Australian Medical Workforce Advisory Committee

THE SPECIALIST GASTROENTEROLOGY WORKFORCE IN AUSTRALIA

SUPPLY AND REQUIREMENTS

1999 - 2010

AMWAC Report 2000.4

August 2000

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AHMAC	Australian Health Ministers' Advisory Council
AMWAC	Australian Medical Workforce Advisory Committee
AIHW	Australian Institute of Health and Welfare
AN-DRG	Australian National Diagnosis Related Groups
Aust	Australia
CME	Continuing medical education
DGP	Divisions of General Practice
DHAC	Commonwealth Department of Health and Aged Care
FRACP	Fellow of the Royal Australasian College of Physicians
FTE	Full Time Equivalent
GESA	Gastroenterological Society of Australia
GP	General Practitioner
ICD-9-CM	International Classification of Diseases, Ninth Revision
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
RACP	Royal Australasian College of Physicians
RRMA	Rural, Remote Metropolitan Areas classification
SA	South Australia
SPR	Specialist: Population ratio
Tas	Tasmania
Terr	Territory
Vic	Victoria
VMO	Visiting Medical Officer
WA	Western Australia

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TERMS OF REFERENCE OF AMWAC AND THE AMWAC GASTROENTEROLOGY 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 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 Gastroenterology Workforce Working Party Terms of Reference

As part of its 1999-2000 work plan, AMWAC was asked by AHMAC to prepare a report on the specialist gastroenterology workforce. The AMWAC Gastroenterology 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 gastroenterologists across Australia, including projections for future requirements.

The Working Party held its first meeting on 12 August 1999 and presented a final report to the 16 August 2000 AMWAC meeting. The report was accepted at the 19 October 2000 AHMAC meeting.

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Nominee of the Australian Medical Association

Dr Robert Bain   Secretary General, Australian Medical Association

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INTRODUCTION, GUIDING PRINCIPLES AND METHODOLOGY

Introduction

The main objective of the Working Party has been to promote an optimal supply and appropriate distribution of gastroenterology specialists across Australia, including projections for future requirements to the year 2010.

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 gastroenterologists, appropriately distributed to provide the gastroenterology services it requires;
- the community is best served when gastroenterologists have high standards of qualification and work with a high level of ongoing experience;
- standards of practice will be highest if gastroenterologists perform a reasonable volume of work;
- 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 gastroenterology medical 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 gastroenterologist as:

A qualified physician who is conducting gastroenterology consultations or is in a full time or part time academic position relating to gastroenterology. It will include salaried positions and private practice. It does not include other practitioners who, for one reason or another, undertake gastroenterology 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 gastroenterology but are not recognised as being in training positions.

Methodology

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

1. The Royal Australasian College of Physicians (RACP)

The RACP keeps a variety of data, principally on number, age, gender and location of Fellows, and data on training posts and trainees.

To supplement this data, with information on hours worked, practice patterns, and consultation waiting times, as well as some qualitative information, AMWAC

conducted a survey of GESA members. The results of the survey are summarised in Appendix B.

2. Australian Institute of Health and Welfare (AIHW)

The principal AIHW data source is the annual medical labour force survey which presents national labour force statistics for registered medical practitioners, principally through a survey collected as part of the annual renewal of registration. The numbers presented in this report are estimates produced from the 1997 survey. In producing these estimates, the AIHW has assumed that non-respondents to the survey had the same characteristics as respondents. Overall the survey had an 81.8% response rate.

3. Commonwealth Department of Health and Aged Care (Health and Aged Care) 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.

Medicare data only cover private practice billing activity. The data therefore exclude information on practitioners who are salaried gastroenterologists in the public hospital system and who do not render services on a fee for service basis, thus excluding services rendered free of charge to public hospital patients, to Veterans' Affairs patients and to compensation cases.

4. National Hospital Morbidity Database

The AIHW National Hospital Morbidity database (ICD-9-CM groupings) has been used as a key source of data on service trends. The data are sourced from the AIHW Australian hospital morbidity database for all patients in public and private hospitals in Australia from 1993-94 to 1997-98. The data has been particularly useful in projecting gastroenterology service trends.

5. AMWAC Survey of Divisions of General Practice

AMWAC surveyed all Divisions of General Practice throughout Australia to obtain information on the adequacy of supply of gastroenterology services. The survey results are summarised in Appendix C.

6. Rural, Remote and Metropolitan Areas classification

Wherever possible, distributional data has been interpreted using the rural, remote and metropolitan area (RRMA) classification developed in 1994 by the Commonwealth Department of Primary Industries and Energy and the then

Commonwealth Department of Health and Family Services (DPIE & DHFS 1994). A summary of the RRMA classification is provided in Appendix A.

7. Australian Bureau of Statistics (ABS)

The Australian Bureau of Statistics (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, up to and including 1996 are based on Series A; for 1997 and onwards the series name changed to Series II. These series assume constant fertility and low overseas migration (ABS 1998).

Key Assumption

The Working Party would like to emphasise that the projections for gastroenterology workforce supply and requirements are based on the assumption that there will be no significant change in existing national health structures. If changes do occur AMWAC recommends the supply and requirements projections be reviewed.

The Working Party has assumed that the pattern of workforce participation of the current workforce provided a suitable basis on which to project future workforce requirements. The Working Party has also assumed that the current length of the gastroenterology training program will remain unchanged and that the majority of candidates will complete the program within this time frame. These assumptions are necessary in the absence of any definitive data to the contrary.

It should also be noted that as a general course of action, AMWAC favours adjustment to trainee intake as the best long term solution to any anticipated imbalances between expected supply and estimated requirements. Hence the conclusions and recommendations are framed in this context.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

This report describes the current gastroenterology workforce, assesses the adequacy of that workforce, and projects workforce supply and requirements to the year 2010.

The report concludes that the gastroenterology workforce is meeting current requirements and to ensure requirements continue to be met, the number of trainees entering the gastroenterology trainee program should be progressively increased to 23 per year. To put this into context, during the last five years there have been an average of 16 to 17 graduates per year.

Gastroenterology requirements have been estimated to increase by an average of 1.8% per year. This growth rate is below the recent growth rate in Medicare services (5.2%) but higher than the projected growth in gastroenterology hospital morbidity data (1.6%).

Description of the Current Gastroenterology Workforce

Number of Practising Gastroenterologists

- The Working Party estimated that the size of the practising gastroenterology workforce is 391.

Geographic Distribution

- The AIHW 1997 labour force survey data indicated that in 1997 there were 2.1 gastroenterologists per 100,000 people in Australia (1 specialist per 47,397 persons). Both Tasmania and Queensland showed per 100,000 population ratios below the national average, while the ratios for Western Australia and Victoria, respectively, were the same as for Australia as a whole (2.1). The ratios for South Australia (3.1) and the Australian Capital Territory (2.9) were well above the national average, and for New South Wales, the ratio was 2.2, which was slightly above the ratio for Australia as a whole.

- On average, 91.1% of gastroenterologists were located in a metropolitan area (83.2% in a capital city and 7.9% in a major urban centre), 6.6% were located in large rural centres, and 2.3% were in other rural areas. The distribution of gastroenterologists is quite similar to the distribution of all specialists.

Age Profile

- The largest proportion of gastroenterologists was aged between 45 and 54 years (38.6% of the workforce, for Australia as a whole). The next largest age group was 35 to 44 years, with 34.5% of gastroenterologists in this category. Only 6.1% of the workforce was less than 35 years of age, and 6.1% was aged 65 years or greater.

- Gastroenterologists have a much younger age profile than all specialists combined and a somewhat younger age profile than all physicians combined. In

total, 79.2% of gastroenterologists are less than 55 years of age, as compared with 74.0% of all physicians and 69.6% of all specialists.

- The average age of gastroenterologists in 1997 was 47.4 years, with some variation among States/Territories. The average age of gastroenterologists ranged from a high of 51 years in Tasmania to a low of 41 years in the Northern Territory.

Gender Profile

- The gastroenterology workforce has quite a high proportion of males, as compared with all specialists combined and all physicians combined. Overall 91.1% of gastroenterologists are male, as compared with 84.4% male specialists and 84.7% male physicians.

- Gender distribution within each State/Territory matched the distribution for Australia as a whole quite closely, with the exception of Tasmania where 100.0% of gastroenterologists were male. The Australian Capital Territory showed the highest proportion of female gastroenterologists (10.0% based on Medicare data and 22.2% based on AIHW data).

Hours Worked

- According to the AIHW 1997 survey, on average gastroenterologists worked 52.4 total hours per week and spent 44.7 of those hours on direct patient care.

- A majority (65.1%) of the gastroenterology workforce worked, on average, more than 50 hours per week, with 20.5% working more than 65 hours per week.

- Female gastroenterologists worked, on average, 75.9% of the average total hours worked by male gastroenterologists (12.9 fewer total hours per week than males). However, female gastroenterologists less than 35 years old averaged 10.8 more hours per week than males, and those in the 55 to 64 year age group averaged 15.3 more hours per week.

- Gastroenterologists in Tasmania reported the highest average total hours worked per week (60.8 hours per week), followed by Queensland (55.6 hours per week), Victoria (54.9 hours per week) and New South Wales (51.2 hours per week). All of the other States/Territories reported working fewer than the average working hours per week for Australia as a whole (52.4 hours per week).

Services Provided

- The two key sources of data for gastroenterology services are Medicare data and hospital casemix data. Medicare and hospital casemix data cannot be aggregated to provide a picture of national activity, as they are based on different sets of information. However, when looked at independently they provide a useful indication of the activity and trends in gastroenterology service provision over time.

- Between 1987-88 and 1997-98, the number of Medicare services provided by gastroenterologists increased by 454.5%, which represents a compound annual increase of 18.7%. The large increase in the early 1990s may be attributed to a change in hospital salary schemes, with many gastroenterologists moving into private practice, as well as changes in billing practices.

- The number of gastroenterologists providing Medicare services also increased significantly, although at a slower rate (10.3% per annum) than the growth in number of services. As a result, the average number of services per provider has also grown (7.6% per annum), although the figure has reached a plateau in recent years.

- By State/Territory, the number of Medicare services per provider ranged from a high of 3,137 services per provider, on average, in Tasmania, to a low of 1,799 services per provider, on average, in Western Australia.

- To examine hospital service trends using the National Hospital Morbidity data source, the Working Party selected a range of AN-DRG codes indicating gastroenterology. The average increase between 1995-96 and 1997-98, for all selected procedures in total was 10.6% (5.2% per annum).

- By State/Territory, the largest increase in hospital separations for gastroenterology procedures occurred in Queensland, while the smallest change occurred in the Australian Capital Territory, which showed a slight decrease.

- Slightly more than half of all gastroenterology separations are for female patients (52.0%) as compared with male patients (48.0%), and this proportion is consistent among the various age groups.

Training Arrangements

- The RACP oversees the training program for gastroenterology, which consists of three years of basic training followed by three years of advanced training in the sub-specialty of gastroenterology and hepatology. Admission to Fellowship of the RACP requires completion of basic and advanced training and a pass in the FRACP examination in adult medicine or paediatrics, and Fellowship is undifferentiated, that is, it is not awarded in a sub-specialty.

- In 1999, there were 46 approved training placements, with the highest proportion of trainees located in New South Wales (37.0%) while there were no trainees in Tasmania.

- Between 1994 and 1999, there was little or no growth in the number of gastroenterology trainees between years, with an average of approximately 49 trainees per year.

- Overall, 32.6% (15) of 1999 trainees were female, with the largest proportion of females being in their second and third year of training.

- The majority of trainees, both male and female, are between 31 and 40 years old (67.4%). Overall, only a very small proportion of gastroenterology trainees are more than 40 years old (2.2%).

Adequacy of the Current Specialist Gastroenterology Workforce
The Working Party concluded that the current gastroenterology workforce is adequately meeting current requirements.

Specialist to Population Ratio
- Based on AIHW data, the SPR for Australia as a whole was relatively unchanged between 1995 and 1997. In 1995 the ratio was one gastroenterologist per 50,064 persons and in 1997 the ratio was one gastroenterologist per 47,396 persons.

- Excluding the Northern Territory (which had no gastroenterologists) the SPR ranged from one gastroenterologist per 32,170 persons in South Australia to one gastroenterologist per 59,670 in Queensland.

- In comparison with some other countries, on a national level Australia is relatively well supplied with gastroenterologists. However it must be noted that international comparisons suffer because of uncertainties about definitions of specialist gastroenterologists and variations in style and scope of practice and health care systems.

General Practitioner Assessment of Requirements for Gastroenterologists
- Information about the adequacy of the supply of gastroenterology services throughout Australia was obtained through a mailed survey of all Divisions of General Practice.

- As the survey response rate was rather low (45.6%, or 57 out of 125 Divisions responding), the Working Party felt that the findings from this survey were not definitive, but that they do provide some indication of general practitioners' assessment of the adequacy of current gastroenterology services.

- The findings indicate that, overall, 58% of Divisions of General Practice consider access to gastroenterology consultation services to be in short supply or totally inadequate, and 54% perceive access to gastroenterology treatment services to be in short supply or totally inadequate.

- A large proportion of responding Divisions in Queensland and Tasmania, in particular, consider access to gastroenterology services to be inadequate.

- Responses by metropolitan and rural regions showed that a greater proportion of rural Divisions considered access to consultation and treatment gastroenterology services to be inadequate (67.9% and 64.3%, respectively) as compared with metropolitan Divisions (52.6% and 47.4%, respectively).

Hours Worked

- The AIHW 1997 labour force survey data showed that 20.6% of the gastroenterology workforce worked more than 65 hours per week. In comparison, 18.9% of physicians worked more than 65 hours per week and 17.0% of all specialists worked more than 65 hours per week .

- The 2000 AMWAC survey of the gastroenterology workforce showed similar results, with 21.7% of respondents indicating that they worked more than 65 hours per week.

Consultation Waiting Times

- The 2000 AMWAC survey of the gastroenterology workforce requested respondents to estimate the average waiting time for referred patients, by type of condition (clinically urgent and non-urgent). In an effort to ensure consistency of responses, the survey questionnaire included examples of clinically urgent conditions (‘rectal bleeding’, ‘recent onset dysphagia’), and examples of non-urgent conditions (‘dyspepsia’, ‘chronic abdominal pain’).

- Patients with a clinically urgent condition wait less time, on average (5 days), to see a gastroenterologist in his/her private rooms than do patients in public outpatient departments (16 days).

- The average waiting time for a patient to see a gastroenterologist in his/her private rooms for a standard first consultation was 22 days, while for a patient presenting to a public sector service the average waiting time was 56 days.

Professional Satisfaction

- Overall, 53.1% of respondents to the AMWAC survey of the gastroenterology workforce indicated that they felt their current workload was about right, 40.2% felt that their workload was too much and 6.7% felt that their workload was too little.

Public Hospital Vacancies

- The AMWAC survey of public hospital specialist vacancies conducted in 1997 found that there were six gastroenterology vacancies, representing approximately 1.5% of employment positions. The survey reported three vacancies in New South Wales, two in Queensland and one in Western Australia.

Projections of Requirements

Population

- Australia has a growing and an ageing population. The 1999 population was estimated at 18.9 million, and the population is estimated to increase by 0.9% per annum to 2010, with ageing of the population expected to add a further 0.4% to the demand for medical services, for a combined growth rate of 1.3%.

Trends in Services

- The number of Medicare services performed by gastroenterologists increased by 11.2% per annum between 1995-96 and 1997-98.

- Between 1995-96 and 1997-98 the average increase for all selected gastroenterology procedures in total was 10.6% (5.2% per annum).

- Forecasts of future gastroenterology procedures were calculated by applying population projections to the hospital age utilisation data for 1997-98. The forecasts suggest that, in total, across all age groups and gender, the demand for gastroenterology procedures over the next 20 years will increase by between 1.6% per annum between 1997-98 and 2008, and 1.6% per annum between 1997-98 and 2018.

- The Working Party concluded that a projected growth rate in the range of 1.8%, which is below the recent growth rate in Medicare services (5.2%) but higher than the projected growth in hospital morbidity data (1.6%), best reflected the likely growth in gastroenterology requirements.

Projections of Supply

- Between 1994 and 1998, an average of 17 graduates from the RACP gastroenterology and hepatology sub-specialty training program have been admitted as RACP Fellows. Based on trainees currently in the program, the number of new gastroenterologists is estimated to be approximately 16 per year between 1999 and 2001.

- Assuming the average retirement age from the AMWAC survey (63.3 years) it can be anticipated that all of the gastroenterologists who are currently aged 55 years or greater will retire in the next ten years, representing an average loss of approximately 8 gastroenterologists per year.

- It is anticipated that the proportion of female gastroenterologists in the workforce may slowly increase, as the proportion of female trainee gastroenterologists (33%) is higher than that represented in the gastroenterology workforce (9%) and female gastroenterologists are comparatively younger than their male counterparts.

Balancing Projected Supply with Projected Requirements

- The Working Party assessed various indicators as the basis for estimating future requirements for gastroenterologists. These indicators included population growth, trends in gastroenterology national hospital morbidity data and Medicare services data.

- Each selected requirement indicator was projected over the period 2000 to 2010, and the projections converted to FTE hours per week using the estimated average hours worked by gastroenterologists. This allowed comparisons to be made with projected supply data, which was similarly converted.

- The Working Party concluded that a projected growth rate in the range of 1.8% which is below the recent growth rate in Medicare services (5.2%) but higher than the projected growth in hospital morbidity data (1.6%), best reflected the likely growth in gastroenterology requirements.

- The supply of gastroenterologists was projected by ageing the estimated number of gastroenterologists, subtracting expected retirements (estimated at approximately 8 per year) and adding expected new graduates.

- The number of gastroenterologists was converted to hours per week by applying the average number of hours worked to head counts in each major age cohort. These supply projections show that, based on the current estimated intake of trainees of 16 per year, supply is projected to increase from an estimated 2000 level of approximately 20,616 FTE hours per week to an estimated 22,502 FTE hours per week in 2010.

- Using these projected supply and requirements scenarios, the projected workforce supply will be above the estimated gastroenterology service requirements level growth of 1.6% per annum, resulting in a slight undersupply of 1.2% in 2000, and continuing to increase to 10.8% by 2010.

- To balance the future gastroenterology requirement growth indicator of 1.8% per annum, a variety of scenarios with different number of graduates per year between 2002 and 2010 were considered. Based on the results of the projection modelling, the Working Party recommends that the number of graduates be progressively increased over the next few years to 23 per year from 2005. It would also seem appropriate that an update of this workforce review be undertaken in 2004-2005.

- It should be noted that the projection model is sensitive to the chosen requirement indicator, number of retirements per year, average hours worked and the age and gender profile of the workforce. If the expected requirement growth for gastroenterology varies from the projected trend of 1.8% per annum, or if any of the other factors mentioned changes significantly, then the model will need to be updated with these scenarios.

- The Working Party was also concerned with the geographic maldistribution of the workforce among the States/Territories and recommends that it would be useful if State/Territory health departments, the RACP and the GESA consider solutions that may help reduce the maldistribution within the workforce.

RECOMMENDATIONS

The Working Party recommends:

1. To achieve an appropriate supply of gastroenterologists the annual average intake to the gastroenterology training program should be progressively increased to 23 trainees per year, starting with 22 in 2003 and 2004, and 23 per year thereafter to 2010. (During the last five years new graduates have averaged approximately 16 to 17 per year.)

   The aim of maintaining first year advanced trainee numbers within this range is to match workforce supply with an expected future growth in gastroenterology requirements of 1.8% per annum.

2. That the coordination of these gastroenterology trainee placements be overseen by State/Territory based gastroenterology working groups, comprising representatives from the Royal Australasian College of Physicians (RACP), the Gastroenterological Society of Australia (GESA), and State/Territory health departments. The recommended placement of first year trainees is shown in the following table.

Recommended first year advanced gastroenterology trainee intake, by State/Territory, 2001 to 2008

State/Territory	First year trainee intake (1999)	% First year trainee intake (1999)	2001 and 2002	%	2003 to 2008	%
NSW	5	41.7	8	36.4	7	30.4
Victoria	4	33.3	6	27.3	5	21.7
Queensland	-	-	2	9.1	3	13.0
South Australia	-	-	-	-	1	4.3
Western Australia	3	25.0	4	18.2	4	17.4
Tasmania	-	-	1	4.5	1	4.3
Northern Territory	-	-	1	4.5	1	4.3
ACT	-	-	-	-	1	4.3
Australia	**12**	**100.0**	**22**	**100.0**	**23**	**100.0**

Source: AMWAC

3. That the RACP and the GESA, in consultation with State/Territory health departments, establish a working party to develop strategies to address the current maldistribution of the gastroenterology workforce among the States/Territories. In particular, consideration be given to the less well supplied States of Tasmania and Queensland.

4. That gastroenterology requirements and supply projections continue to be monitored regularly so that they can be amended if new trends in any of the workforce characteristics emerge or projection assumptions change. That this monitoring be coordinated by the AMWAC and the RACP and the results incorporated into the AMWAC annual report to AHMAC. AMWAC will provide all necessary support.

5. That an update of this review of the gastroenterology workforce be undertaken in 2004-2005.

DESCRIPTION OF THE CURRENT GASTROENTEROLOGY WORKFORCE

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

In establishing the profile of the current gastroenterology workforce the Working Party defined:

- the number of gastroenterologists;
- the distribution of the gastroenterology workforce by State/Territory and geographic location using the RRMA classification;
- the age and gender profiles of the workforce;
- the hours worked; and
- the services provided.

The Number of Practising Specialist Physician Gastroenterologists

The data sources used are the records of the RACP, the Medicare database and the AIHW medical labour force survey.

The RACP records information about Fellows of the College, including age, gender and address. Based on the RACP 1999 survey, there were 359 practising Fellows of the RACP in the specialty of gastroenterology and hepatology.

Medicare data for 1997-98 identified 370 practising gastroenterologists. This figure includes any specialist physician who billed Medicare at least once during 1997-98 for an item defined as one that is provided by gastroenterologists. The Medicare data may exclude some gastroenterologists who, during 1997-98, did not provide or did not bill for gastroenterology Medicare items.

Data on the number of practising specialist physician gastroenterologists is also available from a third source, the AIHW. The AIHW data are self-reported national labour force statistics for registered medical practitioners, obtained principally through a survey conducted as part of the annual renewal of registration. The 1997 AIHW Annual Medical Labour Force Survey reported 462 specialists practising in gastroenterology. For 391 (84.6%) of these specialists, gastroenterology was their main specialty of practice.

The data from the RACP, Medicare, and the AIHW are summarised in Table 1.

Table 1: Number of gastroenterologists (various sources), selected years

RACP (1999)	Medicare (1997-98)	AIHW (1997)
359	370	391[a]

a - specialists whose main specialty of practice was gastroenterology.
Sources: RACP, DHAC, and AIHW

Table 2 shows the number of specialists practicing in gastroenterology but not reporting a qualification in gastroenterology. Substitution can occur in the provision of gastroenterology services as some services are provided by specialists who are not specifically qualified in gastroenterology. Of the 77 gastroenterology specialists not reporting a qualification in gastroenterology, 27 were qualified in general medicine, 22 were qualified in general surgery and 11 were qualified in paediatric medicine.

Table 2: Specialists practising in gastroenterology but not reporting a qualification in gastroenterology , 1997

Field of qualification	Number
General Medicine	27
General Surgery	22
Paediatrics	11
Other	17
Total	**77**

Source: AIHW

Growth in the Gastroenterology Workforce

Table 3 shows the changes occurring in the gastroenterology workforce between 1993-94 and 1999-00. Based on the three main sources of data, the picture is one of rapid growth.

Between 1993-94 and 1999-2000 the number of RACP practising Fellows increased from 243 to 359, an increase of 47.7% (a compound annual increase of 6.7%). Data from the AIHW survey indicate a slightly lower per annum growth rate. Between 1995 and 1997 the number of specialists with gastroenterology as their main specialty of practice increased from 360 to 391, a total increase of 8.6% and a per annum average increase of 4.2%.

For the same time period, Medicare data also show a strong increasing trend in the number of gastroenterologists. These data reveal that since 1995-96 the number of gastroenterologists claiming at least one Medicare benefit per year has increased from 299 in 1995-96 to 370 in 1997-98, an overall increase of 23.7% (a per annum average increase of 11.2%).

The large increase in the gastroenterology workforce that occurred in the early 1990s may be due, at least in part, to a change in hospital salary schemes. During that time many gastroenterologists moved from being solely staff specialists to being involved in hospital work and private practice. As a result, the overall apparent increase in the workforce numbers may be partly the result of a change in status of existing gastroenterologists, rather than to excessive growth in the total number of gastroenterologists.

Population growth between 1993-94 and 1997-98 was 4.9%, a per annum increase of 1.2%.

Table 3: Gastroenterologists, selected years 1993-94 to 1999-00

Source	1993-94	1995-96	1996-97	1997-98	1999-00	% increase*
Medicare	201	299	360	370	-	10.3
RACP	243	286	-	-	359	6.7
AIHW	-	360	381	391	-	4.2

* compound annual increase
- data not available for this year
Sources: DHAC, RACP, and AIHW.

Table 4 uses Medicare data to show the growth in the workforce by State/Territory. The largest growth in the workforce occurred in Victoria, followed closely by South Australia, which are both well above the national average. In all States/Territories reported in Table 4, except for Tasmania, the growth in the workforce has been considerably higher than the population increase.

Table 4: Number of gastroenterologists (Medicare), by State/Territory, 1993-94 and 1997-98

Year	NSW	Vic	Qld	SA	WA	Tas	ACT	NT	Aust
1993-94	85	33	33	18	19	6	7	a	201
1997-98	135	90	57	40	32	6	10	0	370
% workforce increase*	12.3	28.5	14.6	22.1	13.9	0.0	9.3	-	16.5
% population increase*	1.1	0.8	2.3	0.3	1.8	0.1	0.9	2.8	1.2

a - Data not reported to maintain confidentiality.
* compound annual increase
Sources: DHAC and ABS

Distribution of the Gastroenterology Workforce

Table 5 uses RACP 1999 survey data, AIHW 1997 survey data, Medicare data, and ABS data to examine the distribution of gastroenterologists by State/Territory, as compared with the population share in each State/Territory.

The data sources show that the distribution of gastroenterologists by State/Territory was fairly closely matched to the population distribution. In New South Wales, South Australia and the Australian Capital Territory, the State/Territory's share of gastroenterologists exceeded the population share for the State/Territory. According to the 1997 AIHW data, New South Wales, with 33.9% of the Australian population had 35.5% of the gastroenterologists. Similarly, South Australia, with 8.0% of the population had 11.8% of the gastroenterologists, and the Australian Capital Territory, with 1.7% of the population had 2.3% of the gastroenterologists. Comparative figures for the other States and Territories show that Victoria, Queensland, Western

Australia and Tasmania had lower representations of gastroenterologists than was indicated by their share of the population.

Table 5 also uses the RACP 1999 survey data, the AIHW 1997 survey data, Medicare information, and the relevant ABS population estimates to examine the specialist to population ratio and the number of gastroenterologists per 100,000 population, by State/Territory.

Data from the RACP indicated that in 1999, there were 1.9 gastroenterologists per 100,000 people (1 specialist per 52,711 persons). State/Territories with gastroenterologists per 100,000 population ratios below that for Australia as a whole were Tasmania (1.3), Queensland (1.5) and Western Australia (1.8), while the ratios for South Australia (2.7) and New South Wales (2.1) were above that for the whole of Australia.

The AIHW data indicated that in 1997 there were 2.1 gastroenterologists per 100,000 people in Australia (1 specialist per 47,397 persons). Similar to the Medicare and RACP data, both Tasmania and Queensland showed per 100,000 population ratios below the national average, while the ratio for Western Australia was the same as for Australia as a whole (2.1). The data also showed that the ratios for South Australia (3.1) and the Australian Capital Territory (2.9) were well above the national average, and that New South Wales, with a ratio of 2.2, was slightly above the ratio for Australia as a whole.

According to Medicare data for 1997-98, there were 2.0 gastroenterologists per 100,000 people in Australia (1 specialist per 50,087 persons). The Medicare data identified the same States/Territories with ratios above and below the national average, as shown by the RACP data. States/Territories with gastroenterologists per 100,000 population ratios below that for Australia as a whole were Tasmania (1.3), Queensland (1.7) and Western Australia (1.8). The ratios for South Australia (2.7) and the Australian Capital Territory (3.2) were well above that for the whole of Australia.

Table 5: Number of gastroenterologists and gastroenterologists per 100,000 population, by State/Territory, 1997-1999

State/ Territory	Number	% of total number	% of Australian population	SPR	Gastro. per 100,000 pop'n
			RACP(1999)		
NSW	133	37.0	33.8	1 : 48,034	2.1
Vic	87	24.2	24.8	1 : 53,859	1.9
Qld	54	15.0	18.6	1 : 65,204	1.5
SA	40	11.1	7.9	1 : 37,260	2.7
WA	33	9.2	9.8	1 : 56,297	1.8
Tas	6	1.7	2.5	1 : 78,567	1.3
NT	0	0.0	1.0	-	-
ACT	6	1.7	1.6	1 : 51,983	1.9
Australia	359	100.0	100.0	1 : 52,711	1.9
			AIHW (1997)[b]		
NSW	139	35.5	33.9	1 : 45,140	2.2
Vic	95	24.3	24.8	1 : 48,475	2.1
Qld	57	14.6	18.4	1 : 59,670	1.7
SA	46	11.8	8.0	1 : 32,170	3.1
WA	37	9.5	9.7	1 : 48,597	2.1
Tas	7	1.8	2.6	1 : 67,643	1.5
NT	a	a	1.0	-	-
ACT	9	2.3	1.7	1 : 34,422	2.9
Australia	391	100.0	100.0	1 : 47,397	2.1
			Medicare (1997-98)		
NSW	135	36.5	33.9	1 : 46,477	2.2
Vic	90	24.3	24.8	1 : 51,168	2.0
Qld	57	15.4	18.4	1 : 59,670	1.7
SA	40	10.8	8.0	1 : 36,995	2.7
WA	32	8.6	9.7	1 : 56,191	1.8
Tas	6	1.6	2.6	1 : 78,917	1.3
NT	-	-	1.0	-	-
ACT	10	2.7	1.7	1 : 30,980	3.2
Australia	370	100.0	100.0	1 : 50,087	2.0

a - Data not reported to maintain confidentiality.
b - Figures based on gastroenterologists whose main specialty of practice is gastroenterology.
Sources: RACP, AIHW, DHAC and ABS.

Table 6 uses AIHW 1997 survey data and the RRMA classification (see Appendix A) to show the distribution of gastroenterologists by geographic location. The AIHW 1997 data indicate that 91.1% of gastroenterologists were located in a metropolitan area (83.2% in a capital city and 7.9% in a major urban centre), 6.6% were located in large rural centres, and 2.3% were in other rural areas. The distribution of gastroenterologists is quite similar to the distribution of all specialists.

Table 6: Distribution of gastroenterologists as compared to all specialists, by geographic location, 1997

Source	Capital city %	Other metropolitan %	Large rural centre %	Other rural or remote %	Total %
Gastroenterologists	83.2	7.9	6.6	2.3	100.0
All specialists	80.3	7.2	7.4	5.2	100.0
Population	63.7	7.6	6.0	22.7	100.0

Sources: AIHW and ABS.

Table 7 examines the geographic distribution of gastroenterologists by State and Territory using data from the AIHW 1997 survey and the RRMA classification (see Appendix A). According to the data both Queensland and Tasmania had above average representations of rural gastroenterologists, while Western Australia had no rural gastroenterologists. Overall, 32.4% of all rural gastroenterologists are located in Queensland and 32.4% are located in New South Wales.

Table 7: Distribution of gastroenterologists by State/Territory and geographic location, 1997

State/ Territory	Major urban	% by State/ Terr.	Large rural centre	% by State/ Terr.	Other rural	% by State/ Terr.
NSW	130	92.2	8	5.7	3	2.1
Vic	89	93.7	5	5.3	a	1.1
Qld	46	80.7	10	17.5	a	1.8
SA	44	95.7	0	0.0	a	4.3
WA	37	100.0	0	0.0	0	0.0
Tas	4	57.1	3	42.9	0	0.0
NT	0	0.0	0	0.0	a	100.0
ACT	9	100.0	0	0.0	0	0.0
Australia	**359**	**91.3**	**26**	**6.6**	**8**	**2.0**

a - Data not reported to maintain confidentiality.
Source: AIHW

Age Profile

As shown in Table 8, AIHW 1997 survey data show that the largest proportion of gastroenterologists were aged between 45 and 54 years (38.6% of the workforce, for Australia as a whole). The next largest age group was 35 to 44 years, with 34.5% of gastroenterologists in this category. Only 6.1% of the workforce was less than 35 years of age, and 6.1% was aged 65 years or greater. Gastroenterologists have a much younger age profile than all specialists combined and a somewhat younger age profile than all physicians combined. In total, 79.2% of gastroenterologists are less than 55 years of age, as compared with 74.0% of all physicians and 69.6% of all specialists.

Table 8: Age profile of gastroenterologists, all physicians and all specialists, 1997

	Under 35 yrs %	35-44 yrs %	45-54 yrs %	55-64 yrs %	65+ yrs %	Total %
Gastroenterologists	6.1	34.5	38.6	14.6	6.1	100.0
All physicians*	6.1	33.6	34.3	17.5	8.5	100.0
All specialists	4.4	32.7	32.5	20.0	10.4	100.0

* 'physicians' includes all internal medicine specialists
Source: AIHW

The distribution of gastroenterologists by age group varies from the national average in several States/Territories (Table 9). Several States, including New South Wales, South Australia and Western Australia have a higher percentage of gastroenterologists over the age of 65 years, as compared with Australia as a whole. South Australia has the highest percentage of gastroenterologists over the age of 65 years (13.0%), while Tasmania, the Northern Territory and the Australian Capital Territory had no gastroenterologists over the age of 65 years.

According to the survey data, the average age of gastroenterologists in 1997 was 47.4 years, with some variation among States/Territories. The average age of gastroenterologists ranged from a high of 51 years in Tasmania to a low of 41 years in the Northern Territory.

Table 9: Age profile of gastroenterologists, by age group and State/Territory, 1997

State/ Territory	Under 35 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65+ yrs	Average age (yrs)	% aged 65 yrs & over
NSW	7	44	60	18	9	47.8	6.5
Vic	6	29	42	14	4	47.5	4.2
Qld	5	24	17	8	2	45.4	3.5
SA	2	14	14	9	6	48.9	13.0
WA	a	17	8	7	3	47.2	8.1
Tas	a	a	a	a	0	51.0	-
NT	0	a	a	a	0	41.0	-
ACT	a	3	5	0	0	44.8	-
Australia	**24**	**135**	**151**	**57**	**24**	**47.4**	**6.1**
% age group (Australia)	6.1	34.5	38.6	14.6	6.1	-	-

a - Data not reported to maintain confidentiality.
Source: AIHW

Table 10 shows a wide range in the average age of gastroenterologists by geographic region (see Appendix A for a description of the RRMA geographic classification used). The average age ranges from a low of 39.3 years in small rural centres to 58.3 years in other rural areas.

Table 10: Average age of gastroenterologists, by geographic location, 1997

	Capital city	Other metropolitan centre	Large rural centre	Small rural centre	Other rural area	Total
Average age (years)	47.7	47.4	44.3	39.3	58.3	47.5

Source: AIHW

Gender Profile

As shown in Table 11, gastroenterologists have quite a high proportion of males, as compared to all specialists combined and all physicians combined. Overall 91.1% of gastroenterologists are male, as compared to 84.4% male specialists and 84.7% male physicians.

Table 11: Gender profile of gastroenterologists, all specialists, and all physicians, 1997

	Gastroenterologists	All physicians*	All specialists
% male	91.1	84.7	84.4
% female	8.9	15.3	15.6
Total	**100.0**	**100.0**	**100.0**

* 'physicians' includes all internal medicine specialists
Source: AIHW

According to the Medicare data, gender distribution within each State/Territory matches the distribution for Australia as a whole quite closely, with the exception of Tasmania where 100.0% of gastroenterologists were male (Table 12). The Australian Capital Territory showed the highest proportion of female gastroenterologists (10.0% based on Medicare data and 22.2% based on AIHW data).

Table 12: Gender profile of gastroenterologists, by State/Territory, 1997-98

Gender	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
				Medicare (1997-98)					
% Male	91.9	92.2	93.0*	a	93.8	100.0	0	90.0	93.0*
% Female	8.1	7.8	5.3*	a	6.2	0	0	10.0	6.8*
Total number	**135**	**90**	**57**	**40**	**32**	**6**	**0**	**10**	**370**
				AIHW (1997)					
% Male	94.2	87.4	91.2	95.7	91.9	100.0	0	77.8	91.1
% Female	5.8	12.6	8.8	4.3	8.1	0	100.0	22.2	8.9
Total number	**139**	**95**	**57**	**46**	**37**	**7**	**a**	**9**	**391**

a - Data not reported to maintain confidentiality.
* Percentage distributions do not add up to 100% as total number includes one of unknown gender
Sources: DHAC and AIHW.

Tables 13 uses data from the AIHW 1997 survey to examine the age and gender profile of the gastroenterology workforce. Of note is the high proportion of female gastroenterologists aged under 45 years (73.9%) while the comparable figure for male gastroenterologists is significantly lower (37.4%). While women represent approximately 9% of the gastroenterology workforce as a whole, the data show the representation of females in the younger age groups is much higher. Female gastroenterologists comprise 12.5% of gastroenterologists in the under 35 years age group and 16.3% of gastroenterologists in the 35 to 44 years age group. The proportion of females in the older age groups is significantly lower (1.8% aged 55 to 64 years, and 0% aged 65 years or greater). Based on these figures, the proportion of female gastroenterologists in the workforce as a whole is expected to increase as the older male cohort is replaced with younger female gastroenterologists.

Medicare data indicate age and gender profiles similar to the AIHW data.

Table 13: Gender profile of gastroenterologists, by age group, 1997

Gender	Under 35 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65+ yrs	Total (all ages)
Males	21	113	143	56	24	357
% male	5.8	31.6	40.1	15.7	6.8	100.0
Females	3	22	7	a	0	33
% female	9.6	64.3	21.9	4.2	0.0	100.0
Total	**24**	**135**	**150**	**57**	**24**	**390**
% total persons by age group	6.2	34.5	38.5	14.7	6.1	100.0
% male of age group	87.5	83.7	94.7	98.2	100.0	91.1
% female of age group	12.5	16.3	5.3	1.8	0.0	8.9

Source: AIHW

Hours Worked

According to the AIHW 1997 survey, gastroenterologists worked, on average, 52.4 total hours per week and spent 44.7 of those hours on direct patient care.

As shown in Table 14, a fairly significant proportion (20.5%) of the gastroenterology workforce worked, on average, more than 65 hours per week, with a smaller proportion working less than 35 hours per week (13.8%). In terms of both total hours worked and direct patient care hours, the largest proportion of the workforce works, on average, between 50 and 64 hours per week (44.6%).

Table 14: Number of gastroenterologists, average total hours worked per week and average direct patient care hours worked per week, 1997

Average hours worked per week	Less than 35 hours	35 to 49 hours	50 to 64 hours	65+ hours	Total
Total hours worked	54	82	174	80	390
%	13.8	21.0	44.6	20.5	100.0
Direct patient care hours worked	95	115	147	34	391
%	24.3	29.4	37.6	8.7	100.0

Source: AIHW

The hours worked profile for gastroenterologists (Table 15) shows that a large proportion of gastroenterologists work more than 50 hours per week, on average (65.1%). This is a much larger proportion than for all physicians (59.9% work 50 or more hours per week, on average) and compared with all specialists (56.5% of all specialists work 50 hours or more per week, on average).

Table 15: Percentage of the workforce, by average total hours worked per week; gastroenterologists, all physicians and all specialists, 1997

	Less than 35 hours	35 to 49 hours	50 to 64 hours	65+ hours	Total
% gastroenterologists	13.8	21.0	44.6	20.5	100.0
% all physicians	16.8	23.3	41.0	18.9	100.0
% all specialists	15.7	27.8	39.5	17.0	100.0

Source: AIHW

As shown in Table 16, AIHW 1997 survey data show that gastroenterologists aged under 35 years worked fewer total hours (45.9 hours per week on average) than the workforce as a whole (52.4 hours per week on average). Those aged 65 years and over worked less than 35 total hours per week, on average. Female gastroenterologists worked, on average, 75.9% of the average total hours worked by male gastroenterologists (12.9 fewer total hours per week than males). However, those in the youngest and oldest age groups for female gastroenterologists worked more hours per week, on average, than their male counterparts. Female

gastroenterologists less than 35 years old averaged 10.8 more hours per week than males, and those in the 55 to 64 year age group averaged 15.3 more hours per week. The highest average total hours per week for males was in the 35 to 44 year age group (57.6 hours per week on average) and for females it was in the 55 to 64 year age group (70.0 hours per week on average).

In 1997, gastroenterologists spent an average of approximately 85.3% of their work hours per week on direct patient care (44.7 hours out of a total of 52.4 hours worked).

Table 16: Average hours worked per week by gastroenterologists, by gender and age, 1997

	Under 35 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65-74 yrs	75+ yrs	Total
Total hours worked							
Male	44.7	57.6	55.4	54.7	33.6	16.0	53.5
Female	55.5	35.6	45.0	70.0	-	-	40.6
Total	**45.9**	**53.9**	**54.9**	**55.1**	**33.6**	**16.0**	**52.4**
Direct patient care hours worked							
Male	37.3	48.1	48.6	44.1	30.5	16.0	45.6
Female	53.5	28.4	39.3	60.0	-	-	34.3
Total	**39.5**	**45.1**	**48.3**	**44.5**	**30.5**	**16.0**	**44.7**

Source: AIHW

Data from the AIHW 1997 survey indicated substantial variation in the total hours worked by gastroenterologists in different States and Territories (Table 17). Gastroenterologists in Tasmania reported the highest average total hours worked per week (60.8 hours per week), followed by Queensland (55.6 hours per week), Victoria (54.9 hours per week) and New South Wales (51.2 hours per week). Gastroenterologists in all of the other States/Territories reported working fewer than the average working hours per week for Australia as a whole (52.4 hours per week).

Table 17: Average hours worked per week by gastroenterologists, by State/Territory, 1997

State/Territory	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
Total hours worked	51.2	54.9	55.6	46.2	52.3	60.8	20.0	48.8	52.4
Direct patient care hours worked	46.7	48.2	40.6	37.0	40.3	43.0	20.0	39.8	44.7
Proportion (%) of direct patient care hours to total hours worked	91.2	87.8	73.0	80.0	77.1	70.7	100.0	81.6	85.3

Source: AIHW

Table 18 shows that gastroenterologists in large rural centres work, on average, the most hours per week (60.4 average hours per week), when compared with gastroenterologists in other types of locations. The Table also shows the proportion of hours spent on direct patient care ranged from a low of 75.5% in other rural areas to 91.9% in other metropolitan centres.

Table 18: Average total hours worked and direct patient care hours worked per week by gastroenterologists, by geographic location, 1997

Geographic location	Capital city	Other metro. centre	Large rural centre	Small rural centre	Other rural area	Total
Total hours worked	51.8	55.6	60.4	56.3	54.7	52.6
Direct patient care hours worked	43.7	51.1	53.8	44.7	41.3	44.9
Proportion (%) of direct patient care hours to total hours worked	84.4	91.9	89.1	79.4	75.5	85.4

Source: AIHW

Services Provided

Gastroenterology services in Australia are provided through Medicare and other insurance arrangements in fee for service practice and through the government funded public hospital system. Detailed service specific data on medical services which attract Medicare benefits are available since 1985. Public and private hospital casemix activity data are only available for the last few years.

The Health Insurance Commission processes all claims relating to private medical services out of hospital and medical services for private patients in public and private hospitals. It is from this claims database that Medicare statistics are derived. One limitation of Medicare data is that it is not possible to determine the nature of medical consultations. Even for specific procedures there is no information on the underlying medical condition. In addition, Medicare only covers private practice billing activity. For these reasons some care should be exercised in interpreting trends based on Medicare statistics.

There are some advantages in using Medicare data. It enables some broad conclusions to be drawn about the average number of services being provided per provider, and the identification of longer term trends. In addition, Medicare data can be separated into services provided by gastroenterologists and those provided by other specialists.

For hospitals, the key source of services data is the AIHW National Hospital Morbidity database. Hospital morbidity data collections are maintained by all State and Territory health authorities. The collections are based on admitted patient episodes and include demographic, diagnostic, procedural and duration of stay information. Hospital admitted patient data are useful for monitoring the use of surgical and medical procedures performed in hospital. The data cannot be directly used to monitor disease incidence. The other major disadvantage of this database is that it is not possible to distinguish who has provided the service.

The Medicare and hospital morbidity databases cannot be aggregated to provide a picture of national activity because both record different sets of data in different ways.

However, the two databases do provide an indication of gastroenterology service activity and trends over time, which is important for the consideration of the likely future trend in requirements.

Medicare Services

Between 1987-88 and 1997-98, the number of Medicare services provided by gastroenterologists increased by 454.5%, which represents a compound annual increase of 18.7%. (Table 19) The number of gastroenterologists providing Medicare services also increased significantly, although at a slower rate (10.3% per annum) than the growth in number of services. As a result, the average number of services per provider has also grown (7.6% per annum), although the figure has remained steady in the last couple of years.

Table 19: Gastroenterology Medicare item trends, 1987-88 to 1997-98

	1987-88	1993-94	1995-96	1997-98	% change 1987-97	Annual % increase*
Number of providers	139	201	299	370	166.2	10.3
Number of services	175,439	463,145	787,095	972,801	454.5	18.7
Average number of services per provider	1,262	2,304	2,632	2,629	108.3	7.6

* compound annual increase
Source: DHAC

As shown in Figure 1, it is clear that the average number of Medicare services per provider has reached a plateau in recent years. As noted above, the large increase in the early 1990s may be attributed, at least in part, to a change in hospital salary schemes, with many gastroenterologists moving into private practice, as well as changes in billing practices.

Figure 1: Gastroenterology average number of Medicare services per provider

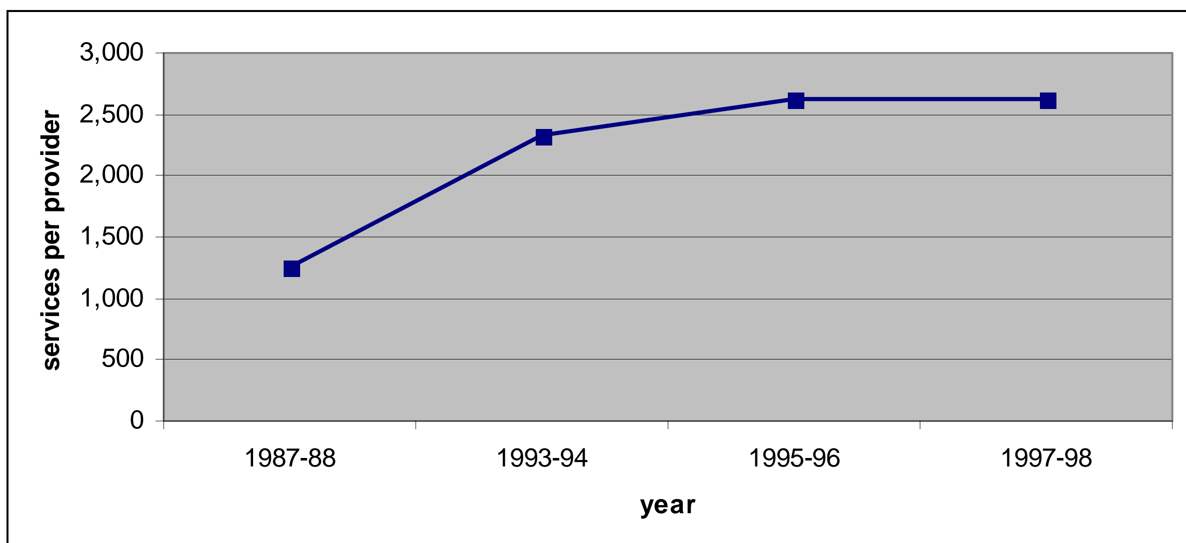

Table 20 shows the most common Medicare services (based on 1997-98 data) provided by gastroenterology specialists. These items represented approximately 95% of all Medicare services provided by gastroenterologists in 1993-94 and 1997-98. The per annum growth rate in Medicare services during this time period was 20.4%, while the number of providers increased at a lower rate of 16.8% per annum.

Table 20: Top 10 Medicare services[a] provided by gastroenterology specialists, 1993-94 and 1997-98

Medicare item		1993-94	1997-98	% change 1993-97	Annual % increase*
116	Subsequent referred consultation	169,710	382,841	125.6	22.6
110	Referred consultation	117,606	225,762	92.0	17.7
30473	Oesophagoscopy, gastroscopy, duodenoscopy or panendoscopy (with or without biopsy)	69,462	138,709	99.7	18.9
32090	Fibreoptic colonoscopy (with or without biopsy)	45,386	87,072	91.8	17.7
32093	Fibreoptic colonoscopy (with removal of one or more polyps)	12,640	28,272	123.7	22.3
119	Minor attendance, subsequent	9,206	24,087	161.6	27.2
32072	Sigmoidoscopic examination	11,798	13,408	13.6	3.2
32084	Flexible fibreoptic sigmoidoscopy or fibreoptic colonoscopy	5,776	7,252	25.6	5.9
41819	Oesophageal and anastomotic stricture, endoscopic dilation	3,189	5,072	59.0	12.3
11700	Twelve-lead electrocardiography	1,134	3,223	184.2	29.8
Total (top 10 Medicare items)		**445,907**	**915,698**	**105.4**	**19.7**
Grand total (all Medicare items)		**463,145**	**972,801**	**110.0**	**20.4**
Top 10 items as a % of all Medicare items		96.3	94.1	-	-
Number of providers		201	370	85.9	16.8

* compound annual increase
a – The top 10 Medicare services excludes item 12533 (carbon-labelled urea breath test) as this item is a lab procedure which is ordered but not performed by a gastroenterologist.
Source: DHAC

Table 21 shows the differences in Medicare services per provider across the States and Territories. The figures range from a high of 3,137 services per provider, on average, in Tasmania, to a low of 1,799 services per provider, on average, in Western Australia.

Table 21: Gastroenterology Medicare items, by State/Territory, 1997-98

State/Territory	Number of providers	Number of services	Average number of services per provider
NSW	135	362,048	2,682
Victoria	90	247,082	2,745
Queensland	57	177,394	3,112
South Australia	40	90,300	2,258
Western Australia	32	57,573	1,799
Tasmania	6	18,821	3,137
ACT	10	19,478	1,948
Australia	**370**	**972,696**	**2,629**

Source: DHAC

Hospital Casemix Services

To examine hospital service trends using the National Hospital Morbidity data source, the Working Party selected a range of AN-DRG codes indicating gastroenterology. Table 22 shows hospital separations for the selected AN-DRG codes, and indicates that the average increase for all selected procedures in total was 10.6% (5.2% per annum). The majority of selected procedures (31 out of the 39 selected procedures) showed an increase in number of hospital separations between 1995-96 and 1997-98. Comparing the increases in gastroenterology hospital separations with population growth for the same period (2.8% between 1995-96 and 1997-98), 22 out of the 40 selected procedures showed an increase in excess of the population growth.

Table 22: Hospital separations for gastroenterology procedures, 1995-96 to 1997-98

AN-DRG code and description		1995-96	1996-97	1997-98	% change 1995-97	Annual % increase*
936	Aftercare W SDx of History of Malignancy W Endoscopy	15,966	19,081	22,047	38.1	17.5
328	Complex Therapeutic Gastroscopy for N-Major Digestive Dis W/O CC	1,791	2,031	2,466	37.7	17.3
529	Intended Sameday Stay for Endoscopic/O.R. Procedure	2,471	2,824	3,201	29.5	13.8
331	Other Gastroscopy for Non-Major Digestive Disease W CC	12,427	14,081	16,063	29.3	13.7
334	Other Colonoscopy W CC	9,840	10,654	11,739	19.3	9.2
388	ERCP Other Therapeutic Procedures Not for Malignancy W/O CC	2,471	2,771	2,941	19.0	9.1
389	Disorders of Pancreas Except Malig Age>54 W CC	1,231	1,387	1,437	16.7	8.0
387	ERCP Other Therapeutic Procedures, for Malignancy or W CC	1,297	1,411	1,510	16.4	7.9
386	ERCP Complex Therapeutic Procedures Not for Malignancy W/O CC	582	580	671	15.3	7.4
327	Complex Therapeutic Gastroscopy for N-Major Digestive Dis W CC	618	647	711	15.0	7.3
332	Other Gastroscopy for Non-Major Digestive Disease W/O CC	159,621	173,981	181,756	13.9	6.7

AN-DRG code and description	1995-96	1996-97	1997-98	% change 1995-97	Annual increase %
378 Disorders of the Biliary Tract W CC	3,876	4,202	4,397	13.4	6.5
348 Oesophagitis, Gastroent & Misc Dig Dis Age>74 or (Age 10-74 W CC)	21,081	22,406	23,718	12.5	6.1
390 Disorders of Pancreas Except Malig (Age<55 W CC)or(Age>54 W/O CC)	3,471	3,586	3,898	12.3	6.0
371 Cirrhosis & Alcoholic Hepatitis W CC	2,987	3,189	3,346	12.0	5.8
385 ERCP Complex Therapeutic Procedures, for Malignancy or W CC	1,295	1,426	1,445	11.6	5.6
352 Other Digestive System Diagnoses Age>9 W CC	4,042	4,164	4,501	11.4	5.5
335 Other Colonoscopy W/O CC	132,109	140,399	145,420	10.1	4.9
329 Other Gastroscopy for Major Digestive Disease W CC	7,393	7,660	8,119	9.8	4.8
326 Complex Therapeutic Gastroscopy for Major Digestive Disease W/O CC	595	550	647	8.7	4.3
376 Disorders of Liver Except Malig, Cirr, Alc Hepa W CC	3,598	3,683	3,885	8.0	3.9
343 Inflammatory Bowel Disease W/O CC	1,763	1,812	1,875	6.4	3.1
333 Complex Therapeutic Colonoscopy	798	910	844	5.8	2.8
379 Disorders of the Biliary Tract W/O CC	12,440	12,556	13,126	5.5	2.7
337 G.I. Haemorrhage Age>64 or W CC	5,217	5,220	5,493	5.3	2.6
353 Other Digestive System Diagnoses Age>9 W/O CC	10,725	10,971	11,184	4.3	2.1
391 Disorders of Pancreas Except Malig Age<55 W/O CC	2,934	2,909	3,049	3.9	1.9
342 Inflammatory Bowel Disease W CC	483	500	497	2.9	1.4
349 Oesophagitis, Gastroent & Misc Dig Dis Age 10-74 W/O CC	35,058	34,672	35,857	2.3	1.1
325 Complex Therapeutic Gastroscopy for Major Digestive Disease W CC	521	538	530	1.7	0.9
377 Disorders of Liver Except Malig, Cirr, Alc Hepa W/O CC	5,646	5,707	5,666	0.4	0.2
339 Complicated Peptic Ulcer W CC	187	165	186	- 0.5	- 0.3
351 Oesophagitis & Misc Digestive System Disorders Age<10	7,670	7,917	7,628	- 0.5	- 0.3
354 Other Digestive System Diagnoses Age<10	1,515	1,500	1,495	- 1.3	- 0.7
338 G.I. Haemorrhage Age<65 W/O CC	2,795	2,547	2,690	- 3.8	- 1.9
330 Other Gastroscopy for Major Digestive Disease W/O CC	34,971	33,962	32,557	- 6.9	- 3.5
372 Cirrhosis & Alcoholic Hepatitis W/O CC	1,059	1,095	980	- 7.5	- 3.8
341 Uncomplicated Peptic Ulcer	1,518	1,257	1,284	- 15.4	- 8.0
340 Complicated Peptic Ulcer W/O CC	365	274	244	- 33.2	- 18.2
Total	**514,427**	**545,225**	**569,103**	**10.6**	**5.2**

*compound annual increase
Source: AIHW

Table 23 shows hospital separations for procedures indicating gastroenterology (see Table 22 for description of procedures included), by State/Territory. The data show that between 1995-96 and 1997-98, the largest increase in numbers occurred in Queensland, while the smallest change occurred in the Australian Capital Territory,

which showed a slight decrease in the number of gastroenterology hospital separations.

Table 23: Hospital separations for gastroenterology procedures, by State/Territory, 1995-96 to 1997-98

Year	NSW	Vic	Qld	SA	WA	Tas	ACT	NT
1995-96	181,074	137,031	96,698	37,773	42,964	11,935	4,920	2,260
1996-97	190,205	141,784	105,907	41,607	45,910	12,647	5,061	2,501
1997-98	193,224	147,155	113,395	44,155	49,076	12,711	4,900	2,457
% change 1995-97	6.7	7.4	17.3	14.2	16.9	6.5	-0.4	8.7
Annual % increase*	3.3	3.6	8.3	6.9	8.1	3.2	-0.2	4.3

* compound annual increase
Source: AIHW

As shown in Table 24, the proportion of hospital separations following gastroenterology procedures is split fairly evenly between public and private hospitals. In South Australia, Western Australia, and the Australian Capital Territory, the proportion is higher in public versus private hospitals and in the Northern Territory 100% of separations are for public hospitals.

Table 24: Hospital separations for gastroenterology procedures, percentage by sector,1997-98

Sector	NSW	Vic	Qld	SA	WA	Tas	ACT	NT	Aust
Public	53.6	46.0	45.9	62.6	61.2	47.6	86.0	100.0	51.8
Private	46.4	54.0	54.1	37.4	38.8	52.4	14.0	-	48.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: AIHW

Table 25 provides data on hospital separations by age group and gender. The data show that slightly more than half of all gastroenterology separations are for female patients (52.0%) as compared with male patients (48.0%), and this proportion is consistent among the various age groups. Gastroenterology separations are also reasonably evenly distributed among the age groups.

Table 25: Hospital separations for gastroenterology procedures, % by age group and gender, 1997-98

	Under 35 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65-74 yrs	75+ yrs	Total
Male %	47.6	48.4	48.4	47.9	50.2	44.2	48.0
Female %	52.4	51.6	51.6	52.1	49.8	55.8	52.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
% by age group	16.4	12.8	17.8	17.8	19.4	15.7	100.0

Source: AIHW

Out of the full list of DRGs (Table 22) the Working Party selected six DRGs which were thought to be particularly representative of gastroenterology. The Working Party examined the average number of these selected procedures per 100,000 population (Table 26), based on the distribution of gastroenterology patients by geographic region. The 1997-98 data show that, across Australia, the average number of procedures per 100,000 population is relatively consistent across geographic regions, with the exception of 'other rural or remote' regions. Excluding 'other rural and remote', the average number of selected procedures per 100,000 population ranged, by geographic region, from 832 (other metropolitan areas) to 899 (large rural centres).

Table 26: Hospital separations for selected gastroenterology procedures* by geographic location and by State/Territory, per 100,000 population, 1995-96 to 1997-98

Location	NSW	Vic	Qld	SA	WA	Tas	ACT	NT	Aust
				1995-96					
Capital city	794	940	n.a.	754	685	n.a.	n.a.	186	678
Other metropolitan	713	595	n.a.	-	-	n.a.	n.a.	-	473
Large rural centre	999	560	n.a.	-	377	n.a.	n.a.	-	402
Small rural centre	876	916	n.a.	718	572	n.a.	n.a.	-	660
Other rural or remote	739	826	n.a.	533	486	n.a.	n.a.	83	497
Total	**794**	**899**	**855**	**712**	**640**	**n.a.**	**n.a.**	**181**	**771**
				1996-97					
Capital city	851	971	960	798	802	n.a.	n.a.	221	848
Other metropolitan	751	626	950	-	-	n.a.	n.a.	-	801
Large rural centre	1,039	579	921	-	625	n.a.	n.a.	-	807
Small rural centre	842	922	993	809	694	n.a.	n.a.	-	833
Other rural or remote	786	835	736	551	579	n.a.	n.a.	250	684
Total	**839**	**920**	**922**	**752**	**758**	**n.a.**	**n.a.**	**248**	**818**
				1997-98					
Capital city	840	1,002	1,026	839	841	907	377	253	895
Other metropolitan	748	563	1,042	-	-	-	-	-	832
Large rural centre	1,053	722	884	-	884	888	-	-	899
Small rural centre	897	849	1,039	897	628	619	-	-	882
Other rural or remote	818	810	775	677	630	709	-	220	751
Total	**841**	**940**	**971**	**812**	**795**	**832**	**483**	**241**	**871**

* Includes DRG codes 334, 335, 385, 386, 387, and 388.
n.a. – data not available
Source: AIHW

Training Arrangements
The RACP oversees the training program for gastroenterology. The training consists of three years of basic training followed by three years of advanced training in the sub-specialty of gastroenterology and hepatology. Admission to Fellowship of the RACP requires completion of basic and advanced training and a pass in the FRACP examination in adult medicine or paediatrics. Fellowship is undifferentiated, that is, it is not awarded in a sub-specialty.

Advanced training in the sub-specialty of gastroenterology and hepatology is supervised by the Specialist Advisory Committee in Gastroenterology (SACG), and includes a minimum of two years spent in full time clinical training positions with responsibility for patient care under the supervision of a trained gastroenterologist. Attainment of technical competence will usually require completion of a specific number of procedures with appropriate success rates under supervision, and recorded in a log book. Training in gastrointestinal endoscopy is assessed independently by the Conjoint Committee for Recognition of Training in Gastrointestinal Endoscopy, a national committee with representatives of the Gastroenterological Society of Australia, the Royal Australasian College of Physicians and the Royal Australasian College of Surgeons. Trainees who satisfy the requirements of the Conjoint Committee will normally be given formal recognition at the completion of advanced training. In addition to the above, the SACG may approve a maximum of one year elective training which may be undertaken in clinical training in other disciplines or research. Trainees are also strongly encouraged to undertake a period of supervised research in basic or clinical sciences. (source: www.racp.edu.au/amtrain/spec/s_gastro2.htm).

In 1999, there were 46 approved training placements. Table 27 shows the 1999 training placements by institution and State/Territory.

Table 27: Gastroenterology training placements, by hospital and State/Territory, 1999

State/Territory	Area / Hospital	Training Placements
New South Wales		**17**
	John Hunter Hospital, Newcastle	1
	Prince of Wales Hospital	2
	St Vincent's Hospital	1
	Repatriation General Hospital, Concord	3
	Royal Prince Alfred Hospital	3
	Nepean Hospital	1
	Wollongong Hospital	1
	Royal North Shore Hospital	1
	Westmead Hospital	2
	St George Hospital	2
Victoria		**10**
	Alfred Hospital	1
	Austin and Repatriation Medical Centre	2
	Monash Medical Centre	2
	St Vincent's Hospital	1
	Royal Melbourne Hospital	1
	Dandenong and District Hospital	1
	Box Hill Hospital	1
	Western Hospital	1
Queensland		**7**
	Townsville General Hospital	1
	Mater Misericordiae Hospital	1
	Princess Alexandra Hospital	3
	Royal Brisbane Hospital	2
Western Australia		**5**
	Royal Perth Hospital	2
	Sir Charles Gairdner Hospital	2
	Fremantle Hospital	1
South Australia		**4**
	The Queen Elizabeth Hospital	2
	Flinders Medical Centre	1
	Royal Adelaide Hospital	1
Australian Capital Territory		**2**
	The Canberra Hospital	2
Northern Territory		**1**
	Royal Darwin Hospital	1
Australia		**46**

Source: RACP

Table 28 shows the distribution of gastroenterology trainees by State/Territory. There were a total of 46 trainees across Australia with the highest proportion of trainees in New South Wales (37.0%) while there were no trainees in Tasmania. The distribution of trainees by State/Territory matches the population distribution quite well, with the exception of Tasmania which has 2.5% of the population but no trainees.

Table 28: Gastroenterology trainees, by State/Territory, 1999

State/Territory	Total number of trainees	% of trainees	% of population
New South Wales	17	37.0	33.8
Victoria	10	21.7	24.8
Queensland	7	15.2	18.6
South Australia	4	8.7	7.9
Western Australia	5	10.9	9.8
Tasmania	-	0.0	2.5
Northern Territory	1	2.2	1.0
Australian Capital Territory	2	4.3	1.6
Total	**46**	**100.0**	**100.0**

Source: RACP and ABS.

Table 29 indicates that between 1994 and 1999, there was little or no growth in the number of gastroenterology trainees between years, with an average of approximately 49 trainees per year.

Table 29: Number of gastroenterology trainees*, 1994-1999

	1994	1995	1996	1997	1998	1999	% annual change** 1994 to 1999
Number of trainees	49	46	50	50	52	48	-0.4

* figures include overseas trainees
** compound annual increase
Source: RACP

Table 30 outlines the gender and training status of gastroenterology trainees. The largest number of trainees are in their third year of training (18 out of 46 trainees or 39.1%). Overall, 32.6% of trainees are female, with the largest proportion of females being in their second and third year of training.

Table 30: Gender and training status of trainee gastroenterologists, 1999

Year of training	1st year	2nd year	3rd year	Total
Male	9	10	12	**31**
Female	3	6	6	**15**
Total	12	16	18	**46**
% Female	25.0	37.5	33.3	**32.6**

Source: RACP

As shown in Table 31, the majority of trainees, both male and female, are between 31 and 40 years old (67.4%). Overall, only a very small proportion of gastroenterology trainees are more than 40 years old (2.2%).

Table 31: Trainee gastroenterologists, percentage by gender and age group, 1999

Age group	Up to 30 yrs	31 - 40 yrs	41 – 50 yrs	Total
% Male	35.5	61.3	3.2	100.0
% Female	20.0	80.0	0.0	100.0
% Total (male + female)	30.4	67.4	2.2	100.0

Source: RACP

Table 32: Average hours worked by trainee gastroenterologists, by gender and age group, 1997

	Under 35 yrs	35-44 yrs	45-54 yrs	Total
Total hours worked				
Male	56.8	65.3	70.0	58.8
Female	61.9	60.0	0.0	61.5
Total	58.1	64.0	70.0	59.4
Direct patient care hours worked				
Male	50.3	56.4	70.0	51.7
Female	51.5	55.0	0.0	52.2
Total	50.6	56.0	70.0	51.8

Source: AIHW

The Main Characteristics of the Specialist Gastroenterology Workforce

The gastroenterology workforce comprises 391 specialists practising in gastroenterology across Australia. This number represents approximately 2 gastroenterologists per 100,000 population and an estimated SPR of 1 : 47,397, with a wide variation across the States/Territories. Less well supplied States/Territories are Queensland, Tasmania and the Northern Territory.

In total, 77 specialists practising in gastroenterology do not hold qualifications in gastroenterology. The majority of these specialists hold qualifications in general medicine, general surgery or paediatric medicine.

Gastroenterologists practise primarily in metropolitan locations, with approximately 9% practising in rural areas and of these, 32% are located in Queensland and 32% are located in New South Wales. Using population share as a benchmark, Queensland, Tasmania, and the Northern Territory have less than their share of gastroenterologists, while New South Wales, South Australia and the Australian Capital Territory have more than their share. Victoria and Western Australia's share of gastroenterologists is fairly close to their share of the population.

Women currently represent only a small proportion of the gastroenterology workforce (approximately 9%). The proportion of females in the workforce is expected to increase, however, as women represent a much larger proportion of gastroenterology trainees (33%), and female gastroenterologists are comparatively younger than their male counterparts.

The average age of gastroenterologists is 47.4 years, with approximately 21% of the workforce being over age 55 and less than 7% being under 35 years old. The majority of female gastroenterologists are under 45 years old (74%) while a much smaller proportion of male gastroenterologists are under the age of 45 years (37%).

Gastroenterologists work an average of 52.4 hours per week. In total, female gastroenterologists work, on average, 12.9 fewer hours per week than their male counterparts. However, young female gastroenterologists (*i.e.*, those under 35 years of age) work, on average, 10.8 hours more than male gastroenterologists in the same age group. A large proportion of the workforce work, on average, more than 65 hours per week (20.5%). Gastroenterology trainees work, on average, 7 more hours per week than gastroenterology specialists (59.4 hours per week on average).

ADEQUACY OF THE CURRENT GASTROENTEROLOGY 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 a variety of measures it is possible to gain an indication of whether the workforce is adequately meeting current demand or if there is a significant shortfall or oversupply. The indicators chosen by the Working Party were:

- specialist to population ratio;
- general practitioner assessment of the need gastroenterologists;
- hours worked;
- consultation waiting times;
- perceptions of the adequacy of the current workforce; and
- public hospital vacancies.

Gastroenterologist : Population Ratio

Specialist to population ratios are useful for comparing States/Territories and changes over time. Table 5 calculated SPRs using RACP, AIHW, Medicare and ABS data to examine differences among States and Territories. Medicare and ABS data, shown in Table 33, provide some comparisons over time.

Table 33 shows that over the last 8 years, the SPR has increased significantly from one gastroenterologist per 93,823 persons in 1990-91 to one gastroenterologist per 50,087 persons in 1997-98. These figures include all gastroenterologists who provided at least one Medicare service during the relevant year. During the same period, 1990-91 to 1997-98, the population increased by 7.9% (1.1% per annum) while the total number of gastroenterologists increased by 102.2% (10.6% per annum).

Following the rapid growth in the SPR in the early 1990s, the SPR has levelled out in recent years. The Working Party attributes the earlier increases to systemic factors which resulted in a re-distribution of existing gastroenterologists, rather than to excessive growth in the total number of gastroenterologists. The apparent large increase in the gastroenterology workforce (based on the Medicare data) which happened in the early 1990s may be due, at least in part, to a change in hospital salary schemes.

Table 33: Gastroenterologists to population ratio (Medicare) by year, 1990-91 to 1997-98

Year	Number of gastroenterologists	Population ('000)	SPR	Gastro. per 100,000 pop'n
1990-91	183	17,169.6	1 : 93,823	1.07
1991-92	196	17,384.6	1 : 88,697	1.13
1992-93	180	17,573.1	1 : 97,628	1.02
1993-94	199	17,661.5	1 : 88,751	1.13
1994-95	284	17,840.8	1 : 62,820	1.59
1995-96	299	18,023.1	1 : 60,278	1.66
1996-97	360	18,208.2	1 : 50,578	1.98
1997-98	370	18,532.2	1 : 50,087	2.00

Sources: DHAC and ABS.

Based on AIHW data, Table 34 shows the SPR for Australia as a whole was relatively unchanged between 1995 and 1997. In 1995 the ratio was one gastroenterologist per 50,064 persons and in 1997 the ratio was one gastroenterologist per 47,396 persons. Although there was wide variation in the SPRs among the States and Territories, all of the States, with the exception of the Australian Capital Territory, followed the national trend of a slight increase in the number of gastroenterologists as compared with population. While the Australian Capital Territory continued to be comparatively well supplied with gastroenterologists, it showed a slight decrease in the proportion of gastroenterologists as compared with population, changing from one gastroenterologist per 28,091 persons in 1995 to one gastroenterologist per 34,422 persons in 1997.

Table 34: Gastroenterologists to population ratio, by State/Territory, 1995 and 1997

State/Territory	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1995									
No. Gastro.	123	91	54	38	35	7	0	11	360
Population ('000)	6,108	4,501	3,256	1,475	1,722	478	174	309	18,023
SPR 1:	49,662	49,459	60,291	38,821	49,194	68,300	-	28,091	50,064
Gastro./100,000	2.0	2.0	1.7	2.6	2.0	1.5	-	3.6	2.0
1997									
No. Gastro.	139	95	57	46	37	7	a	9	391
Population ('000)	6,274	4,605	3,401	1,480	1,798	474	187	310	18,532
SPR 1:	45,140	48,475	59,670	32,170	48,597	67,643	-	34,422	47,396
Gastro./100,000	2.2	2.1	1.7	3.1	2.1	1.5	-	2.9	2.1

Source: AIHW and ABS.

In comparison with some other countries, on a national level Australia is relatively well supplied with gastroenterologists. However, it must be noted that international comparisons suffer because of uncertainties about definitions of specialist gastroenterologists and variations in style and scope of practice and health care systems.

In the United Kingdom, the Royal College of Physicians of London, Gastroenterology Committee 1999 report on appropriate workload for consultant gastroenterologists reports an actual SPR of one gastroenterologist serving a population base of 130,000 persons. The report calculates an estimated total need of one gastroenterologist per 66,000 persons, and notes that achieving this SPR would require an increase of 9.8% per annum over the next ten years (www.bsg.org.uk/workload.html). In Canada, available 1998-99 figures on the number of gastroenterology specialists and population for the province of Alberta, show the 1998-99 ratio may be calculated to be one gastroenterologist per 145,647 persons (www.health.gov.ab.ca/public/document/ssup98-99, table 1.1 (population) and table 2.9 (specialists)). In the United States, the American Gastroenterological Association/American Digestive Health Foundation Trends Report reports an SPR of one gastroenterologist per 27,778 persons. The report also notes that the American Gastroenterological Association has set a goal of reducing the SPR by 50% over the next 12 years, which would result in a ratio of one gastroenterologist per 55,556 persons. The report states that while meeting this target is unlikely, reducing the ratio to one specialist per 33,333 persons may be achievable within 15 years (www.gastro.org/adhf/ddw-trends2.html, trend 12).

General Practitioner Assessment of the Need for Gastroenterologists

Information about the adequacy of the supply of gastroenterology services throughout Australia was obtained through a mailed survey of all Divisions of General Practice. As the response rate was rather low (45.6%, or 57 out of 125 Divisions responding), the Working Party felt that the findings from this survey were not definitive, but that they do provide some indication of general practitioners' assessment of the adequacy of current gastroenterology services.

The findings from the survey indicate that 58% of responding Divisions of General Practice consider access to gastroenterology consultation services to be in short supply or totally inadequate, and 54% perceive access to gastroenterology treatment services to be in short supply or totally inadequate. Responses by metropolitan and rural regions showed that a greater proportion of rural Divisions considered access to consultation and treatment gastroenterology services to be inadequate (67.9% and 64.3%, respectively) as compared with metropolitan Divisions (52.6% and 47.4%, respectively).

In every State/Territory, with the exception of Victoria and South Australia, the majority of responding Divisions considered access to gastroenterology consultation and treatment services to be either in short supply or totally inadequate. In particular, a large proportion of responding Divisions in Queensland and Tasmania considered

access to gastroenterology services to be totally inadequate. Conversely, in Victoria and South Australia, a significant proportion of responding Divisions considered access to gastroenterology services to be about right. (Table C5)

Hours Worked

As noted above, based on the 1997 AIHW labour force survey gastroenterologists worked an average of 52.4 hours per week. The AIHW survey also provides information on the proportion of the workforce working excessive hours, or more than 65 hours per week. For the gastroenterology workforce, 20.5% of gastroenterologists reported working more than 65 hours per week. In comparison, 18.9% of physicians worked more than 65 hours per week and 17.0% of all specialists worked more than 65 hours per week (Table 35).

Table 35: Proportion of gastroenterology workforce working excessive hours, as compared to all physicians and all specialists, 1997

	Between 65 and 79 hours per week	More than 65 hours per week	More than 80 hours per week.
% gastroenterologists	17.0	20.5	3.5
% all physicians	13.9	18.9	5.0
% all specialists	12.1	17.0	4.9

Source: AIHW

The 2000 AMWAC survey of the gastroenterology workforce showed similar results, with 21.7% of respondents indicating that they worked more than 65 hours per week.

Consultation Waiting Times

The 2000 AMWAC survey of the gastroenterology workforce requested respondents to estimate the average waiting time for referred patients, by type of condition (clinically urgent and non-urgent). In an effort to ensure consistency of responses, the survey questionnaire included examples of clinically urgent conditions (‘rectal bleeding’, ‘recent onset dysphagia’), and examples of non-urgent conditions (‘dyspepsia’, ‘chronic abdominal pain’). In considering these waiting times, particularly those for ‘clinically urgent conditions’, it must be noted that the most clinically urgent patients would most likely be provided with immediate treatment through hospital emergency departments, and therefore would be excluded from these survey results.

The survey results indicate that patients with a clinically urgent condition wait less time, on average (five days), to see a gastroenterologist in his/her private rooms than do patients in public outpatient departments (16 days). Waiting time for a patient with a clinically urgent condition presenting to a public sector service ranged from 8 days in the Australian Capital Territory to a high of 24 days in Queensland. Waiting times for patients with a clinically urgent condition presenting to a private sector service ranged from 2 days in the Northern Territory to 10 days in South Australia. (Table 36)

The average waiting time for a patient to see a gastroenterologist in his/her private rooms for a standard first consultation was 22 days, while for a patient presenting to a public sector service the average waiting time was 56 days.

Table 36: Average waiting time (days) for gastroenterology services for a clinically urgent condition and a standard first consultation, by type of service and State/Territory, 2000

State/Territory	Public Outpatient	Private Room
	Clinically urgent condition	
New South Wales	12	6
Victoria	14	4
Queensland	24	4
South Australia	13	10
Western Australia	21	4
Tasmania	11	7
Australian Capital Territory	8	7
Northern Territory	10	2
Total	**16**	**5**
	Standard first consultation	
New South Wales	60	26
Victoria	42	17
Queensland	88	18
South Australia	36	17
Western Australia	54	22
Tasmania	35	30
Australian Capital Territory	73	49
Northern Territory	56	21
Total	**56**	**22**

Source: AMWAC survey of gastroenterologists.

Professional Satisfaction

Overall, 53.1% of respondents to the AMWAC survey of the gastroenterology workforce indicated that they felt their current workload was about right, 40.2% felt that their workload was too much and 6.7% felt that their workload was too little.

Aspects which more than 75% of the survey respondents were satisfied with were related to the work itself (‘opportunity to use abilities’ and ‘sufficient work to maintain competence’), the income level (‘sufficient work to maintain income’) and some aspects of support from other providers (‘availability of similar consultants’ and ‘availability of other specialists’). Aspects which the largest proportion of respondents were dissatisfied with were related to workload, with 23.0% of respondents indicating they were dissatisfied with their ‘hours of work’ and 21.7% indicating they were dissatisfied with their ‘amount of work’. (Table B16)

Public Hospital Vacancies

The AMWAC survey of public hospital specialist vacancies conducted in 1997 found that there were six gastroenterology vacancies, representing approximately 1.5% of

the employment positions. The survey reported three vacancies in New South Wales, two in Queensland and one in Western Australia.

Conclusions on Adequacy of the Current Specialist Gastroenterology Workforce

Overall, the Working Party concluded that the gastroenterology workforce is adequately meeting current requirements. Nationally the SPR has increased significantly over the past 8 years. The Working Party considers that this growth may be apparent rather than real, and may be due, at least in part, to changes in work practices. The majority of Divisions of General Practitioners assessed the supply of gastroenterologists to be inadequate, although the Working Party did not consider this result to be definitive due to the low survey response rate. In addition, whilst a large proportion of the gastroenterology workforce worked excessive hours, the proportion is fairly consistent with other specialists. Public hospital vacancies were considered appropriately low.

The SPRs by State/Territory show that Tasmania and, to a lesser extent, Queensland, appear to be less well supplied and may require proportionately more gastroenterologists.

PROJECTIONS OF REQUIREMENTS

Population

Australia has a growing and an ageing population. The 1999 population was estimated at 18.9 million, and the population is estimated to increase to 20.2 million by 2006 and 21.0 million by 2011 (ABS 1998). Between 1999 and 2010, the projected growth rate of the total population is 0.9% per annum.

ABS estimates that the median age of the total population will rise from 34.3 years in 1997 to between 40.1 and 41.1 years in 2021. As a proportion of the total population, those aged 65 years and over represented 12.1% (2.2 million) in 1997, and this proportion is projected to increase to 12.9% (2.6 million) in 2006, 14.0% (3.0 million) in 2011, and 17.9% (4.0 million) in 2021. These changes represent a growth rate in the over 65 year age group of 2.0% between 1997 and 2011 and 3.1% between 2011 and 2021.

Trends in Services

The Medicare and the National Hospital Morbidity databases provide information regarding trends in gastroenterology service provision over recent years and are useful indicators of likely future demand.

Services Attracting Medicare Benefits

Provision of Medicare services by gastroenterologists increased significantly in the early 1990s and, while they continue to grow at an average annual rate of 11.2%, the average number of services per provider has levelled out in recent years. Between 1995-96 and 1997-98, the provision of all Medicare services by gastroenterologists increased by 11.2% per annum (an overall increase of 23.6%) and the number of gastroenterologists providing Medicare services also increased by 11.2% per annum. During this same period, the number of services per provider remained steady at about 2,630 services per provider, suggesting that the growth in Medicare providers was keeping pace with the growth in demand for Medicare services. The growth trends in the top 10 Medicare items provided by gastroenterologists and in the consultation items (100 and 116) also averaged around 11% per annum. Item 110 (initial referred consultation) increased by 18.7% overall, and item 116 (subsequent consultation) increased by 25.3% overall. These items represented 63% of all Medicare items provided by gastroenterologists.

Table 37: Trends in Medicare services provided by gastroenterologists, 1995-96 to 1997-98

Indicator	1995-96	1997-98	Annual % increase*
All Medicare services	787,095	972,801	11.2
Top 10 Medicare services	757,563	939,907	11.4
Item 110 (initial referred consultation)	190,227	225,762	8.9
Item 116 (subsequent referred consultation)	305,477	382,841	11.9
Items 110 and 116	495,704	608,603	10.8

* compound annual increase
Source: DHAC

National Hospital Morbidity Database

The Working Party analysed hospital separations following gastroenterology procedures of public and private patients. Between 1995-96 and 1997-98 the average increase for all selected procedures in total was 10.6% (5.2% per annum). The Working Party selected a further subset of these procedures which they considered best reflected the demand for gastroenterology services. The subset included DRG codes 334, 335, 385, 386, 397, and 388 (see Table 22 for a description of the codes). Between 1995-96 and 1997-98, the overall increase in this subset of procedures was 15.6% (7.5% per annum).

Table 38: Trends in hospital separations following gastroenterology procedures, 1995-96 to 1997-98

Indicator	1995-96	1997-98	Annual % increase*
All gastroenterology procedures[a]	514,427	569,103	5.2
Selected gastroenterology procedures[b]	141,184	163,276	7.5

[a] See Table 22 for a description of the procedures included.
[b] Includes DRG codes 334, 335, 385, 386, 387, and 388.
* compound annual increase
Source: DHAC

The incorporation of service trend data such as the National Hospital Morbidity data with future population projections has the potential to provide forecasts of future service requirements. Forecasts of future gastroenterology procedures have been calculated by applying projections of the population to the hospital age utilisation data for 1997-98. These projections suggest that in total, across all age groups and gender, the demand for gastroenterology procedures over the next 20 years will continue to increase. Forecasts of gastroenterology procedures for the period 1997-98 to 2008, based on population projections, indicate a growth rate of 1.6% per annum, for all age groups. For the period 1997-98 to 2018, the forecasts also indicate a per annum growth rate of 1.6% for all age groups. Gastroenterology procedures for males are expected to increase at a slightly higher rate than for females (Table 40).

Table 39: Actual and projected population and hospital separations for gastroenterology procedures, by age group and gender, 1997-98 to 2018

Age group	Population			Separations ('000)		
	Male	Female	Total	Male	Female	Total
			1997-98 (actual)			
0 – 19 yrs	2,683,882	2,549,482	5,233,364	14.2	13.6	27.9
20 – 34 yrs	2,131,892	2,105,761	4,237,653	30.2	35.2	65.5
35 – 54 yrs	2,689,891	2,671,368	5,361,259	84.0	90.6	174.5
55 – 64 yrs	815,029	801,306	1,616,335	49.8	51.7	101.5
65+ yrs	999,203	1,282,545	2,281,748	94.9	104.8	199.8
Total (all ages)	**9,319,897**	**9,410,462**	**18,730,359**	**273.1**	**296.0**	**569.1**
			2008 (projected)			
0 – 19 yrs	2,659,651	2,523,936	5,183,587	14.1	13.5	27.6
20 – 34 yrs	2,192,325	2,135,206	4,327,531	31.1	35.7	66.8
35 – 54 yrs	2,956,625	2,992,328	5,948,953	92.3	101.5	193.8
55 – 64 yrs	1,207,197	1,203,323	2,410,520	73.7	77.6	151.4
65+ yrs	1,230,363	1,502,349	2,732,712	116.9	122.8	239.7
Total (all ages)	**10,246,161**	**10,357,142**	**20,603,303**	**328.1**	**351.1**	**679.2**
			2018 (projected)			
0 – 19 yrs	2,555,144	2,422,938	4,978,082	13,544	13.0	26.5
20 – 34 yrs	2,304,921	2,237,201	4,542,122	32,682	37.4	70.1
35 – 54 yrs	3,034,599	3,051,296	6,085,895	94,708	103.5	198.2
55 – 64 yrs	1,419,474	1,452,358	2,871,832	86,703	93.7	180.4
65+ yrs	1,713,747	2,008,121	3,721,868	162,830	164.1	326.9
Total (all ages)	**11,027,885**	**11,171,914**	**22,199,799**	**390,467**	**411.7**	**802.2**

Note: It is assumed that the rate of hospital separations for each age group for 1997-98 will remain constant to 2008 and 2018, and, using this assumption, 1997-98 hospital separations have been projected using the ABS population projections.
Sources: AIHW hospital morbidity database and ABS Catalogue 3222.0.

Table 40: Annual percentage increase* in projected population and hospital separations for gastroenterology procedures, by age group and gender, 1997-98 to 2018

Age group	Population			Separations		
	Male	Female	Total	Male	Female	Total
			1997-98 to 2008			
0 – 19 yrs	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
20 – 34 yrs	0.3	0.1	0.2	0.3	0.1	0.2
35 – 54 yrs	0.9	1.0	1.0	0.9	1.0	1.0
55 – 64 yrs	3.6	3.8	3.7	3.6	3.8	3.7
65+ yrs	1.9	1.4	1.7	1.9	1.4	1.7
Total (all ages)	**0.9**	**0.9**	**0.9**	**1.7**	**1.6**	**1.6**
			1997-98 to 2018			
0 – 19 yrs	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
20 – 34 yrs	0.4	0.3	0.3	0.4	0.3	0.3
35 – 54 yrs	0.6	0.6	0.6	0.6	0.6	0.6
55 – 64 yrs	2.7	2.9	2.8	2.7	2.9	2.8
65+ yrs	2.6	2.2	2.4	2.6	2.2	2.4
Total (all ages)	**0.8**	**0.8**	**0.8**	**1.7**	**1.6**	**1.6**

Note: Percentage changes are calculated based on data from Table 39
* compound annual increase
Sources: AIHW hospital morbidity database and ABS Catalogue 3222.0.

Impact of Technology

Technological advance will have an impact on the utilisation of gastroenterology services. The impact is, however, difficult to quantify. Generally, it is considered technology has two long-term impacts – boosting practitioner productivity and broadening both the types and sophistication of procedures and treatments that are available to the public.

New technology may also allow other specialties, such as general practitioners, surgeons or other specialists, to be able to perform some of the tasks which are currently referred to gastroenterologists. For example, in the area of large bowel investigations, a new technique called 'virtual colonoscopy' may be introduced, and it will be performed by radiologists not gastroenterologists. If the technique is widely adopted (for example, in the area of colon cancer screening), the number of colonoscopies might initially increase, in response to abnormalities indicated through virtual colonoscopy, but might then slowly decrease, as accuracy of the virtual colonoscopy increases. However, it is unlikely that virtual colonoscopy will have a major impact on traditional colonoscopy and therefore is anticipated to have little or no effect on workforce numbers.

Recognition of the difficulty of quantifying the impact of technological advancement is one of the reasons the AMWAC process includes regular updating of the data and conclusions contained in the original reports.

Gastroenterologists' Perceptions of Factors Affecting Workforce Requirements

Respondents to the AMWAC survey of gastroenterologists were asked to indicate whether they believed particular factors would increase workforce requirements, decrease workforce requirements or whether requirements would stay the same.

Among the important issues that respondents considered would increase workforce requirements were ageing of the population, patient expectations/knowledge, and growth in consumer demands. There were no factors which a majority of respondents (more than 50%) felt would decrease workforce requirements, although a large proportion of respondents felt that cost containment strategies would result in a decrease in requirements for gastroenterologists over the next ten years. (Table B21)

PROJECTIONS OF SUPPLY

Additions and Losses to the Gastroenterology Workforce

Additions to the Gastroenterology Workforce

Between 1994 and 1998, an average of 17 graduates from the RACP gastroenterology and hepatology sub-specialty training program have been admitted as RACP Fellows. Based on trainees currently in the program, the number of new gastroenterologists is estimated to be approximately 16 per year between 1999 and 2001.

Retirements

Respondents to the AMWAC survey of the gastroenterology workforce indicated an average expected retirement age of 63.3 years (mode 65 years, median 65 years). A total of 11.6% (25) of responding gastroenterologists intend to retire in the next five years and a further 19.0% (41) plan to retire within the next ten years, for a total of 30.6% (66) gastroenterologists indicating that they plan to retire by 2010 (Table B20).

According to the AIHW 1997 labour force survey data, the average age of gastroenterologists is 47.4 years, with the largest cohort aged between 45 and 54 years (38.6%) (Table 8). The AIHW data show 57 gastroenterologists are between 55 and 64 years of age, and 24 are aged 65 years or more, making a total of 81 gastroenterologists over the age of 55 years. Assuming the average retirement age from the AMWAC survey (63.3 years) it can be anticipated that all of the gastroenterologists who are currently aged 55 years or greater will retire in the next ten years, representing an average loss of approximately 8 gastroenterologists per year.

Female Participation in the Workforce

Women represent approximately 9% of the gastroenterology workforce (Table 13b). It is expected that this proportion will increase because women represent a much larger proportion of gastroenterology trainees (33%) and female gastroenterologists are comparatively younger than their male counterparts. In particular, based on AIHW 1997 data, there are no female gastroenterologists in the over 65 year age group and only one female in the 55 year to 64 year age group. As a result, during the next few years the majority of retirees from the gastroenterology workforce will be male.

According to the AIHW 1997 survey, female gastroenterologists work, on average, 12.9 hours per week less than male gastroenterologists, although women in the youngest age group, under 35 years of age, work an average of 10.8 hours per week more than their male colleagues (Table 16).

Expected Changes in Work Hours

In total, 66.4% of respondents to the AMWAC survey of gastroenterologists indicated that they anticipated a change in the hours that they work over the next ten years,

with 46.8% anticipating a reduction in their hours and 19.5% planning to increase their hours worked (Table B17).

Of the 103 responding gastroenterologists who expected their work hours to decrease over the next ten years, 34.9% were over 55 years of age. Of the 43 responding gastroenterologists who expected their work hours to increase, 30.2% were under the age of 35 years. A large percentage of those in the 55 years and over categories planned to decrease their work hours (69.8% of those aged 55 to 64 years and 66.7% of those aged 65 years or greater). (Table B18)

On average, those respondents who stated that they expected to increase their work hours indicated that they would increase their hours worked by 34%, while those who planned to decrease their work hours, indicated an average reduction of 32%. (Table B19)

The main reasons given by respondents who planned to increase their work hours over the next ten years were to 'build practice/income', 'changed patient numbers' and 'family considerations'. Reasons given by respondents who planned to decrease their work hours over the next ten years were 'lifestyle preference', 'family considerations' and 'retirement'.

Provision of Services in Rural and Remote Areas

A total of 85.1% of respondents to the AMWAC survey of the gastroenterology workforce indicated that their primary practice was located in a metropolitan area and 14.9% had their primary practice located in a rural area. States/Territories with the highest proportion of gastroenterologists located in rural areas were Queensland, Tasmania and the Northern Territory. In each of these States/Territories, 33.3% of primary practices were located in rural areas. New South Wales and South Australia had the lowest proportion of gastroenterologists with primary practices in rural areas, with 9.4% and 4.3% of practices, respectively, located in rural areas. (Table B15)

A total of 18.6% (36) of responding metropolitan gastroenterologists reported that they provide rural outreach services, and, of these, 88.9% provided visiting rural outreach services and 11.1% provided telemedicine services. On average, these gastroenterologists spent 19.6 hours per month providing visiting rural outreach services and 4 hours per month providing telemedicine services. The main reasons stated by metropolitan gastroenterologists for providing rural outreach services were, in order of frequency, 'adds variety to my work and opportunity to expand my practice', 'employing hospital has an arrangement with rural providers' and 'other reasons'.

The main reasons given for choosing to practice in a rural area were 'lifestyle', 'nature of clinical work', 'good place for children' and 'came from the country'. A total of 48.3% indicated that they provide visiting outreach services to outlying rural/remote communities. 'Availability of local hospital facilities/equipment' was considered the most important factor in ensuring a sustainable rural specialist

practice, followed by ‘availability of sufficient similar specialists to provide 24 hour cover’.

According to the AIHW 1997 labour force survey data, 8.9% of gastroenterologists practise in rural areas (Table 6). Of these, 32.4% of these specialists are located in Queensland and 32.4% are located in New South Wales. The data also showed that while 52.1% of gastroenterologists located in capital cities are on call, 100% of gastroenterologists in small rural areas reported being on call.

The survey of the Divisions of General Practice found that a greater proportion of rural Divisions than metropolitan Divisions considered access to gastroenterology treatment and consultation services to be inadequate. Overall, 67.9% of rural Divisions considered access to gastroenterology consultation services to be inadequate as compared with 52.6% of metropolitan Divisions, and 64.3% of rural Divisions considered access to gastroenterology treatment services to be inadequate as compared with 47.4% of metropolitan Divisions.

BALANCING SUPPLY AGAINST REQUIREMENTS

The standard AMWAC specialist medical workforce projection model has been used to project a gastroenterology supply and requirements scenario to 2010. On the supply side, the model takes into account expected entrants to the workforce and those leaving, converts the number of specialists to a full time equivalent (FTE) figure using the average hours worked per week by age and gender, and factors in the expected lower average lifetime workforce contribution of female specialists. On the requirements side, the likely trend in demand for gastroenterology services is factored in, based on the Working Party's assessment of the expected trend in requirements (Theile et al, 1998).

Both supply and requirements have been projected over a ten year period to 2010. It is recognised that a ten year projection period is a long time frame for assumptions to remain valid. However, this time frame was chosen because five years was considered to be too short for any impact on training numbers to be identified.

Requirement Trends

The Working Party assessed various indicators as the basis for estimating future requirements for gastroenterologists. These indicators included population growth, trends in gastroenterology national hospital morbidity data and Medicare services data.

Each of the selected requirement indicators has been projected over the period 2000 to 2010 and the results are outlined in Table 41. The projections have been converted to FTE hours per week using the estimated average hours worked by gastroenterologists of 52.4 hours per week. Conversion of the data to hours worked allows comparisons to be made with projected supply data, which has been similarly converted.

The most definable influence on future requirements is population change, which is projected to increase by 0.9% per annum over the next ten years. Ageing of the population is expected to add a further 0.4% to the demand for medical services, for a combined growth rate of 1.3% per annum. Projections of hospital morbidity data, estimated by applying projected population growth by age group and gender to 1997-98 gastroenterology hospital morbidity data, show an expected increase of 1.6% per annum. However, actual trends in gastroenterology services growth in recent years have been well above 1.6% per annum, ranging from 5.2% per annum (Medicare services) to 11.2% per annum (hospital morbidity data), between 1995-96 and 1997-98. (Table 41)

The Working Party considered that while the recent trend in gastroenterology services growth was too high an indicator of future workforce requirements, it was also felt that requirements may grow at a rate in excess of the projected hospital morbidity data growth rate. The Working Party concluded that a projected growth rate of 1.8%, which is below the recent growth rate in Medicare services (5.2%) but

higher than the projected growth in hospital morbidity data (1.6%), best reflected the likely growth in gastroenterology requirements.

Table 41: Projected requirements for gastroenterology services (in FTE hours per week) for selected indicators, 2000 to 2010*

Projected requirements for gastroenterology services in FTE hours per week	% growth pa	2000	2002	2004	2006	2008	2010
Population growth (1997-2010)	0.9	20,674	21,053	21,439	21,833	22,233	22,641
Population growth and ageing (1997-2010)	1.3	20,756	21,305	21,868	22,446	23,039	23,648
Medicare service provision (1995-96 to 1997-98)	11.2	22,776	28,150	34,791	43,000	53,145	65,684
Hospital separations ICD-9-CM (1995-96 to 1997-98)	5.2	21,548	23,838	26,372	29,175	32,276	35,706
Hospital separations ICD-9-CM (projected - 1997-98 to 2008)	1.6	20,819	21,499	22,202	22,928	23,677	24,451

*Assumes an average of 52.4 hours worked per week
Source: AMWAC

Supply Trends

The supply of gastroenterologists was projected by ageing the estimated number of gastroenterologists, subtracting expected retirements (estimated at approximately 8 per year) and adding expected new graduates (16 in 1999, 18 in 2000, and 12 in 2001). The expected number of graduates for the years 1999 to 2001 were provided by the RACP based on the number of commencing students for the relevant years. The Working Party estimated that, based on trends in recent years, approximately one overseas gastroenterologist per year will enter the Australian gastroenterology workforce. From 2002 to 2010 the number of graduates has been estimated as averaging 16 per year.

The number of gastroenterologists was converted to hours per week by applying the average number of hours worked to head counts in each major age cohort. In doing so the Working Party assumed that the pattern of workforce participation of the current workforce provides a suitable basis on which to project future workforce requirements. Increasing female participation and the average lower lifetime workforce contribution of female specialists has also been assumed. These supply projections show that, based on the current estimated intake of trainees, supply is projected to increase from the estimated 2000 level of approximately 20,616 FTE hours per week to an estimated 22,502 FTE hours per week in 2010 (Table 42).

Table 42: Projected supply of gastroenterology services (in FTE hours per week), 2000 to 2010[a]

Year	Expected graduates	Estimated FTE hours
2000	18	20,616
2001	12	20,872
2002	16	20,963
2003	16	21,193
2004	16	21,423
2005	16	21,644
2006	16	21,849
2007	16	22,037
2008	16	22,208
2009	16	22,362
2010	16	22,502

a – based on an average of 16 graduating gastroenterologists per year.
Source AMWAC

Projected Balance

Using the projected supply and requirements scenarios summarised in Tables 41 and 42, an indication of the expected shortage or oversupply within the workforce can be calculated. This is outlined in Table 43 and shows that the projected workforce will be below the estimated gastroenterology service requirements level, assuming growth in requirements of 1.8% per annum, resulting in a slight undersupply in 2000, estimated at 1.2%, and continuing to increase to 10.8% by 2010.

Table 43: Projected gastroenterology supply and requirements (in FTE hours per week), 2000 to 2010[a]

Year	Projected Supply	Projected Requirements	Estimated (over)/under supply (%)
2000	20,616	20,856	1.2
2001	20,872	21,231	1.7
2002	20,963	21,613	3.1
2003	21,193	22,002	3.8
2004	21,423	22,398	4.6
2005	21,644	22,801	5.3
2006	21,849	23,212	6.2
2007	22,037	23,630	7.2
2008	22,208	24,055	8.3
2009	22,362	24,488	9.5
2010	22,502	24,929	10.8

a – based on a growth rate of 1.8%, average retirement rates (8 per year), average graduating gastroenterologists (16 per year), and a working week of 52.4 hours.
Source AMWAC

To balance the future gastroenterology requirement growth indicator of 1.8% per annum, a variety of scenarios with different number of graduates per year between 2002 and 2010 were considered. Table 44 shows the scenario of an increasing number of graduates per year, assuming 22 graduates in 2003 and 2004, and 23 per year thereafter, to 2010. This scenario will result in a slight notional undersupply, peaking at 3.8% in 2003, and progressively decreasing thereafter to 2.1% in 2010. Based on the results of the projection modelling, the Working Party recommends that the number of graduates be progressively increased, as outlined in this scenario (Table 44), to 23 per year for the next few years. It would also seem appropriate that an update of this workforce review be undertaken in 2004-2005.

It should be noted that the projection model is sensitive to the chosen requirement indicator, number of retirements per year, average hours worked and the age and gender profile of the workforce. If the expected requirement growth for gastroenterology varies from the projected trend of 1.8% per annum, or if any of the other factors mentioned changes significantly, then the model will need to be updated with these scenarios.

Table 44: Estimated gastroenterology graduate output required to move projected supply into balance with projected requirements [a] (in FTE hours per week), 2003 to 2010

Year	Projected Supply	Projected Requirements	Estimated (over)/under supply (%)
Projected supply assuming 22 graduates in 2003 and 2004, and 23 graduates per year thereafter (2005 to 2010)			
2003	21,193	22,002	3.8
2004	21,629	22,398	3.6
2005	22,074	22,801	3.3
2006	22,551	23,212	2.9
2007	23,026	23,630	2.6
2008	23,495	24,055	2.4
2009	23,959	24,488	2.2
2010	24,418	24,929	2.1

a - based on a growth rate of 1.8%, average retirement rates (8 per year), and a working week of 52.4 hours.
Source: AMWAC

The Working Party is concerned with the geographic maldistribution of the workforce among the States/Territories and recommends that it would be useful if State/Territory health departments, the RACP and State/Territory health departments consider solutions that may help reduce the maldistribution within the workforce.

RECOMMENDATIONS

The Working Party recommends:

1. To achieve an appropriate supply of gastroenterologists the annual average intake to the gastroenterology training program should be progressively increased to 23 trainees per year, starting with 22 in 2003 and 2004, and 23 per year thereafter to 2010. (During the last five years new graduates have averaged approximately 16 to 17 per year.)

   The aim of maintaining first year advanced trainee numbers within this range is to match workforce supply with an expected future growth in gastroenterology requirements of 1.8% per annum.

2. That the coordination of these gastroenterology trainee placements be overseen by State/Territory based gastroenterology working groups, comprising representatives from the Royal Australasian College of Physicians (RACP), the Gastroenterological Society of Australia (GESA), and State/Territory health departments. Table 45 shows the recommended placement of first year trainees, by State/Territory.

Recommended first year advanced gastroenterology trainee intake, by State/Territory, 2001 to 2008

State/Territory	First year trainee intake (1999)	% First year trainee intake (1999)	2001 & 2002	%	2003 to 2008	%
NSW	5	41.7	8	36.4	7	30.4
Victoria	4	33.3	6	27.3	5	21.7
Queensland	-	-	2	9.1	3	13.0
South Australia	-	-	-	-	1	4.3
Western Australia	3	25.0	4	18.2	4	17.4
Tasmania	-	-	1	4.5	1	4.3
Northern Territory	-	-	1	4.5	1	4.3
ACT	-	-	-	-	1	4.3
Australia	**12**	**100.0**	**22**	**100.0**	**23**	**100.0**

Source: AMWAC

3. That the RACP and GESA, in consultation with State/Territory health departments, establish a working party to develop strategies to address the current maldistribution of the gastroenterology workforce among the States/Territories. In particular, that consideration be given to the less well supplied States of Tasmania and Queensland.

4. That gastroenterology requirements and supply projections continue to be monitored regularly so that they can be amended if new trends in any of the workforce characteristics emerge or projection assumptions change. That this monitoring be coordinated by AMWAC and the RACP and the results incorporated into the AMWAC annual report to AHMAC. AMWAC will provide all necessary support.

5. That an update of this review of the gastroenterology workforce be undertaken in 2004-2005.

APPENDIX A: RURAL, REMOTE AND METROPOLITAN AREAS CLASSIFICATION

The Rural, Remote and Metropolitan Areas classification, devised by the Commonwealth Departments of Primary Industries and Energy and Health and Family Services, has been used to classify the geographic location of the job of responding medical practitioners in the following seven categories. The data used in determining these categories are based on the 1991 population census.

Metropolitan areas:

1. *Capital cities* consist of the State and Territory capital cities of Sydney, Melbourne, Brisbane, Perth, Adelaide, Hobart, Darwin and Canberra.

2. *Other metropolitan centres* consist of one or more statistical subdivisions which have an urban centre of population of 100,000 or more in size. These centres are: Newcastle, Wollongong, Queanbeyan (part of Canberra-Queanbeyan), Geelong, Gold Coast-Tweed Heads, Townsville-Thuringowa.

Rural zones:

3. *Large rural centres* are statistical local areas where most of the population reside in urban centres of population of 25,000 to 99,999. These centres are: Albury-Wodonga, Dubbo, Lismore, Orange, Port Macquarie, Tamworth, Wagga Wagga (NSW); Ballarat, Bendigo, Shepparton-Mooroopna (Vic); Bundaberg, Cairns, Mackay, Maroochydore-Mooloolaba, Rockhampton, Toowoomba (Qld), Whyalla (SA); and Launceston (Tas).

4. *Small rural centres* are statistical local areas in rural zones containing urban centres of population between 10,000 and 24,999. These centres are: Armidale, Ballina, Bathurst, Broken Hill, Casino, Coffs Harbour, Forster-Tuncurry, Goulburn, Grafton, Griffith, Lithgow, Moree Plains, Muswellbrook, Nowra-Bombaderry, Singleton, Taree (NSW); Bairnsdale, Colac, Echuca-Moama, Horsham, Mildura, Moe-Yallourn, Morwell, Ocean Grove-Barwon Heads, Portland, Sale, Traralgon, Wangaratta, Warrnambool (Vic); Caloundra, Gladstone, Gympie, Hervey Bay, Maryborough, Tewantin-Noosa, Warwick (Qld); Mount Gambier, Murray Bridge, Port Augusta, Port Lincoln, Port Pirie (SA); Albany, Bunbury, Geraldton, Mandurah (WA); Burnie-Somerset, Devonport (Tas).

5. *Other rural areas* are the remaining statistical areas within the rural zone. Examples are Cowra Shire, Temora Shire, Guyra Shire (NSW); Ararat Shire, Cobram Shire (Vic); Cardwell Shire, Whitsunday Shire (Qld); Barossa, Pinnaroo (SA); Moora Shire, York Shire (WA); George Town, Ross (Tas); Coomalie, Litchfield (NT).

Remote zones:
These are generally less densely populated than rural statistical local areas and hundreds of kilometres from a major urban centre.

6. *Remote centres* are statistical local areas in the remote zone containing urban centres of population of 5,000 or more. These centres are: Blackwater, Bowen, Emerald, Mareeba, Moranbah, Mount Isa, Roma (Qld); Broome, Carnarvon, East Pilbara, Esperance, Kalgoorlie/Boulder, Port Hedland, Karratha (WA); Alice Springs, Katherine (NT).

7. *Other remote areas* are the remaining areas within the remote zone. Examples are: Balranald, Bourke, Cobar, Lord Howe Island (NSW); French Island, Orbost, Walpeup (Vic); Aurukun, Longreach, Quilpie (Qld); Coober Pedy, Murat Bay, Roxby Downs (SA); Coolgardie, Exmouth, Laverton, Shark Bay (WA); King Island, Strahan (Tas); Daly, Jabiru, Nhulunbuy (NT).

APPENDIX B: AMWAC SURVEY OF GASTROENTEROLOGISTS, 2000

METHODOLOGY

A confidential mailed survey of all gastroenterologists (based on GESA membership) was conducted in April 2000 to assist with the establishment of a profile of the gastroenterology workforce in Australia. The survey was administered by AMWAC in consultation with the GESA. In total, 713 questionnaires were distributed and 277 responses were received, which is a response rate of 38.8%. However, this response rate is not an accurate reflection of the true response rate as the questionnaire was mailed out to every member on the GESA mailing list, which would have included many whom are not necessarily practising gastroenterologists (*e.g.*, they may be surgeons with an interest in gastroenterology). Unfortunately it was not possible to separate out the non-gastroenterologists from the mailing list and therefore many of those who received the survey would not have responded, as the survey would not have been applicable or relevant to them. It is possible to get an approximation of the true response rate by considering that the workforce size, as agreed by the Working Party, is 391 and therefore the response rate may be estimated to be closer to 58.6% (229 completed questionnaires returned, out of 391 questionnaires distributed). Out of the 277 questionnaires returned, 48 were incomplete, as they were submitted by respondents who were not currently practising in gastroenterology, which left 229 completed questionnaires.

RESULTS

The results of this survey are presented in the following sequence:

- An analysis of the survey response rate, which includes a description of the profile of respondents;
- A description of the work profile of responding gastroenterologists including qualifications, type of practice, work setting, hours worked, practice activities, age profile of patients, waiting times, provision of services to rural areas, distances travelled by patients, and professional satisfaction; and
- An examination of factors influencing future workforce participation and requirements, including plans to change hours worked, retirement expectations, respondents' perceptions of factors affecting workforce requirements, perceived provider shortage/oversupply, and adjustment to trainee numbers.

Response rate analysis

Distribution

Table B1 shows that the State/Territory distribution of survey respondents was similar to the distribution of gastroenterologists based on AIHW data, although it appears that gastroenterologists in New South Wales may have been under-represented in the survey results. Conversely, gastroenterologists in Victoria, Queensland, the Northern Territory and the Australian Capital Territory may have been over-represented.

Table B1: Distribution of survey respondents (2000) compared with the workforce distribution based on AIHW data (1997), by State/Territory

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust
	AMWAC survey respondents (n=234)								
% respondents	28.2	27.4	18.4	10.3	8.5	1.3	1.3	4.7	100.0
	AIHW (n=391)								
% of gastroenterologists	35.5	24.3	14.6	11.8	9.5	1.8	0.2	2.3	100.0

Sources: AIHW and AMWAC survey of gastroenterologists.

The majority of survey respondents were from capital cities (78.2%), which is also where the largest proportion of the gastroenterology workforce is located (83.2%). In total, 14.9% of survey respondents were from rural areas (10.3% from large rural centres and 4.6% from other rural or remote areas) as compared with a smaller rural representation in the total gastroenterology workforce (8.9%).

Table B2: Geographic distribution of gastroenterologists, AMWAC 2000 survey and AIHW 1997 medical labour force survey

	Capital city	Other metropolitan	Large rural centre	Other rural or remote	Australia
	AMWAC survey respondents (n=234)				
% respondents	78.2	6.8	10.3	4.6	100.0
	AIHW medical labour force data (n=391)				
% of gastroenterology workforce	83.2	7.9	6.6	2.3	100.0

Sources: AIHW and AMWAC survey of gastroenterologists.

Age profile

The age range of survey respondents was from 30 years to 87 years with an average age of 48.9 years, while the AIHW 1997 survey data show the average age of gastroenterologists was 47.4 years. Table B3 shows the distribution of respondents by age group varied from the age profile of the workforce, as indicated by the 1997 AIHW medical labour force survey. Overall the age profile of the survey respondents is reasonably consistent with the overall workforce, with the exception of those in the 45 to 54 year age group, which represent 28.8% of respondents as compared with 38.6% of the overall workforce in this age group.

Table B3: Age profile of gastroenterologists, AMWAC 2000 survey, and AIHW 1997 medical labour force survey

	<35 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65+ yrs
	AMWAC survey respondents (n = 274)				
% respondents	9.9	32.5	28.8	19.7	9.1
	AIHW medical labour force data (n = 391)				
% gastroenterology workforce	6.1	34.5	38.6	14.6	6.1

Sources: AIHW and AMWAC survey of gastroenterologists.

Gender profile

It appears that a larger proportion of female than male gastroenterologists responded to the AMWAC survey. In total, 85.4% of respondents were male and 14.6% were female, as compared with the AIHW 1997 labour force data, which show 91.1% of gastroenterologists were male and 8.9% were female. The average age of female respondents (39.7 years) was more than ten years below that for male respondents (50.5 years).

Workforce status

In total, 84.2% (229) of survey respondents indicated they were currently working in the field of gastroenterology, of whom 73.4% indicated they were working full-time and 26.6% indicated they were working part-time, and 15.8% (43) of respondents indicated that they were not currently practising gastroenterology. Of those not currently practising gastroenterology, 32.6% were retired; 25.6% were practising in surgery; 16.3% worked in academic or research areas; 7.0% did not specify why they were not practising gastroenterology; and the remainder were not practising in gastroenterology for various other reasons, such as maternity leave and working in other medical fields. Of the five survey respondents who did not answer this question, three did not complete the body of the questionnaire.

The remainder of this report focuses on the information provided by the 229 respondents who were currently active in the workforce.

Response rate conclusions

The Working Party concluded that while it was not possible to specify the true survey response rate, it considered that the large number of responses received will provide valuable information about the gastroenterology workforce. Furthermore, it was concluded that the profile of respondents was sufficiently consistent with the AIHW profile of the gastroenterology workforce to provide representative data of the gastroenterology workforce.

Qualifications

In total, 206 (90.7%) survey respondents who are currently active in the workforce held Fellowship of the RACP. Of these respondents, 61.7% indicated they received advanced training under the auspices of the Specialist Advisory Committee in

Gastroenterology (SACG). A further 19.9% received advanced training prior to the establishment of the SACG while 12.6% indicated they received advanced training under another specialist advisory committee (SAC), (Table B4).

Table B4: Advanced training for Fellowship of the RACP, 1999

Advanced training	Number of specialists	%
Under the auspices of the SACG[1]	127	61.7
Prior to the establishment of a SAC[2]	41	19.9
Under the auspices of some other SAC[2]	26	12.6
Not specified	10	4.9
Other	2	1.0
Total	**206**	**100.0**

1 - Specialist Advisory Committee in Gastroenterology
2 - Specialist Advisory Committee
Source: AMWAC survey of gastroenterologists

Of the 26 respondents who indicated they gained advanced training under the auspices of another specialist advisory committee (SAC), 10 were under the SAC in Paediatrics, 9 were under the SAC in General Medicine, and 2 were under the auspices of the SAC in Internal Medicine. The remaining 5 respondents gained their advanced training under the auspices of other specialist advisory committees or overseas.

Type of Gastroenterology Practice

Respondents were asked to indicate whether they considered themselves to be either a gastroenterology specialist or a paediatric gastroenterology specialist. A total of 215 gastroenterologists responded to this question, with 93.0% (200) indicating that they considered themselves to be a gastroenterology specialist, and the remaining 7.0% (15) considered themselves a paediatric gastroenterology specialist. Of note is that all of the (15) gastroenterologists who considered themselves to be paediatric gastroenterology specialists were located in metropolitan areas. Of the 200 respondents who considered themselves to be gastroenterology specialists, 13.0% were located in rural areas and 87.0% were located in metropolitan areas.

Respondents were asked to indicate the proportion of direct patient care they spent in various gastroenterology practice areas. On average, respondents spent the largest proportion of their time on office or outpatient consultations (47.7%), followed by endoscopic and other procedures (30.8%), and hospital ward rounds (11.2%). The remainder of their time spent on direct patient care (10.3%) was spent in other areas, including other surgery. (Table B5)

Table B5: Proportion of direct patient care spent in gastroenterology practice areas, 2000

Area of gastroenterology practice	Average percentage of time spent in area of gastroenterology practice
Office or outpatient consultations	47.7
Endoscopic and other procedures	30.8
Hospital ward rounds	11.2
Other	10.3
Total	**100.0**

Source: AMWAC survey of gastroenterologists.

Work Setting

Respondents to the survey were asked to indicate where they practised gastroenterology. On average, respondents indicated that 55.7% of their time was spent in private practice, 40.2% of their time was spent in a salaried position (eg. staff specialist, VMO), and the remaining 4.1% of their time was spent in other areas, including research, study and teaching. Gastroenterologists located in rural areas indicated a larger proportion of their time was spent in private practice (67.7%) (Table B6). Overall, a total of 17.6% of respondents indicated that all of their time was spent in private practice and 14.9% indicated that all of their time was spent in a salaried position.

Table B6: Average percentage of time spent by gastroenterology workforce by work setting and location, 2000

	Average % of time spent by gastroenterologists		
Work Setting	**Metropolitan**	**Rural**	**Total**
Private practice	53.6	67.7	55.7
Salaried position (e.g., staff specialist, VMO)	41.8	31.4	40.2
Other	4.6	0.9	4.1
Total	**100.0**	**100.0**	**100.0**

Source: AMWAC survey of gastroenterologists.

Of the respondents who indicated they worked some or all of their time in a salaried position, the main source of salary reported was a public hospital (81.7%), followed by public hospital and university (7.7%), public hospital and research institute (4.2%), and university (4.2%), with the remaining 2.1% reporting other sources. (Table B7)

Table B7: Source of salary of gastroenterologists employed in a salaried position in gastroenterology, 2000

Source of Salary	Percent
Public hospital	81.7
Public hospital and university	7.7
Public hospital and research institute	4.2
University	4.2
Other	2.1
Total	**100.0**

Source: AMWAC survey of gastroenterologists.

As shown in Table B8, of the respondents who indicated they worked some or all of their time in a private practice, the majority had a paid public hospital appointment (75.3%). A further 16.1% indicated they had a private hospital appointment, 4.6% had an unpaid public hospital appointment, and 2.9% had no hospital appointment.

Table B8: Appointment in private practice in gastroenterology, 2000

Appointment in Private Practice	Percent
Public hospital appointment, paid	75.3
Private hospital appointment only	16.1
Public hospital appointment, unpaid	4.6
No hospital appointment	2.9
Other	1.1
Total	**100.0**

Source: AMWAC survey of gastroenterologists.

Hours Worked

On average, respondents worked a total of 54.7 hours per week (minimum 4 hours; maximum 104 hours; mode 60 hours; median 60.0 hours). Respondents worked an average of 5.2 hours per week on call back, and spent an average of 36.8 hours per week on call, but not working.

Table B9 shows that the average hours worked per week ranged from a low of 53.4 average hours per week in New South Wales to a high of 61.0 hours per week, on average, in the Northern Territory. Overall, the mean hours worked per week was higher for gastroenterologists located in rural areas (60.0 hours per week) than for gastroenterologists located in metropolitan areas (53.8 hours per week). The average hours worked by gender were 56.7 hours per week for male gastroenterologists and 43.7 hours per week for female gastroenterologists.

Table B9: Average hours worked per week by gastroenterologists, by geographic location and State/Territory, 2000

Location	NSW	Vic	Qld	SA	WA	Tas	ACT	NT	Aust
Metropolitan	53.0	53.5	56.4	51.0	53.8	60.0	54.9	64.0	53.8
Rural	56.7	68.8	55.5	45.0	-	55.5	75.0	55.0	60.0
Total	**53.4**	**55.8**	**56.1**	**50.7**	**53.8**	**58.3**	**58.9**	**61.0**	**54.7**

Source: AMWAC survey of gastroenterologists.

As shown in Table B10, the survey responses indicated that, on average, gastroenterologists in the 65 years and over age group worked the fewest hours per week, while those in the 45 to 54 year age group worked the most.

Table B10: Average hours worked per week by gastroenterologists, by age group, 2000

Age group	Less than 35 yrs	35 to 44 yrs	45 to 54 yrs	55 to 64 yrs	65+ yrs	All ages
Average hours worked	42.7	55.3	59.7	55.9	31.2	54.7

Source: AMWAC survey of gastroenterologists.

Based on the survey results, 21.7% of gastroenterologists worked more than 65 hours per week, on average, while 15.8% worked between 65 and 79 hours per week and 5.9% worked more than 80 hours per week.

Table B11: Percentage of gastroenterologists, average total hours worked per week, by age group, 2000

Average hours worked	Less than 35 hours	35 to 49 hours	50 to 64 hours	65 to 79 hours	80 hours or more	Total
Percentage of gastroenterologists	9.0	17.1	52.3	15.8	5.9	100.0

Source: AMWAC survey of gastroenterologists.

Practice Activities

Respondents were asked to indicate the percentage of their time spent in various activities over a typical week. The responses showed that, in both the private and public sectors, the majority of their time was spent on patient care activities, including consultations, case conferences, correspondence and letters relating directly to patients, telephone consultations with patients or with colleagues about a specific patient, operating time and ward rounds. In the private sector, 46.3% of gastroenterologists' time, on average, was spent on patient care, as compared with 25.1% of their time in the public sector. (Table B12)

Table B12: Percentage of hours worked by gastroenterologists, by sector and by type of activity, 2000

Type of activity	% of total hours worked in a typical week
Private sector health services	
Specialist treatment services	46.3
Administration	3.2
CME	2.7
Teaching and research	1.8
Other	0.7
Subtotal (private sector health services)	*54.7*
Public sector health services	
In-patient care	12.6
Outpatient care	12.5
Teaching and research	11.0
Administration	4.2
CME	2.4
Multidisciplinary team activities	2.1
Other	0.5
Subtotal (public sector health services)	*45.3*
Total (private + public sectors)	**100.0**

Source: AMWAC survey of gastroenterologists.

Age Profile of Patients

Table B13 shows the estimated percentage of direct patient care hours per week that respondents spent with patients, by age group. The hours were fairly evenly distributed across the age groups, with the majority of hours spent on patients aged 50 years or greater (55.9%).

Table B13: Age profile of gastroenterology patients, 2000

Patient age group	Average % of direct patient care hours worked in a typical week
Child/youth (0 – 19 years)	10.1
Young adult (20 – 34 years)	13.4
Adult (35 – 49 years)	20.6
Adult (50 – 64 years)	25.0
Mature adult (65 – 79 years)	22.4
Aged adult (80 years or over)	8.5
Total	**100.0**

Source: AMWAC survey of gastroenterologists.

Consultation Waiting Times

Table B14 shows that patients with a clinically urgent condition wait less time, on average (5 days), to see a gastroenterologist in his/her private rooms than do patients in public outpatient departments (16 days). The data also show that there is wide variation in average waiting times among the States/Territories. Waiting time for a patient with a clinically urgent condition presenting to a public sector service ranged from 8 days in the Australian Capital Territory to a high of 24 days in Queensland. Waiting times for patients with a clinically urgent condition presenting to a private sector service ranged from 2 days in the Northern Territory to 10 days in South Australia. Within States/Territories, Queensland showed the most variation in average waiting time for patients presenting with a clinically urgent condition, ranging from an average waiting time of 4 days for a patient presenting to a private sector service to 24 days for a patient presenting to a public sector service.

The survey results show the disparity between the private and public systems with respect to waiting time for a standard first consultation with a gastroenterologist is much greater than for a clinically urgent condition. The average waiting time for a patient to see a gastroenterologist in his/her private rooms for a standard first consultation was 22 days, while for a patient presenting to a public sector service the average waiting time was 56 days. Within State/Territory, Queensland again showed the most variation between the private and public sectors, with average waiting times ranging from 88 days for a standard first consultation with a gastroenterologist when presenting to a public sector service and 18 days for patients presenting to a private sector service.

Table B14: Average waiting time (days) for gastroenterology services for a clinically urgent condition and a standard first consultation, by type of service and State/Territory, 2000

State/Territory	Public Outpatient	Private Room
	Clinically urgent condition	
New South Wales	12	6
Victoria	14	4
Queensland	24	4
South Australia	13	10
Western Australia	21	4
Tasmania	11	7
Australian Capital Territory	8	7
Northern Territory	10	2
Total	**16**	**5**
	Standard first consultation	
New South Wales	60	26
Victoria	42	17
Queensland	88	18
South Australia	36	17
Western Australia	54	22
Tasmania	35	30
Australian Capital Territory	73	49
Northern Territory	56	21
Total	**56**	**22**

Source: AMWAC survey of gastroenterologists.

Provision of Services to Rural Areas

In total, 85.1% of the survey respondents indicated that their primary practice was located in a metropolitan area and 14.9% had their primary practice located in a rural area. States/Territories with the highest proportion of gastroenterologists located in rural areas were Queensland, Tasmania and the Northern Territory. In each of these States/Territories, 33.3% of primary practices were located in rural areas. New South Wales and South Australia had the lowest proportion of gastroenterologists with primary practices in rural areas, with 9.4% and 4.3% of practices, respectively, located in rural areas. (Table B15)

A total of 18.6% (36) of responding metropolitan gastroenterologists reported that they provide rural outreach services, and, of these, 88.9% provided visiting rural outreach services and 11.1% provided telemedicine services. On average, these gastroenterologists spent 19.6 hours per month providing visiting rural outreach services and 4 hours per month providing telemedicine services. By State/Territory, there was a wide variation in the proportion of metropolitan gastroenterologists involved in providing rural outreach services, with the Northern Territory having the highest proportion (66.7%) and Queensland having the lowest (7.1%). (Table B15)

Table B15: Provision of rural services by gastroenterologists, by State/Territory, 2000

Location of service provision	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust
Metropolitan only	78.1	77.8	59.5	47.8	80.0	33.3	0.0	80.0	69.3
Metropolitan providing rural outreach services	12.5	7.9	7.1	47.8	20.0	33.3	66.7	20.0	15.8
Rural	9.4	14.3	33.3	4.3	0.0	33.3	33.3	0.0	14.9
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: AMWAC survey of gastroenterologists.

The main reasons stated by metropolitan gastroenterologists for providing rural outreach services were, in order of frequency, 'adds variety to my work and opportunity to expand my practice', 'employing hospital has an arrangement with rural providers' and 'other reasons'.

Respondents were asked to indicate their view on the population catchment necessary to sustain a reasonable rural outreach specialist service. The answers ranged from 2,000 to 300,000, with an average of 37,500. In total, 73.1% of respondents indicated that a population of 20,000 or less was required, and 88.5% indicated that a population of 50,000 or less was required. Factors most frequently noted as having an influence on population catchment requirements were 'population characteristics' (eg, paediatric population, age, income), and 'access and availability of resources and support'. 'General practitioner support' was considered the most important factor in the provision of a sustainable rural outreach service, followed by 'availability of local hospital facilities/equipment'.

Resident Rural Gastroenterologists

Overall, 14.9% (34) of respondents indicated that their practice was located in a rural location. Of these, 30 (88.2%) responded to questions pertaining to the provision of services in rural areas.

The main reasons given for choosing to practice in a rural area were 'lifestyle', 'nature of clinical work', 'good place for children' and 'came from the country'. A total of 48.3% indicated that they provide visiting outreach services to outlying rural/remote communities. 'Availability of local hospital facilities/equipment' was considered the most important factor in ensuring a sustainable rural specialist practice, followed by 'availability of sufficient similar specialists to provide 24 hour cover'.

Respondents were asked to indicate their view on the population catchment necessary to sustain a reasonable resident rural specialist service. The answers ranged from 20,000 to 100,000, with an average of 48,000. In total, 78.6% of respondents indicated that a population of 50,000 or less was required.

Locum Service Requirements
41 respondents replied to questions regarding the provision of locum services to rural areas, with 61.0% (25) indicating that they would make use of such a scheme if it were available. The majority of those interested indicated a requirement of between 4 and 6 weeks of locum support per year (average of 5 weeks per year).

Distances Travelled by Patients
Respondents were asked to indicate whether some of their patients travelled a long distance (more than 50km) to obtain gastroenterology services. A total of 83.6% (184) responded that yes, some of their patients did travel more than 50km for services and that, on average, these patients represented 12.7% of their practice.

During a given month:
- 149 respondents indicated that an average of 11 of their patients travel between 50km and 100km each way;
- 137 respondents indicated that an average of 8 of their patients travel between 100km and 200km each way; and
- 124 respondents indicated that an average of 5 of their patients travel more than 200km each way.

Professional Satisfaction of Gastroenterologists
Workload Level
Overall, 53.1% of respondents indicated that they felt their current workload was about right, 40.2% felt that their workload was too much and 6.7% felt that their workload was too little.

Satisfaction with Aspects of Practice
Respondents were asked to indicate how satisfied or dissatisfied they were with various aspects of their practice. As shown in Table B16, a total of 83.4% of gastroenterologists were either satisfied or very satisfied with their work overall. Aspects which more than 75% of respondents were satisfied with were related to the work itself (‘opportunity to use abilities’ and ‘sufficient work to maintain competence’), the income level (‘sufficient work to maintain income’) and some aspects of support from other providers (‘availability of similar consultants’ and ‘availability of other specialists’). Aspects which the largest proportion of respondents were dissatisfied with were related to workload, with 23.0% of respondents indicating they were dissatisfied with their ‘hours of work’ and 21.7% indicating they were dissatisfied with their ‘amount of work’.

Table B16: Gastroenterologists' professional satisfaction, 2000

Indicator	Very dissatisfied	Dissatisfied	Neither dissatisfied nor satisfied	Satisfied	Very satisfied
Overall satisfaction	***0.9***	***4.0***	***11.7***	***60.5***	***22.9***
The work itself					
Opportunity to use abilities	1.3	5.3	7.5	57.5	27.9
Sufficient work to maintain competence	0.9	4.4	4.9	49.1	40.7
Level of income					
Sufficient work to maintain income	0.9	5.8	16.4	47.1	29.8
Workload					
Hours of work	3.1	19.9	23.0	44.2	9.7
Amount of work	4.4	17.3	21.2	45.6	11.5
Support from other providers					
Availability of similar consultants	3.6	3.6	14.9	47.1	30.8
Availability of other specialists	2.2	3.6	15.2	49.8	29.1
Support from primary care practitioners	0.9	6.3	21.7	52.5	18.6
Availability of skilled nursing staff	1.8	12.6	22.4	43.0	19.7
Availability of allied health personnel	0.9	13.2	26.5	43.4	16.0

Source: AMWAC survey of gastroenterologists.

Plans to Change Hours Worked

In total, 66.6% of responding gastroenterologists indicated that they anticipated a change in the hours that they work over the next ten years, with 47.0% anticipating a reduction in their hours and 19.6% planning to increase their hours worked. (Table B17)

Table B17: Percentage of gastroenterologists planning to change hours worked, by State/Territory, 2000

State/Territory	Reduce hours	Increase hours	Remain the same	Total
NSW	42.6	21.3	36.1	100.0
Vic	50.0	19.4	30.6	100.0
Qld	51.2	14.6	34.1	100.0
SA	31.8	22.7	45.5	100.0
WA	57.9	21.1	21.1	100.0
Tas	33.3	33.3	33.3	100.0
NT	100.0	-	-	100.0
ACT	50.0	20.0	30.0	100.0
Australia	**47.0**	**19.6**	**33.3**	**100.0**

Source: AMWAC survey of gastroenterologists.

Of the 103 responding gastroenterologists who expected their work hours to decrease over the next ten years, 34.9% were over 55 years of age. Of the 43 responding gastroenterologists who expected their work hours to increase, 30.2% were under the age of 35 years. As shown in Table C18, a large percentage of those in the 55 years and over categories planned to decrease their work hours (69.8% of those aged 55 to 64 years and 66.7% of those aged 65 years or greater).

Table B18: Gastroenterologists' plans to change hours worked by age group, 2000

Age group	Reduce hours	Increase hours	Remain the same	Total
Less than 35 years	10.0	65.0	25.0	100.0
35 to 44 years	37.8	29.7	32.4	100.0
45 to 54 years	50.7	2.7	46.6	100.0
55 to 64 years	69.8	11.6	18.6	100.0
65+ years	66.7	11.1	22.2	100.0
Total	**47.0**	**19.6**	**33.3**	**100.0**

Source: AMWAC survey of gastroenterologists.

Reasons given by respondents who planned to increase their work hours over the next ten years, in order of frequency, were:

- to build practice/income
- changed patient numbers
- family considerations
- workplace change

Reasons given by respondents who planned to decrease their work hours over the next ten years, in order of frequency, were:

- lifestyle preference
- family considerations
- retirement
- personal health considerations

Table B19 shows by how much, on average, respondents expect to change the hours they work over the next ten years. Respondents who anticipated their work hours to increase expected an increase, on average, of 34.0% while respondents who anticipated their work hours to decrease expected a change, on average, of 32.0%. Respondents in Queensland indicated the lowest expected overall percentage increase and reduction in hours worked, while respondents in Tasmania reported the greatest anticipated change.

Table B19: Average expected percentage change in hours worked, 2000

State/Territory	Reduce hours (%)	Increase hours (%)
New South Wales	35	23
Victoria	30	38
Queensland	21	27
South Australia	47	47
Western Australia	41	30
Tasmania	50	100
Northern Territory	30	-
Australian Capital Territory	24	30
Australia	**32**	**34**

Source: AMWAC survey of gastroenterologists.

Retirement

Respondents were asked at what age they intend to retire from the gastroenterology workforce. The expected age of retirement ranged from 50 years to 80 years, with an average expected retirement age of 63.3 years (mode 65 years; median 65 years). Among the States/Territories, the average planned retirement age ranged from a low of 55 years in the Northern Territory to a high of 64 years in New South Wales, Victoria, and South Australia. The average mean retirement age did not vary much by gender, with male respondents indicating an average retirement age of 63 years and female respondents indicating an average retirement age of 62 years.

Table B20 shows that 11.6% (25) of responding gastroenterologists intend to retire in the next five years and a further 19.0% (41) plan to retire in the next ten years, for a total of 30.6% (66) gastroenterologists indicating that they plan to retire by 2010. Of practitioners aged 55 years and over, 54.9% (28) plan to retire within the next five

years, 37.3% (19) plan to retire within the next ten years, and the remaining 7.8% (4) plan to retire in more than ten years' time.

Table B20: Number of gastroenterologists who intend to retire in selected years, 2000

To 2005	2006-10	2011-15	2016-2020	2021-2025	2026-2030	2031-2035
25	41	45	43	37	15	10

Source: AMWAC survey of gastroenterologists.

Gastroenterologists' Perceptions of Factors Affecting Workforce Requirements

Respondents were asked to indicate whether they believe particular factors will increase workforce requirements, decrease workforce requirements or whether requirements would stay the same.

As shown in Table B21, the most important factors that respondents considered would increase gastroenterology workforce requirements were 'ageing of the population' (85.2%), 'patient expectations/knowledge' (75.3%), and 'growth in consumer demands' (70.6%). There were no factors which a majority of respondents (more than 50%) felt would decrease workforce requirements, although 41.7% of respondents felt that 'cost containment strategies' would result in a decrease in requirements for gastroenterologists over the next ten years.

Table B21: Gastroenterologists' perceptions of factors that could influence requirements for gastroenterologists over the next ten years, 2000

Factors likely to influence requirements for gastroenterologists over the next ten years	Decrease %	Stay the same %	Increase %
Population Trends			
Changing patterns of health and illness	9.3	40.2	50.5
Ageing of the population	1.4	13.5	85.2
Lifestyle changes that improve population health	25.1	51.1	23.8
Patient expectations/knowledge	3.2	21.6	75.3
Clinical Practice Trends			
More defensive medicine	2.3	32.7	65.0
Requirements for safer procedural practice	2.7	44.3	53.0
Advances in medical technology	24.3	33.0	42.7
Multi-disciplinary team provision	8.4	56.5	35.2
Workforce Trends			
Increasing doctor specialisation	8.1	51.0	41.0
Substitution of specialist services by other providers	33.3	56.0	10.6
Need for improved geographic distribution of the specialty	3.7	43.6	52.7
Health Care System Trends			
Growth in consumer demands	3.3	26.1	70.6
Reforms to increase efficiency	23.7	58.8	17.6
Cost containment strategies	41.7	46.0	12.3

Source: AMWAC survey of gastroenterologists.

Perceived Provider Shortage/Oversupply

Respondents were asked to specify provider groups that are relevant to their field practice, which they felt are in short supply, in both the geographic area where they practise and in other geographic areas.

A total of 74 (32.3%) respondents listed provider groups which they felt are in short supply in their own geographic area. In order of frequency, the main provider groups included:

- allied health workers (eg. dieticians);
- hepatologists and gastroenterologists; and
- psychiatrists/psychologists.

A total of 17 (7.4%) respondents specified provider groups which they felt are in short supply in other geographic areas. In order of frequency, the main provider groups included:

- all provider groups;
- gastroenterologists;
- psychiatrists, GPs and surgeons.

Respondents were also asked to specify if there were any provider groups relevant to their field of practice, which are oversupplied. A total of 38 (16.6%) gastroenterologists responded to this question, and the main provider groups which were indicated as being in oversupply were:

- surgeons
- gastroenterologists

Adjustment to Trainee Numbers

Respondents were asked whether they thought the gastroenterology workforce required an increase or a decrease in trainees. Of the 219 who responded to this question, 10.0% (22) answered that an increase is required, 25.6% (56) said that a decrease is required, 43.8% (96) said that there should be no adjustment, and 20.5% (45) said they did not know whether an increase or decrease was required. Of note is the fact that 8.6% of metropolitan practitioners responded that an increase is necessary, as compared with 18.8% of rural practitioners, and conversely, 28.3% of metropolitan practitioners suggested a decrease is necessary as compared with 9.4% of rural practitioners. (Table B22)

Table B22: Gastroenterologists' views on adjustment to trainee numbers, 2000

Adjustment to trainees	Metropolitan	Rural	Total
Increase	8.6	18.8	10.0
Decrease	28.3	9.4	25.6
Remain the same	41.7	56.3	43.8
Don't know	21.4	15.6	20.5
Total	100.0	100.0	100.0

Source: AMWAC survey of gastroenterologists.

In response to the question of whether there is value in advanced trainees in gastroenterology spending a period of training in a rural hospital and/or rural gastroenterology practice, assuming adequate supervision and training, 74.1% (146) responded 'yes'. A total of 83.3% of respondents located in rural areas answered yes, and 72.5% of metropolitan practitioners answered yes.

APPENDIX C: AMWAC SURVEY OF DIVISIONS OF GENERAL PRACTICE

METHODOLOGY

To obtain information about the adequacy of the supply of gastroenterology services throughout Australia, AMWAC administered a mailed survey of all Divisions of General Practice. Of a possible 125 Divisions, 57 responded (45.6%) with 55 Divisions supplying completed questionnaires. The major reason Divisions gave for not being able to respond to the questionnaire was lack of accurate information.

RESULTS

Response

Table C1 shows the number of completed questionnaires submitted in response to the survey, by State/Territory, as compared with the total Divisions surveyed in each State/Territory. The response rate was highest in South Australia (69.2%), with comparatively low responses from the Northern Territory, Tasmania and Victoria. In total, 55 completed questionnaires were submitted, a response rate of 44.0%. As shown in Table C2, the response rate from rural Divisions was higher than from metropolitan Divisions.

Table C1: Number of Divisions of General Practice responding to the survey and number surveyed, by State/Territory, 1999

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust.
Number responded	19	10	9	9	6	1	1	0	55
Number surveyed	37	31	21	13	15	3	4	1	125
% response	51.4	32.3	42.9	69.2	40.0	33.3	25.0	0.0	44.0

Source: AMWAC survey of Divisions of General Practice

Table C2: Response rate, by geographic location, 1999

	Metropolitan	Rural
% response	35.9	51.7

Source: AMWAC survey of Divisions of General Practice

Distribution of Respondents

Table C3 shows the distribution of responding Divisions to the AMWAC survey by State/Territory and by geographic location. The majority of responding Divisions were located in rural areas (57.4%), with the remaining 42.6% located in metropolitan areas. Eight of the nine Divisions from South Australia were located in a rural area.

Table C3: Distribution of responding Divisions of General Practice, by State/Territory and geographic location, 1999

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Australia
Metropolitan %	47.4	50.0	44.4	11.1	71.4	-	-	-	42.6
Rural %	52.6	50.0	55.6	88.9	28.6	100.0	100.0	-	57.4
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: AMWAC survey of Divisions of General Practice

Triggers for General Practitioner Referral to a Gastroenterologist

Divisions of General Practice were asked to indicate the importance of seven "triggers" for referral to a gastroenterologist and to identify any further important triggers.

The most important triggers for referral by a GP to a gastroenterologist were 'severity of the condition' followed by 'condition unresponsive to treatment', 'rarity of diagnosis' and 'lack of experience within the practice'. The least important triggers for referral were 'social circumstances of patient' and 'age of patient'. In addition to the list included in the questionnaire, some respondents noted other trigger factors, including: 'unable to make a diagnosis/doubts on diagnosis'; 'requires endoscopy'; 'procedural component makes GP treatment difficult from a skills/cost perspective'; 'indications for targeted screening of individuals with family history of colon cancer'.

There were a couple of observed differences in responses based on geographic location (metropolitan or rural). The trigger factor 'lack of experience within the practice re: condition/treatment' was rated as more important by rural Divisions as compared with metropolitan Divisions. 'Social circumstances of the patient' was rated as somewhat more important by metropolitan Divisions as compared with rural Divisions.

Supply of Gastroenterologists

Table C4 shows for Australia as a whole, 11 (20.8%) responding Divisions of General Practice reported that there was no resident or visiting gastroenterologists providing services to people cared for by the general practitioners in the Division. However, it appears that in some of these areas, gastroenterology services are being provided by general practitioners practising mainly as gastroenterologists. Of the 11 Divisions reporting no resident or visiting gastroenterologist, three Divisions (one in New South Wales, one in Queensland and one in Victoria) indicated that one or more general practitioners in the Division are practising mainly as gastroenterologists. The remaining eight Divisions (four in New South Wales, two in Queensland, one in South Australia and one in Western Australia) reported no general practitioners in the Division who are mainly practising as gastroenterologists.

Table C4: Number of gastroenterologists (resident or visiting) providing services in divisional area (percentage of Divisions), by State/Territory, 1999

		Number of gastroenterologists (resident or visiting)						
State/Terr.	**Number of DGP***	**None**	**One to two**	**Three to four**	**Five to six**	**Seven to eight**	**More than eight**	**Total**
		Percentage of Divisions						
NSW	19	26.3	42.1	21.1	5.3	5.3	0.0	100.0
Vic	9	11.1	44.4	11.1	0.0	11.1	22.2	100.0
Qld	9	33.3	22.2	11.1	22.2	0.0	11.1	100.0
SA	8	12.5	75.0	0.0	12.5	0.0	0.0	100.0
WA	6	16.7	50.0	16.7	0.0	0.0	16.7	100.0
Tas	1	0.0	100.0	0.0	0.0	0.0	0.0	100.0
NT	1	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Total	**53**	**20.8**	**47.2**	**13.2**	**7.5**	**3.8**	**7.5**	**100.0**

* Number of Divisions of General Practice responding to this question.
Source: AMWAC survey of Divisions of General Practice

Availability of General Practitioners with Qualifications in Gastroenterology

Divisions were questioned on the availability of general practitioners mainly practising in gastroenterology and the proportion of general practitioners with a special interest in gastroenterology.

Resident General Practitioners Mainly Practising Gastroenterology

Out of the 46 Divisions responding to this question, ten Divisions (21.7%) reported the presence of resident general practitioners mainly practising in gastroenterology. These ten Divisions were located in New South Wales (three Divisions), Victoria (three Divisions), Queensland (one Division), Western Australia (two Divisions) and the Northern Territory (one Division). Most Divisions with general practitioners mainly practising in gastroenterology reported between one and six resident general practitioners practising mainly in gastroenterology.

Visiting General Practitioners Mainly Practising Gastroenterology

Out of the 37 Divisions responding to this question, only one Division reported the presence of visiting general practitioners mainly practising in gastroenterology. The Division was located in South Australia, and reported two visiting general practitioners mainly practising in gastroenterology.

General Practitioners with an Interest in Gastroenterology

Of the 38 Divisions responding to this question, 25 (65.8%) reported that there were no general practitioners in their Division with a special interest in gastroenterology. Of the remaining 13 Divisions responding to this question, most (69.2%) estimated that the percentage of general practitioners with an interest in gastroenterology was less than 5.0%.

Adequacy of Access to Gastroenterologists

Divisions were asked to indicate if they considered current access to gastroenterology services to be adequate. Overall, 50 Divisions responded to the question.

Table C5 shows 58.0% of Divisions of General Practice considered access to gastroenterology consultation services to be inadequate in their area (42.0% reported services to be in short supply and 16.0% reported services to be totally inadequate). A total of 54.0% of Divisions of General Practice considered access to gastroenterology 'treatment' services to be inadequate in their area (36.0% reported treatment services to be in short supply and 18.0% reported these services to be totally inadequate). Responses by metropolitan and rural regions showed that a greater proportion of rural Divisions considered access to consultation and treatment gastroenterology services to be inadequate (67.9% and 64.3%, respectively) as compared with metropolitan Divisions (52.6% and 47.4%, respectively).

Table C5: Adequacy of access to gastroenterology services in areas covered by Divisions of General Practice, by State/Territory, and by type of service*, 1999

	NSW	Vic	Qld	SA	WA	Tas	NT	Australia
Adequacy of access to gastroenterology consultation services*								
Number of DGP**	19	10	7	7	5	1	1	50
About right %	26.3	80.0	28.6	57.1	40.0			42.0
Short supply %	57.9	20.0	28.6	28.6	60.0		100.0	42.0
Totally inadequate %	15.8		42.9	14.3		100.0		16.0
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Adequacy of access to treatment gastroenterology services*								
Number of DGP**	19	9	7	8	5	1	1	50
About right %	21.1	100.0	28.6	75.0	40.0			46.0
Short supply %	57.9		28.6	12.5	60.0		100.0	36.0
Totally inadequate %	21.1		42.9	12.5		100.0		18.0
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* A "consultation" service is defined as one in which a gastroenterologist sees and assesses patients and makes recommendations for others to treat; a "treatment" service is defined as one in which a gastroenterologist sees, assesses and treats patients.

** Number of Divisions of General Practice responding to this question.

Source: AMWAC survey of Divisions of General Practice

Consumer Views on Adequacy of Access

Respondents were asked to indicate if consumers considered current access to a gastroenterologist to be adequate. In total, 20 Divisions responded to the question. The consumer views should be interpreted with care because it is not possible to determine how the Divisions obtained the consumer views and therefore it is difficult to assess how adequately the responses actually reflect consumer views. Table B6 shows that responses to this question indicate a total of 50.0% of consumers view access to gastroenterology services to be in short supply (25.0%) or totally

inadequate (25.0%). Comments provided in response to this question indicate that in some locations consumers consider that the waiting time for patients (particularly for public patients) is too long.

Table C6: Consumers' views on adequacy of access to gastroenterology services in areas covered by Divisions of General Practice, 1999

	Oversupply %	About right %	Short supply %	Totally inadequate %
Access to gastroenterology services	5.0	45.0	25.0	25.0

Source: AMWAC survey of Divisions of General Practice

Requirement for Additional Gastroenterologists

Responding Divisions which indicated, earlier in the survey, that they considered there to be a shortage of gastroenterologists were asked to indicate the number of additional gastroenterologists required (resident and visiting). They were further asked to classify whether additional gastroenterologists were required to provide consultation services or treatment services.

Table C7 shows 16 Divisions of General Practice perceived a need for 21 additional resident gastroenterologists to provide 'consultation' services, and 18 Divisions perceived a need for 27 additional resident gastroenterologists to provide 'treatment' services. In terms of visiting gastroenterologists, 14 Divisions of General Practice perceived a need for 20 additional visiting gastroenterologists to provide consultation services and 17 Divisions perceived a need for 24 additional visiting gastroenterologists to provide treatment services.

Table C7: Estimated number of additional gastroenterologists required in areas covered by Divisions of General Practice - Number of Divisions, by type of service*, and type of practitioner (resident or visiting), 1999

Type of service	Total number of Divisions of GP**	None	One	Two	Three
Divisions requiring additional 'resident' gastroenterologists					
Consultation*	20	4	12	3	1
Treatment*	21	3	10	7	1
Divisions requiring additional 'visiting' gastroenterologists					
Consultation*	15	1	10	2	2
Treatment*	18	1	12	3	2

* A "consultation" service is defined as one in which a gastroenterologist sees and assesses patients and makes recommendations for others to treat; a "treatment" service is defined as one in which a gastroenterologist sees, assesses and treats patients.
** Number of Divisions of General Practice responding to this question
Source: AMWAC survey of Divisions of General Practice

Summary

The findings from this survey indicate that 58% of Divisions of General Practice consider access to 'consultation' gastroenterology services to be in short supply or totally inadequate, and 54% perceive 'treatment' services to be in short supply or totally inadequate. A greater proportion of rural Divisions than metropolitan Divisions considered these services to be inadequate. In total, 42% of Divisions considered supply of consultation services to be adequate and 46% considered the supply of treatment services to be adequate. Consumers show a similar pattern, with 50% of responding Divisions indicating consumers view access to gastroenterology services to be inadequate.

Comments provided by respondents highlight the fact that in many areas gastroenterology services are being provided by resident or visiting surgeons and/or resident general practitioners. Some respondents suggested that to improve access to gastroenterology services general practitioners (particularly in rural areas) should be trained in endoscopy. Others noted barriers such as the specialist not having visiting rights to the public hospital and one Division noted that the endoscopy waitlist reflects the lack of hospital funding rather than availability of a gastroenterologist. Several respondents also commented that in some areas the adequacy of access differs between the private and public sectors, with access through the private system generally being better. Several respondents noted that access to gastroenterology services in their area is good or adequate, while on average a similar number of respondents noted that access to nearby gastroenterology services is poor, and some of these noted that the local population base would not support a specialist in the area.

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A full copy of the report can be obtained by contacting the AMWAC@doh.health.nsw.gov.au