

# Rural optometry in Australia

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Optometry in Australia has been a success story since its inception into Medicare in the 1970's. Australians have benefited from the easy access to university-trained optometry graduates. Optometry is defined as the practice of examining eyes in order to determine levels of vision, the screening for eye disease and then prescribing and supplying any necessary corrective lenses and aids, often all at a "one-stop shop", convenient location.

In Australia, optometry can be studied as a five year University degree course at University of NSW, University of Melbourne and Queensland University of Technology, graduating approximately 100 students per year. Tertiary Entrance scores are in the top 97th percentile and there is no pre-selection or interview process for student intake.

Though a small profession, with currently about 2700 FTE optometrists practicing, we are responsible for providing primary eye care to the nation's 22 000 000 people. This gives a working FTE ratio of 1:7500 which is adequate for market demands and one of the highest per capita ratios of optometrists in the world.<sup>(1)</sup> Recent studies show however, that a maldistribution of optometrists is occurring.

There are too many optometrists in metropolitan and large urban areas, and not enough in small rural centres or visiting remote regions. When states are compared, there was a difference seen in states that did not have optometry schools.

## Objectives of this project

Eye care for all Australians is of utmost importance. The gift of sight is one we must not take for granted. If we can't see well, we can't work, play, learn or live well. From purely an economic view, good vision is essential for workplace efficiency and safety. Optometry can care primarily for this area of service in the community to all.

Without that care in rural and remote areas, a major contributing group to our Gross Domestic Product (GDP) could be at risk of blindness through poor vision or disease.

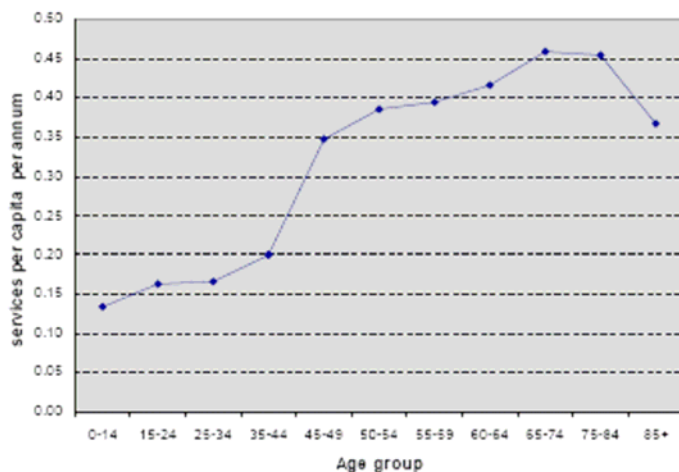
From a national and moral viewpoint, we can't allow Australians to suffer from a poor standard of eye care.

With this standard of delivering primary eye care to Australia, the emphasis for this project is ultimately on the optometrists who service rural and remote communities. Exploring factors such as how to attract them to these areas; how to keep them content in these areas; and how to best serve those communities that can't maintain a full-time optometrist is the reason for this research.

## Vision impairment in rural Australia

In 2001, the National Health Survey found that 9.7 million Australians or 51% of the population had at least one sight problem. Figure 1 shows more vision problems and subsequent eye diseases occur in the over 45 year old age group.

**Figure 1 Medicare Optometry Services by Age Group<sup>(2)</sup>**

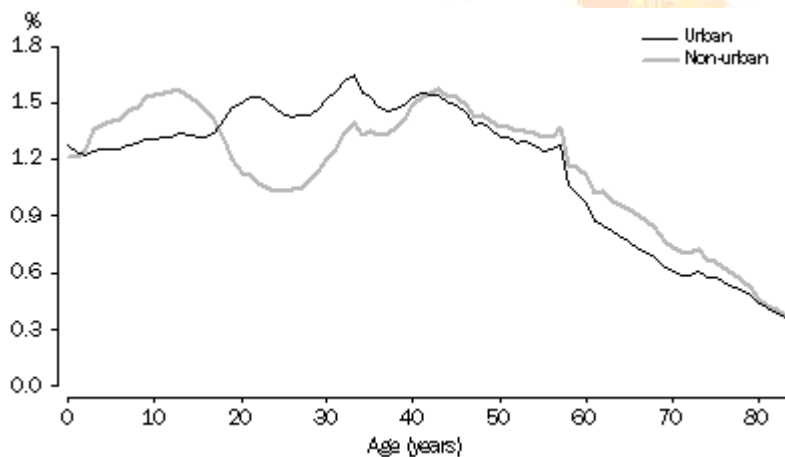


Evidence found so far shows that a rural and urban gap in eye care does exist..

The population-based Visual Impairment Project (VIP) which collected data from 4944 adults from rural (agricultural) and urban Victoria , showed that rural residents have higher rates of eye injury<sup>(3)</sup>, pterygium<sup>(4)</sup>, cataract<sup>(5)</sup> and glaucoma.

Figure 2 illustrates the ageing of Australia's rural communities increasing at a higher rate than urban areas. This population shift requires a corresponding increase in health service needs, which optometry is integral to.

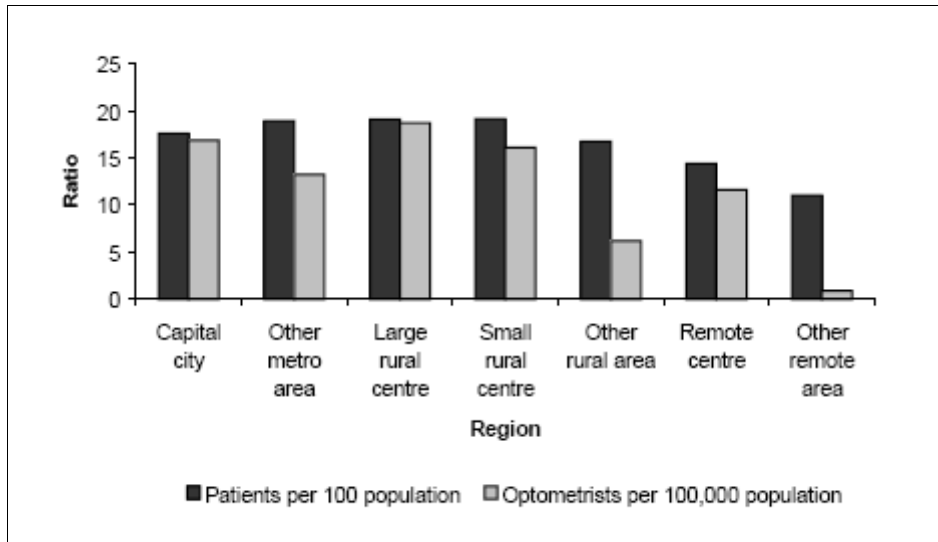
**Figure 2 Age distribution—urban and non-urban<sup>(6)</sup>**



Despite this trend, reducing numbers of optometrists are occurring in small rural areas through to “other rural areas” as shown in Figure 4<sup>(7)</sup>.

The graph shows an obvious deficiency which strategies are needed for addressing the shortfall.

**Figure 4 Patients per 100 population and optometrists per 100,000 population: geographic region, Australia, 1998–99**



With over half the rural population of Australia having a sight problem, optometrists are the key eye care providers. Those who service these rural areas are a unique group who have certain characteristics that make them perform their duties better than others who don't have these. Areas of research that relate to these characteristics are recruitment and retention qualities, the increasing feminisation of the profession, models for sustainable services and Indigenous eye care.

### Recruitment issues

Schools of Optometry are in Queensland, New South Wales and Victoria where 79% of Australians live. These states have been found to have an oversupply of optometrists, reaching "saturation point" in particularly inner metropolitan regions. Whereas, states without optometry schools (especially Western Australia and South Australia) have a deficiency. The lack of incentives for undergraduates to travel out of their home states to the Schools of Optometry has been reported as the reason.

### Retention issues

The result of poor access to optometry services could, at worst, be blindness. Some conditions that present in a daily practicing situation need urgent medical attention which optometrists are skilled to diagnose and deal with or refer appropriately to save the person's sight. Accessibility is the strength of the profession. No referral is necessary to attend an optometrist's practice, unlike the medically-trained, disease treating ophthalmologist. Waiting times for optometrists are usually less than a week, compared to months for ophthalmologists. Convenient locations of optometry practices make them easily accessible and standardisation of these practices means that high quality care is given. The examination is usually less than one hour duration and in 98% of cases, bulk-billed so no out-of-pocket costs are required from the patient. To maintain this service, a survey has been administered to find out what support is required for these optometrists.

## Feminisation

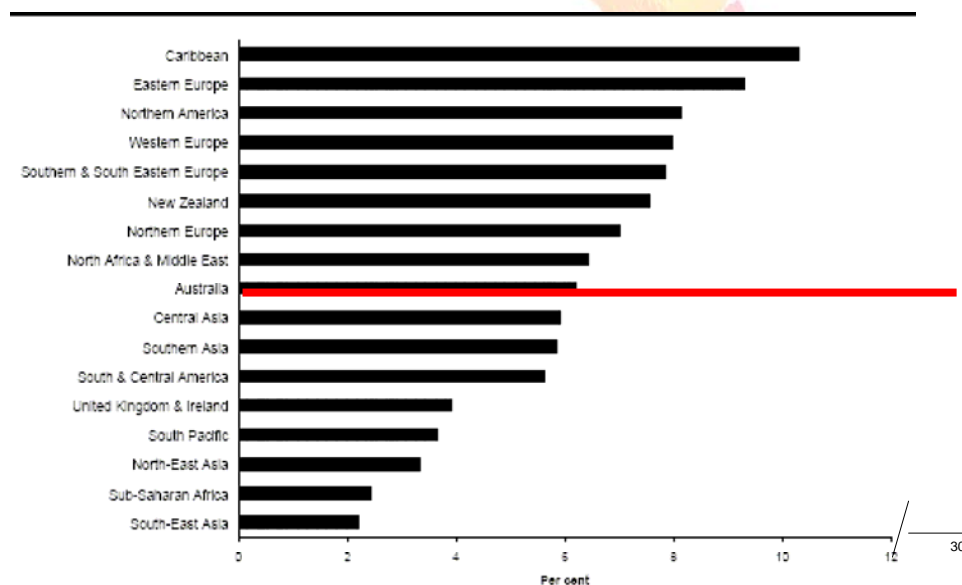
Feminisation of the GP workforce has been predicted to have a huge bearing on the medical workforce. The ramifications of this changing ratio is that female GPs have a shorter working life and have family commitments that lead to a desire to work regular hours on return to the workforce<sup>(8)</sup>. In the paper, "Medical workforce issues in Australia: tomorrow's doctors-too few, too far" it was found that female doctors have a working life of 60% compared to male doctors. This change in the demographics of a profession will cause an unmet need for medical services<sup>(9)</sup>. The ratio of female optometry graduates this last year was in excess of 80%, a disturbing trend in light of these findings.

## Indigenous eye care

Traditionally, young rural Aboriginals have good visual acuity, but trachoma, a blinding eye disease common in developing countries, was found to be prevalent in remote Aboriginal communities by up to 30%. Conditions such as limited access to water and overcrowding still exist within some remote communities, which serve to encourage the breeding of the flies that act as carriers, and inhibit the ability of people to maintain personal hygiene such as facial cleansing. The gap can be closed, though. A study of remote Western Australian school children who had a prevalence of trachoma ranging from 44% in 1993, reduced to 1% by 2003 with education and improved medicine<sup>(10)</sup>.

Following this problem is diabetes mellitus (Type 2), which is taking on hyper epidemic proportions in the Aboriginal populations, affecting up to 30% of adults in some areas, is shown by Figure 5. This disturbing finding in Western Australian Aboriginal communities will have dire consequences for eye health and eventual mortality<sup>(11)</sup>.

**Figure 5 Diabetes prevalence in Western Australia's Kimberley Region<sup>(12)</sup>**



**Figure 1: Prevalence of diabetes in people aged 20-79 years by selected region of residence, 2003**

Notes

Crude rates are presented.

New developments in teleophthalmology will have a significant impact on Indigenous communities. The invention of the automated visual acuity testing unit by the Lions Eye Institute in Western Australia will be a useful tool for mass screening in remote communities<sup>(13)</sup>. Its application will mean residents will not have to travel for unnecessary eye examinations and it can be easily administered by semi-skilled ancillary staff. In combination with the retinal cameras based at Aboriginal Medical Health centres, diagnosis and referral can be more appropriately managed by local Aboriginal health workers.

## Modes of service in remote centres

In RRMA 6 and 7, approximately 700 000 people reside, many needing eye care services.

Primary eye care services such as optometry and ophthalmology are provided in a range of settings including community health centres, doctors' and specialists rooms, hospitals, and Aboriginal Medical Service centres. Usually, these services are funded by the state, territory and federal governments. The most effective way to deliver eye care services is to have Aboriginal health workers screen for diabetic retinopathy and visual acuity, followed by the scheduled visit of an optometrist who works regularly in a given community. These visits may be coordinated with a visiting ophthalmologist or held independently. The frequency of the visits might vary widely. In some towns visits on a regular monthly basis occur, whilst in other smaller communities they were on an annual basis. Usually the optometrist bulkbills for the examination and in some instances receive a subsidy to cover travel, accommodation or lost revenue (The Visiting Optometry Scheme), though the states do not have a streamlined system as yet. Optometrists are currently unable to practice in hospitals, though due to Medicare legislation, and this is causing problems in an otherwise streamlined system.

## Method

To obtain information about rural optometrists, a survey was administered to this specific group. Optometrists that served in rural areas (RRMA 4-7) were targeted as survey recipients, because they were seen to be offering optometry in areas of low distribution. Those who had practiced in these RRMA's for at least 5 years were chosen as they were seen as "stayers", showing qualities that achieved a permanency required for good rural practice. A total of 50 optometrists were identified using the above criteria, and accessing the "Directory of Members" editions of which 97% of Australian optometrists are listed<sup>(14, 15)</sup>. Following Ethics Approval (UNSW), an email survey was conducted.

## Results

A summary of the results found is shown in Table 1. This gives a snapshot of the profile of optometrists in rural Australia.

**Table1 Summary of Characteristics of rural and remote Australian optometrists (total n=24)**

Variable	Result
Mean age group:30–79 yrs	47 years (range: 30-70's)
Proportion female	9/24 (37%)
Marital status	20/24 married; 1/24 widowed 3/24 single
% with children	21/24 (88%)
Ethnic origin: % Caucasian	100%
Optometrist/spouse rural background	13/14 (93%)
Why stay?	Lifestyle reasons: 67%
Retiring in 5 years:	33%

## Discussion

By investigating the results and categorising them into the major issues confronting optometrists and the related optometry service delivery, a picture of what is required for the future of optometry in rural areas emerges.

The profile of the rural optometrist, that is: Caucasian; male; in the late 40's age group; married; with children; and with a rural background, is the same as that found for rural medical general practitioners and rural dentists<sup>(16, 17)</sup>. As with those professions, there are significant challenges facing Australian optometry, also.

Ageing of the workforce is a worrying result. A third of the sample group is facing retirement within the next five years. With the oldest respondent turning 80 years old during this study, and several others in their 70's, there is an urgent need to start applying the findings of this study to the workplace, educational facilities and government departments now.

## Recruitment

Rural background was a predictor of those optometrists working in rural areas in the confines of this study. This finding correlates with that found in the literature of other medical, dental and allied health professionals<sup>(8, 16, 18-26)</sup>. That is, there is a positive correlation between those who have a rural background and proceed to work in rural areas. This is a recommendation which should be pursued at the three universities that have Schools of Optometry. Also, right of entry from those who are from states without courses should be given priority. Based on the statistic that rural Australia occupies 30% of the total population, an allocation of this amount would suffice for future projections of required manpower if all Schools of Optometry implemented this figure.

Undergraduates from rural backgrounds need to be made aware of scholarships that can enable them to concentrate primarily on their study, rather than having to combine a heavy financial workload to cover transport costs, educational, accommodation and living expenses as well as the equally heavy academic workload that the optometry course demands. Students from states without optometry schools have an even greater burden of travel costs and lack of social support. States without schools of optometry have to realise the importance of local support systems being fundamental to retention, and therefore it is in their interest to offer bonded scholarships to able candidates. This could be implemented through the Departments of Health and Ageing. Schools of Optometry have to allow a certain amount of places for

these states in their annual quota, to cater for their future optometry needs. It is not fair that only states with optometry schools are filled with students from those states, the end result is maldistribution.

Corporations that employ optometrists from states without schools could also be doing more in this way. The OPSM group has a bonded scholarship system which has worked well for many years, but other corporate groups also need to consider this as a long-term investment. All these systems of financial support need to be advertised to suitable students in their upper secondary school years, when decisions about career choice are being investigated.

## Retention of optometrists

The majority of the sample of optometrists showed they intended to remain in their rural locations in the next five years, but they also cited that they would like assistance to do so.

Results showed that locum relief was seen as the most critical stress factor for retention of optometrists in rural areas. Optometrists do not like leaving their practices unattended while they go on holiday, study break, sickness, maternity or paternity leave. Some do not even travel to secondary practices anymore because they see that it is time away from their primary practice and they believe patients should be able to travel to them instead to avoid this splitting of time. This may be the changing face of rural practice; that optometrists will reduce travel for economic reasons, but the overwhelming evidence that few had a month's break from their practices in the last year, shows that there is a dire need for a locum strategy to be implemented.

A working solution would be to offer optometrists registered in other countries short-term working visas to address this need, but with the proviso that they have set requirements to practice only as a locum in these areas of need.

## Feminisation of the profession

There were distinct similarities to the findings of the medical profession. Rural raised males ranked highly in the numbers of those practicing in RRMA 4-7 in the last 5 years. This was an interesting trend, considering the "feminisation" of optometry since the 2000's, where the graduate female: male ratio is 2:1 compared to the 1980's when it was the reverse<sup>(27)</sup>. The ratio of female graduate optometrists from University of New South Wales for 2008, the highest producer of graduates is 9:1.

The paper, "Gender-related factors in the recruitment of physicians to the rural northwest (USA)" stated that women are less likely than men to practice in rural areas<sup>(28)</sup>. My study clarifies this finding. They also state that 'because rural areas rely mainly on primary care providers for health care, the recent increase in the numbers of women ...are likely to have a major impact on supply of (medical) providers for rural areas.

With female optometrists not being recruited from rural areas, rural residents' eyesight will suffer. Urgent changes to university admissions places are required.

## Stability of workforce

Ultimately, access to optometry services by the public is in the national interest. In rural and remote areas, the challenge becomes higher directly proportional to the RRMA factor. It will increase, too, with the retirement of a third of the rural optometric profession in the next five years.

Historically, the motivational force of the baby boomer generation's approach to rural practice has been described as "altruistic". This is verified by the over 50 year old respondents of this survey who started practicing in a rural area. They went there because they could "see a need for optometry services". But, will this be the case for the following generations? According to Schoo<sup>(23)</sup>, Generation X and Y motivation is different. Individual owner practices who are aiming to retire will need to look at succession planning strategies that accommodate the in-coming optometrist, such as offering locum relief and financial, managerial and professional support.

## New sustainable models of care

The results showed that most of the optometrists did travel to at least one other practice location. This idea of multiple locations is a unique feature of rural optometry practice. It shows the commitment rural optometrists have to service their communities and the need for them to service a larger population in order to stay financially viable.

The RRMA Classification system was used to look at how services are distributed and maintained. These trends arose:

In RRMA 4, (rural centres of populations >10 000-24 999) optometrists tend to reside in the community. There were adequate numbers of optometrists, though some were planning to retire in the next five years.

In RRMA 5, (rural centres of populations >5 000-10 000) there were adequate numbers of optometrists, but some were planning to retire within the next five years. In smaller centres, optometrists traveled out in a "hub and spoke" model of practicing and some were finding the travel component not financially worthwhile and were considering stopping it. The result is more people in these small communities could lose their sight. A public awareness "drive" regarding the importance of regular vision tests is required, if this happens. Media advertisements in "prime time" explaining this message are of paramount importance, to encourage the patient to travel for the service.

By RRMA 6 and 7 (remote centres of populations <5 000) sustainable services became more difficult, scant and in some places, non-existent. The optometrists servicing these areas had to travel very long distances (up to 10 000km) often needing four-wheel drive vehicles because road conditions were poor. The populations in these areas were often indigenous and suffering poorer eye health than other Australians. Because of the hardships endured, less vision care results.

In some areas, integration of Aboriginal Medical Services, ophthalmological and optometry services provide a streamlined system of screening, diagnosis and referral, alleviating stretched eye care services to some of Australia's neediest people. The model in use by the International Centre for Eye Education (ICEE) is an example of this, as local Indigenous groups initiate and organise visits for optometry services. The ICEE are also instrumental in training Aboriginal Health workers in vision care, so knowledge is being passed on to future generations<sup>(29)</sup>.

Ultimately, having Aboriginal optometrists who are aware of cultural issues, visiting Aboriginal communities should be a national, educational and social goal of the future. In order to make this happen, the findings relating to recruitment need to be applied to this specific group. With nearly 3% of the Australian population being of Aboriginal descent, the same percentage should be applied to university entrance admission candidates. It is barely 1% at present. This is an area that needs addressing.

## Recommendations

The following key recommendations, if adopted, will increase the eye care of people in rural and remote Australia. The intention of these recommendations is to ultimately close the gap in this area between rural and urban eye health care.

## Recruitment issues

- Rural background is the best pre-selector for rural practice. It is recommended that the Schools of Optometry increase their intake of undergraduates from rural areas, states without optometry schools and indigenous populations, reflecting Australia's population demographic statistics. This support will increase the likelihood of future regional employment in the long term.
- Bonded scholarships with obligations to practice in rural areas on completion of the optometry degree provided by rural health organisations, and state governments without schools of optometry. Or, alternatively, HECS reimbursements for rural and remote service by optometry graduates, weighted by RRMA.

## Retention issues

- Locum relief is required by most optometrists in rural and remote areas. Overseas trained optometrists on temporary visas to service rural and remote areas could be used if Australian registered locum sources were unable to meet the need.
- Travel. The Commonwealth Government should give financial support for optometrists who travel to RRMA 6 and 7, or other areas of need, with the optometry Medicare rebate weighted by RRMA factor. As optometrists need to bulk-bill lower socio-economic groups that dominate rural and remote areas, they are only being partially subsidised by the VOS scheme.
- Lobbying of state governments to allow optometrists to work in rural hospitals, so "hub and spoke" models of practice can be established in RRMA 6 and 7. This action would also strengthen the evidence that rural hospitals meet the health needs of the local community better than any alternative.
- Policy makers should be aware that the increasing proportion of women in the optometry workforce will mean there is a corresponding reduction in the number of rural optometrists.

## References

1. Kiely PH, P., Chakman, J. The Australian Optometric Workforce 2005, analysed by Local Government areas. *Clinical and experimental Optometry*. 2007;90(no2):83-123.
2. Access Economics. *Modelling the Optometry Workforce*. 2006 [updated 2006; cited 2006]; Available from.
3. McCarty CA, CL F, HR T. Epidemiology of ocular trauma in Australia. *Journal of Ophthalmology*. 1999;106(9):1847-52.
4. McCarty CA, Fu CL, Taylor HR. Epidemiology of pterygium in Victoria, Australia. *Br J Ophthalmol*. 2000 March 1, 2000;84(3):289-92.
5. McCarty CA, Mukesh BN, Fu CL, Taylor HR. The epidemiology of cataract in Australia. *American Journal of Ophthalmology*. 1999;128(4):446-65.
6. Australian Bureau of Statistics. How many people live in Australia's remote areas? In: *Statistics ABo*, editor.: ABS; 2004.
7. Australian Institute of Health and Welfare C. *Optometry Labour Force*. In: Australia Co, editor. Canberra; 1999.

8. Tolhurst H. Australian medical students' intentions in relation to practice location: Their short- and long-term time frame. *Australian Journal of Rural Health*. 2006;14:88-90.
9. Simmons D, Bolitho LE, Phelps GJ, Ziffer R, Disher GJ. Dispelling the myths about rural consultant physician practice: the Victorian Physicians Survey. *Medical Journal of Australia*. 2002 May;176(10):477-+.
10. Kain S, Morgan W, Riley D, Dorizzi K, Hogarth G, Yu D-Y. Prevalence of trachoma in school children of remote Western Australian communities between 1992 and 2003, *Clinical & Experimental Ophthalmology*. 2007;Volume 35 (2):119-23.
11. Jaross N, Ryan P, Newland H. Prevalence of diabetic retinopathy in an Aboriginal Australian population: results from the Katherine Region Diabetic Retinopathy Study (KRDRS). Report no. 1. *Clinical & Experimental Ophthalmology*. 2003;31(1):32-9.
12. Yellachich D. Incidence of Diabetes in Kimberley Population; 2007.
13. Morgan S. Orientation for general practice in remote Aboriginal communities: A program for registrars in the Northern Territory. *Australian Journal of Rural Health*. 2006;14(5):202-8.
14. Optometrists Association Australia. Directory of Members 2002. 2002.
15. Directory of Members 2007 [database on the Internet]. 2007 [cited 2/9/08].
16. Dunabin J, Levitt L. Rural origin and rural medical exposure: their impact on the rural and remote medical workforce in Australia. *Rural and Remote Health*. 2003;212(3):Online.
17. Smith K, Tennant M. Demographic analysis of currently registered dentists in Western Australia: Rural urban divide. *Australian Journal of Rural Health*. 2006;14:126-8.
18. Eley D, Young L, Shrapnel M, Wilkinson D, Baker P, , Hegney D. Medical Students and rural general practitioners: Congruent views on the reality of recruitment into rural medicine. *Australian Journal of Rural Health*. 2007;15(1):12-9.
19. Glasson W. Homegrown GPs are the answer. *The Medical Observer*. 2004 April.
20. Harding A, Whitehead P, Aslani P, Chen T. Factors affecting the recruitment and retention of pharmacists to practice sites in rural and remote areas of NSW: A qualitative study. *Australian Journal of Rural Health*. 2006;14(5):214-8.
21. Kegel-Flom P. Identifying the potential rural optometrist. Kegel-Flom P. *American Journal of Optometry and physiological Optics*. 1976;September 53(9 part 1):479-82.
22. Richards H, Farmer J, Selvaraj S. Sustaining the rural primary healthcare workforce:survey of healthcare professionals in the Scottish Highlands. *The International Electronic Journal of Rural and Remote Health Research, Education, Practice and Policy*. 2005;5:365.
23. Schoo AM SK, Mercer C, Dunbar J. . A conceptual model for recruitment and retention: Allied health workforce enhancement in Western Victoria, Australia. . *Rural and Remote Health*. 2005;5:477.
24. Wearne S, Wakeman J. Training our future rural medical workforce. *Medical Journal of Australia*. 2004;180(2):101-2.
25. Willie CV. The recruitment and retention of minority health professionals. *Alabama Journal of Medical Sciences*. [Article]. 1982;19(3):303-8.
26. Kegel-Flom P. The rural optometrist: who and why? *Journal of American Optometric Association*. 1976;47(12):1549-54.
27. Australian Institute of Health and Welfare C. Labour force-Optometry. 2002.
28. Ellsbury K, Baldwin L, Johnson K, Runyan S, G H. Gender-related factors in the recruitment of physicians to the Rural Northwest. *Journal American Board of Family Practice*. 2002;15:391-400.
29. Layland B, Holden B, Evans K, Bailey S. ICEE/AHMRC NSW Aboriginal Eye and Visioncare Program, Australia [project report]. *Rural and Remote Health*. 2004 5 February 2004;4 (online):247.

## Presenter

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