

## When, what and how South Australian pre-registration junior medical officers' career choices are made

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**OBJECTIVES** This study aimed to provide better understanding of how pre-registration junior medical officers (PJMOs) make their career choices by investigating when decisions are made, what factors impact on choices, and the role of experience in this process.

**METHODS** A third ( $n = 54$ ) of PJMOs from the 2003 cohort at South Australian teaching hospitals participated in the current research. Inductive content analysis was used to discover themes in data gathered from semistructured interviews.

**RESULTS** Interviews revealed that although 26% (14/54) of participants had made their career decisions in their pre-registration year, 50% (27/54) had still to decide on a career choice. The factors identified as impacting on career choice were grouped into 5 main categories: job satisfaction; lifestyle; career path; training programme, and the wider environment. Depending on the demographic profile of the PJMO, different relative importance was assigned to these factors. The most important elements used to confirm or disconfirm PJMOs' potential career choices were the experiences they had of different specialty areas.

**DISCUSSION** This study allowed an in-depth exploration of the factors that affect the decision-making process of PJMOs. It also found that defined groups of PJMOs place different degrees of importance on these factors, which may have implications for medical workforce planning. It is clear that

experience and role models are a crucial component of the career decision-making process. This has importance for specialties that are not incorporated into junior medical training.

**KEYWORDS** multicentre study [publication type]; humans; South Australia; \*career choice; medical staff, hospital/\*psychology; job satisfaction; attitude of health personnel; time factors; life style; stress, psychological; career mobility; workplace; interpersonal relations.

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### INTRODUCTION

One of the key aims of medical workforce planning is to ensure a balanced distribution of doctors across the range of disciplines to meet the health care needs of their community.<sup>1</sup> To assist with achieving this, governments and medical colleges can implement strategies that attempt to reduce entry into popular specialties and increase entry to less well represented specialties. However, filling positions in less popular specialties is still dependent on junior medical officers choosing to pursue that specialty. Thus, understanding the factors impacting on this decision is important.

A number of factors have been identified as impacting on choice of specialty.<sup>2</sup> This requires continual review as the diversity of medical graduates increases. In Australia,<sup>3</sup> as elsewhere,<sup>4,5</sup> there has been a progressive change in the demographic characteristics of entrants to medical school, largely resulting from changes in medical school entry requirements.<sup>6,7</sup> Medical school intake shows an

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## Overview

### What is already known on this subject

To date, research based on reports from medical students or doctors already working in their chosen specialty has identified internal and external factors influencing the decision-making process.

### What this study adds

The qualitative approach adopted has enabled these 3 essential areas of understanding to be explored in detail from the perspective of the pre-registration junior medical officer. It confirms and reorganises the importance assigned to some of the factors identified to impact on specialty choice. The critical role of experience used to confirm or disconfirm specialty choice is an extremely important outcome. Variations in the decision-making approach due to the increasing heterogeneity of medical graduates have also been observed.

### Suggestions for further research

Future research might examine the relative importance of hospital experience and medical school experience on determining the specialty career choices of junior medical officers.

increasing proportion of female students, older students, students taking medicine as a second degree, and students from non-English speaking backgrounds.<sup>4-6</sup> These changes at the medical school level will have significant impact on the future profile of the workforce. Therefore, it is important to know when any current group of pre-registration junior medical officers (PJMOs) is making career choices, what factors influence those choices, and how final decisions are made in order to ensure the development of an effective workforce in the future.

A number of studies have been undertaken in an effort to gain this understanding. The majority of these studies were conducted overseas and

hence may not be directly relevant to the Australian context.<sup>8-11</sup> The few published Australian studies<sup>12-14</sup> have been questionnaire-based and have focused on doctors already in vocational training reflecting on what influenced their decisions. This approach has 2 main limitations. Firstly, it requires the respondent to reflect back upon the decision process, often years after it initially occurred. Secondly, questionnaires are mainly restricted to a closed list of possible responses and often provide limited opportunity for the respondent to expand on his or her selection. Therefore, gaining an in-depth understanding of the decision-making process is unlikely.

There also was an identified need to obtain data on career decision making at the pre-registration level, where previous studies have established that career decision making occurs.<sup>3,12</sup> This study used a methodology that allowed the PJMOs to highlight, from their perspective, which factors impact on decision making. The aim of this study was to gain a greater understanding of when PJMOs make their career choices, what factors influence or impact on their career choices, and how their final decisions are made.

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## METHODS

### Participants

A third ( $n = 54$ ) of PJMOs from the 2003 cohort ( $n = 149$ ) in South Australian teaching hospitals were recruited for the study. Recruitment was carried out via an initial mail-out to all PJMOs and follow-up presentations at hospital education meetings. All PJMOs who volunteered were included in the sample and received a small honorarium for their time. A summary of the key characteristics of participants is shown in Table 1.

### Procedure

Semistructured interviews were used for data collection, according to a script developed by researchers (Table 2). Questions focused on participants' impressions of future specialties and factors impacting upon this. Interviews typically lasted between 45 minutes and 1 hour and were tape-recorded and later transcribed.

Ethical consent was gained and all data remained confidential. Interviewer bias was reduced by recruiting an interviewer from a different discipline

Table 1 Summary of key characteristics of participants

		Sex			Type of medical degree		Graduating university	
		Overall	Male	Female	Under-graduate	Post-graduate	Adelaide	Other
Overall	Participants	54	27	27	38	16	29	25
Sex	Male	27	27	0	19	8	13	14
	Female	27	0	27	19	8	16	11
Type of degree	Postgraduate	16	18	17	0	18	28	10
	Undergraduate	38	9	9	38	0	1	15
Graduating university	University of Adelaide	29	13	16	28	1	29	0
	Other university	25	14	10	10	15	0	25
Age (years)	Mean	27.1	27.41	26.74	26.13	29.31	25.34	29.08
	Standard deviation	4.32	4.14	4.54	4.32	5.15	2.98	4.8
	Minimum	24	24	24	24	25	24	24
	Maximum	40	40	40	40	40	40	40

Table 2 Interview script

Applications for specialties	Have you submitted any applications for an area of specialisation?
Tracking career intentions	How many? To what specialty areas?
	Why did you initially decide to do medicine?
	Did you initially have a career path in mind? What was this?
	Do you have one in mind now? What is this?
Timing of career choice	Does this match up with the career path you initially thought you'd take?
	Why do you think they are the same/different?
	How often did you think about the direction of your career throughout your training?
	At what stage did you consider it (e.g. at medical school, during your internship)?
Factors that influence career choice	Do you think there were any specific triggers that prompted you to think about your future career at these times?
	If yes, what were they?
	When you were contemplating your career choice what factors do you feel were most important in your decision making?
	Out of these factors can you identify one as being most influential?
	Why was this factor most influential?
	Do you think that the factors you considered when thinking about your future career direction changed over time as you progressed through your study?
	If yes, why might these factors have changed?

with no previous knowledge of the research area.<sup>15</sup> The external validity of the results was improved by drawing many of the factors identified back to the experience of the participant.<sup>16</sup>

An inductive method of analysis was used to create a coding scheme. The method involved constant comparative analysis, adapted from grounded theory. Two coders (both authors) separately coded the interviews using qualitative research software (N6, Version 6.0; NVivo, Version 1.3; both QSR International Pty Ltd, Melbourne, NSW, Australia). The final coding scheme consisted of 68 codes, organised into a 3-level coding hierarchy. Based on the final coding scheme, a content analysis was performed. An overall inter-rater reliability of 0.70 was achieved. Differences between the coders were

resolved through discussion and subsequent adjustment of the coding system.

## RESULTS

### When is a future career path chosen?

Overall, we investigated how PJMOs thought about their future career during 5 stages. These were prior to enrolling in a medical school, during early medical school (pre-clinical years), during later medical school (clinical years), during the pre-registration year and in the future (any time after the pre-registration year). These stages are depicted in Table 3. Over 78% of the participants made their career decision after completing medical school, with

Table 3 Stage at which a career choice is decided, percentage of participants and summary of the thoughts associated with each stage

Stage of training when career choice is decided	Participants' thoughts associated with stage
Before medical degree (5.8% of participants)	Generally did not understand the possibilities for future career specialty As medical students they did not have a future career path determined before enrolling in medical school Had limited knowledge of the career options within the medical field Most only had experience with local doctors, doctors portrayed in the media, from hearsay or doctors within their family
Early medical school (1.9% of participants)	Thought infrequently about future career Their focus seemed to be mostly on passing examinations and gaining a broad knowledge base in order not to limit future decisions Some participants had developed an interest in particular areas of theoretical knowledge during early medical school, and this tended to spark their interest in a particular specialty (or more) throughout their medical degree
Late medical school (13.5% of participants)	Thought quite frequently about their future career choice but contextual information was still not clear The majority emphasised the influence of rotations experienced late in their degree on their thoughts about their future specialty choice However, there were still a number of things that were not obvious about the typical demands of certain specialties
Pre-registration year (26.9% of participants)	Thought frequently about their future career choice during their pre-registration year, although the majority of pre-registration junior medical officers had still not made a definite decision about their future specialty Pre-registration rotations were perceived to provide more realistic representation of future working conditions Lifestyle issues, and the reality of the job only become apparent during the pre-registration year They wanted more experience before making a decision Applications for some vocational training programmes choice occurred at a difficult time
Future (51.9% of participants)	The majority are not rushed to make their future career choice and intend to make a decision in the future They did not feel pressured to make a decision about their future career path during the pre-registration year They felt it was more important to engage in more practical experience in order to be certain they were making the correct decision

more than half reporting that they would make their decision after their pre-registration year. In essence, before enrolling in medical school, participants generally did not have a particular career choice in mind apart from the overall aim of wanting to become a doctor. As they moved through medical school they developed attitudes towards the particular specialties, with the pre-registration year being the key year for thinking about which particular career paths were most appealing.

#### What are the influential factors?

A number of factors were perceived to impact on specialty decision making. Table 4 shows the high-level codes and subcodes into which these factors have been grouped and the percentage of participants who considered that each of these factors influenced their future specialty choice. Quotes drawn from the transcripts are provided in Table 4 in order to illustrate the meaning associated with each of the factors.

*Job satisfaction* (54/54) and *lifestyle* (54/54) were perceived by all participants as influences on choice of specialty. *Career path* (45/54) was perceived as an influential factor on specialty choice by more participants than was *training programme* (42/54).

Finally, *enjoyment of job setting* (35/54) was mentioned by the fewest number of participants.

#### *Job satisfaction*

All participants (54/54) cited the *type of activity involved* as making an important contribution to job satisfaction. Within this subcode a number of elements were discussed, including whether the job involved procedural skills, medical skills or problem-solving skills. Over 81% (44/54) of participants indicated that the *type of patient contact* in particular specialties impacted on their enjoyment of that job. Patient contact was discussed in terms of wanting longterm or short-term patient relationships. *General job satisfaction* was mentioned by over half (34/54) the participants. This consisted of a range of comments about the importance of enjoying the work that they were doing. *Type of patient* was also mentioned by over half (32/54) the participants, in comments that dealt with patients with specific characteristics such as children, geriatric patients, pregnant women and cancer patients.

*Type of outcome* was referred to by almost half (24/54) the participants. This subcode captured the desire to practise a career that typically produced good outcomes (such as surgery) or, in some cases, poor outcomes (such as oncology).

Table 4 Coding categories and examples of comments by participants

Main categories	Subcategories	Examples of comments by participants
Job satisfaction	Type of activity involved	'I would probably like a job that mixed things up and you had some procedures and some ward work. I think if you were just doing ward work all the time it could get very boring as well' (Participant A10)
	Type of patient contact	'Firstly, I think the most important thing is I want to do something that I enjoy. Everything has its ups and downs but I would like to say on the whole I really enjoy what I do, so that would be my number 1 consideration' (Participant A17)
	Type of patient	
	Type of outcome	'For example, part of the appeal of surgery, say, is that all the patients by definition who come to you are patients you can treat. So if everyone walks in the door and you go "Ah, I've got just the thing for you," and you do your little thing and usually hopefully you improve them and they walk out the other door and it's like, wow, I've achieved something here' (Participant A4)
	General job satisfaction	
Lifestyle	Hours worked	'I don't think now that if I got stuck in a job where I potentially had to work 6 days a week and/or long hours each day and that as such reduced the contact I had with my family, I think I would find that intolerable' (Participant A34)
	Life outside medicine	'...Being able to take time off later to have children. A lot of specialties you can't do that. But general practice – that's a good thing about GPs, you would be able to take time off and come back to it later without too much trouble' (Participant A11)
	Potential for travel	
	Stress	'Some training schemes are just a lot of hard work and I think I am an innately lazy person too' (Participant A19)
	Career	'... so I guess different areas suit people with a slightly different personality and even within the medical field there are people who are sort of more intellectual, more of a theoretical base, and others are more practical' (Participant A16)
	Personality	
	Remuneration	'Litigation is another area we haven't spoken about but that's a huge issue that influences choice of career I think' (Participant A14)
	Potential for litigation	
	Stereotype	
	Career potential	'I guess how much – I do like specialties that are more prestigious. I think I do. I think, for example, general practice probably isn't the most prestigious compared to say if you're a cardiologist or something like that - and what is really important to me is if it is interesting and I find the work interesting' (Participant A10)
	Incorporate research	
	Status	
Training programmes		'All of the programmes to me seemed a fairly similar length of time on paper, however, you notice for example in surgery that you may pass your exams but then you may not be accepted on to the programme and people seem to get stuck at various stages of their training. That was something that I did think about, especially being a postgraduate student too. I think you're probably a bit more aware of time and if things are going to take a longer time that is a bit of a deterrent' (Participant A17)
	Personal investment required	
	Certainty and conviction	'I have sort of come to the conclusion that I don't want to go into something yet because I don't feel like I'm passionate enough about anything to warrant charging ahead. I'd rather do a general year, do some good – and maybe do a few years in a general capacity until I come across something that I'm passionate about and look at it and go "Well, that's what I want"...' (Participant A13)
	Difficulty getting into a training programme	
Unsuccessful first time		
Enjoyment of job setting	Immediate setting	'You are your own boss. You don't get consultants saying you didn't do this. We don't do this any more. We do this. You don't get anybody shouting at you or something. You just do whatever you want. So you are your own boss' (Participant A44)
	Wider setting	'But in an operating theatre there's nurses, the surgeon, you are as a team worker on that patient at that particular time and I think that's positive' (Participant A14)
Importance of experience		'I think just past experience of certain professions that definitely colours your experience as to whether you want to do a certain specialty' (Participant A50)
Influence of others		'The second factor, as I say, will probably be the longterm, which I tend to look at a consultant ... what sort of situation do I envision myself being in 20 or 30 years time if I get into this field?' (Participant A31)

### Lifestyle

When discussing lifestyle, the 2 most frequently mentioned subcodes were *working hours* and *life outside medicine*. *Working hours* was mentioned by all PJMOs interviewed (54/54) and this was most apparent during their pre-registration year. Most participants wanted to have shorter working hours and less on-call time in their ideal job. Most PJMOs also wanted careers where they could have a certain amount of control over the hours they worked (examples were anaesthetics and general practice).

Wanting to have a *life outside medicine* was also frequently mentioned (48/54), particularly by

PJMOs who were postgraduate medical course entrants. This was quite strongly associated with *working hours*. Most participants gave some concrete examples of why they wanted a life outside medicine, such as wanting to spend more time with family and friends, and on hobbies and other commitments. Many of the PJMOs were in relationships and wanted to spend time with their partner (44/54). Some were contemplating children in the future and mentioned that spending time raising their children was a priority. This was mentioned by both male and female PJMOs. Those from postgraduate entry medical courses (18/19) were also more likely to value life outside medicine and spending time with family

than PJMOs from undergraduate entry courses (30/35).

Less frequently mentioned subcodes under job satisfaction were *opportunity to travel* and *stress*. Over half the participants (28/54) mentioned that they wanted a future career specialty that would give them the opportunity to travel. Most wanted a portable qualification that would enable them to travel.

*Stress* was mentioned by nearly a quarter (13/54) of those interviewed. Typically, they would talk about avoiding jobs that made them feel stressed. Stress was mentioned much more frequently by PJMOs who had undertaken an undergraduate entry medical course (10/35).

#### *Career path*

A total of 45/54 of interviews mentioned career. The subcodes most frequently referred to were *personality* (22/54) and *remuneration* (21/54). *Personality* was talked about in 2 main ways. Firstly, PJMOs felt that their personality predisposed them to a particular specialty. Secondly, PJMOs commented that the stereotypical personality of people in a particular specialty influenced their choice.

When discussing *remuneration*, participants either wanted to be in a very good financial position from the salary provided or they believed that remuneration was not an important consideration because all fields of medicine provide a salary that would afford an adequate lifestyle. This factor was more important for male PJMOs (15/27) than female PJMOs (6/27).

*Potential for litigation and career potential* were also discussed under career. In terms of potential for litigation, participants who mentioned this wanted a career where their chances of being sued were minimal. Fields that were associated with concerns about litigation were identified as obstetrics and gynaecology, and general practice. The potential for litigation was more of a concern for PJMOs from undergraduate medical courses.

*Career potential* was a factor discussed by 15 participants, particularly those from undergraduate medical courses. Career potential was discussed in terms of job vacancies, potential for promotion and job security. Eleven of 54 participants wanted a job where they could *incorporate research* or teaching. A small number of participants (4/54) felt they wanted a

career where they would have a good *status* in the medical and wider community.

#### *Training programmes*

Over 77% (42/54) of interviewees mentioned training programmes. The PJMOs talked about the *personal investment required* (27/54), such as the cost, length, difficulty and the intensity of the training programme. They often mentioned the issue of a *guaranteed outcome*, particularly in term of changes to some training programmes such as surgery.

*Certainty and conviction* were mentioned by 22 of the participants under the training programme code. Many PJMOs had not reached certainty in their thinking, which they felt was important before enrolling in a training programme. A small number of participants (12/54) discussed the *difficulty of getting into training programmes* such as for surgery and the impact of *not getting into a training programme first time* (12/54).

#### *Work environment*

Work environment was discussed by 35 of the participants. The subcodes included in this category were the *immediate setting* and the *wider setting*. The *immediate setting* was mentioned more frequently (27/54) and participants tended to discuss careers in terms of *individual* or *isolated* positions as compared with those that are predominantly part of a *team*. *Wider setting* was talked about by 24 of the participants in terms of their having an ideal location in which they would like to work (usually either rural or city). They also talked about whether or not they enjoyed the hospital setting.

#### **How experience and other people influence career choice**

Experience was important in determining how PJMOs made a particular specialty choice (49/54). Through their experience they gained knowledge on which to base their decision making. This knowledge was gained in 2 main ways:

- 1 actually doing the job (50/54): examples of quotes highlighting the importance of experiencing the job are shown in Table 4, and
- 2 interacting with or observing others who do the job (32/54), including while on rotation and in other contexts; influential people included supervisors (registrars or senior house officers), consultants, other doctors and peers.

This influence was perceived to occur through:

- **observation** of supervisors or consultants by PJMOs to ascertain what their lifestyle and job requirements would be like in that profession;
- **questioning** of supervisors or consultants by PJMOs about their lifestyle and job requirements, and
- **offering of information** on lifestyle or job requirements by supervisors, consultants, other doctors or peers.

The PJMOs also mentioned that support offered by supervisors contributed indirectly to their positive perception of a given career. Observing others doing a job was more influential for male PJMOs (20/27) than female PJMOs (12/27).

### The decision process

Analysis indicated a clear 3-stage process whereby PJMOs made their choice of specialty. Firstly, PJMOs determined the factors that fitted their personal requirements. Secondly, based on these factors a short list of potential specialties was made. Finally, experience was used to confirm or disconfirm final choice. One PJMO summarised the process thus:

‘So it [career choice] was always on your mind because you would test every rotation to see if it was something that you liked and if it reinforced your plans or if it dashed them, so you thought about it a lot.’ (Participant A13)

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## DISCUSSION

The study has identified 3 elements to the decision-making process that junior medical doctors use when determining their choice of specialty.

The first element involves identification of the types of factors the PJMO deems important components of his or her future work – this may be part-time work, developing a relationship with patients, procedural skills, or the prestige associated with a particular specialty. Universally, for our PJMOs, factors related to job satisfaction and lifestyle were deemed the most important influencing factors. This is consistent with other studies which indicate that the new generation of medical graduates place greater importance on lifestyle and factors associated with lifestyle rather than income.<sup>17–19</sup>

However, differences did occur in the importance some factors held, depending on the PJMO’s training experience (undergraduate or graduate entry medical courses) and sex. The differences tended to reflect the maturity and age of graduate-entry PJMOs,<sup>20</sup> who emphasised factors such as life outside medicine as many were married and had children, and remuneration and therefore the attractiveness of shorter vocational training programmes.<sup>10</sup> Younger, undergraduate-entry PJMOs emphasised good patient outcomes and potential for travel, although they expressed concerns about stress, litigation and personality associated with a specialty. Male PJMOs placed more importance on remuneration and the personal investment required to participate in a training programme when deciding on a career, a result similar to other studies.<sup>13,21</sup> Our study found that both male and female PJMOs placed importance on interest and flexibility, a finding reported previously for female graduates only.<sup>22</sup>

The second element of the decision-making process for PJMOs was the final selection of the specialty. The selection of factors identified as important to the PJMO is then used as a template against which potential specialties can be matched to determine ‘goodness of fit’. From this matching process, the PJMO develops a short list of choices and these choices are then influenced by his or her experience of the specialty. It seems that the actual experiences a PJMO has on rotations then mediates PJMO career choice. This is in line with the understanding that actual experience is the best method of consolidating knowledge about a particular area.<sup>23</sup>

Experience consisted of doing the job and carrying out its associated responsibilities, which PJMOs identified as different to the experiences of medical students. Interactions with more senior doctors confirmed the importance of role models on specialty choice.<sup>24–26</sup> This study identified differences in the role models of male and females PJMOs – consultants were more influential for male PJMOs, whereas females perceived registrars and peers as more influential. Other options may need to be considered for those specialties to which PJMOs are not exposed during the pre-registration year, such as mentoring, or the option of rotations in the specialty during the pre-registration year.<sup>27</sup>

The timing of the decision depends on the above 2 elements being fulfilled, so that the PJMO has a clear understanding of which factors he or she considers should be satisfied by a future career path and the careers that might match with these requirements,

and adequate experience with which to make an informed decision. As other studies have indicated,<sup>12-14</sup> our study found that PJMOs delay making decisions on career choice, citing the desire for more experience before committing to a particular specialty. This suggests that although exposure to specialties during medical school is important,<sup>12</sup> the more critical time for exposure that informs career decision making is in the junior medical years.

The results indicate that although there are common factors among all junior doctors, there are also differences related to their sex, age and type of medical training.<sup>21</sup> The increasing heterogeneity of medical graduates adds further complexity to the decision-making process and, as types of medical courses and selection processes change, this will only increase.

This study has a number of limitations. Firstly, as the study focused on PJMOs prior to their entry into vocational training, the applicability of its findings to medical systems which do not have pre-vocational training, such as in the USA, may be limited. However, as the focus of the paper is on the decision-making process, the results may be generalisable to other health systems. What may change is the emphasis on particular factors, as seen with the differences between undergraduate and postgraduate entry PJMOs. Secondly, it is acknowledged that some responses associated with the timing of decisions about choice of specialty may be subject to selective recall. Thirdly, the study was unable to determine how stable the decisions made by the participants will be. Other research has suggested that most doctors make their career choices in the early postgraduate years<sup>12-14</sup> and that only a small proportion of doctors change their minds in their first 3 years of training.<sup>28</sup> Those who did reported reasons highlighted in this research, such as quality of life and job content.<sup>28</sup> This warrants a follow-up study of this group of PJMOs to find out if the factors considered have changed.

Overall, this research has given us a deeper understanding of when, what and how junior doctors choose their specialties. Although it supports findings from a number of previous studies,<sup>8,9,13</sup> it better defines from the PJMO perspective the various factors impacting on specialty choice and their relative importance. The critical role of the PJMO experience as the final determinant in career decision making is an important finding that has been underexplored and warrants further research. The study also suggests

that these issues should be examined in the context of specific medical specialties.

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