

Australian Medical Workforce Advisory Committee

**CAREER DECISION MAKING BY DOCTORS IN THEIR  
POSTGRADUATE YEARS  
A LITERATURE REVIEW**

**AMWAC Report 2002.1**

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## **ABBREVIATIONS**

ABS	Australian Bureau of Statistics
AHMAC	Australian Health Ministers' Advisory Council
AIHW	Australian Institute of Health and Welfare
AMA	Australian Medical Association
AMWAC	Australian Medical Workforce Advisory Committee
BMA	British Medical Association
GP	General practitioner
NHS	National Health Service
UK	United Kingdom
US	United States of America

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- Dr Simon Willcock (Confederation of Postgraduate Medical Education Councils).

## **AMWAC TERMS OF REFERENCE**

The Australian Health Ministers' Advisory Council (AHMAC) established AMWAC to assist with the development of a more strategic focus on medical workforce planning in Australia and advise on national medical workforce matters, including workforce supply, distribution and future requirements. The committee is required to:

- 1 Provide advice to the Australian Health Ministers' Advisory Council 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;
  - workforce supply and demand;
  - medical workforce financing; and
  - models for describing and predicting future workforce requirements.
- 2 Develop tools for describing and managing workforce supply and demand which can be used by employing and workforce controlling bodies including Governments, Colleges and Tertiary Institutions.
- 3 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 Career Choice Working Party

The AMWAC Career Choice Working Party was established as a subcommittee of AMWAC in 2000 to provide advice to AMWAC on the factors influencing the career choice and workforce participation decisions of young doctors. The project builds on earlier AMWAC work in the area of female participation in the medical workforce and the factors influencing workforce participation.

The literature review is the first part of a larger project to monitor the career plans of postgraduate medical practitioners and to identify the factors influencing these plans. This project will focus initially on vocational medical training. A survey of vocational trainees will be undertaken in 2002. This survey is being assisted by the specialist medical colleges. The project is being undertaken jointly by AMWAC and the Commonwealth Department of Health and Ageing (working through the Medical Training Review Panel). It is intended to examine the immediate postgraduate years at a later date (ie. doctors in postgraduate years 1 and 2).

This report was prepared by Amanda Price and Mary Harris, and is based on the results of commissioned research undertaken by Amanda Price. The literature review was current as at November 2001.

The report was accepted by AMWAC when it met in March 2002 and by AHMAC out of session during June 2002.

## **EXECUTIVE SUMMARY**

The review examined the Australian and overseas literature in relation to the factors influencing career choices and workforce participation of doctors in their postgraduate years. The literature was examined from the perspective that there is a range of influential factors including biodata and personality characteristics that have a role to play in decision-making processes. The review refers to literature available up to November 2001.

The key influential factors identified through the review can be separated into intrinsic and extrinsic categories. Intrinsic factors included such things as age, gender, ethnicity, personality and personal preferences and extrinsic factors included work hours, stress, and family commitments. The extent to which intrinsic or extrinsic factors may have a greater predictive value over the other in career decision making could not be established. However, what is evident from the literature is that there is greater opportunity for governments, health authorities and the medical profession to make changes to the extrinsic determinants of career choice than to the intrinsic determinants. The most important or influential extrinsic factors were identified as mentors/significant others, hours and conditions of work, and stress. Where trainee doctors reported positive experiences in one or all of these aspects of their training, they have been more satisfied with their career decision.

The profile of medical graduates around the world has changed over the past ten years, with more women entering medical school. A seemingly simple demographic change such as this has the capacity to significantly alter the future profile of the workforce. As the literature has demonstrated, women's specialty preferences reflect their needs for job flexibility and part-time employment to enable a balance between family commitments and professional life.

The capacity to influence medical graduates choice of career is dependent upon a wide range of factors, intrinsic and extrinsic. Using this paradigm, evidence suggests that there is little likelihood of intrinsic factors being able to be altered or influenced, however the nature of extrinsic factors potentially allows for an interventionist approach.

As many of the specifics regarding the Australian medical workforce and its projected requirements have been established, an opportunity exists for Australian healthcare policy makers, workforce planners and medical educationalists to positively intervene with the aim of enabling achievement of workforce goals.

## **1. BACKGROUND INFORMATION**

### **Purpose of the Literature Review**

The purpose of this paper is to review the current Australian and international literature on factors influencing the career choices and workforce participation of doctors in their early postgraduate years and the methods used to research this issue.

The structure of the future medical workforce is dependent upon the career choices made by young doctors. Changes in the healthcare needs of Australians can only be met by an appropriately skilled and staffed service delivery system. If sensitivity to the population's healthcare needs is to be achieved, monitoring and the ability to adjust the characteristics of students entering medical school are essential.

A discussion of the many different factors identified in the literature as influential in determining career choice is presented here. In addition, a description of personality theory as it is believed to apply to decision making is provided. The application of various theoretical frameworks to the problem of understanding the career choices of medical graduates is also examined here.

### **Trends in Health Service Delivery**

The Australian health care system has seen growth in demand for most types of health care services arising from the growing and ageing population, and enhanced technology and intervention possibilities. There has also been a trend toward the delivery of acute and chronic health services outside the hospital, and this is anticipated to continue (AIHW, 2000a).

Hospitals will increasingly treat patients with more complex and specialised conditions, and the rate of growth in hospital specialties is projected to be different depending on the level of technology involved, eg cardiology and gastroenterology. Technological changes in surgery and anaesthesia have also enabled a greater move to day stays, and day admissions in Australian private hospitals doubled in the four years to 1997, while overnight stays remained constant (AIHW, 2000a).

Technological advances have moved beyond new treatment modalities to the introduction of telemedicine and health call centres. Telemedicine services have improved access for those Australians living in rural and remote parts of the country. Health call centres have their basis in demand management, and aim to educate patients to achieve astute use of the available health care services and educate providers to improve patient compliance (Health Group Strategies, 1998).

The future role of doctors in the Australian health care system will be greatly influenced by a number of factors, including:

- the profile of an ageing population;
- more educated and demanding patients;
- financial and human resource constraints; and
- technological advances.

Over the past decade the Australian community has increased pressure on governments for improved access to medical services, particularly in rural and regional centres. Universities and medical colleges have changed their admissions' procedures and curricula to improve the skills of graduate doctors to meet patient expectations. Curriculum changes include increased community and rural experience with the expectation that more young doctors will choose to practise in a rural area (AMWAC 2000a).

Traditionally, public hospitals have been the main providers of specialist vocational training work experience with state/territory governments being the main source of funding. There has been an expectation that dedicated trainee doctors will work long hours. Hospital work rosters have frequently lacked flexibility with few opportunities to work and train part-time. These expectations are being challenged in the interest of patient safety and trainee doctor health and wellbeing (Australian Medical Association [AMA], 2001a and AMA 2001b). In recent times, these public hospitals have undergone significant change due to increased demand for services, limited resources to meet these demands and management initiatives to contain costs and increase workforce productivity. In some specialist disciplines (eg dermatology and radiology), training opportunities are declining in the public hospital sector and new modes of vocational training are being pursued, with the number of training places provided in the private sector increasing (AMWAC 1998; AMWAC 2001).

The Commonwealth government is the main provider of funds for the vocational training of general practitioners (GPs) and in recent years greater emphasis has been given to providing trainees with rural experience with the expectation that more doctors will choose to practise in a rural area (Commonwealth Department of Health and Aged Care 2000). Australia is also beginning to witness changes in the operation of general practice medicine, with an estimated 10 percent of general practitioners working for corporation-owned practices (Catchlove, 2001). This development has implications for health care spending, GP autonomy and potentially the skills required of GPs as their practices become linked with onsite pathology and radiology services.

The organisation of medical practice is also changing in some other specialist disciplines (eg radiology and pathology) with small private practices merging to form larger companies or selling out to large corporations (AMWAC 2001). Medical indemnity insurances are increasing and this is occurring more so in some disciplines than in others (eg obstetrics).

### **Features of the Australian Medical Workforce**

AMWAC (2000a) profiled the Australian medical workforce characteristics in 1998 and their key findings can be summarised as follows:

- workforce maldistribution, with only 15.6% medical practitioners working in rural and remote Australia;
- increasing numbers of specialist medical practitioners;
- 9.4% of the medical workforce was aged 65 and over; and
- increasing female participation, with women 28.1% of employed medical practitioners.

Information regarding the employed medical workforce in Australia, and the proportion of female practitioners in each category, is presented in Table 1 below.

**Table 1 Number of Employed Medical Practitioners, Australia 1998**

	<b>1998</b>	<b>% Female</b>
<i>CLINICIAN:</i>	<b>46,078</b>	<b>27.8</b>
Primary care practitioner	20,851	33.2
Hospital non-specialist	4,262	40.9
Specialist	16,490	15.6
Specialist in training	4,474	35.1
<i>NON CLINICIAN</i>	<b>2,857</b>	<b>32.5</b>
<b>TOTAL</b>	<b>48,935</b>	<b>28.1</b>

Source: AIHW and AMWAC (2000), Annual Report 1999-2000, AMWAC Report 2000.5, Sydney.

Prideaux et al. (2001), discussed the above-mentioned trends in the Australian medical workforce in the context of initiatives that have been developed to overcome the problems of distribution and numbers. Medical trainee postgraduate years 1 and 2 programs have been introduced and medical colleges have commenced programs of recertification and continuing medical education.

The maldistribution of general practitioners around Australia and problems associated with retention of doctors (general practitioners and specialists) in rural areas has been well documented (Committee of Inquiry into Medical Education and Medical Workforce, 1988; Wise et al. 1994; AMWAC/AIHW 1996; AMWAC, 1996a; Hays et al. 1997; Wolff, 1997; Kamien, 1998; Alexander 1998). A greater emphasis on rural medical training and practice has led to the opening of a new medical school in Townsville, North Queensland (AMWAC, 2000c).

### **Health Workforce Trends**

In 1997-98, the professional health workforce in Australia numbered around 300,000. This represented approximately 33% of persons employed in the health industry and about 3% of all employed people in Australia. At this time, 53% of the professional workforce were nurses, 17% doctors, 9% pharmacists and dentists, 4% physiotherapists and the remaining 17% included a wide range of other allied health professionals (Duckett and Kenny, 2000).

Table 2 draws largely on 1996 data from the AIHW and the ABS and indicates that per 100,000 population there were 1,064 registered and enrolled nurses, 241.9 medical practitioners, 75.6 pharmacists, 49.4 physiotherapists and 41.8 dentists. While not shown in this table, there has been a 51.6 percent increase in the number of all health practitioners over the period 1976-1996 (ABS, 1996). Duckett and Kenny (2000) note that the 'number of health professionals per head of population increased from 6.9 per 1000 population in 1961 to 14.8 per 1000 population in 1996' (p 62). The rate of increase in the number of medical practitioners over a 5-year period to 1998 was 8.9 percent, higher than that for the general population increase of 6.1 percent (Conn, 2001).

**Table 2 Employed health practitioners per 100,000 population, by occupation, 1996**

	1996	1996
	Number	Practitioner per 100,000 population
Medical Practitioner <sup>1</sup>	44,000	241.9
Dental Practitioner <sup>2</sup>	7,601	41.8
Registered and Enrolled Nurses <sup>1</sup>	218,172	1,064
Pharmacy <sup>1</sup>	13,834	75.6
Physiotherapy <sup>2</sup>	8,896	49.4
Optometry <sup>3</sup>	2,787	15.5
Occupational Therapy <sup>2</sup>	4,363	24.2
Podiatry <sup>2</sup>	1,462	8.1
Other Health Labour Force <sup>2</sup>	14,778	82.1

Source: 1. Australian Institute of Health and Welfare (1998), *Australia's Health 1998*, AIHW, Canberra.

2. Australian Bureau of Statistics (1996), *Census of Population and Housing: Selected Family and Labour Force Characteristics*, Australia, ABS Catalogue No. 2017.0, Canberra.

3. Commonwealth Department of Health and Aged Care, 1999 Medicare data 1998-99, DHAC, Canberra.

Duckett and Kenny (2000) observed that the professional health workforce in 1997-98 was predominantly female (72.5% of health professionals). However, this gender profile did not apply to all professional groups. For example, in 1997-98, 80% of specialist medical practitioners, 70% of dentists and 68% of general practitioners were male. This compared with 8% of registered nurses and 18% of physiotherapists being male. However, the gender profile of people enrolling in health courses is changing and this is most notable in medicine and dentistry. In 1999, of people commencing a medical course and a dentistry course, 53% and 46% respectively, were women. This change in the gender profile of these workforces has serious implications for workforce planning because gender impacts on choice of specialty and the hours people work (AMWAC, 2000b).

Allied health professions, like nursing, continue to be predominantly female. The public hospital system has traditionally been the largest employer of allied health professionals. Financial constraints have led to a reduction in the number of staff in hospital allied health departments and there has been a subsequent increase in the number of 'private practitioners'. There is less scope for specialisation among these other health professions. The general trend in allied health, for example, is the completion of a degree followed by one year of hospital or community-based internship.

There is an Australia-wide shortage of nurses and nursing staff in many specialist disciplines which has led some State Governments to develop workforce planning strategies and techniques in an attempt to alleviate the problem. The problem is two-fold with qualified nurses leaving the profession on the one hand and fewer school leavers choosing to undertake a nursing qualification on the other. For example, over the period 1993 to 1998 there was a 5.9 percent decline in the number of nurse registrations and enrolments (AIHW, 2000a).

Nursing continues to be a predominantly female occupation and the declining numbers of both generalist and specialist staff has been attributed in part to the wider variety of job choices

available to women these days. Where nurses have chosen to leave the profession, the changes in career choice have been attributed to dissatisfaction with shift work, the level of remuneration and family commitments.

It has also been noted that specialty choice amongst nursing graduates is determined by some of the factors mentioned above, ie. family commitments and shift work, as well as the perceived appeal of the specialty itself, for example, difficulties recruiting graduates to intensive care nursing.

The American Hospital Association (2001) warns that today's workforce shortages in the health industry 'reflects fundamental changes in the relative attractiveness of careers in hospitals, increased competition from non-hospital employers for caregivers and support personnel, and the ageing and pending retirement of "baby boomers"' (p 2).

Data from the Commonwealth Department of Education, Science and Training supports this notion of a decline in the relative attractiveness of a hospital based career. Between 1993 and 1999, courses attracting the highest growth in undergraduate course commencements were law and legal studies, arts, humanities and social science, science and business, and administration and economics. Growth in these broad fields of study was above 28%, which was well above the 11% growth for all courses, while the 7% growth in health courses was well below the average (Harris, 2002).

Fields of study within the health area in addition to nursing in which there has been a decline or little growth in undergraduate course commencements over the last eight years include medicine and dentistry (AIHW, 2001). With medicine the low growth is not unexpected because since 1995 the government has limited the number of Higher Education Contribution Scheme funded places available to around 1,200 (AMWAC, 2000c). On the other hand, there has been high growth in health course commencements at the undergraduate level in medical science, health support, science and technology, occupational therapy and medical radiography (Harris, 2002).

### **Characteristics of Students Entering Medical School**

Some research shows that the demographic characteristics of the Australian medical school population is changing (AMWAC, 1997; AMWAC 2000c; Prideaux et al. 2001). If so, what is the potential impact of this on the future workforce structure and the career choices of young medical graduates?

In 1997, AMWAC and the AIHW reported on the characteristics of students entering Australian medical schools between 1989 and 1997, with an update by AMWAC in 2000 (AMWAC 2000c). Findings from these reports are presented in Table 3 below.

**Table 3: Medical course commencements data 1989-1999.**

Commencements	1989 <sup>1</sup>	1996 <sup>1</sup>	1999 <sup>2</sup>
Number	1,371	928	1,334
	(%)	(%)	(%)
Age >25	6.9	18.5	20.3
Gender:			
Female	43.6	46	52.7
Male	56.4	54	47.3
Country of Birth:			
Australia	65.8	61	86.1
Asia	18.0	25.7	na
UK and Europe	8.3	6.3	na
Other	7.9	7.0	13.9
Aboriginal and TI	0.4	0.7	21
Rural Background	10.7	17.3	11.0

Source: 1. AMWAC/AIHW (1997) Characteristics of students entering Australian medical schools 1989 – 1996, AMWAC report 1997.7, Sydney.

2. AMWAC (2000) 'Innovations in medical education to meet workforce challenges', *Australian Health Review*, Vol 23, No 4, pp 43-59.

There was a significant decrease in the number of students commencing a medical degree over the period 1989 to 1996. This was in part attributed to a government policy decision to reduce the cap on basic medical degree graduates from 1,200 to 1,000 per year. The introduction of a graduate level entry medical degree at some universities in 1996 also had an impact on the overall number of entrants. Since 1997 the numbers have increased to almost the same level as 10 years earlier.

There has been an increase in the number of females entering medical school and there has also been an increase in the age of entrants, with 20% of commencing students aged 25 or more years in 1999 compared with 6.9% in 1989 (AMWAC 2000c).

Between 1989 and 1996, the proportion of Asian students increased, while proportions in all other cultural groups decreased (AMWAC/AIHW, 1997).

Compilation of the demographic profile of students entering medical school provides valuable information for workforce planners. The fact that a significant proportion of 'older' students are studying medicine has implications for specialty choice and the future workforce profile.

## **Summary of Workforce Issues in Canada, the United Kingdom and the United States of America**

### *Canada*

Following the recommendation of the 1964 Royal Commission on Health Services to double the number of study places for medicine in Canada, four new faculties of medicine were established. In addition, the 12 existing facilities were expanded (Ryten et al. 1998). Twenty years later, in 1984, a reduction in the number of enrolments was recommended by the workforce study into physician manpower in Canada 1980-2000. The aim was to avoid a physician surplus, and a subsequent study in 1991 recommended not only enrolment reductions but reductions in the

number of post-MD training positions (Barer and Stoddart, 1991).

Canada has been experiencing a shortage of medical practitioners which has led to large scale importation of overseas trained doctors. This has been attributed to the reductions in medical student intake and postgraduate training placements (Goldsand and Tepper, 2001).

Canada has also experienced changes in process of medical student training. For many years junior doctors undertook their postgraduate training in hospitals as “interns” where they provided services to hospital inpatients, a form of apprenticeship. The internship eventually became a requirement for licensure, and consequently more structured training programs were required. This progressively led to the transfer of responsibility to medical schools and a university-based curriculum (Goldsand and Tepper, 2001).

The Canadian literature suggests that while the numbers of medical student enrolments have decreased by close to one quarter over the period 1970 to 1998, the proportion of females have increased to account for 50 percent of the intake (Buske and Strachan, 2000). Another demographic feature of the Canadian system is the growing proportion of visa students. Their numbers have doubled over the last 10 years, with a quarter coming from Malaysia.

#### *United Kingdom (UK)*

The results of a major review of workforce planning in the National Health Service (NHS) was published in April 2000. A number of goals were identified which have subsequently been incorporated in the NHS Plan. The key features have been identified as:

- improved partnerships;
- improved performance;
- increased flexibility in training and work practices;
- improved patient care; and
- improved prevention.

Additional funds were directed by government to the NHS to achieve the goals identified above. In addition, the NHS Plan 2000 has included the recommendation for 7,500 more consultants, 2000 more general practitioners, 1000 more specialist registrars and 1000 more medical school places (Hill, 2001).

Junior doctors in the UK have been included in the European Working Time Directive which was developed as a means of controlling the number of hours worked by individuals to a safe level. Under this Directive, junior doctors have to meet a 48-hour working week in 7 years' time.

The general demographic profile of medical students in the UK has seen an increase in the number of women undertaking medicine, and not confining their career choice to primary care, but rather opting for surgical specialties (Goldacre et al. 1999).

Also of relevance to the present discussion of career choice is the question, why do young students choose medicine as a career in the first instance? One researcher in the United Kingdom has examined this question over a ten-year period in the context of trying to ascertain what doctors want from their careers (Allen, 1997). She consistently found three themes:

- the student was good at science;
- a parent was a doctor; or
- the student had good grades and was undecided about what university course to take.

#### *United States of America (US)*

Unlike Australia, Canada and the United Kingdom the US has no national system of workforce planning and prefers to use the 'market' to determine the number of physicians and trainees (Coffman et al. 2000).

A number of changes in the demographic characteristics of American medical students have been noted in the literature. These include:

- increasing age of students;
- increasing numbers of female students;
- more students taking medicine as a second degree; and
- increasing numbers of non-white students.

The general trends in medical school entrance in the US appear to be similar to those of the other countries described earlier. Policy goals have been established to try and increase the number of primary care physicians whilst reducing the overall number of physicians although there is no agreement as to the status of physician supply. While there is a process in place concerning the licensure of physicians, national workforce planning has no system (Salzberg, 2001). Educational reform has also been proposed, supporting promotion of training away from teaching hospitals, through the utilisation of telecommunications and other technology.

## 2. SPECIALTY CHOICES AND CAREER CHANGES – INFLUENTIAL FACTORS

The literature indicates that many factors contribute to the career decisions of junior doctors. These include a range of 'demographic' factors, such as gender, age, cultural background and ethnic identity, and marriage/family commitments. Another more complex set of constructs such as personality, self-perception, self-efficacy and motivation also have a role to play in the decision making process. Francis (1985) summarises some of these career drivers as:

- 'material rewards (seeking wealth and a high standard of living);
- power and influence (seeking to be in control of people);
- search for meaning (seeking to do things which are believed to be valuable for their own sake);
- expertise (seeking a high level of accomplishment in a specialised field);
- creativity (seeking to innovate and be identified with original output);
- affiliation (seeking nourishing relationships with others at work);
- autonomy (seeking to be independent and able to make key decisions for oneself);
- security (seeking a solid predictable future); and
- status (seeking to be recognised, admired and respected by the community at large)' (pp 60-61).

It is widely acknowledged that no single factor determines career choice, although most researchers in this field have tended to use a single factor to explain decision making. Unravelling the interrelationships among all the possible factors would be a complex process, if it were in fact empirically possible.

Ideally, individuals make career decisions that are well informed and which enable the person to achieve a good fit between their personal attributes and the opportunities that exist in the world of work. However, Francis maintains that despite the fact that career has a fundamental impact on an individual's life, few people make career decisions deliberately, progressively and appropriately. Optimal career planning requires that the individual has a good understanding of the factors that motivate, or drive them, their talents, their knowledge and skill, and the psychological or physical attributes that constrain them. These are factors 'intrinsic' to the individual. Secondly, they need information about 'extrinsic' factors, including the world of work, such as the type of job available for a person with their talents and interests and the prospective rewards and costs of each option. In addition, they need information about the type of organisations associated with these jobs including the organisational culture or environment and the working conditions. Thirdly, they need information about employment opportunities so they can work toward achieving their career objectives through training and personal development.

This section provides a review of each of the factors that have been cited in the literature as having a role to play in the career choices of doctors. In the following section, review of the literature pertaining to the role of the more complex constructs and theoretical perspectives on decision-making in the career context is provided.

### **Age**

The majority of entrants to Australian university medical education continue to be school leavers, aged less than 25, although the number of students aged 25 years has been increasing since

1994 (AMWAC, 2000c). The increase in older students is explained by changes in medical school admission policies of some Australian universities. Universities are seeking students who possess a combination of personal qualities in addition to academic and other appropriate skills (AMWAC 2000c). This policy change has resulted in the introduction of a graduate entry program by four Australian universities.

One American study (Xu et al. 1997) comparing the career choices for primary care of medical school graduates in two age groups found that older graduates were more likely to choose primary care and they had a different background to younger graduates. The older graduates came from either a rural or inner city environment, already had a degree and their decision was influenced by family commitments.

A study of the generational differences in married physicians found that younger doctors made more career changes for marriage and family reasons than did their older peers (Warde et al. 1996).

### **Gender**

The number of females entering medical schools in Australia has increased from 43.4% in 1989 to 52.7% in 1999 (AMWAC, 2000b). This reflects general labour force trends in Australia over the past 10 years which show increased female participation in the workforce (ABS data 1998).

Female doctors in Australia are more likely to choose specialties such as general practice, psychiatry, anaesthesiology and paediatrics (AWAC 2000b; Prideaux et al. 2001). Their choice of these specialties has been attributed to family commitments and the requirement for greater flexibility to accommodate child-rearing duties and a preference to work part-time (Kanagarajah et al. 1996; AMWAC, 1998).

The increasing proportion of female medical school students and graduates has also featured in the overseas literature. A number of studies have noted that female medical graduates are more likely to choose primary care as a specialty in the US (Kiker and Zeh, 1998) and Canada (Morrison, 2001).

In contrast, a study of medical graduates in the United Kingdom in 1996 found an 8.8 percent decline in the number of women choosing general practice when compared with the graduates of 1993, however the percentage choosing surgical specialties rose by almost 4 percent (Goldacre et al. 1999).

The increasing number of women in medicine combined with the growing influence of patient preference has seen a decline in male participation in some specialties, such as obstetrics and gynaecology. Lewin (2001) found that there was a female preference for women obstetric and gynaecological specialists, although in the US there were still 64% male specialists. She reported that in 2001, women had filled 70.3% of obstetric and gynaecology residencies compared with 50% ten years ago.

## **Cultural Background and Ethnic Identity**

There has been a significant amount of interest in the role of cultural background and ethnic identity in decision making styles which affect career (Mau, 2000; Gloria and Hird, 1999; Kerka, 1998). The applicability of the current models has also been called into question as these models are generally based on white male populations (Kerka, 1998).

One comparative study of American and Taiwanese medical students hypothesised that American students would be more likely to adopt a rational style of decision making as their primary style than would their Taiwanese counterparts, the latter using a dependent style (Mau, 2000). The findings demonstrated that both American and Taiwanese students endorsed a rational style.

An issue of interest is the role that cultural background and ethnic identity may have on specialty choice. As noted earlier, the proportion of medical students from an Asian cultural background entering Australian universities is increasing.

Razali's (1996) study of Malaysian medical students noted that the most popular choices for future specialties were medicine, surgery, paediatrics and obstetrics and gynaecology. He found surgery as a career choice was confined to men. Also female doctors were less likely to pursue a career in private practice, and that more often they chose paediatrics and obstetrics and gynaecology.

## **Income**

Many graduates are leaving medical school carrying the burden of debt for their education. This may have an influence on specialty choice, with some students choosing shorter courses so that they may enter the workforce sooner. There are differing views on income expectation as a determinant of specialty choice, with some researchers proposing that general practice, for example, is not popular due to its comparatively low level of remuneration (Pitts, 1997). To date, this issue does not appear to have been the subject of examination in Australian medical school graduates' choice of specialty.

US-based researchers, Kiker and Zeh (1998), examined the impact of income expectations on specialty choice. This study was conducted in response to the declining numbers of medical graduates specialising in primary care. A comparison of the growth in income found that between 1982 and 1992 primary care physicians income had increased by 50 percent compared with a 90 percent increase for radiologists and surgeons during the same period. The researchers hypothesised that those graduates with lower income expectations were more likely to choose primary care. They found that women, married students, and non-white students were more likely to choose primary care.

Monetary gain was cited as the motivation for choosing a medical career in a group of Malaysian medical students (Razali, 1996). Their career choice of private practice was significantly associated with family influence and monetary gain. It was interesting to note that the majority of Malay medical students were from low socio-economic backgrounds.

## **Stress**

The impact of stress on professional and family life for members of the medical profession has been widely studied over the past decade (Firth-Cozens, 1987; Allen, 1994; BMA, 1995; AMA 2001a). Stress has been associated with poor performance, career changes, “burnout”, substance abuse, depression and suicide (BMA, 1993; Richings et al. 1986).

Stress experienced by the medical workforce has been attributed to a variety of sources. These are the main ones identified by Luck (2001) and the British Medical Association:

- long hours;
- working environment;
- nature of the work;
- financial constraints of health system impacting upon staffing levels;
- career indecision;
- repetitive tasks;
- lack of induction; and
- no opportunity for peer debriefing.

While these sources of stress have been identified in the workplace, Luck believes that shorter training times combined with a more intense workload and higher patient expectations are also contributing factors. She proposed some practical solutions that may help alleviate the levels of stress experienced by junior doctors which also included the availability of professional counselling.

In a recent Australian article concerning general practitioner satisfaction, Chew (2001) commented on the stressors they experienced which were seen to contribute to their level of dissatisfaction with their specialty choice. The main stressor was low job control, which manifested itself through time pressures, financial pressures, and a variety of organisational issues.

Some of the remedies Chew suggested included professional upskilling and practice management, as well as combining clinical with other professional activities.

As part of a ten year study, the British Medical Association (BMA) has reported on stress among junior doctors. The BMA were of the opinion that adequate staffing levels would enable greater access to peer support networks, and this in turn would help lower stress levels.

Other studies that have focussed on individual specialties have found varying degrees of ‘burnout’ and reports of stress by doctors. Whippen and Canellos (1991) surveyed oncologists regarding “burnout”, and found that 56 percent of their respondent group experienced some degree of burnout. The reasons given by this specialist group were lack of vacation or personal time, continuous exposure to fatal illness and frustration with limited therapeutic success.

In measuring stress among Finnish medical practitioners, Otkinuora et al. 1990 reported the highest scores among general practitioners and non-specialists working in health centres.

In the UK, Firth-Cozens et al. (1999) researched specialty choice and the relationship between stress and personality. This longitudinal study revealed that of the six specialties (psychiatry, general practice, hospital medicine, anaesthetics, surgery and laboratory) the highest stress levels were found in laboratory scientists and psychiatrists, and the lowest levels were found in surgeons and anaesthetists. They attributed these findings to the relationship between self-criticism scores and stress which were higher in students who became psychiatrists.

In an earlier study of medical practitioners, personality and stress Firth-Cozens (1997) found that many doctors had personality traits (i.e. being highly self-critical) that she considered would predispose them to symptoms of stress.

In the US, stress has also been attributed to the growing concern over the surety of reimbursement for medical services provided under their health system.

### **Hours of Work**

Surveys of younger graduates have indicated they have a preference for working shorter hours than their predecessors (Warde et al. 1996). Long working hours and overtime have been implicated in stress experienced by young doctors (Luck, 2001; BMA, 1995). In some instances, the requirement to work long hours has been attributed to financially driven staff shortages, and covering for staff on leave (Allen, 1997).

It has been noted in both the Australian and overseas literature that female doctors tend to work shorter hours and have a preference for working shorter hours primarily due to family commitments (AMWAC, 1998; Firth-Cozens et al. 1999).

Heiligers and Hingstman (2000) surveyed the members of five medical associations regarding career preferences of medical specialists in the Netherlands. They examined career preferences for gender differences, and influential characteristics of the home and work domains. They also reported on the extent to which actual working hours and preferred working hours matched. Their results showed that more than 50 percent of all specialists surveyed preferred a part-time career, however the actual/preferred match in part-time focus was low for males (26%) compared with females (81%). A preference for part-time work was influenced by the home domain for males but not for females (Heiligers and Hingstman, 2000). One of the predictors of male doctors' preference for part-time positions was having a youngest child aged between 5 and 12.

### **Location**

Attracting and retaining medical staff in rural Australia has been a problem for many years. In a study of job aspirations of Australian physician trainees, Kanagarajah et al. (1996) found that generalists were more likely to want to practise outside capital cities than specialists, although there was no significant difference between male and female doctors with regard to location.

The Rural Undergraduate Steering Committee (RUSC) Program, introduced by the Australian Commonwealth Government in 1994, has provided funding to medical schools so that the number of medical students of rural origin could be increased through changes to selection, curriculum and support provided to rural students (AMWAC, 2000c; Prideaux et al. 2001).

Additional Commonwealth government funding has been made available to assist in meeting accommodation, living and travel expenses of rural students and for the establishment of rural and regional clinical schools. Similarly, the development of the medical school at James Cook University in Townsville is part of the national initiative to improve the distribution of medical practitioners throughout the rural areas of Australia, based on the notion that there is a link between place of study (rural) and staying in the rural area (AMWAC 2000c; Prideaux et al. 2001).

### **Family Commitments**

The traditional professional male-female roles appear to be changing, with young male doctors wanting to take a larger care-giver role with their children. While female doctors continue to work shorter hours and take a greater role in child-rearing, they seem to make fewer sacrifices in their overall career choice compared with 10 years ago (Warde et al. 1996; AMA 2001b).

Changes for marriage and family commitments have been found to be more common among younger male doctors than their older peers (Warde et al. 1996). The most common career change was found to be a reduction in the number of hours worked. This study also found that females were more likely to make career sacrifices for their children than their male peers. Similar findings were made by Sobecks et al. (1999) when they examined the professional and family lives of dual-doctor families. The female physician partner in these families were found to play a more significant role in child rearing, although male physicians in dual-doctor families played a greater role than those with a non-physician spouse.

### **Significant Other Influential Factors**

Much has been written of the role of the medical school, supervising physicians and residents, parents and peers on the career choices of young medical graduates.

An Australian study investigated the influence of negative comments made by hospital specialists about general practitioners and conversely the effect of negative comments made by GPs about hospital specialists on the career choices of medical school graduates (Kamien et al. 1999). They defined the term 'badmouthing' as 'unwarranted, negative, denigrating, even sarcastic comments made by doctors about other doctors' (p. 576). This study, conducted in Perth, was retrospective and used a questionnaire developed in America. An Australian modification of the questionnaire was designed to elicit the type and frequency of negative comments made by both groups of medical practitioners mentioned earlier.

The students were also required to rate the effect of these comments on their attitudes to specialisation. Kamien et al. (1999) concluded that 'badmouthing' was correlated with attitudes towards three fields of specialisation, urban and rural general practice and teaching hospital specialisation, and the frequency of negative comments about these fields negatively influences pursuit of these specialties.

Griffith et al. (2000) examined the role of attending physicians and supervising residents in internal medicine on choices of medical students who were able to take any specialty. The study showed that students who rated their supervisors highly were more likely to choose internal medicine as a specialty when compared with those students who rated their supervisors poorly.

The researchers concluded that exposure to highly rated physicians and residents were a predictor of specialty choice.

Another study compared the influence of general internists supervisors on students' choice of primary care versus that of other sub-specialists (Henderson et al. 1996). They were interested in examining the effect of role modelling on career choice. Their results showed that there was an association, after controlling for a range of demographic and personal characteristics.

A survey examining the medical students' specialty choices asked them to identify different factors that had influenced their choice (Burack et al. 1997). Comparison was made between those students who chose primary care as a specialty and those who did not. Significantly more primary care students identified role models as having an influence on their choice than non-primary care students. Role models were seen to demonstrate specific characteristics admired by the students.

Role models were also found to be influential in medical students choice of surgical careers (Erzurum et al. 2000). Other influential variables identified in a group of third and fourth year students considering a career in surgery, compared with those who were not, were career and academic opportunities.

In the UK, the attitude held by some consultants that general practice is an inferior specialty has been highlighted as an influential factor in the career choice of medical students (Pitts, 1997).

As mentioned earlier, much of the focus in the American and Canadian literature regarding career choice has been on the waning interest in primary care. Some researchers have attributed the decline in interest in primary care to negative attitudes towards its education and practice obtained while in medical school (Bland et al. 1995; Bloom, 1989; Block et al. 1996).

In a study investigating the influence of medical school on opinions about primary care practice, Lynch et al. (1998) surveyed first and fourth year students interested in careers in primary care. Although both groups had a positive opinion about primary care practice, the results showed fourth year students to have a more realistic perception of the demands of primary care. They differed from first year students on variables such as perceived prestige, financial compensation and control over working hours. The researchers attributed this difference in perceptions to medical school.

Another American study examined the relationship between medical school characteristics and primary care, general internal medicine and general paediatrics as career choices (Senf et al. 1997). They were more concerned with funding for biomedical research and the impact that would have on medical school curricula and faculty structure. Senf et al. (1997) designed a model to explain the various components that they hypothesised were predictors of students' decision to undertake the specialty of primary care.

They found that the level of interest in primary care at matriculation was the best predictor of primary care specialty choice. Other predictors of primary care practice were: age of medical school, percentage of rural students, funding and ratio of medical students to residents and

fellows.

Three groups of third year medical students from diverse curricula backgrounds were compared for differences in likelihood of choice of a generalist field of medicine. The findings were non-significant, which led the researchers to conclude that curriculum alone does not have a significant influence on choice of generalist field (Stimmel and Serber, 1999).

### **Summary**

In summary, consistent themes have emerged in the literature both in Australia and overseas suggesting that there has been a progressive change in the demographic characteristics of entrants to medical school. These are documented as an increasing proportion of women, an increasing proportion of students who are aged 25 years and over and who are taking medicine as a second degree, and increasing numbers of non-white students.

Considerable concern has been expressed over the declining interest in specialties such as primary care. As a specialty, primary care is perceived as poorly remunerated for the hours of work involved and lacks a sense of autonomy due to its progressive corporatisation. In spite of this, primary care seems to be the specialty choice of students who are older, or female, and in the US are also non-white and come from a lower socio-economic level.

All of the above factors, discussed in the literature, are seen to play an important role in the career choices of junior doctors. These factors are undeniably interrelated and while most researchers continue to approach the issue of determining or describing influential factors in the career choices of junior doctors from a single-factor perspective, their contribution fails to acknowledge the multifactorial nature of the decision making process.

### **3. THEORIES OF PERSONALITY AND VOCATIONAL BEHAVIOUR**

Vocational psychology as a field of endeavour has developed out of a practical interest in understanding and being able to predict those factors which apply to the sphere of occupational choice, vocational interest and finding the best-fit between individuals and their job. In the context of the present Review, personality may play an important role in decision-making and determining the choices that young doctors make with regard to their future career.

Like many aspects of psychology, the study of personality, and the subsequent development of personality theory are far from an exact science. A number of theories of personality, personality development and its role in determining various human behaviours has not led researchers any closer to a unified or definitive position.

In an attempt to unravel the nature of the relationship a number of empirical studies have been conducted and reported in the vocational psychology literature. Many researchers have examined the relationship between personality and vocational behaviour (Holland, 1997; Dawis and Lofquist, 1984; Greenberg and Baron, 1993) holding the view that personality relates to career choice in a meaningful way and suggest that personality is a significant predictor of career choice behaviours.

Tokar et al. (1998) adopted a five-factor model of personality constructs as the basis for their selective review of personality and vocational behaviour. They describe the five broad dimensions of personality as: Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experience/Intellect. Although the five-factor model has been criticised for exclusion of personality traits such as locus of control (Schneider and Hough, 1995), these constructs have been applied in many empirical studies associated with vocational choice and behaviours and is considered the most comprehensive trait model presently available.

As a result of their review, Tokar et al. (1998) concluded that personality and vocational interests are related using the five-factor model. Some of the key findings of relevance from the literature are summarised under the following headings.

#### **Personality Factors and Career Aspirations, Orientation and Choice**

Locus of control has emerged as a significant factor differentiating a student's choice of career. (Mau et al. 1995; Rojewski and Yang, 1997). The findings of these two studies indicated that the greater the internal locus of control, the more likely a student would aspire to a gender non-traditional occupation.

In their investigations of anxiety (neuroticism) and optimism (associated with extraversion) and job descriptions of civil servants, Spector et al. (1995) found that those individuals with higher levels of anxiety were more likely to have positions with less autonomy, variety, identity, significance and complexity when compared with individuals with a high rating in optimism.

#### **Career Development and Maturity**

Studies of the relationship between personality and career maturity have found that neuroticism, expressed as shyness, was positively associated with inhibited career development (Hamer and Bruch, 1997). Neuroticism has also been associated with career indecision in college students in

numerous studies (Betz and Serling, 1993; Lucas and Wanberg, 1995; Multon et al. 1995). Chartrand et al. (1993) associated problem solving deficits, a dependent decision-making style, and both informational and affective antecedents of career indecision with neuroticism.

### **Mentoring**

Internal locus of control has been positively associated with the willingness to mentor (Allen et al. 1997). In another study of the relationship between mentoring and locus of control, Turban and Dougherty (1994) found that those more likely to initiate mentoring relationships had an internal locus of control, were more emotionally stable and had a higher level of self-monitoring.

#### 4. THEORIES OF SELF-PERCEPTION AND SELF-EFFICACY

It is not surprising that concepts such as self-perception and self-efficacy have been investigated in the context of career choice and decision-making.

Self-perception and youth has been written about at length by the Australian researchers Evans and Poole (1991). In their 1991 monograph they focus on the general life contexts of young people, to include the role of the educational setting, workplace, and leisure. They 'argue the need to look not only at the immediate concerns of young people themselves, and at the larger economic and social contexts in which their lives are lived, but also at the significant immediate life contexts in which young people develop their personal sense of control and competence...'(p1).

Their research has led them to consider demographic factors such as gender, socio-economic status, and ethnicity on the one hand, and perceptions and self-beliefs in examining life contexts. Some of the key findings relating to the aspects of their research focussing on demographic variables are:

- sex stereotypes still exist in the types of occupations chosen by young people;
- females more than males were concerned with personal relationships;
- parents occupational status is less important than gender;
- young people of higher socio-economic status were found to have greater levels of confidence and self-sufficiency and less reliance on external assistance.

The concept of personal agency beliefs have been described in various ways in quite diverse research traditions; locus of control (Rotter, 1966), self-efficacy (Bandura, 1977), social competence (Ford 1985). Skinner and Chapman (1984) in discussing control beliefs, argue that these have 2 components: first, the extent to which the person believes that any particular event can be controlled by people in the context; and second, the extent to which the person believes that he or she is one of those who can so control the event.

Ford (1987) stated 'Beliefs about one's capabilities for attaining goals (ie. personal agency beliefs) must therefore be of two fundamental types: beliefs about the responsiveness of the environment to one's efforts to attain desired outcomes (ie. perceptions of control), and beliefs about one's ability to actually achieve these outcomes when given the opportunity to do so (ie. perceptions of competence).' (p. 212). The notion of the goal being worth attaining has been included in the discussion of self-efficacy by Fuller et al. (1982), such that an individual will behave in a way which positively influences the outcome.

It is unlikely that an individual's self-concept is static when considering life concerns and goals, although, researchers coming from other theoretical backgrounds have proposed this hypothesis.

Many of the research studies, related to medical graduates' choice of career, have compared initial preferences when entering medical school with the final specialty choice. Given that the literature suggests that career maturity, self-efficacy and self-concept are all evolutionary in nature, these methodologies may merely be capturing normal developmental change and

maturation.

## **5. THEORIES OF DECISION MAKING**

A number of theoretical perspectives on the process of decision making have emerged in the literature. A brief summary of each of the major theoretical frameworks will be presented here, followed by a discussion of literature which has attempted to apply them to vocational choice and more specifically, the career choices of medical graduates.

The process of decision making formed the theoretical framework for other early studies of career choice (Matteson and Smith, 1977). Under this framework, 'occupational preference was defined as the occupation an individual would enter if there were no impediments' (Nieman et al. 1986).

In a further theoretical development, Janis and Mann (1977) proposed a five-stage process of decision making. They theorised that the individual passed through two stages where they gathered information and made an assessment of the alternatives. The third stage could best be described as the time where alternatives are discarded and a final choice is made. During the final two stages, the individual is seen to commit him/herself to the decision and pursue the chosen option.

It was Janis and Mann's (1977) contention that vigilance is an important component of seeking information and weighing up the options, and that increased vigilance promotes increased satisfaction with the final choice. They also proposed that the decision making process was driven by a number of factors they described as, self approval, social approval, utilitarian gains for self, and utilitarian gains for others. These factors determined the options assessment phase, that is, how a particular option might be pursued or ruled out.

### **Trait and Factor Theories**

It has been theorized that it is possible to match individual traits to occupational requirements. While Holland (1997) matched six types of occupation on the basis of this theory, critics have questioned the generalisability of his results on the grounds that they were limited to white males.

The orientation of this perspective is that it deals with career issues at a fixed point in time.

### **Life Span Theories**

Life span theories take a developmental approach, and are generally considered to be long-term in their orientation. The basic premise is that vocational development occurs in a series of stages across an individual's life span. Super (1980) who has the most widely known span theories (Super's Theory of Vocational Choice) considered self-concept and vocational maturity to be important determinants of occupational choice.

As with trait and factor theories, the major criticism of life-span theories is their restricted capacity to account/accommodate for changes in women's roles, and applicability to a non-white populations.

### **Social Cognitive Career Theories**

Social cognitive theories emphasise the relationship between self-efficacy and outcome

expectations on goals and behaviour (Stitt-Gohdes, 1997). From this perspective it is predicted that an individual will have the belief that he/she is able to complete a task and has an expectation of the outcome, his/her behaviour will reflect their beliefs and he/she are more likely to achieve their expected outcome.

### **Career Maturity and Salience**

Career maturity simply refers to an individual's readiness to make career decisions that are appropriate. Naidoo (1998) proposed that other factors including age, gender, socio-economic status, ethnic identity and locus of control all have an impact on career maturity.

Work salience is an interesting concept that refers to the value that individuals place on work as a role in life. It is purported that these values change over the course of an individual's life, for example, family having increased importance at some stages, or leisure pursuits (Sharf, 1997).

The five factor model of personality has not generally been applied in investigations of career development and maturity, but rather it has been the construct of locus of control.

Luzzo (1993a; 1993b) examined the role of locus of control in the context of career maturity and development and found a significant relationship between increased internal locus of control and greater confidence in career decision-making as well as reported greater career maturity.

In summary, elements of each of these theoretical perspectives occur in most discussions of decision-making theory and vocational choice. At the most simplistic level of analysis, one might hypothesise that appropriate career decisions will be made by an individual with a level of career maturity that has developed over time, a high level of self-efficacy and possessing a particular range of personality characteristics.

## **6. APPLICATION OF THEORETICAL FRAMEWORKS TO CAREER CHOICE AND WORKFORCE PARTICIPATION**

Investigation of the decision-making and career choice process specifically in the medical environment has yielded a diverse range of approaches.

Funkenstein (1978) investigated medical graduate career choice and decision making by separating variables into two categories, intrinsic and extrinsic. As previously indicated intrinsic factors are those unique to the individual (i.e. gender, intellect, personality) and extrinsic factors constitute the external factors experienced by an individual (i.e. social, educational).

As well as making this distinction, Funkenstein also categorised students' interests in medicine into two groups, biosocial and bioscientific. Some students were seen to have a greater interest in the scientific aspects of medicine (bioscientific), while others were more interested in helping people through the application of medical techniques (biosocial). The application of this theoretical framework to medical student decision making demonstrated that external factors and biosocial students were more likely to choose a career in primary care.

A group of American researchers (Nieman et al. 1986) sampled a group of first year medical students to study the differences between those who preferred family medicine and those who didn't. They applied a combination of Funkenstein's biosocial/bioscientific dichotomy, questions to determine stage of decision making based on Janis and Mann's research, questions to examine factors that formed the basis of the decision making and a series of demographic variables.

What this research concluded was that there are differences between the students who had a preference for family medicine and other students, and that the application of decision making theory helped to show how they were different. All students were equally vigilant in their decision making, although those who preferred family medicine were at an earlier stage in their decision making when compared with other students. The researchers hypothesised that this may explain the decline in the actual number of graduates who proceed to a career in family medicine.

The Washington Primary Care Interest Inventory was developed by Brock et al. (1998) to assess medical graduates attitudes toward the appropriateness of family physicians' treating psychosocial problems. These researchers felt that attitudinal variables were important to understanding career selection, as well as extrinsic variables such as education. They proposed that the nature of the student's evaluation of psychosocial problems brought to the family physician might improve understanding of career choice.

The factors underlying the inventory were physical and familial complaints, and stressors. Brock et al. (1998) found that students who scored higher on these three factors were more inclined to choose primary care as a specialty.

## 7. NEW CONCEPTS OF A CAREER

The social world has changed sufficiently that it has led to less permanent prospects in work, family and education for the youth of today compared with two to three decades ago. The clearly marked transition points from youth to adulthood such as leaving home and buying a house, finishing school and starting work, marriage and starting a family are no longer clear, or in some instances unattainable.

It has been postulated that the loss of social institutions and more traditional transition points has created uncertainty for youth in their decision-making and life choices (du Bois-Reymond, 1998; Furlong and Cartmel, 1997; Beck, 1992). The consensus of opinion amongst researchers is that young people experience more complex transitions from study to work.

One may speculate that the lack of employment permanency and subsequent 'career path' may be reflected in the growing trend in university curricula to offer 'double-majors' and/or 'double-degrees'. The 'double' phenomenon represents the need to develop a range of skills across more than one field, with the ability to apply knowledge gained in either field to the other. Some examples of this include: nursing and business; medicine and health law.

Davies (2001) describes the concept of 'portfolio careers' as being 'a career made up of many parts' (p 1). What Davies appears to describe is the gradual progression of an individual's interest in activities related to their core occupation. It is unclear whether this represents occupational evolution by design, or merely random capitalising on opportunities as they present themselves.

On the positive side the acquisition of a variety of skills has the potential to give the individual variety in their day-to-day occupational undertaking.

## **8. IS THERE CAPACITY TO INFLUENCE THE CAREER DECISIONS OF MEDICAL GRADUATES?**

Perhaps the most vexing question is whether educationalists and policy makers have the capacity to influence the career choices of medical graduates in their early postgraduate years. Is it possible to develop an interventionist model, apart from merely restricting the numbers of graduates entering specialties that are oversupplied?

Humphreys et al. (2001) identified some of the relevant intrinsic factors influencing a doctor's decision to take up rural practice as background, marital status, the aspirations and needs of the doctor's spouse or partner, the household's stage of the lifecycle, perceived variety of practices, and a particular attraction to a rural place or lifestyle, independence and access to hospitals. External factors included the size and characteristics of the local community, the nature of existing health services and infrastructure, the nature of practice the doctor can actually undertake within the community, the nature and extent of professional support and continuing education, availability of locum relief, and the extent to which a career path is perceived to be limited by location outside of metropolitan areas. These researchers based their conceptual framework for the recruitment of rural doctors on the proposition that 'where the match between internal aspirations and needs and external environmental factors is sufficiently congruent, the doctor takes up rural practice' (p 97). In other words, an individual takes many internal and external factors into consideration when deciding where to locate his/her medical practice. It follows that among doctors in their early postgraduate years, decisions about type of medical practice and choice of discipline training program are equally complex and multi-factorial.

A study commissioned by the AMA (2001b) concluded that lifestyle and work practices have the greatest impact on vocational choice. These extrinsic factors were reported as being evaluated by trainees 'in terms of their ability to allow for part-time or job-sharing positions, working hours, on-call and after hours requirements and flexibility to spend time with family and friends' (p iii). The most salient intrinsic factor was the interest or appeal that the discipline held for the trainee doctor. Additional extrinsic factors driving vocational choice included:

- training requirements;
- experience/exposure to discipline;
- atmosphere and working environment;
- competition/availability of training positions;
- competition/availability of consultant positions; and
- remuneration.

The literature suggests that there is little likelihood of being able to alter or manipulate career choice determinants intrinsic to medical graduates, such as the appeal that a particular discipline holds for the individual or the psychological needs that motivate them. Furthermore, few studies have found that psychological measures have predictive value because most of the measures associated with them lack reliability when applied to medical practitioners. On the other hand, extrinsic factors potentially allow for intervention. The most important or influential extrinsic factors for medical graduates appear to be mentors or significant others, hours and conditions of work, workplace stress and lifestyle considerations. Where medical graduates report positive experiences in one or all of these aspects of their vocational training, they report more

satisfaction with their choice of discipline than medical graduates who have not had positive experiences in these aspects. Changes or enhancements that such a range of extrinsic factors may help to reduce include career indecision and the potential for later career dissatisfaction.

### **Work Satisfaction and Career Decision-Making**

A further consideration for a study of career decision-making among medical graduates is the assessment of satisfaction with vocational training and work experiences. Work satisfaction has been defined as an 'emotional response toward various facets of one's job' (Kreitner and Kinicki, 1998, p 206). It follows that many factors may impact on satisfaction and that while a person may be relatively satisfied with one aspect of their work or career or training program, they may be dissatisfied with other aspects. Work satisfaction is likely to influence the career plans of young doctors in several ways. First, the perceived work satisfaction of important others (eg consultants, peers and more senior vocational trainees) is likely to influence decisions about choice of discipline. Secondly, an individual's work satisfaction and stress is likely to influence decisions about whether to remain within their chosen discipline or to try another field of medicine or to leave medicine altogether. Decisions to withdraw from a particular work situation are usually associated with dissatisfying work aspects together with an acceptable alternative career opportunity.

### **The Dynamic Nature of Career Decision-Making**

Humphreys et al. (2001) note the dynamic nature of career decision-making. For example, the internal career drivers (ie personal and professional needs) of the individual may change over time or their external work environment might change. These changes have the potential to alter the amount of satisfaction that the doctor gains from his/her work. With reference to the retention of doctors in a rural area, these researchers maintain that '(i)n situations where a significant mismatch exists between the doctor's level of satisfaction and their present location, ... a state of "stress" (reflected in levels of satisfaction, physical and mental wellbeing) may occur in which some modification is required in order for the practitioner to remain in situ' (p 97). Resolution of this situation may occur in several ways. The doctor may adjust his/her personal and professional needs and aspirations or he/she may take action to change the work environment. Alternatively, the community may take action to enhance the doctor's work environment. If the situation is not resolved to the doctor's satisfaction then he/she may decide to relocate to another community. Decisions by doctors in the early postgraduate years about choice of discipline or about leaving the medical workforce are likely to follow a similar process to that outlined by Humphreys et al.

### **Retention and Attrition Considerations**

In deciding whether to withdraw from a given discipline training program or work situation, the young medical practitioner will typically assess what other options are open to them. Desirable options will be those that he/she perceives will provide them with greater satisfaction and less stress or discomfort associated with a mismatch between their personal and professional needs and their work situation. Blegan (1993) observed that stress has a strong, negative relationship with job satisfaction. Long work hours, lack of meal breaks and demanding on-call work rosters are factors associated with stress among young doctors (AMA 2001a and 2001b). A further relevant consideration is the relationship between work demands and personal life. Recent research supports the notion that work satisfaction or dissatisfaction spills over into one's personal life and vice versa (Parasuraman et al. 1996; Tenbrunsel et al. 1995; AMA 2001b). It

follows, that should a significant mismatch develop between a medical practitioner's expectations about his/her personal life and his/her professional life, then their level of work satisfaction is likely to decline and he/she will be at risk of changing his/her career plans, including withdrawing from the medical workforce.

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