

## Contamination of interventional research is possible through GP membership of more than one division

Sandy Middleton, Jeanette Ward

Sandy Middleton, BAppSc, MN, FCN, (NSW), is a NH&MRC doctoral student, Division of Population Health, Central Sydney Area Health Service and School of Public Health, University of Sydney, New South Wales. Jeanette Ward, MBBS, MHPed, PhD, FAFPHM, is Director, Division of Population Health, South Western Sydney Area Health Service, New South Wales.

**INTRODUCTION** General practice divisions were promoted in the 1990s to provide support for general practitioners. Membership patterns are not well understood and may have implications for research and health services development.

**METHODS** Within a postal questionnaire conducted in 1999, we determined self reported membership of divisions.

**RESULTS** We obtained a 60% response rate ( $n=296$ ) from a random sample drawn from all New South Wales GPs. The majority of GPs ( $n=204$ , 69%) belonged to one division. Thirty respondents (10%) did not belong to any division. Fifty-nine GPs (20%) belonged to two or more divisions, women GPs ( $n=27$ , 31%) significantly more than men ( $n=32$ , 16%) ( $P=0.002$ ), and GPs with city or metropolitan area practices ( $n=52$ , 24%) were significantly more likely than rural or remote GPs ( $n=7$ , 9%) ( $P=0.005$ ) to belong to two or more divisions.

**DISCUSSION** If divisions are used as the unit of randomisation for interventional research, there is risk of contamination in study design. Articles reporting such trials should acknowledge this.

The first divisions of general practice were established in 1992 to provide clinical, management and professional support for general practitioners.<sup>1</sup> They have become increasingly influential local organisations. There are now 37 divisions of general practice in New South Wales alone, 20 urban and 17 rural.<sup>2</sup> Each year, the National Information Service (NIS) conducts an informative Annual Survey of divisions.<sup>3</sup> In 2000, the NIS estimated that 82% ( $n=18764$ ) of all GPs in Australia were members of divisions.<sup>3</sup> Another national study had shown that 78% of GPs were members of a division.<sup>4</sup> Further analyses of unpublished data from this previous research<sup>4</sup> found that the proportion of GPs who were members of divisions by state ranged from 66% in Tasmania to 95% in South Australia. The NSW proportion was 74%.

The only independent predictor of GP division membership was male sex.<sup>4</sup>

A growing number of projects and other initiatives have been conducted using divisions as a sampling frame.<sup>5-9</sup> Using this method will miss some GPs because membership is not mandatory. Furthermore, membership of multiple GP divisions is also possible. We explored this further.

### Method

Ethics approval was obtained from the CSAHS Ethics Review Committee. To obtain a sampling frame for our postal survey, we purchased names and contact details of all GPs in NSW from IMS Health ( $n=6951$ ).<sup>10</sup> Using a random number software program we selected 550 names. Of these, 60 were ineligible: 11 were on extended sick leave, annual

leave or maternity leave, six had retired, 23 were no longer in general practice and 20 had left with no forwarding address and were unknown to directory enquiries.

In November 2000, the 490 remaining GPs each were mailed a self administered questionnaire about stroke diagnosis, management and prevention. We examined division membership by asking: 'How many GP divisions do you belong to?' The following response options were given: 'none', 'one', 'two', 'three', 'unsure'.

Standardised follow up strategies for nonresponders were employed.

### Results

We received 296 completed questionnaires (response fraction 60%). General practitioners' responses to our question regarding divisional membership are

**Table 1. GPs' self report of division of general practice membership**

Number of divisions	n	%
None	30	10
One	204	69
Two	53	18
Three	6	2
Unsure	1	0.3
Missing	2	1
<b>Total</b>	<b>296</b>	

shown in Table 1. Thirty (10%) respondents did not belong to any GP division. This proportion is significantly lower than the proportion of NSW nonmember GPs in 1996 (20%) ( $P<0.001$ ) (data from previous research),<sup>4</sup> and the proportion reported by the Annual Survey of Divisions<sup>3</sup> that estimated, nationally at least (no state based data were available<sup>3</sup>) that 18% of GPs were not members of a GP division ( $P<0.001$ ).

Membership of any GP division was not significantly associated with GP gender (88% of men versus 93% of women) ( $P=0.22$ ); but was associated with membership of the AMA, (95% of GPs were members of the AMA versus 85% of GPs who were not) ( $P=0.007$ ). General practitioner age, type of employment (full time versus part time), practice type (solo practitioner versus group or partnership), practice location (capital city or other metropolitan area versus rural or remote), Fellowship of the Royal Australian College of General Practitioners (RACGP), graduate of the RACGP Training Program, and possession of professional indemnity insurance were not significantly associated with membership of any division.

Fifty-nine GPs (20%) belonged to two or more divisions of general practice

(Table 1). Women GPs ( $n=27$ , 31%) were significantly more likely than men GPs to belong to two or more divisions ( $n=32$ , 16%) ( $P=0.002$ ). Those whose practice was located in the capital city or other metropolitan area ( $n=52$ , 24%) also were significantly more likely than GPs whose practice was located in a rural or remote area ( $n=7$ , 9%) to belong to two or more divisions of general practice ( $P=0.005$ ). General practitioner age, type of employment (full time versus part time), practice type (solo practitioner versus group or partnership), membership of the AMA, Fellowship of the RACGP, graduate of the RACGP Training Program, and possession of professional indemnity insurance were not significantly associated with multiple divisional membership.

## Discussion

Membership of divisions in NSW appears to be increasing with time. This may be due, in part, to an increased responsiveness of divisions to the needs of GPs.<sup>3</sup>

We identified gender bias in multiple divisional membership, with women GPs significantly associated with multiple divisional memberships. Reasons for this are unclear. Our finding that urban GPs also are more likely to belong to more than one GP division when compared with their rural colleagues is likely explained by contiguous divisional boundaries or little awareness of the discrete roles and functions divisions offer to local members.

These findings have important implications for GP research. While there is an obvious methodological advantage in interventional research to randomise divisions rather than individual GPs to different interventions,<sup>11</sup> such studies will be contaminated as a result of membership of multiple divisions. Publications of such trials should acknowledge this possibility.

## Acknowledgments

We thank all GPs who participated in our study which was part of a larger project

funded by the General Practice Evaluation Program.

## References

1. Australian Divisions of General Practice Limited (ADGP). 1999–2000 Annual Report. Canberra: ADGP, 2001.
2. <http://www.answd.com.au>
3. Modra C, Kalucy E, McIntyre E. Distinct divisions: Report on the 1999/2000 Annual Survey of Divisions of General Practice in Australia. National Information Service. Adelaide: Flinders University, 2001.
4. Ward J E, Donnelly N J. Rates of membership of professional organisations in general practice. *Med J Aust* 1997; 167:107–108.
5. National Information Service of the General Practice Evaluation Program (NIS). Profiles of completed GPEP projects 1996–1997. Adelaide: NIS, Flinders University, 1997.
6. Pit S, Cockburn J, Zorbas H. Investigation of a new breast symptom: an audit in general practice. Sydney: NH&MRC National Breast Cancer Centre (NBCC), NBCC, 1999.
7. Del Mar C B, Silagy C A, Glasziou P P, et al. Feasibility of an evidence based literature search service for general practitioners. *Med J Aust* 2001; 175:134–137.
8. Smith B J, Bauman A E, Bull F C, Booth M L, Harris M F. Promoting physical activity in general practice: a controlled trial of written advice and information materials. *Br J Sports Med* 2000; 34:262–267.
9. Askew D, Clavarino A M, Glasziou P P, Del Mar C B. General practice research: attitudes and involvement of Queensland general practitioners. *Med J Aust* 2002; 177:74–77.
10. <http://www.imshealth.com>
11. Campbell M, Grimshaw J, Steen N. Sample size calculations for cluster randomised trials. *J Hlth Serv Res Policy* 2000; 5:12–16.

AFP

## Correspondence

Professor Jeanette Ward  
Director, Division of Population Health  
South Western Sydney Area  
Health Service  
Locked Bag 7008  
Liverpool, NSW 2170  
Email:  
[Jeanette.Ward@swsahs.nsw.gov.au](mailto:Jeanette.Ward@swsahs.nsw.gov.au)