockhampton, Southport, Toowoomba and Townsville. In Victoria there are resident urologists in Ballarat, Bendigo, Geelong, Shepparton, Traralgon, Warragul and Wodonga (Moss 1995).

### Public Hospital Involvement

From the AMWAC/US Survey, the majority (162 or 90.4%) of respondents held a public hospital position. States appear to vary significantly in terms of the number of urologists who hold public hospital posts. New South Wales, the Australian Capital Territory and Victoria have the highest proportion of urologists holding public posts and Queensland the lowest.

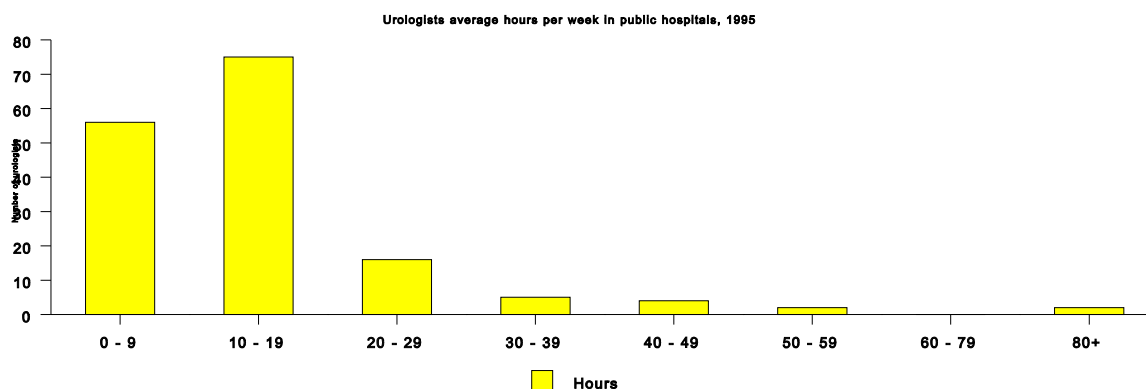
**Table 6: Urologists holding public hospital urology posts; by State/Territory, 1995**

	NSW	Vic	Qld	SA	WA	Tas	ACT
% holding public posts	95.7	95.7	75.9	92.3	84.6	80.0	100.0

Source: AMWAC/US Survey

The total hours worked per week in public hospitals is shown in Figure 3 and ranges from 2 to 80 hours with a mean of 14.2 hours and a median of 12 hours. 15 (9.3%) of respondents who hold a public hospital position indicated that they will be reducing their public sector workload over the next ten years which may increase urology waiting list clearance times and place an extra burden on other urologists in the public system.

**Figure 3: Urologists, average hours worked per week in public hospital, 1995**



Source: AMWAC/US Survey

## Age Profile

Table 7 provides information on the age distribution on the respondents to the AMWAC/US Survey. The youngest was 33 years of age. The mean age was 49.7 years. There were three (1.7%) respondents over the age of 70 years. The largest ten year age group was the 40-49 year age group (32.4%), followed by the 50-59 year age group (31.2%).

Table 8 provides a summary of the age profile of urologists by major categories. It shows that for Australia, 50.6% of urologists are aged under 50 years and 18.2% are aged over 60 years. Significantly, 31.2% are aged 50 to 59 years, indicating there will be a sizeable number of specialists leaving the workforce after the year 2000.

This trend varies considerably across States and Territories. For respondents aged under 50 years the range is from 40% of respondents in Tasmania to 61.5% in South Australia, and for respondents aged 60 years and over the range is from 7.7% in South Australia to 40% in Tasmania.

The average working life of a urologist is 30 to 35 years.

**Table 7: Age profile of urologists; by State/Territory and gender, 1995**

State/ Terr.	Sex	<39 years	40-49 years	50-59 years	60-64 years	65-69 years	70-74 years	Total
NSW	M	9	27	21	6	4	1	68
Vic	M	8	13	12	8	4	0	45
	F	1	0	0	0	0	0	1
Qld	M	5	8	9	4	1	1	28
SA	M	4	3	4	1	0	0	12
	F	1	0	0	0	0	0	1
WA	M	3	3	7	0	0	0	13
Tas	M	1	1	1	0	1	1	5
ACT	M	0	2	1	0	0	0	3
<b>Aust</b>	M	30	57	55	19	10	3	174
	F	2	0	0	0	0	0	2
	<b>Total</b>	<b>32</b>	<b>57</b>	<b>55</b>	<b>19</b>	<b>10</b>	<b>3</b>	<b>176</b>
%	Total	18.2	32.4	31.2	10.8	5.7	1.7	100
%	F	6.3	0	0	0	0	0	1.1

Source: AMWAC/US Survey

**Table 8: Age profile of US members; by State/Territory and major age group, 1995**

<b>Age</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>SA</b>	<b>WA</b>	<b>Tas</b>	<b>ACT</b>	<b>Aust</b>
% under 50 years	52.9	47.8	46.4	61.5	46.2	40.0	66.7	50.7
% 50-59 years	30.9	26.1	32.2	30.8	53.8	20.0	33.3	31.2
% over 60 years	16.2	26.1	21.4	7.7	0.0	40.0	0.0	18.1

Source: AMWAC/US Survey

### **Gender Profile**

Table 7 also provides information on the gender profile of the US membership. There are two fully qualified female urologists in Australasia (representing 1% of the membership), one of whom completed training in 1995 and one who has returned from overseas experience to commence practice in 1995. Both women are aged under 50 years of age.

Currently, in 1996, there are eight female urology registrars in training, representing 24% of all Australian trainees.

### **Participation Rate**

The level of active supply is affected by the participation rate of practitioners, in terms of their full time and part time status. Urologists working different hours can be converted to a standard estimate of productivity defined as full time equivalent (FTE), that is, determined by the number of hours worked on a full time basis.

Tables 10 and 11 detail the estimated hours worked per week by urologists, and Table 9 the average hours worked per week by urologists. This information comes from the AIHW Health Labour Force Survey (AIHW 1995a) and the AMWAC/US Survey. It should be noted that Medicare data was examined but not used, because the Working Party considered it provided a distorted picture, as its division between full time and part time is based on an income cut off point which would not pick up on work in a public hospital. The survey data on total hours worked was therefore considered a more accurate indication of participation.

The information in Table 10 shows that of the 187 respondents to the AIHW Survey;

- 91% worked over 40 hours per week;
- the majority (59.4%) worked between 51 and 70 hours per week, with the modal range being 61 to 70 hours per week (38%);
- nearly one fifth (19.8%) worked more than 70 hours per week; and
- 2.7% worked 20 hours per week or less.

In contrast the 178 respondents to the AMWAC/US Survey worked less hours overall:

- 76.7% worked over 40 hours per week;

- a large proportion (42.4%) worked between 51 and 70 hours per week, with the modal range being 51 to 60 hours per week (30.8%);
- only 5.2% worked more than 70 hours per week; and
- 1.7% worked 20 hours per week or less.

**Table 9: Average hours worked per week by urologists; by State/Territory, 1993**

Specialty	NSW	Vic	Qld	SA	WA	Tas	ACT	NT	Aust
Urology	69	60	75.5	55.4	57.1	57.5	33.5	na	58.3

na - not applicable

Source: AIHW

**Table 10: Estimated hours worked per week by urologists; by age group, 1992-93**

Hours	- 35 years	35-44 years	45-59 years	60-64 years	65-69 years	70 + years	Total
1-10	0	0	0	0	2	0	2
11-20	0	1	1	0	1	0	3
21-30	0	0	0	0	0	2	2
31-40	0	1	6	1	1	0	10
41-50	4	3	3	5	6	0	21
51-60	2	11	23	3	1	0	40
61-70	0	26	34	9	2	0	71
71-80	0	6	5	0	0	0	11
80 +	2	7	11	2	4	0	26
<b>Total</b>	<b>8</b>	<b>55</b>	<b>83</b>	<b>20</b>	<b>18</b>	<b>2</b>	<b>187</b>

Source: AIHW

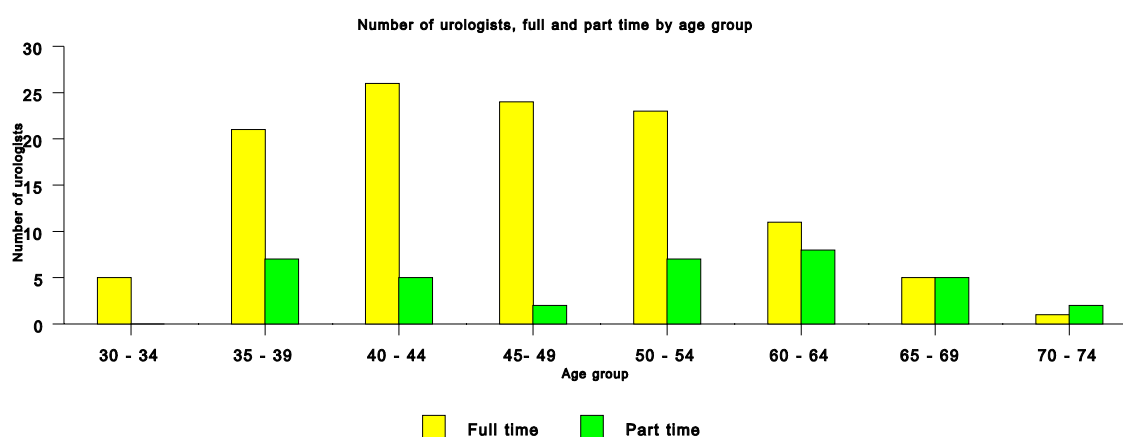
The distribution of hours worked by age (Table 11 and Figure 4) shows that urologists work on average more than 40 hours per week in most age groups with a gradual decline in hours worked from 60 years onwards.

Figure 4 illustrates that urologists have different work practices in all age groups, indicating that it may be more accurate to measure surgeons by hours worked/hours required than by looking at numbers of surgeons alone. This approach has been adopted in estimating future supply and requirements.

**Table 11: Estimated hours worked per week by urologists; by age group, 1995**

Hours	- 35 years	35-44 years	45-59 years	60-64 years	65-69 years	70 + years	Total
1-10	0	0	0	0	1	0	1
11-20	0	0	0	0	1	1	2
21-30	0	0	2	3	1	1	7
31-40	0	11	13	4	2	0	30
41-50	2	16	25	3	3	1	50
51-60	3	18	26	4	2	0	53
61-70	0	7	11	2	0	0	20
71-80	0	2	1	1	0	0	4
80 +	0	0	3	1	0	1	5
<b>Total</b>	<b>5</b>	<b>54</b>	<b>81</b>	<b>18</b>	<b>10</b>	<b>4</b>	<b>172</b>

Source: AMWAC/US Survey



**Figure 4: Urologists, full and part time\*; by age group, 1995**

\* Full time = 40 hours or more; Part time = less than 40 hours

Source: AMWAC/US Survey

### Services Provided and Performed

In 1994-95 the 227 urology providers, identified in Medicare data, provided 637,670 Medicare services (or 2,809 services per practitioner).

**Table 12: Medicare urologists, services provided and average fees charged, 1994-95**

	Urologists	Services	% Services direct billed	Service per doctor	Average fee per service (\$)
Urology	227	637,670	13.8	2,809.1	101

Source: DHFS

Table 13 provides information on the total number of Medicare services provided by urology providers in 1990-91 and 1994-95. The number of providers increased by 9.7% from 1990-91 to 1994-95 while the number of services provided increased by 31.2% over the same period.

**Table 13: Urology Medicare providers, services and fees, 1990-91 and 1994-95**

Year	Number of providers	Average number of services	Total number of services	Fees charged \$	Benefits paid \$
1990-91	207	2,349	486,189	47,883,800	32, 503,600
1994-95	227	2,809	637,670	64,117,270	43,862,732
% increase	9.7	19.6	31.2	33.9	34.9

Source: DHFS

The number of urological procedures billed to Medicare increased by 37.9% from 166,522 in 1990-91 to 229,588 in 1994-95. The largest rates of annual increase have been in the last two years. This growth is largely in non operative areas such as penile injections and prostate biopsies.

In 1994-95, 30.4% of urological procedures charged to Medicare were cystoscopies. The other most common MBS items within urology were penile injections (20.6% of urological items), vasectomies (12.8%) and prostate biopsies (8.6%). The distribution of urological services has changed somewhat from 1990-91. In that year 34% of MBS urological items were cystoscopies, only 2.9% penile injections, 19.2% vasectomies and 2.2% prostate biopsies.

From 1990-91 to 1994-95 there was a large increase in the number of urological procedures undertaken by non-specialist surgeons; from 667 to 17,182. The bulk of the services provided by non-specialist 'urologists' and other practitioners are relatively minor, such as intracavernosal penile injections and cystoscopies. In terms of the workload the bulk of the major urological surgical procedures, which take up significant amounts of time, are done by specialist urologists.

The US has already expressed its concern to the Health Insurance Commission about the apparent rapid growth in charges for penile injection therapy, and has recommended steps to review this portion of the urology schedule.

The top ten most common urological MBS items provided by selected provider groups (those specialties that provided most of the urological services in 1994-95) are detailed in Table 14.

This clearly illustrates the different distribution of services performed by the different provider groups. For example, in 1994-95, more than half of all urological services (55.8%) were provided by urology surgeons (all urological services includes all minor procedures). 43.7% of all services provided by obstetricians and gynaecologists were cystoscopies. In comparison, 56% of urological services provided by GPs and 92% of

urological services provided by non-specialist surgeons were penile injections; 73.7% of urological services provided by diagnostic imaging specialists were prostate biopsies; and 61.9% of urological services provided by general surgeons were vasectomies. Much of the paediatric urology is done by paediatric general surgeons, some is done by paediatric urologists, and some by general surgeons.

It should be noted that the US encourages GP involvement in patient care and has undertaken a number of education initiatives to lead to increased GP involvement in the care of patients with minor urological problems.

The proportion of urology services provided by other specialties varies from state to state. In 1994-95, in Tasmania, 72.7% of urological services were provided by specialist urologists, followed by 64.5% in South Australia. The lowest percentage was in the Northern Territory with only 0.5% of urological services provided by specialists, followed by Queensland with 49.3%.

**Table 14: Ten most common Medical Benefits Schedule urology items billed to Medicare; by providers, 1994-95**

MBS item	Urology Surgeon	GP	General Surgery	Surgery-non spec.	Obs. & Gynae.	Diag. Imaging	Other	Total - all specialties
Cystoscopy	61351	416	1803	385	4975	398	528	69856
Prostate biopsy/exc	13342	158	250	102	0	5819	165	19836
Prostatectomy	11710	96	354	9	0	0	125	12294
Penis injection	9081	20404	35	15810	58	384	1569	47341
Urethral stricture	5607	417	429	17	67	9	70	6616
Vasotomy or vasectomy	5526	8472	11338	482	415	0	3075	29308
Shock wave	2795	0	7	13	0	1	3	2819
Urethrotomy	2628	13	29	9	0	0	7	2686
Ureteroscopy	2195	0	16	11	0	0	9	2231
Bladder catheterisation	1981	5786	198	85	176	680	535	9441
<b>Total - top ten items</b>	<b>116216</b>	<b>35762</b>	<b>14459</b>	<b>16923</b>	<b>5691</b>	<b>7291</b>	<b>6086</b>	<b>202428</b>
<b>Total - all items</b>	<b>128128</b>	<b>36463</b>	<b>18315</b>	<b>17182</b>	<b>11378</b>	<b>7893</b>	<b>10229</b>	<b>229588</b>

Source: DHFS

To focus more closely on services provided by specialist urologists, the Working Party chose a subset of selected MBS items where over 80% of the services were provided by specialist urologists. These items are also believed to make up the major procedural workload of specialist urologists (see Table 15). The figures confirm the Working Party's clinical impression that for core urological procedures, there has not been a major change in overall numbers. However, there have been some significant shifts in certain

areas. There has been a large decrease of 62.8% from 1990-91 to 1994-95 in open stone procedures (ureterolithotomy). These procedures have been replaced by shock wave lithotripsy (a 37.6% increase) and ureteroscopy (a 68.5% increase). There has also been an increase in cystoscopic procedures. There has been a change from urinary conduits to urinary reservoirs and a move to radical prostatectomies for prostate cancer.

**Table 15: Selected Medical Benefits Schedule items, growth in services provided; by specialist urologists and weighted price, 1990-91 and 1994-95**

<b>MBS items</b>	<b>1990-91</b>	<b>1994-95</b>	<b>% increase</b>	<b>cost* (\$ &gt;000) 1990-91</b>	<b>cost* (\$ &gt;000) 1994-95</b>	<b>% increase</b>
Nephrectomy/ Nephro- ureterectomy	859	870	1.3	728.79	758.67	4.1
Ureterolithotomy pyelo/nephro	494	184	-62.8	349.25	132.39	-62.1
Shock wave lithotripsy	2005	2759	37.6	1017.94	1400.74	37.6
Intestinal urinary reservoir/conduit	156	136	-12.8	153.91	145.49	-5.5
Nephroscopy and PCN procedures	1106	775	-29.9	571.04	409.98	-28.2
Ureteroscopy	1303	2195	68.5	591.10	1044.91	76.8
Diagnostic cystoscopy	31941	41726	30.6	4278.62	5510.21	28.8
Endoscopy	11522	11211	-2.7	3295.25	3274.45	-0.6
Litholopaxy	551	626	13.6	188.72	214.41	13.6
Bladder total excision	140	128	-8.6	109.61	100.21	-8.6
Prostatectomy open/radical	458	1498	227.1	380.92	1385.46	263.7
Prostatectomy endo/TURP/laser	12555	11502	-8.4	10674.26	9779.00	-8.4
Urethral sounds	11594	7406	-36.1	581.89	366.57	-37.0
Urethrotomy int/optical	3834	2628	-31.5	730.61	543.26	-25.6
Bladder neck reconstruction	6	100	1566.7	5.10	85.02	1566.7
Artificial urinary sphincter bulbar/ BN/pump/ revision	78	86	10.3	42.71	43.93	2.9
<b>Total</b>	<b>78602</b>	<b>83830</b>	<b>6.7</b>	<b>23699.72</b>	<b>25194.67</b>	<b>6.3</b>

\* 1995 MBS fees are used. Source: DHFS

Using these selected MBS items, the total number of services increased by 6.7% from

78,602 in 1991-90 to 83,830 in 1994-95. The cost of these items, using the 1995 Medicare fee (and therefore allowing for consumer price index increases), increased by 6.3%. This suggests that there has been little change in the mixture of cases or relative work value in this range of procedures, that is, time demands have increased at a similar rate to procedures.

Table 16 provides data on hospital separations with a principal diagnosis indicating urology by age group. People 65 years and over had the highest number of procedures compared with other age groups at 44.6% of the total procedures. This is quite significant given they represent only 11.7% of the total population.

**Table 16: Hospital separations with a principal diagnosis indicating urology (>000s); by age group, 1992-93**

	< 15 years	15-29 years	30-44 years	45-64 years	65 + years	Total
1993 population	3,831.1	4,108.8	4,129.2	3,531.4	2,060.9	17,661.4
% of population	21.7	23.3	23.4	19.9	11.7	100
Separations	15.9	13.5	20.3	46.6	77.5	173.8
% of total separations	9.1	7.8	11.7	26.8	44.6	100

Source: AIHW and ABS

### **Training Arrangements**

Since the development of a formal training program in urology, there had been a fairly steady number of accredited training posts up until 1988. At this time, there was a total of 28 accredited training positions, comprising 23 in Australia and five in New Zealand. Over the subsequent years, there has been a steady increase in posts, as further training positions became available (see Table 17). This followed the demonstrable need for increased numbers of urologists to service the community, in both the public and private sectors.

In 1995, there were 42 accredited trainees, including 34 in Australia and eight in New Zealand. Of these, two were on overseas exchange attachments from the United Kingdom.

In 1996, an additional 12 trainees have commenced training, and there will be a total of 44 Australasian trainees, including 36 Australians. None of the positions will be filled by overseas trainees for 1996. There are eight females amongst the 44 advanced trainees (four in Victoria, two in Queensland, one in Western Australia and one in South Australia).

Between 1988 to 1996, there has been a 57% increase in total numbers of training positions in the Australasian scheme; that is an additional 16 posts from the starting level of 28. For Australian trainees alone, in the period up to 1996, there has been an increase from 23 to 36 trainees (56.5%). This marked change has been achieved by steady encouragement of hospitals to add additional registrar positions where satisfactory units were available (Moss 1995).

Entrants to Advanced Training in urology are selected from applications received after notification to all advanced trainees. They are selected in a national selection scheme between Australia and New Zealand, after consideration of their applications, references, and interview by sectional training committees. The applications must include a curriculum vitae, with answers to specific questions regarding needs felt to be of importance in work as a urologist, including communication skills, and technical skills.

For entrants in 1996, 32 applications were considered, and 12 new trainees appointed to the combined Australasian scheme. This includes two Australians who are appointed to vacant posts in New Zealand, both of whom anticipate they will complete their training in Australia and return to work here.

There are currently 42 training posts, including seven in New Zealand, plus two research trainees. As the scheme is run on a combined basis by the Australasian Board of Urology, combined numbers must be considered. New Zealand numbers are generally tailored to the anticipated need for urologists in New Zealand, but it should be noted that a number of New Zealand trainees have subsequently immigrated to work in permanent positions in Australia. As mentioned earlier, for 1996, there will be two Australian trainees in New Zealand posts, so there will in fact be 36 Australians in training positions for 1996, including two spending a year in full time research, which will serve as accredited time.

Following admission to training, three years must be spent in fully accredited clinical posts, plus a fourth year spent in additional training. Fourth year training may be in a sub-specialty area or gaining exposure to a broader experience interstate or overseas. The fourth year of training will not usually involve one of the fully accredited posts, so that at any time there may be 56 to 60 urologists in training. On average, the current numbers of training posts will produce 14 additional fully qualified urologists to commence practice in any one year for Australasia, including 12 for Australia.

Training positions must provide an acceptable range of experience in workload and educational opportunities, to receive accreditation. Operative workloads of the trainees are checked on computer printouts every six months, along with mentor reports of the trainees. Each training post is reinspected at five year intervals, or earlier should any problems become apparent.

The trainees in each State/section are provided with a regular teaching program coordinated by the State Training, Accreditation and Education Supervisor. Trainees in clinical posts are employed and paid for by the individual hospitals, and pay a training fee to the Royal Australasian College of Surgeons (RACS) each year. 50% of this fee is rebated to the US, and this is used to provide educational programs to the trainees, and recompense the training supervisors for administration costs. All training supervision is honorary, and in many cases this involves a substantial amount of work by Members of the RACS Board of Urology (Moss 1995).

**Table 17: Urology training positions; by State/Territory and hospital (including New Zealand), 1988 to 1997**

<b>State/Territory</b>	<b>Positions established in 1988</b>	<b>Additional training posts and year of commencement</b>
New South Wales/ Australian Capital Territory	2 Royal Prince Alfred 2 Prince Henry 1 Concord 1 Royal North Shore 1 St Vincent's 1 Westmead 1 Newcastle	Wollongong 1992 St George 1994 Woden Valley (ACT) 1995
Victoria	1 Alfred 1 Repatriation Heidelberg 1 Royal Melbourne 1 St Vincent's	Albury/Wodonga 1991 Ballarat 1991 Geelong 1993 Royal Melbourne (no. 2) 1995 Repatriation Heidelberg (no. 2) 1995
Queensland	2 Royal Brisbane 2 Princess Alexandra 1 Greenslopes (ceased at the end of 1994)	Mater Misericordiae 1993 Gold Coast 1995
South Australia	1 Royal Adelaide 1 Flinders Medical Centre 1 Queen Elizabeth (only 2 of these were used in any one year)	All 3 training posts used from 1995 onwards
Western Australia	1 Royal Perth 1 Sir Charles Gardiner 1 Fremantle	(Royal Perth Rehabilitation to commence 1997)
New Zealand	2 Auckland 1 Wellington 1 or 2 Christchurch 1 Hamilton	Christchurch (no. 2) 1995 Tauranga 1995 Research 1 Auckland Childrens'/ Auckland (no. 2) 1996

Source: US

**Table 18: Urology training posts; by State/Territory, 1988 to 1995**

Year	NSW	Vic	Qld	SA	WA	ACT	Aust
1988	9	4	5	2	3	0	23
1989	9	4	5	2	3	0	23
1990	9	4	5	2	3	0	23
1991	9	6	5	2	3	0	25
1992	10	6	5	2	3	0	26
1993	10	7	6	2	3	0	28
1994	11	7	5	2	3	0	28
1995	11	9	6	3	3	1	33
% increase 88 - 95	22.2	125.0	20.0	50.0	0	100	43.5

There are no training posts in Tasmania and the Northern Territory.

Source: US

Table 19 shows the distribution of urology training posts by State/Territory in 1996. The distribution of training posts, on the whole, reflects the distribution of the population, except for Tasmania where there are no training positions and 2.7% of the population (478,100 people).

**Table 19: Urology training posts; by State/Territory, 1995**

State/Territory	NSW	Vic	Qld	SA	WA	Tas	NT	ACT
% of total trainees	33.3	27.3	18.2	9.1	9.1	0	0	3
% of total population	33.9	25.0	18.1	8.2	9.6	2.7	1.0	1.7

Source: US and ABS

In urology, there are very few non-accredited registrar positions and none that would currently be of a satisfactory standard to be seriously considered for inspection for a potential trainee. A further post has been reinspected and is under consideration for reinstatement on the program (Greenslopes Hospital in Queensland). A number of new posts are currently under consideration. These include Orange Base, Gosford and Lismore Base hospitals in provincial New South Wales. A paediatric urology rotation at the new Childrens' Hospital at Westmead in Sydney would also appear to be an ideal training rotation; although to date the New South Wales Training, Accreditation and Education Sub-Committee's approaches have been rejected, on the basis of limited available funding. In Queensland an additional post, at the Queen Elizabeth II Hospital is to be inspected in the near future. Proposals for additional posts are also being considered from Monash Medical Centre, Melbourne and Royal Hobart Hospital. An

additional post at the Royal Perth Rehabilitation Unit has been approved to commence in 1997.

In the past, all training had been performed in city urological centres, and there was often no mechanism for trainees to become aware of the possibilities and advantages of practice in provincial areas. As a method of potentially resolving this problem, a number of training posts have been established in major centres outside of capital cities in Victoria and New South Wales. In Victoria, three of the nine advanced training posts are in major urban centres (Ballarat, Albury/Wodonga and Geelong) and two of the 12 training posts in New South Wales are also in major urban areas (Newcastle and Wollongong).

Training posts need an absolute minimum of two urologists, preferably three, and a dedicated urology ward with an adequate range of workload and full urological equipment. Unfortunately, some provincial centres are unable to provide the range of training experience.

Training posts outside of capital cities can, however, offer a number of advantages, especially the exposure of trainees to the wide range of urology that is possible in the country, as well as the exposure to some particular sub-specialty areas, that may not otherwise be seen in their training. This may include reconstructive urology, paediatric urology, and a large amount of endoscopic stone work. It also exposes trainees to the attractions of work in a rural centre and already there are signs of recent graduates who have been through the rural posts becoming interested in returning to work in country areas.

Recent appointments of urologists to major provincial and urban locations include Albury/Wodonga, Geelong, Bendigo, Coffs Harbour and Newcastle. However, in Queensland, despite several new urologists locating in provincial areas (Southport, Nambour, Cairns, Rockhampton and Townsville), further vacancies remain.

To date, there has been no major provincial centre in Queensland which has a unit of sufficient quality to be considered for an adequate training post; although as noted it is hoped that Lismore Base Hospital (located in northern New South Wales, which functions in the Northern Section as part of the Queensland training area) will be able to be considered for a trainee in the near future.

Several hospital training posts are currently under review because of funding cutbacks, resulting in reductions in unit workloads (eg Royal Brisbane and Royal Melbourne). The Working Party recognises that over time some training positions may need to be relocated. However, the present level of training positions need to be maintained as any net loss to training positions would create future urological workforce shortages.

Respondents to the AMWAC/US Survey suggested that urology trainees now require a broader knowledge of drug interactions and disease, along with training in new technologies. Respondents also saw the decrease in the number of patients managed in public hospitals affecting training requirements for advanced trainees. It was also suggested that Australia should broaden its training responsibilities to cover the Western Pacific region.

## ADEQUACY OF THE CURRENT UROLOGY WORKFORCE

There are a number of indicators of the adequacy of a medical workforce. No single measure can provide a definitive assessment, however by examining each it is possible to gain an indication of whether a workforce is adequately meeting current demand or if there is a significant shortfall or oversupply. The indicators chosen by the Working Party were:

- surgeon:population ratio;
- public hospital vacancies;
- elective surgery waiting lists and waiting times;
- waiting times for consultations; and
- perceptions of the adequacy of the current workforce.

### Urology Surgeon:Population Ratio

The urology workforce has grown relatively quickly over the past ten years. In 1984-85, 173 urologists were identified from Medicare data. The figure in 1994-95 was 227 an increase of 31.2% over the period. The overall numbers of urologist provider per population increased from 1:91,262 to 1:79,400 between 1984-85 and 1994-95 (Table 20).

Using the Working Party's estimate of the current number of specialist urologists of 200 will produce a specialist urology SPR of 1:90,119.

**Table 20: Urology provider: population ratio, using Medicare data; by selected years, 1984-85, 1988-89 and 1994-95**

Year	Urologists	Population ('000)	Population per Urologist
1984-85	173	15,788.3	91,262
1988-89	192	16,814.4	87,575
1994-95	227	18,023.8	79,400

Note: 1994-95 population is an estimate  
Source: DHFS and ABS

**Table 21: Urologist: population ratio, using US full time Australian members; by selected years, 1984-85, 1988-89 and 1994-95**

Year	Urologists	Population ('000)	Population per Urologist
1984-85	177	15,788.3	89,199
1988-89	188	16,814.4	89,438
1994-95	200	18,023.8	90,119

Note: 1994-95 population is an estimate  
Source: US and ABS

A US submission to the 1988 Doherty enquiry suggested that the SPR for urology should be 1:65,000. This calculation was based on the British Association of Urological Surgeons recommendation that the SPR be 1:130,000 with two urologists per unit. At that time the SPR for the United States was 1:40,000, United Kingdom 1:130,000 and Ireland 1:170,000. There was no firm basis for this original prediction. In 1992 an RACS manpower study subsequently adapted this figure of 1:60,000 despite strong opposition from the US. Anecdotally, urological surgeons that work in areas with a population catchment of about 60,000, state there is not enough work to support one urologist.

To maintain a high level of ongoing experience and to ensure that urologists perform a reasonable volume of surgical work, the US suggests that the SPR for Australia should be in the range of 1:80,000 to 1:85,000.

The fact that the current specialist SPR is slightly below this benchmark could be taken to indicate there is a shortage of urologists; although when the total number of Medicare defined urologists is used (which includes non specialist urologists) the current SPR is marginally above this benchmark.

There is considerable variation in the provider to population ratios between the States and Territories and this is highlighted in Table 22, where ratios based on Medicare data range from 1:68,300 in Tasmania to 1:90,621 in Western Australia.

**Table 22: Urology provider:population ratio, using Medicare data; by State/Territory, 1984-85 and 1994-95**

Year	NSW	Vic	Qld	SA	WA	Tas	ACT	NT
<b>1984-85</b>								
Urologists	66	41	27	16	15	3	3	0
Pop. ('000)	5464.5	4120.1	2571.2	1371.2	1418.6	442.8	251.4	148.5
SPR	82,795	100,490	95,230	85,700	94,573	147,600	83,800	-
<b>1994-95</b>								
Urologists	74	60	43	20	19	7	4	0
Pop. ('000)	6108.4	4500.8	3255.7	1475.2	1721.8	478.1	309.0	174.1
SPR	82,546	75,013	75,714	73,760	90,621	68,300	77,250	-

\* number less than 3  
Source: DHFS and ABS

Internationally, in 1994, there is a large range of urologist:population ratios, ranging from 1:27,700 in United States to 1:214,300 in South Africa. Differences in health structures make international comparisons difficult, for example in the United States and Germany (SPR 1:30,800) urologists provide primary care, that is as general practitioners in urology. This has resulted in a reduced number of surgical operations per urologist.

### **Public Hospital Vacancy Rate**

The difference between active supply and current requirements is expressed as the vacancy rate or level of unfilled positions.

The 1995 Public Hospital Specialist Vacancy Survey undertaken by AMWAC had a 98.8% response rate, with all large metropolitan and rural hospitals responding.

The survey showed five vacancies out of 12 FTE urology salaried staff vacancies and 15 urology VMO sessions vacant out of a total of 310.

The survey also found there was one TRD filling a position in Tasmania.

These vacancies were checked in April 1996 and it was found that there were four salaried staff vacancies and nine VMO sessions vacant. However, the US were unaware of 12 staff specialist positions and believe that some may be part time positions. It is not possible to determine how many urologists fill the 301 filled VMO sessions and the nine vacant VMO sessions could be filled by three to nine urologists depending on how many sessions they undertake in a week.

The public hospital vacancies give no evidence of oversupply and a slight weight to undersupply, although the Working Party believes that these positions could probably be filled from the existing workforce.

### **Elective Surgery Waiting Lists and Waiting Times**

Elective surgery waiting lists are often used as indicators of the adequacy of services. However, the Working Party took the view that waiting lists were not a significant indicator of the requirement for services because there is a lack of consistent standardised collection and reporting which hampers any meaningful national interpretation.

Total numbers of people on waiting lists are of limited use. They conceal the fact that large numbers of people proceed through the system within a reasonable time (Gillett and Mays 1994). Moreover, waiting lists are open to manipulation, especially in the way they are maintained and through such devices as the allocation of theatre time and resources.

The AIHW has tried to provide some degree of national interpretation of waiting lists by conducting, in 1994 and 1995, two surveys of State and Territory health authorities which aimed to collect nationally consistent information. The most recent report (Moon 1996) emphasised waiting times, as waiting list size is a result of many factors including the size of the hospital, the number of people in the associated community and the health needs of that community. It does not indicate the ability of the hospital system to meet the demand for elective surgery. However, measurement of waiting time for elective surgery does address this issue.

**Table 23: Characteristics of admissions from elective surgery waiting lists, Australian public hospitals; by urology surgeon and indicator procedure, 1995\***

	Proportion of patients who were:		
	Category 1 patients %	Intended same-day patients %	Public patients %
Urology	31	44	85
Prostatectomy	25	3	88
All patients	30	44	82

\* excludes Queensland

Source: AIHW

The proportion of urology admissions that were classified as Category 1 was around the average for all specialties. As was the percentage that were same day patients. Category 1 patients are those where admission is desirable within 30 days.

The largest groups of patients on the waiting list were Category 2 patients in the orthopaedic and general surgery groups, each accounting for almost 20% of the list. Urology patients made up 9.8% of the list with 0.7% as Category 1 and 9.1% as Category 2.

**Table 24: Urology and indicator procedure clearance times for elective surgery waiting lists (months), Australian public hospitals; by hospital type, 1995\***

	Teaching hospitals	Non-teaching hospitals	All hospitals
Urology	3.1	2.5	2.9
Prostatectomy	4.9	2.8	3.9
All patients	2.7	2.6	2.7

\* excludes Queensland

Source: AIHW

The 1996 AIHW report on elective surgery waiting lists (Moon 1996) found that the clearance time for urology patients, compared with other specialties, was above average in teaching hospitals, and about average in non-teaching hospitals. For Category 1 patients, the clearance times were within one month for all specialties (see Table 24). Clearance times are expressed in months, and are defined by the number of patients on the waiting list at a point in time divided by the number of patients cleared (admitted and removed) from the waiting list per month. Clearance time is the theoretical time it would take to clear all patients from the waiting lists at a point in time, assuming the clearance rate remained constant.

Victoria had the lowest clearance times for elective urology Category 1 patients (0.5 months) and the Northern Territory had the lowest for Category 2 patients (1.7 months). The Australian Capital Territory had the highest clearance times for Category 1 patients (3.1 months) and Category 2 patients (11.7 months). The overall clearance of urology patients of 0.8 months for Category 1 would suggest that urgent urology patients are being treated within a reasonable time.

For Category 2 urology patients the overall clearance time was 3.7 months. This is a relatively long clearance time compared to all patients and may suggest a shortage of urologists. However, from the AMWAC/US survey a significant number of urologists would be willing to increase their workload if this was made possible which may suggest that the problem lies with the hospital infrastructure rather than a workforce shortage.

One important point to note is that the increase in number of patients leaving the private system could result in under utilisation of the extensive system of private health care delivery that currently provides approximately 15% of elective urology surgery (Moon 1996). The public system will have to take on a larger burden and this could result in an increase in urology waiting lists and waiting times.

Changes in surgical practice over the last two decades, such as day surgery and minimal invasive surgery, have had a significant impact on waiting times and have enabled more patients to be admitted to acute hospitals. Day surgery has accelerated the decline in length of stay, particularly in urology. The proportion of day surgery patients in public hospitals has increased from 20% in 1987-88 to 28% in 1991-92. 43% of all admissions to private hospitals are day surgery patients.

Ultimately, the role that the urology workforce plays in the length or clearing of waiting lists is difficult to estimate. There may be some instances when operating theatre lists are cancelled due to unavailability of urology staff but this is not quantifiable.

Given these factors it is considered difficult to use waiting lists and waiting times as a totally reliable indicator of a medical workforce shortage. However, as better reporting and national guidelines on monitoring are developed, waiting lists may become a more useful tool.

### **Waiting Times for Urological Consultations and Procedures**

In the AMWAC/US Survey, urologists were asked the following questions about waiting times:

- waiting time for a standard first consultation, private and public;
- waiting time for a referred patient with an urgent condition, such as solid mass in the kidney, private and public; and
- waiting time for a major procedure because of a disabling condition: category 1, carcinoma of the kidney; category 2, trans-urethral resection of the prostate (TURP) for moderate obstructive symptoms; and category 3, vasectomy reversal, private and public.

The majority of respondents to the AMWAC/US Survey indicated that they see most of their patients for consultations in private rooms whether insured or uninsured. A number of areas do not have outpatient clinics in public hospitals.

There is an impression amongst urologists that the rate of initial consultation has increased. This is confirmed by Medicare data which shows an increase of 34.5% from 340,775 consultations in 1990-91 to 458,262 consultations in 1994-95. There was a 5.2% increase from 1990-91 to 1991-92, 6.6% increase from 1991-92 to 1992-93, a 12.3% increase from 1992-93 to 1993-94, and a 6.8% increase from 1993-94 to 1994-95.

Possible reasons for this increase include anxiety by GPs as a result of recent changes in the legal interpretations of the duties of the GP. The subsequent increase in "defensive medicine" type of referrals for comparatively trivial conditions has been noticeable (Rogers 1995). There is also a public expectation that they will be referred to a specialist and, once referred, patients demand more information which requires longer consultation times. Similarly, medico-legal considerations are also increasing consultation times and sometimes resulting in unnecessary investigations.

#### First consultation

It takes significantly longer to have a first consultation in a public outpatient unit than to have a private consultation in most states. In New South Wales the average waiting times were very similar with 3.8 weeks for private rooms and 3.6 for public outpatients and in the Australian Capital Territory the average waiting for public outpatients (1.6 weeks) was less than private rooms (4.6 weeks). Victoria, Queensland, South Australia and Tasmania showed public waiting times to be four times longer than private waiting times and Western Australia's public waiting times were three times longer than private.

**Table 25: Average waiting time for first urological consultation, public and private rooms; by State/Territory, 1995**

<b>State/Territory</b>	<b>Mean time private rooms (weeks)</b>	<b>Mean time public outpatient (weeks)</b>
New South Wales	3.8	3.6
Victoria	2.0	8.5
Queensland	3.5	28.1
South Australia	2.0	10.3
Western Australia	4.5	13.8
Tasmania	2.9	11.9
Australian Capital Territory	4.6	1.6

Source: AMWAC/US Survey

Non urgent consultations in urology may include impotence, minor prostatic symptoms and requests for vasectomies. Urologists consider that minor delays in such consultations have no significant consequence for health care. On the other hand all urgent cases can be seen promptly by most urologists.

#### Patients referred with an acute condition

Referral times for urgent conditions are much shorter than general referrals. All States/Territories have a mean waiting time in private rooms of under seven days and under 14 days in the public system. Only in the Australian Capital Territory would an urgent condition be seen in under one week in the public system.

**Table 26: Average waiting time for a urological consultation on a referred urgent condition, public and private rooms; by State/Territory, 1995**

State/Territory	Mean time private rooms (days)	Mean time public outpatient (days)
New South Wales	3.3	7.4
Victoria	3.3	10.8
Queensland	2.1	12.5
South Australia	1.8	11.0
Western Australia	3.1	9.0
Tasmania	4.6	8.3
Australian Capital Territory	3.7	1.0

Source: AMWAC/US Survey

#### Hospital procedure waiting times

Urologists were asked how long a patient would expect to wait for intervention for a category 1 diagnosis, eg carcinoma of the kidney. Waiting times for privately insured patients, or those who pay for procedures, were one to 1.4 weeks in all States and the Australian Capital Territory. In most States waiting times in the public system were two to three weeks. Queensland and the Australian Capital Territory waiting times are marginally longer at 3.1 and four weeks respectively.

**Table 27: Average waiting time for a urological intervention for a major procedure (eg carcinoma kidney), private and public hospital; by State/Territory, 1995**

State/Territory	Mean time private hospital (weeks)	Mean time public hospital (weeks)
New South Wales	1.1	2.8
Victoria	1.0	2.3
Queensland	1.0	3.1
South Australia	1.0	2.6
Western Australia	1.2	2.6
Tasmania	1.4	2.5
Australian Capital Territory	1.3	4.0

Source: AMWAC/US Survey

Urologists were asked how long a patient would expect to wait for intervention for a category 2 diagnosis, eg TURP for moderate obstructive symptoms. Private patients would expect to wait one to three weeks in all States; for the Australian Capital Territory the mean time was 3.6 weeks. In most States waiting times in the public system were about 15 to 20 weeks; however Queensland (42.6 weeks), Western Australia (35.9 weeks) and the Australian Capital Territory (36.9 weeks) significantly exceed waiting times compared to the rest of Australia.

**Table 28: Average waiting time for a urological intervention for category 2 diagnosis (eg TURP), private and public hospital; by State/Territory, 1995**

State/Territory	Mean time private hospital (weeks)	Mean time public hospital (weeks)
New South Wales	2.3	15.4
Victoria	2.1	16.8
Queensland	2.4	42.6
South Australia	1.3	20.0
Western Australia	2.7	35.9
Tasmania	3.0	16.9
Australian Capital Territory	3.6	36.9

Source: AMWAC/US Survey

Urologists were also asked how long a patient would expect to wait for intervention for a category 3 diagnosis, eg reversal of vasectomy. It should be noted that only 136 urologists (76.4%) indicated that they did this procedure in private hospitals and only 90 (50.6%) indicated that it was available in the public setting.

In all States and the Australian Capital Territory, privately insured patients would expect to wait two to six weeks for a vasectomy reversal. In most states, waiting times in the public system ranged from 29 to 44 weeks (7 to 11 months). Three states indicated waiting times of more than eighteen months, Queensland (77.5 weeks), Tasmania (100.1 weeks) and Australian Capital Territory (76.8 weeks).

Category 3 cases, where there are continuing delays, concern a number of elective issues. In urology these may include vasectomy, vasectomy reversal, and circumcision. There would be little likelihood that long waiting times for these procedures would result in poor health outcomes, although they may be a significant health consumer issue.

**Table 29: Average waiting time for a urological intervention for category 3 diagnosis (eg reversal of vasectomy), private and public hospital; by State/Territory, 1995**

State/Territory	Mean time private hospital (weeks)	Mean time public hospital (weeks)
New South Wales	2.6	29.1
Victoria	3.4	43.1
Queensland	4.2	77.5
South Australia	2.1	26.8
Western Australia	3.0	33.2
Tasmania	4.8	100.1
Australian Capital Territory	5.6	76.8

Source: AMWAC/US Survey

Response times for consultations and procedures do not appear to reflect surgeon to population ratios in the States. Used on their own waiting times are not a satisfactory indicator of surgeon availability. Many other factors influence access to services. However, the waiting times would indicate that, for a first consultation and urgent conditions, patients are seen within a reasonable time frame; and as such do not appear to indicate an acute workforce shortage.

### Limitations on Public Hospital Urological Work

Urologists were asked to indicate whether they believed there were restrictions on the work they could do in the public hospitals in which they worked. A majority (77.2%) of those who hold public hospital posts report some form of restriction. The most common restrictions were related to budget restrictions (64.8%) and access to equipment (54.3%).

**Table 30: Urologists= perceptions of limitations on urological work in public hospitals**

	Yes	No
Are there:		
Restrictions in the work you can do?	77.2%	22.8%
Limits in access to surgical lists?	52.5%	47.5%
Limits in access to beds?	46.9%	53.1%
Limits in access to equipment?	54.3%	45.7%
Budget limits?	64.8%	35.2%

(n=162)

Source: AMWAC/US Survey

52.5% of respondents indicated that there were limits in access to surgical lists. The main problem identified was limited operating theatre time and little flexibility in the time available. Other problems included delays between cases; inadequate provision of nurses/anaesthetists; and lists not fully utilised.

46.9% indicated that there were limits in access to beds. The main problem identified was the restricted number of beds in relation to number of urologists. Other problems included cancellations due to bed capacity and variable availability of beds which causes unfilled surgical lists.

54.3% indicated that there were limits in access to equipment. Lack of particular specialist equipment seemed to be the main problem, eg extra-corporeal shock wave lithotripsy (ESWL), laser and ureteroscopy. Other problems included no budget allocation for new equipment; not enough equipment which results in longer waiting lists due to sterilisation requirements; and poorly maintained equipment.

64.8% indicated that there were budget limits where they worked in public hospitals. The budget limits affected amount of equipment available, allocation of operating theatre

time, constraints due to availability of associated medical services (x-ray, nuclear medicine) and cancellation of outpatient clinics.

A substantial number, 33.5% believe they could do more surgical sessions in the public hospital system, if resources were made available. A number of respondents stated that there may be more urologists leaving the public hospital system due to conditions of service.

### **Urologists' Perceptions of Service Levels**

In the AMWAC/US Survey, urologists were asked if they believed the number of surgeons serving their area was satisfactory, too high or too low. Overall, 59% believed that the number of urologists serving their area was satisfactory, 8.4% believed the numbers were too high and 33.1% believed the numbers were too low. The urologists' perceptions do not appear to provide an objective guide to service need except at a local level.

**Table 31: Urologists' perceptions of the number of urologists serving their area; by age group**

<b>Age group (years)</b>	<b>Satisfactory (%)</b>	<b>Too High (%)</b>	<b>Too Low (%)</b>
30 - 39	71.0	12.9	25.8
40 - 49	53.6	12.5	37.5
50 - 59	55.4	3.6	35.7
60 - 64	55.6	11.1	33.3
65 - 69	90.0	0.0	10.0
70 - 74	33.3	0.0	66.7

Source: AMWAC/US Survey

Table 32 shows that the States that indicated the least satisfaction with numbers of urologists were Western Australia, Queensland and Victoria, where around 50% of the survey respondents thought numbers were satisfactory. New South Wales, South Australia and the Australian Capital Territory all showed that more than 60% urologists felt satisfied with current numbers. Reasons given for believing that the numbers were satisfactory included: waiting times for patients to see a urologist were reasonable; the recent arrival of new urologists in the area; urologists are busy; and no additional hospital sessions are available. A few urologists stated that the numbers were satisfactory in the private sector but not in the public sector.

Only urologists in New South Wales (11.4%), South Australia (23.1%) and Victoria (8.7%) thought that the current number of urology surgeons were too high. The main indicator respondents used in making this judgement was decreasing workloads due to more urologists moving into the local area.

A much larger number of urologists considered the number of surgeons to be too low. In Queensland and Western Australia 50% or more of the urologists believed that the

numbers were too low. In Victoria and Tasmania around 40% of urologists, and in New South Wales 24.3% of urologists thought the numbers to be too low. The main indication given was increasing workloads, followed by ageing of the workforce, long waiting lists and the geographical distribution of urologists.

**Table 32: Urologists' perceptions of the number of urologists serving their area; by State/Territory**

Perception	NSW	Vic	Qld	SA	WA	Tas	ACT
% satisfactory	62.9	50.0	50.0	76.9	46.6	60.0	100.0
% too many surgeons	11.4	8.7	0.0	23.1	0.0	0.0	0.0
% too few surgeons	24.3	39.1	50.0	0.0	53.3	40.0	0.0
% no response	1.4	2.1	0.0	0.0	0.0	0.0	0.0
% total urology surgeons	40.1	25.6	15.5	7.2	7.2	2.7	1.7

Source: AMWAC US Survey

### **Conclusions on Adequacy**

On balance, the Working Party concluded that the current urology workforce was adequately meeting demand. Public hospital vacancies and specialist SPR gave some indication of a shortfall but this could be balanced with waiting times, which for urgent or Category 1 patients were considered reasonable. A significant number of urologists expressed intentions to increase their workload if this was made possible by the public hospital system. This would suggest that the relatively long clearance times for Category 2 urology patients could be due to factors other than any inherent workforce shortage.

## PROJECTIONS OF REQUIREMENTS

### Population

Australia has a growing and an ageing population. In 1993 Australia's population was 17.84 million. The ABS estimates that population will reach 19.17 million by 2001 and 20.09 million by 2006 (ABS 1994) (note these projections use series A/B). Between now and 2006 there is a projected 1.2% growth per annum.

ABS estimates that the median age of the total population will rise from 33.1 years in 1993 to between 39.4 and 41.8 years in 2041. As a proportion of the total population, those aged 65 and over represented 11.7% (2.1 million) in 1993, and will increase to around 12.7% (2.56 million) in 2006. (ABS 1994).

### Changes in Utilisation

The AIHW has applied current utilisation rates to the population profile in 2016, taking into account the different utilisation of urological services by different age groups, and the projected ageing of the population, and has estimated the demand for urological services in hospitals is to increase by 46.7% over the next 20 years (see Table 33). This represents a compound increase of approximately 2% per year (1.6% over the next ten years). This increase is principally due to ageing of the population and the higher demand for services by the older age groups.

**Table 33: Projected increase in hospital separations with a principal diagnosis indicating urology (>000s); by age group, 1993 to 2016**

Year	less 15 years	15 to 29 years	30 to 44 years	45 to 64 years	over 65 years	Total
<b>1992-93</b>						
Population	3,831.1	4,108.8	4,129.2	3,531.4	2,060.9	17,661.4
% of population	21.7	23.3	23.4	19.9	11.7	100.00
Separations	15.9	13.5	20.3	46.6	77.5	173.8
% separations	9.1	7.8	11.7	26.8	44.6	100.00
<b>2016 forecasts</b>						
Population	4,048.6	4,278.2	4,360.9	5,673.8	3,398.7	21,760.2
% of population	18.6	19.7	20.0	26.1	15.6	100.00
Separations	16.8	14.1	21.5	74.8	127.8	255.0
% separations	6.6	5.5	8.4	29.4	50.1	100.00
<b>% increases 1993 to 2016</b>						
Population	5.7	4.1	5.6	60.7	64.9	23.2
Separations	5.7	4.4	5.9	60.5	64.9	46.7

Source: AIHW and ABS

Table 33 shows that the over 65 year age group will continue to comprise the bulk of hospital separations - 50.1% of separations by 2016, rising from 44.6% in 1992-93. Both the over 65 years of age and the 45 to 64 years of age categories are expected to significantly increase their utilisation, by 64.9% and 60.5% respectively (AIHW 1995b).

A significant factor contributing to service utilisation is the ageing of the population. However, this increase in life expectancy has not been matched by an increase in disability free life expectancy. Factors that might contribute to this include an increased incidence of chronic disease, improved survival leading to increased prevalence, earlier diagnosis of these conditions and changes in societal perception of disability and expectations of health.

### **Changes in Technology and Options for Service Provision**

Urology is becoming increasingly dependant on technology. In some instances technology has made many operations redundant but on the other hand some technology demands more time in the operating theatre, whereas ESWL will probably reduce surgical time. Many urologists in the AMWAC/US Survey suggested that because of the cost of technology, fewer units (perhaps, Centres of Excellence) will develop with group urological practice and higher specialisation.

There has been a significant increase in prostate cancer screening. This has led to a great increase in referrals for investigation and management of prostate cancer. Currently, there is a National Health and Medical Research Council working party looking at the evidence in favour of prostate cancer screening. Should prostate cancer screening be adopted by government as policy then the workload of all urologists will dramatically increase, both in diagnosis, counselling and treatment. This in turn can be expected to add to future workforce requirements.

The increased availability and sophistication of diagnostic tests, and the substitution of medical treatment for urological conditions that may have been treated in the past by either observation by the GP or surgery, has led to an increase in second consultations. The increase in referrals for new and second consultations is expected to continue in the short to medium term.

There are continuing changes in the management of major disease conditions, eg the management of lower urinary tract dysfunction, previously known as "prostatism". There is a significant increase in referral to urologists as a result of community interest in mens' health, and the reluctance of GPs to accept responsibility for management of men with minor symptoms. Working in the other direction, there is an increased tendency by urologists to offer shared care with GPs in the management of this condition and producing guidelines as to indications for referral. Over the last few years there has been an increased tendency for GPs to refer this condition. However, it is quite possible that as GPs regain confidence, referrals may decline. The major anxiety in general practice is missed prostate cancer.

The management of benign prostatic hyperplasia has become far more complicated which has led to increased numbers of consultations, and a percentage of patients

being offered medical therapy. The operative stay of patients has significantly shortened allowing an increased number to be processed. Medicare data indicates that the number of trans-urethral resections of the prostate, one of the commonest major operations performed by urologists, is decreasing (a 9.2% decrease from 12,895 prostatectomies in 1990-91 to 11,710 prostatectomies in 1994-95).

The easy availability of flexible cystoscopy without general anaesthesia has led to some increase in this diagnostic procedure being undertaken in an outpatient setting. This change is likely to continue and will lead to decreased use of inpatient services. Prostatic biopsy was previously an inpatient procedure, usually performed under general anaesthesia and is now, also, done as an office or outpatient procedure.

The greatest increase in items of service in the urology schedule is the treatment of impotence. Medicare data shows that penile injections have increased from 4,826 in 1990-91 to 47,341 in 1994-95, an 881% increase in the space of five years. The majority of these treatments are carried out by non-specialist urologists and it is likely that in the future, this form of treatment will, increasingly, be performed in clinics or by appropriately credentialed GPs. At the same time the number of penile injections provided by urologists has also increased over the same period by 153.7%, from 3,580 in 1990-91 to 9,081 in 1994-95. This probably reflects community attitudes and expectations and is expected to continue to rise.

With an ageing population, bladder incontinence is likely to be an increasing problem in both diagnosis and treatment. However, in 1994-95, the majority of MBS item bladder stress incontinence were billed to other practitioners (82.6%), 76.7% of which were billed to gynaecologists.

Certain conditions appear to be declining in presentation. These include invasive bladder cancer. Although this has never been a large volume of urological practice, it does occupy significant surgery time as the surgery involved is usually quite lengthy.

Lithotripsy (ESWL) has made stone surgery obsolete in most instances. However, ESWL has significantly increased the number of multiple procedures, where patients require either a further ESWL or need to go on to percutaneous or even open surgery if the lithotripsy fails, as is not uncommon with stones in the ureter. It is believed that the large pool of previously untreated stones has in general now been dealt with so that the number of treatments may decline in the future.

The introduction of laparoscopy has not made a huge impact on urological practice, however, it is conceivable that it may in the future radically modify surgical urological practice. New surgical procedures for management of benign prostatic conditions, heat therapy, and laser therapy may decrease hospital stays (Rogers 1995).

Overall, the Working Party found no evidence to suggest that technology will dramatically increase or decrease the demand for urology services but concluded it will change the way urologists practice. It is expected that more procedures will be undertaken in private rooms and day surgery units and consultations for expert opinion will continue to increase.

Interestingly, the Committee on Inquiry Into Medical Education and Medical Workforce (Doherty 1988) and the more recent Medical Workforce Standing Advisory Committee in the United Kingdom (MWSAC 1995) reached similar conclusions on medical technology.

Doherty (1988) - "The Committee believes that the rate of technological change on medicine may well increase in the future and that new technology is likely to exacerbate existing pressures for fragmentation of the medical workforce into specialty and subspecialty groups. This may well lead to an increase in the overall demand for the number of medical practitioners who are specialists... The Committee notes the history of technological advances, some of which led to increased demand for medical practitioners, for example the ability to treat or cure previously untreatable conditions... and some to decrease demand, for example, simpler and less invasive procedures. The Committee is unable to predict what sort of change will predominate in the future.

The MWSAC concluded "that there are no indications at present that fewer medical personnel will be required to provide health care as the diversity and extent of technology increases." (MWSAC 1995).

## PROJECTIONS OF SUPPLY

### Additions to the Urology Workforce

The current number of training posts will produce an average of nine additional urologists in 1995 and 12 from 1996 to 2000 in Australia.

This will mean that the workforce can be expected to grow by approximately 1.3 to 1.4% per year. This compares with an estimated increase in demand for urological services, as a result of demographic changes of approximately 1.6% a year to the year 2006.

### Retirements

The AMWAC/US Survey asked urologists over 55 years of age at what age they intend to retire. The age of expected retirement ranged from 60 to 75 years of age with 47.4% (n52) of those over 55 indicating that they expect to retire at 65 years of age. A few urologists indicated they had no intention of retiring at 65, unless forced to do so and a number have continued in active practice well beyond 65 years of age.

It is estimated that within the next five years approximately 80% of the urologists aged 60 years and over will retire from the workforce.

**Table 34: Actual year of intended retirement, urologists 55 years of age and over**

1996	1997	1998	1999	2000	2001	2002	2003	2005	2006	2007	2009
2	4	4	5	9	5	4	11	2	1	1	1

Source: AMWAC/US Survey

### Work Patterns

AMWAC/US Survey data indicates that a large proportion of urologists (46.9%) would prefer to reduce their workload over the next ten years, particularly those aged over 50 years. Respondents indicated that they will reduce workload by taking extra time off during the week, reducing operating time and reducing consultation time.

10% (18) of the respondents to the AMWAC/US Survey indicated that they intended to leave the workforce for a period of longer than three months in the next two years. Reasons for leaving the workforce included sabbaticals, long service leave and to work in developing countries. The majority of those intending to leave were in the 40 to 44 year age group.

55 (31%) urologists indicated that they anticipated the size of their practice to increase over the next ten years. The majority of these respondents were in the 35 to 49 year age group. The numbers expecting to increase their practice decreased with age and conversely the number of those who expect their practice to decrease ( 58 or 32.6%) over the next ten years increased with age.

**Table 35: Urologists' intent to positively reduce workload over the next ten years; by age group, 1995**

Age group (years)	Yes (%)	No (%)	Don't Know (%)
30 - 34	0.0	80.0	20.0
35 - 39	21.4	53.6	25.0
40 - 49	36.8	52.6	10.6
50 - 59	58.2	32.7	9.1
60 - 64	78.9	15.8	5.3
65 - 69	70.0	20.0	10.0
70 - 74	100.0	0.0	0.0

Source: AMWAC/US Survey

**Table 36: Urologists who expect an increase or decrease in their practice over the next ten years; by age group, 1995**

Age group (years)	Expect increase (%)	Expect decrease (%)
30 - 39	66.7	0.0
40 - 49	35.1	15.8
50 - 59	18.2	47.3
60 - 64	10.5	68.4
65 - 69	0.0	80.0
70 - 74	0.0	66.7

Source: AMWAC/US Survey

### **Female Participation in the Workforce**

It is expected that the proportion of women in the workforce will increase; as is demonstrated by the increase in the number of female trainees; women represent 1% of the current workforce but 24% of Australian trainees.

Increasing numbers of women specialising in urology has implications for the available workforce in the future. Many women may take time off from practice to have families and may not return to the workforce in a full time capacity.

### **Provision of Services in Rural and Remote Areas**

Provision of specialist services outside capital cities and major urban areas will continue to be of concern, as there appears to be little incentive to practice in rural areas. Traditional urological services in rural areas can be expected to continue to need to be provided by visiting urologists, general practitioners and by general surgeons in some areas.

There are obviously some communities where there is insufficient workload to warrant recruitment of specialist urologists. It is important to encourage GPs to obtain, maintain and utilise their skills in urology to provide some of these services. Appropriate training and retraining opportunities together with appropriate remuneration and indemnity arrangements appear to be barriers to GPs obtaining and using their urology skills.

## **BALANCING SUPPLY AGAINST REQUIREMENTS**

### **Requirement Trends**

Over the next ten years the Australian population is expected to increase at an annual rate of 1.2% per year. This would be the rate of growth required to maintain a constant urologist SPR.

The combined effects on demand for urology services due to population growth and ageing can be calculated from age specific projections of hospital activities. Projections of hospital separations for patients with a principal procedure indicating urology by age group shows an increase of 1.63% per year. For urology services, ageing effects are estimated to be at least 0.4% above population growth and possibly higher. However, projections were based on broad patient age cohorts instead of five year groupings so the actual ageing affects are probably higher.

Between 1990-91 and 1994-95 Medicare specialist urological services grew by 31.2% from 486,189 services in 1990-91 to 637,670 services in 1994-95 (see Table 13). This is an annual growth of 9.5% and suggests an increase in requirements of 8.3% above population growth.

The subset of selected MBS items, detailed in Table 15, show an increase of 6.7% in major workload, and 6.3% in costs, from 1990-91 to 1994-95. This supports requirements growth projections of 1.6% per annum due to population and demographic changes.

The productivity of urologists as measured in hours worked will vary from time to time and by age group as not all urologists work a uniform full time working week so it is appropriate to measure services provided in hours instead of by head count.

In 1995 the 200 specialist urologists in the workforce provided an estimated total of 9,442 hours of services per week. Surveys of public hospitals and the profile of hours worked suggest this supply is approximately equal to present requirements. Table 36 shows the growth in requirements under four different growth assumptions starting from the 1995 requirements level; and ranging between growth in requirements of 1.6% per year (population effects) to 9.5% per year (current growth in Medicare urological procedures).

**Table 37: Projected requirements for urology services; by hours worked per week, 1995, 2000 and 2006**

Year	Population growth (1.6% per year)	Requirements based growth in urologists (3.1% per year)	Requirements based on modified procedures growth (6.7% per year)	Requirements based on growth in Medicare services (9.5% per year)
1995	9442	9442	9442	9442
2000	10221	11010	14260	14838
2006	11243	13241	23388	25524

Source: van Konkelenberg

It is expected that high growth rates in some services will not be sustained and general growth in requirement for services should be nearer demographic growth trends of 1.6% per year.

### Supply Trends

The supply of specialist urologists was projected by ageing the 1995 supply through each year of age, subtracting retirements and adding nine new graduates per year to 1996 and 12 in subsequent years. The average retirement rate was calculated assuming retirements according to the AMWAC/US Survey results for each age group.

The number of urologists was then converted to hours per week by applying the average number of hours worked to headcounts in each age cohort. These projections show that supply will increase from a current level of 9442 hours per week to 10853 hours per week in 2006; with the upper and lower projection range of 10319 to 11560 hours per week (see Table 38).

**Table 38: Projected supply of urological services, high, low and average retirement rates; by hours worked per week, 1995, 2000 and 2006**

Year	Low retirement rate	Average retirement rate	High retirement rate
1995	9442	9442	9442
2000	10434	9884	9405
2006	11560	10853	10319

Source: van Konkelenberg

### Projected Balance

The low retirement supply projections meets increased requirements resulting from ageing and growth of the population but both average and high retirement rates fall slightly below this target line (see Figure 5).

A strict balance to match a continued growth rate in requirements of 1.6% per year can be achieved by increasing the proposed number of graduates in 2001 from the current

level of 12 per year to 13 per year with a further increase to 15 per year by 2004 (see Table 39). Under this scenario notional shortages peak at 3.3% from 1998 to 2000 but a balance would be achieved in 2006.

**Table 39: Urology graduate output needed to balance projected supply with projected requirements (1.6% growth per year); by hours worked per week, 1995 to 2006**

Year	Number of graduates	Projected supply	Projected requirements	Balance (shortage)	% shortage
1995	9	9442	9442	0	0.00
1996	12	9368	9593	225	2.35
1997	12	9437	9746	309	3.17
1998	12	9575	9902	327	3.30
1999	12	9735	10060	325	3.23
2000	12	9884	10221	337	3.30
2001	13	10071	10385	314	3.02
2002	13	10265	10551	286	2.71
2003	14	10456	10720	264	2.42
2004	15	10677	10892	215	1.97
2005	15	10980	11066	86	0.77
2006	15	11232	11243	11	0.10

Source: van Konkelenberg

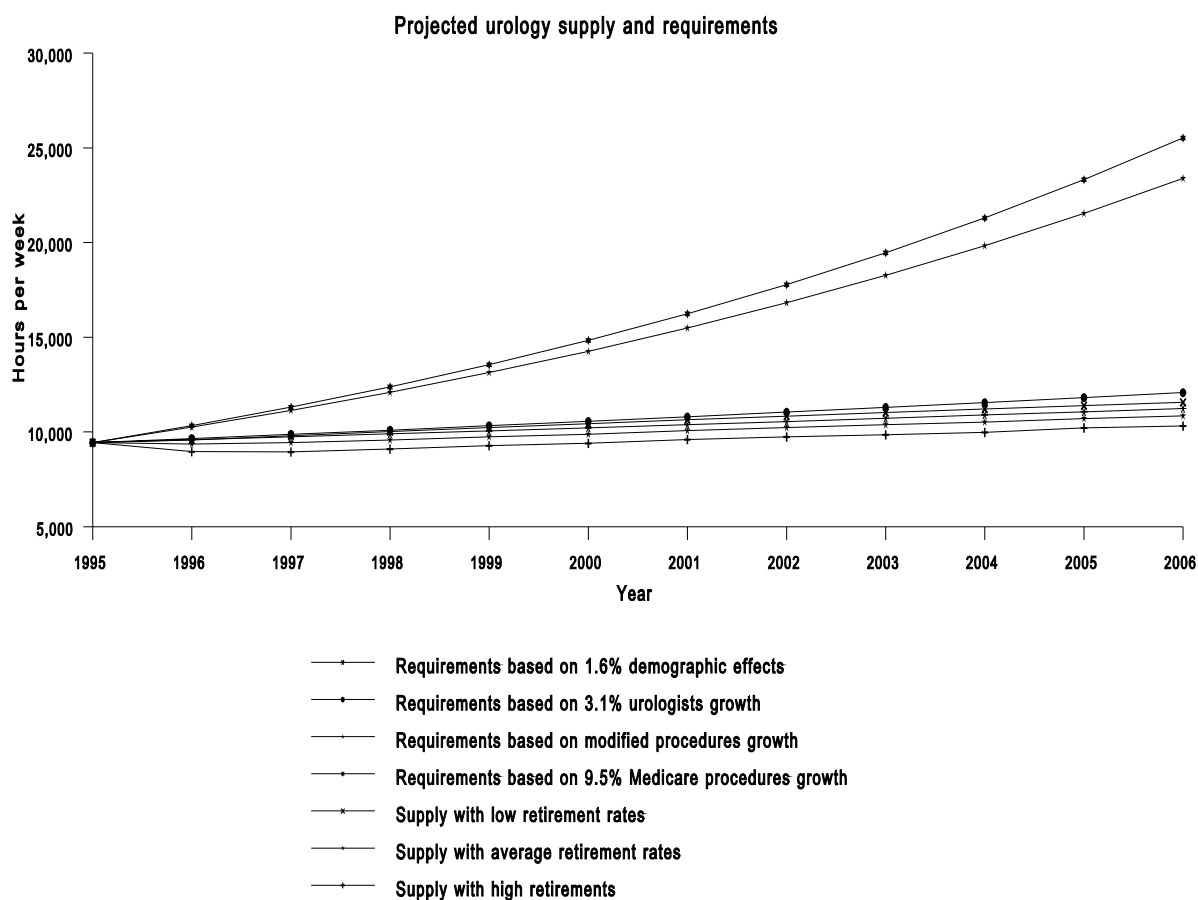
The results of this projection work show that the current level of graduate output will meet requirements based on demographic growth if low retirement rates prevail. For higher requirements growth targets, the graduate output must be increased. Under the scenario presented in this report, it should increase to 15 graduates per year by 2006.

If the target of 15 graduates by 2006 is desired an additional nine urology training positions would be required.

The Working Party recognises that these increases have resource implications for government. It is also concerned about maintaining the quality of training, which will clearly have to be monitored closely by US.

It should be noted that retirements and workforce participation assumptions should be further substantiated and that the longer term outcome of the projections is uncertain. Even if growth in requirements is only equivalent to the expected trends in population and ageing then there will be a need for additional graduates.

**Figure 5: Projected urology supply and requirements, 1995 to 2006**



Source: van Konkelenberg

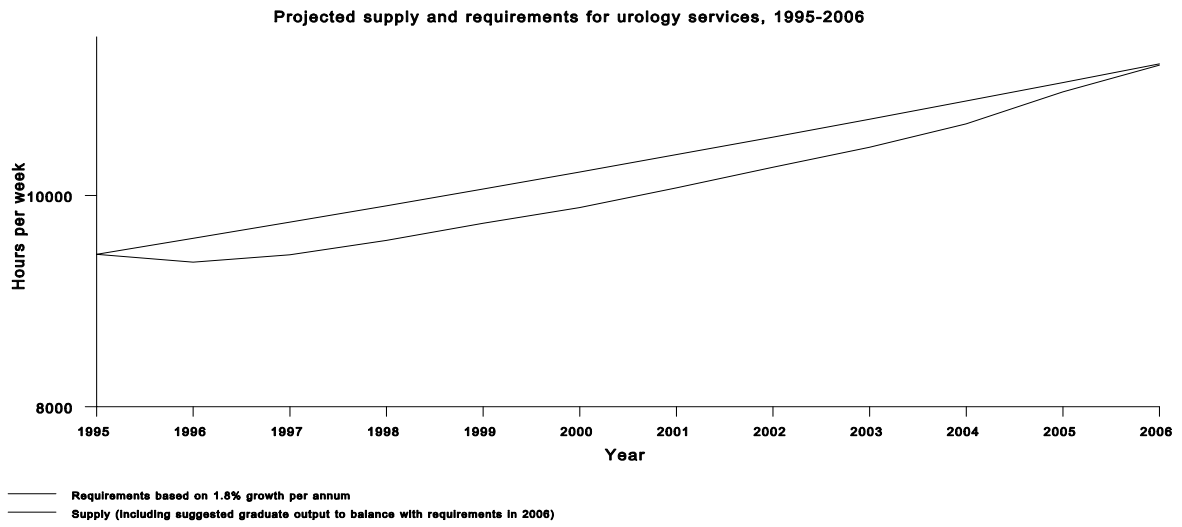
The Working Party concluded that growth in requirements could be expected to be between the figure of 1.6% per year and a maximum of 9.5% per year. The upper level reflects growth in urological procedures in the MBS, and this was felt to be not at all reflective of specialist urologist growth needs (see Tables 14 and 15).

In making its recommendations the Working Party adopted the lower growth rate of 1.6% as the expected future annual growth in requirements. This means annual graduate output will have to increase to 15 by 2004.

With the suggested growth rate of graduate outputs summarised in Table 39, the potential shortage in urologists is expected to be a maximum of 3.3% in 1998 to 2000. It will be necessary to monitor the workforce situation and, if necessary, to formulate effective ways of accommodating excess demand for the period of relative shortfall.

The recommended scenario for supply and requirements is summarised in Figure 6.

**Figure 6: Elimination of the potential shortfall - projected urology supply and requirements, 1995 to 2006**



Source: van Konkelenberg

## RECOMMENDATIONS

The Working Party recommends:

1. There be an increase in the number of funded urology training positions and trainees to match an expected future growth in activity of 1.6% per year (this includes growth due to population and ageing of the population).
2. That State and Territory health departments undertake negotiations with the US for the establishment of additional urology training positions, initially up to five by 2001, distributed as shown in the following table:

**Table 40: Additional urology training positions; by State/Territory, 1996 to 2006**

State/Territory	1996	2001	2006	Increase 1996 to 2001	Increase 1996 to 2006
NSW/ACT	12	15	16	3	4
Victoria	10*	10	11	0	1
Queensland	6	8	10	2	4
SA/NT	3	3	3	0	0
Western Australia	3	4	4	1	1
Tasmania	0	1	1	1	1
New Zealand	2#	0	0	-2	-2
AUSTRALIA	36	41	45	5	9

\* includes one research position

# one Australian research position and one Australian overseas position

Urgent consideration be given to establishing a training post in paediatric urology at Westmead Hospital, Sydney; and a further training post in provincial New South Wales (at either Gosford or Orange Base hospitals). Additional posts are also needed in Queensland to address the relative shortage in that state - Greenslopes or Queen Elizabeth II hospitals should be considered. Other additional posts may include Monash Medical Centre, Melbourne and Royal Hobart Hospital.

3. That current funding for training positions be guaranteed to ensure there is no net loss in training positions (recognising the concern that any loss of current training positions would create urological workforce shortages).
4. State/Territory based urology services working groups, comprising US and State/Territory department of health representatives, be organised to co-ordinate the establishment of the new training positions and to oversee the introduction of any short term measures they may feel are necessary to meet localised service shortfalls (recognising that the increased number of graduates will not make an effective contribution to the urology workforce until 2001).

5. Options to meet localised shortfalls, for consideration by the urology services working groups include local incentives to increase the current work load of specialist urologists; use of appropriately qualified and skilled overseas trained urologists; and increased skilling and use of general practitioners, particularly in rural areas.
6. That urology requirements and supply projections be monitored annually so that they can be amended if new trends emerge.
7. That this monitoring be coordinated by the US and AMWAC and the results incorporated into the AMWAC annual report to AHMAC. AMWAC will provide all necessary support.

## REFERENCES

- Australian Bureau of Statistics (1994), Projections Of The Populations Of Australia, States And Territories: 1993 to 2041. Catalogue no. 3222.0, Canberra
- Australian Institute of Health and Welfare (1995a), Health Labour Force 1992-93, Canberra
- Australian Institute of Health and Welfare (1995b), Urology Labour Force Profile, unpublished data collection
- Australian Institute of Health and Welfare (1995c), Urology Labour Force Profile number 2, unpublished data collection
- Australian Medical Workforce Advisory Committee & Australian Institute of Health and Welfare (1996), Australian Medical Workforce Benchmarks, AMWAC Report 1996.1, Sydney
- Department of Human Services and Health (1994), Rural And Remote Areas Classification, Canberra
- Doherty Professor R, et al (1988), Australian Medical Education Workforce Into The 21st Century - Report of the Committee of Inquiry Into Medical Education and Medical Workforce, Canberra
- Gadiel D, Ridoutt L (1995), The Specialist Medical Workforce And Specialist Service Provision In Rural Areas - MWDRC Consultancies no. 1, Canberra
- Gillett S, Mays L (1994), Waiting Lists: Towards National Statistics (An Interim Report), Canberra
- Medical Workforce Standing Advisory Committee (United Kingdom) (1995), Planning The Medical Workforce - Second Report, London
- Moon L (1996), Waiting For Elective Surgery In Australian Public Hospitals, 1995 (Australian Institute of Health and Welfare Health Services Series no. 7), Canberra
- Moss D (1995), Submission to the AMWAC Urology Workforce Working Party on Issues Relating to Urological Workforce Planning and Urology Training
- Rogers J (1995), A Submission to the AMWAC Urology Workforce Working Party on Issues Relating to Urological Manpower Planning
- Royal Australasian College of Surgeons (1992), The Surgical Workforce In Australia, 1992, information supplied to Senator Graham Richardson, October 1993
- van Konkelenberg R (1996), Balancing Urology Supply Against Requirements, unpublished projection paper