

Clinical activity of overseas-trained doctors practising in general practice in Australia

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Abstract

Introduction: Medical workforce shortages in Australia have led to increasing reliance on overseas-trained doctors (OTDs) to work in general practice in areas of need, particularly in rural areas. These OTDs do not have Australian post-graduate training in general practice, and we know little about how they practise.

Objective: To determine differences in practice style between a self-selected group of overseas-trained general practitioners undertaking the Alternative Pathways Program and GPs who are Fellows of the Royal Australian College of General Practitioners (FRACGP), and whether such differences can be explained by other practitioner, practice and patient characteristics.

Method: A self-selected sample of 89 OTDs from the Alternative Pathways Program were compared with FRACGPs in a continuous national study of GP activity ($n=1032$). Each GP provided details about themselves and their practice and recorded data about patients, morbidity and treatments for 100 encounters.

Results: OTDs were younger, less experienced, worked more sessions per week, in smaller practices. OTDs saw fewer children and elderly patients, more new patients, health concession card holders and Indigenous people. OTDs managed less general, urological, social, skin and pregnancy problems, and more cardiovascular problems, urinary tract infections, tonsillitis and conjunctivitis. They provided more medications, other treatments and referrals, and ordered more pathology and imaging tests.

Conclusion: This study suggests that OTDs see a different patient mix and range of morbidity and provide different management to that of FRACGPs, generating higher costs of care. Regular study of the clinical activities of a representative sample of overseas-trained GPs is needed.

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What is known about the topic?

Australia is dependent on overseas-trained doctors (OTDs) to fill gaps in the health workforce. Currently OTDs account for 25% of Australia's medical workforce. There are no data available about how OTDs practise in any health setting in the Australian health care system.

What does this paper add?

This study provides the first insight into the clinical activity of OTDs in Australia. It demonstrates that OTDs see a different patient mix, manage different morbidity and provide different treatments to Fellows of the Royal Australian College of General Practitioners, and that these differences are not explained by differences in practitioner, practice or patient characteristics.

What are the implications for practitioners?

This paper is pertinent to future health workforce planning and policy considering that health workforce will be reliant on OTDs for several years to come.

AUSTRALIA IS CURRENTLY experiencing medical workforce shortages^{1,2} and has introduced a variety of new training initiatives including increased numbers of publicly funded university medical places and general practitioner vocational training places.¹ However, it is estimated it will take almost a decade for these initiatives to make an impact on the workforce shortages.^{1,3,4} Australia increasingly relies on overseas-trained doctors

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(OTDs), commonly referred to as international medical graduates, to address these shortages.^{1,2,5} An OTD is defined as any doctor who did not obtain their primary medical qualification in Australia.⁶ OTDs account for 25% of the Australian medical workforce^{1,2} and this is increasing due to the MedicarePlus initiative to recruit a further 725 OTDs by 2007.⁵

Medical workforce shortages are reflected in the general practice workforce, particularly in rural and remote Australia.¹ It is important to note that OTDs have worked in Australian general practice for many years. However, they were not previously required to have a Fellowship of the Royal Australian College of General Practitioners to work as an independent GP and were not targeted as part of the solution to workforce shortages. There are several initiatives to enable OTDs to work in general practice, including granting of conditional registration that requires them to work in an area of need or district of workforce shortage, often in rural and remote Australia.⁷ There are more than 1500 restricted OTDs working as general practitioners in districts of workforce shortage.¹ Recruitment, assessment and registration of OTDs are the responsibilities of each state or territory medical board.⁷ There is no formal assessment of the level of theoretical and clinical skills for doctors with conditional registration.^{3,4,8}

There has been recent debate about the need for national registration^{2,9,10} and nationally consistent assessment procedures for OTDs in Australia^{2-4,11} to address differences between the registration and assessment procedures in the states and territories. However, there are no data available about how OTDs practise,¹² and whether this differs from other GPs practising in Australia, to determine the need for assessment and registration/national policy.

The National Consortium for Education in Primary Medical Care (NCEPMC) (a collaboration of nine Universities, General Practice Education Australia, Australian Divisions of General Practice and the Royal Australian College of General Practitioners [RACGP]) developed the Alternative Pathway Program as a method for GPs to gain eligibility to sit for the RACGP Fellowship

(FRACGP) examination for GP recognition.¹³ This program was available to both OTDs and Australian graduates across all states and territories who were otherwise unable to meet the requirements to sit the RACGP exam. The program is no longer in operation and there has been no national training program to take its place. This program was available to GPs who held a recognised medical degree, an existing Medicare Provider Number, were registered with a State Medical Board, had 12 months general practice experience (in Australia or overseas) and who were able to continue in active general practice for at least 3 sessions per week throughout the program.¹³ At enrolment, GPs were required to complete a practice profile as part of the development of a learning plan aimed at bridging gaps between their previous training and needs in their current practice. This study examined the general practice activity of the overseas-trained GPs enrolled in the Alternative Pathway Program.

This paper sought to determine if there are differences in the way overseas-trained GPs practise compared with GPs who hold FRACGP, and the extent to which any differences are due to other practitioner and practice characteristics or to overseas-trained status.

Methods

OTD sample

Enrolment in the Alternative Pathway Program was optional. The program required as part of enrolment that GPs complete a practice profile. This practice profile utilised the Bettering the Evaluation and Care of Health (BEACH) methodology.¹⁴ Each GP completed a single questionnaire about their own and their practice characteristics and details about each of 100 consecutive GP-patient encounters. There were 125 GPs who completed the Alternative Pathway Program between October 2001 and January 2005, 89 of whom were OTDs.

Comparative GP sample

The comparative sample was drawn from the BEACH program. BEACH is a continuous cross-

sectional survey of general practice activity in Australia that commenced in April 1998. A random sample of GPs who have claimed at least 375 general practice Medicare items of service in the previous quarter are invited to participate. About 1000 GPs participate each year. All participants complete a questionnaire about themselves and their practices and, for each of 100 consecutive encounters, a structured form on the patient, their morbidity and management. The unit of measure is the patient encounter with the GP. The sample of encounters is a cluster sample with the GP as the primary sampling unit.

GPs who hold FRACGP who had completed the BEACH program between April 2001 and March 2004 were selected as the comparison group ($n=1032$). This period was chosen to ensure coverage of the same period as the data recorded by the overseas-trained GPs. This comparison group was chosen as FRACGP is the desired end point of the Alternative Pathway Program and FRACGP is the basic skill set now required to independently practice as a recognised GP in Australia.

The study was approved by the Ethics Committee of the University of Sydney and the Ethics Committee of the Australian Institute of Health and Welfare.

Outcome measures

Data were collected on GP and practice characteristics, including GP age and sex, number of years in general practice, the country of primary medical degree, number of sessions worked per week, and the number of GPs in the practice. The location of the practice was classified by postcode according to the Australian Standard Geographical Classification Remoteness Structure.¹⁵ Patient demographic factors recorded in the study included patient age and sex, whether the patient held a Commonwealth concession card, the Indigenous status of the patient (self-identified) and whether the patient was new to the practice. Problems managed at the encounter were classified according to the International Classification of Primary Care (ICPC-2).¹⁶ Morbidity was analysed at both the specific problem level and the

broader ICPC-2 chapter-based body-system level. Treatment outcomes recorded included medications, procedural and clinical treatments, referrals, and the ordering of pathology and imaging tests.

Consultation length (recorded finish time minus start time) was available for all OTD encounters and for a subsample (40 of the 100 encounters) of the FRACGP encounters. Analysis of consultation length was limited to those encounters where A1 and A2 Medicare items were recorded and start and finish time were recorded.

Statistical analysis

Results are reported as proportions (%) when describing the distribution of an event that can arise only once per GP or per encounter. We report rates per 100 encounters when an event can occur more than once per consultation.

The sample of overseas-trained GPs was a convenience sample and the comparison sample from BEACH was a subgroup of FRACGP GPs from a random sample of all Australian GPs. The sample of encounters was a cluster sample with the GP as the primary sampling unit. Therefore when the encounter, problem managed or treatment provided was the unit of inference we used designated procedures in SAS version 8.2¹⁷ that adjust the standard errors for the design effect of the cluster sample.¹⁸ When the GP was the unit of inference we used conventional statistical analyses.

We used simple linear regression and logistic regression for the unadjusted comparisons between the groups on the outcomes of interest. To compare the two GP groups on a range of outcomes, after adjusting for potential confounding variables, we used multiple logistic regression for analyses of categorical outcomes and multiple linear regression for ordinal and continuous outcomes. Categorical outcomes are reported as odds ratios, and continuous and ordinal outcomes are reported as partial regression coefficients (interpreted as the mean difference in outcome between the two groups of GPs after adjusting for potential confounders). The covariates fitted in

I Variables included in the regression models

Covariates for general practitioner and practice characteristic outcomes and for patient outcomes

GP age, sex, location of practice (major city; inner regional Australia; outer regional/remote/very remote Australia), size of practice and sessions worked per week

Covariates for problems managed outcomes and treatment outcomes

GP characteristics (as above) plus patient sex, age, Indigenous status and new patient to practice

each model depended on the outcome of interest and are described in Box 1.

Results

GP characteristics

OTDs were significantly younger, had spent fewer years in general practice, worked more sessions per week and were more likely to work in smaller practices than FRACGPs. The geographical location of practices was significantly different, with OTDs more often in inner regional, outer regional, remote and very remote Australia than FRACGPs. The most common

2 Significant differences in the characteristics of overseas-trained GPs and FRACGP GPs

GP characteristics	OTDs, (n=89) no. (mean)	FRACGPs, (n=1032) no. (mean)	P
Age (years)	89 (38.8)	1032 (44.2)	<0.001
Years in practice	88 (3.9)	1029 (14.9)	<0.001
Sessions per week	84 (9.1)	1029 (8.0)	0.01
Size of practice (no. GPs)	89 (3.6)	1027 (4.9)	0.0015
Comparison of proportions	no. (%)	no. (%)	
Male ($\chi^2_1 = 0.8$; $P < 0.036$)	48 (53.9) (95% CI, 43.4–64.5)	607 (58.8) (95% CI, 55.8–61.8)	
Geographic location ($\chi^2_4 = 113$; $P < 0.001$)			
Major cities	20 (22.5)	694 (67.3)	
Inner regional Australia	35 (39.3)	203 (19.7)	
Outer regional Australia	18 (20.2)	115 (11.1)	
Remote Australia	9 (10.1)	13 (1.3)	
Very remote Australia	7 (7.9)	7 (0.7)	
Place of graduation			
Australia	—	812 (78.7)	
Asia	36 (40.4)	61 (5.9)	
Africa	20 (22.5)	41 (4.0)	
Europe	15 (16.9)	15 (1.5)	
United Kingdom	8 (9.0)	66 (6.4)	
New Zealand	7 (7.9)	21 (2.0)	
Other	2 (2.2)	4 (0.4)	
Pacific	1 (1.1)	5 (0.5)	
America	—	7 (0.7)	

Missing data removed (age: OTD = x, FRACGP = X; years in practice: OTD = 1, FRACGP = 3; sessions per week: OTD = 5, FRACGP = 3; size of practice: OTD = 0, FRACGP = 5). OTD = overseas-trained doctor. FRACGP = Fellowship of the Royal Australian College of General Practitioners.

geographic areas of primary degree for OTDs in the sample were Asia, Africa, Europe and the United Kingdom (Box 2).

Patient characteristics

Both before and after adjustment for GP and practice characteristics OTDs were significantly more likely to see younger patients. Patients at OTD encounters were more likely to be new to the practice, to hold a Commonwealth concession card and to be an Indigenous person (Box 3).

The descriptive analysis showed that OTDs were less likely to manage problems of a general and unspecified nature, musculoskeletal, psychological and social problems than FRACGPs. OTDs were more likely to manage problems related to the ear and the urological system. After adjustment for GP and patient characteristics, differences in general and unspecified, urological, and social problems remained. Lower management rates of skin problems, pregnancy, and higher management rates of cardiovascular problems emerged as new differences after adjustment (Box 3).

Univariate analysis showed that OTDs were significantly more likely to manage urinary tract infection (UTI), tonsillitis, acute otitis media, conjunctivitis, otitis externa, and sinusitis, and were less likely to manage sprains and strains and to provide cardiac check-ups. After adjustment, only the differences in the management of UTI, tonsillitis and conjunctivitis remained significant (Box 3).

OTDs were significantly more likely to provide medications (particularly prescribed medications), other treatments (including clinical and procedural treatments), referrals (particularly to allied health professionals and to hospitals) and were more likely to order pathology and imaging tests. These differences were maintained after adjustment for GP and patient characteristics, with the exception of hospital referrals (Box 3).

Consultation length was reported for consultations where Medicare A1 and A2 items were claimed. There was no significant difference in

the length of consultations with OTDs compared with FRACGPs (Box 4).

Discussion

This study shows that practising OTDs who do not hold GP qualifications recognised in Australia and are undertaking the Alternative Pathway Program are different to their FRACGP counterparts. The OTDs are younger, work more sessions on average and largely practise outside major cities. The fact that they manage different patients and morbidity, and provide different treatments cannot be explained by the measured differences in their own characteristics (eg, age and sex) or their practice characteristics (eg, size and geographical location).

Almost 80% of the OTDs in this study were from non-English speaking countries. The increased recruitment of OTDs from non-English speaking backgrounds in Australia has raised concerns about possible communication difficulties, cultural problems and lack of understanding of the Australian health care system.^{1,3,19,20} These issues could be reflected in the lower management of pregnancy and social problems, as patients may choose to visit another health professional for the management of these problems. It is also possible that the high referral rates reflect OTDs' reluctance to treat some problems. Alternatively, the high referral rates may reflect past experiences with different models of care in other countries.

The high rates of Indigenous patients seen by OTDs suggested an area of potential concern, as a recent Australian Medical Workforce Advisory Committee report highlighted that OTDs working in Aboriginal-specific health services were often poorly trained to deal with Aboriginal people.¹

Higher management rates of UTI, tonsillitis and conjunctivitis suggest that OTDs are more likely to manage acute conditions. Acute conditions coupled with higher rates of young and new patients suggests that many patients who are seeing OTDs have an immediate medical need and are not long-term patients. The higher rates of acute conditions may partially explain the

3 Significant differences: unadjusted and adjusted analysis of OTD and FRACGP patients, morbidity managed and treatment outcomes

Patient characteristic*	Descriptive		Linear regression			
	OTDs	FRACGPs	Unadjusted		Adjusted	
	Rate per 100 encounters (95% CI)	Rate per 100 encounters (95% CI)	OR	P	OR	P
Age < 15 years	16.5 (15.8–17.3)	13.9 (13.7–14.1)	1.2	0.002	1.2	0.040
15–24	12.7 (12.0–13.4)	10.3 (10.1–10.4)	1.3	< 0.001	1.3	< 0.001
25–64	52.9 (51.8–53.9)	52.4 (52.1–52.7)	1.0	0.67	1.0	0.32
65+	17.9 (17.1–18.7)	23.4 (23.2–23.7)	0.7	0.001	0.8	0.041
New to practice	21.0 (16.4–25.5)	11.0 (10.2–11.7)	2.2	< 0.001	2.3	< 0.001
Commonwealth concession card	52.0 (48.8–58.2)	41.3 (40.0–42.6)	1.5	0.001	1.4	0.005
Repatriation health card	2.4 (1.7–3.0)	3.6 (3.3–3.9)	0.6	0.002	0.7	0.031
Aboriginal and/or Torres Strait Islander	10.8 (5.1–16.6)	1.7 (1.2–2.1)	7.3	< 0.001	3.5	0.009
Morbidity†			RC‡	P	RC‡	P
Number of problems managed	144.9 (139.4–150.3)	149.7 (148.0–151.4)	–4.8	0.092	–2.3	0.40
General and unspecified	15.3 (13.5–17.1)	17.4 (16.8–18.0)	–2.1	0.030	–2.8	0.006
Eye	3.0 (2.5–3.4)	2.6 (2.4–2.7)	0.4	0.057	0.5	0.025
Skin	16.4 (15.1–17.7)	17.8 (17.1–18.4)	–1.4	0.060	–2.5	0.004
Cardiovascular	15.3 (13.4–17.3)	15.1 (14.5–15.7)	0.2	0.84	2.2	0.009
Musculoskeletal	14.9 (13.8–16.0)	16.9 (16.3–17.5)	–2.1	0.001	–1.0	0.131
Psychological	9.5 (8.2–10.7)	11.2 (10.7–11.7)	–1.7	0.012	–0.8	0.297
Ear	4.8 (4.3–5.4)	4.1 (4.0–4.3)	0.7	0.011	0.6	0.060
Urology	3.8 (3.1–4.4)	3.0 (2.9–3.2)	0.7	0.021	0.7	0.027
Pregnancy	5.4 (4.6–6.2)	5.4 (5.0–5.7)	0.1	0.8	–1.0	0.016
Social	0.6 (0.3–0.9)	1.0 (0.9–1.1)	–0.3	0.042	–0.3	0.046
Individual problems managed						
Urinary tract infection	2.4 (2.0–2.8)	1.6 (1.5–1.7)	0.8	< 0.001	0.9	< 0.001
Tonsillitis	2.1 (1.8–2.5)	1.0 (0.9–1.1)	1.2	< 0.001	1.0	< 0.001
Acute otitis media/myringitis	1.8 (1.4–2.1)	1.3 (1.2–1.4)	0.4	0.027	0.3	0.14
Conjunctivitis	1.4 (1.0–1.7)	0.7 (0.7–0.8)	0.6	0.001	0.6	< 0.001
Sprain/strain	1.2 (0.9–1.5)	1.6 (1.5–1.7)	–0.4	0.019	–0.4	0.060
Otitis externa	1.1 (0.8–1.4)	0.7 (0.6–0.7)	0.4	0.005	0.3	0.061
Sinusitis acute/chronic	1.0 (0.7–1.2)	1.3 (1.2–1.4)	0.3	0.010	–0.3	0.064
Cardiac check up	0.7 (0.3–1.1)	1.2 (1.1–1.3)	–0.5	0.009	–0.4	0.065

3 (cont.) Significant differences: unadjusted and adjusted analysis of OTD and FRACGP patients, morbidity managed and treatment outcomes

Treatment outcomes (management) [†]	Descriptive		Linear regression			
	OTDs	FRACGPs	Unadjusted		Adjusted	
	Rate per 100 problems (95%CI)	Rate per 100 problems (95% CI)	RC [‡]	P	RC [‡]	P
Medications	79.4 (74.5–84.3)	65.3 (64.1–66.4)	14.1	<0.001	13.1	<0.001
Prescribed	60.0 (55.1–64.8)	51.6 (50.4–52.8)	8.4	0.001	8.6	<0.001
GP-supplied	11.4 (5.8–17.1)	6.9 (6.1–7.7)	4.5	0.11	2.5	0.272
Other treatments	57.9 (53.5–62.3)	38.6 (37.3–39.9)	17.9	<0.001	16.2	<0.001
Clinical	43.0 (38.9–47.0)	27.7 (26.6–28.9)	15.2	<0.001	14.6	<0.001
Procedural	15.0 (13.5–16.4)	10.9 (10.4–11.4)	2.7	<0.001	1.7	0.020
Referrals	10.6 (9.4–11.8)	8.4 (8.2–8.7)	2.3	<0.001	1.8	0.005
Allied health professional	3.4 (2.8–3.9)	2.2 (2.0–2.3)	1.3	<0.001	0.9	0.001
Hospital	0.9 (0.6–1.3)	0.4 (0.3–0.4)	0.5	<0.001	0.4	0.087
Pathology	36.1 (32.4–39.7)	27.1 (26.3–27.9)	9.2	<0.001	5.2	0.017
Imaging	8.2 (7.3–9.1)	6.2 (5.9–6.5)	2.1	<0.001	1.2	0.028

* Patient characteristics adjusted for GP age, sex, sessions per week, size of practice, practice location. † Morbidity and treatment outcomes adjusted for GP age, sex, sessions per week, size of practice, practice location, patient age and sex, indigenous status and new patients. ‡ Linear regression co-efficients are interpreted as the mean difference in the rate per 100 encounters between RACGP and OTD practitioners. OTD = overseas trained doctor. FRACGP = Fellowship of the Royal Australian College of General Practitioners. RC = regression coefficient. OR = odds ratio.

4 Length of consultations where A1 and A2 Medicare items were recorded

Type of encounter	Number of encounters	Mean length (min)	95% CI	Median	Range
OT GP	7000	16.0	15.05–16.93	15	1–90
FRACGP GP	35 777	15.4	15.11–15.60	14	1–175

OT GP = overseas-trained general practitioner. FRACGP = Fellowship of the Royal Australian College of General Practitioners.

increased rate of prescribed medications and clinical treatments. However the differences in these two management actions were far greater than could be accounted for by the difference in the management rate of acute conditions. The high prescribing, referral, pathology and imaging rates have economic implications for the secondary costs of the services incurred as a result of these encounters.

OTDs have higher rates of almost all treatment outcomes. However, the number of problems managed at encounter did not differ, and their

average consultation length was comparable to that of FRACGPs. This may reflect the lower management rates of older patients with chronic conditions at OTD consultations.

High turnover of OTDs, particularly in areas of workforce shortage,^{1,21} together with the higher proportion of new patients found in this study could indicate less than ideal continuity of care. Retention of OTDs in rural communities could reduce turnover and any lack of continuity of care.²¹

There is no central database on OTDs in general practice and the population of OTDs practis-

ing in Australia has not been enumerated. The OTDs in this study therefore were, of necessity, a convenience sample of doctors who had volunteered for the Alternative Pathways Program. This may limit the generalisability of these findings to all OTDs. It is conceivable that the OTDs in the study may differ from their OTD counterparts who were not involved in the training program. The higher treatment rates recorded by OTDs in this study may be in part an artefact of the training process these doctors were undertaking. In spite of these limitations, this study provides the first opportunity to look at the characteristics and clinical activity of a large sample of overseas-trained GPs and provides a reference point for future research.

In general practice, training programs for OTDs must take into account differences in the way OTDs practise compared with both average general practice and their current practice need, particularly for OTDs working in rural general practice. It has been demonstrated that regional and remote general practice is significantly different to average general practice.²² If training programs aim to integrate OTDs into the “normal” registered general practice workforce these OTDs need to be trained for mainstream general practice as well as being trained for rural and remote general practice while they are restricted to working in areas of need and districts of workforce shortage. However, if workforce shortages in general practice in regional and remote Australia are to be resolved long-term, methods of retention of OTDs in rural and remote communities need to be implemented.²¹

There have been calls for centralised registration of OTDs.^{2,9,10} This listing would provide a reliable source of representative OTD data that could provide a research sample for measures of quality of care such as those described by Miller et al.²³

This study provides the first insight into differences in the way OTDs and FRACGPs practice in Australian general practice. Given the fact that the Australian medical workforce will be dependent on OTDs for at least the next decade it is important to determine national standards for assessment of

theoretical and clinical skills of OTDs before their placement in the workforce.^{2-4,11}

The issues identified in this paper are not limited to general practice. They have implications for other specialities and health sectors relying on OTDs to fill recognised workforce gaps, particularly in light of recent problems identified in Queensland.²⁰

This study demonstrates that OTDs see a different mix of patients and morbidity and provide different management to that of FRACGPs. The extent to which the clinical activity of the study group is representative of that of all OTDs and the extent to which their practice style is “right” or “wrong” cannot be judged from this study. However, the results suggest that there are possible economic implications in terms of Medicare and Pharmaceutical Benefits Scheme costs generated by OTDs that should be considered in future policy.

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Competing interests

The authors declare that they have no competing interests.

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