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# EQUITY OF ACCESS IN THE SPATIAL DISTRIBUTION OF GPs WITHIN AN AUSTRALIAN METROPOLITAN CITY

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## Abstract

Equitable access to primary health care is a key objective for health policy makers. In Australia, poor access to primary care providers has been well documented for many rural areas, yet the distribution of general practitioners (GPs) in metropolitan regions remains relatively unknown. Traditional methods of determining geographic access to GPs are limited as they rely on simple population to provider ratios within artificial administrative borders and, among other things, fail to take into account patients that utilise close-by facilities outside of these borders. This study utilised specialised geographic information

systems to examine the equity of access to GPs in an Australia capital city (Adelaide). Results showed that by Australian standards, residents of metropolitan Adelaide have low GP ratios. However, an inequitable spatial distribution of GPs within metropolitan Adelaide was found, with ~16% of residents considered to be living in areas of GP workforce shortage. Residents in the outer suburbs and those with lower social economic status appeared to be the most disadvantaged. It is recommended that future studies employ specialised GIS techniques as they provide a more accurate measurement of variations in spatial accessibility to primary care within metropolitan cities.

**Additional keywords:** Adelaide, floating catchment, geographic information systems, GP shortage.

## References

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Adhikari P (2006) Socio-economic indexes for areas: introduction, use and future directions. Cat. No. 1351.0.55.015. Australia Bureau of Statistics, Canberra.

Armstrong K, Tess D, Walsh J, Hui Q, Lam W, *et al.* (2005) Technical paper: general practice workforce modelling. Australian Medical Workforce Advisory Committee (AMWAC) & AMWAC General Practice Working Party. Available at <http://www.nhwt.gov.au/documents/Publications/2005/General%20practice%20workforce%20model%20Technical%20paper.pdf> [Verified 25 May 2010]

Australian Bureau of Statistics (2007a) Population by age and sex, Australia, 2006. Cat. No. 3235.0. Available at <http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/2F33D3E91BA0F08FCA2574A9C8D4E4E9?OpenDocument> [Verified 25 May 2010]

Australian Bureau of Statistics (2007b) Australian Standard Geographical Classification (ASGC) Remoteness Structure (RA) Digital Boundaries, Australia, 2006. Cat. No. 1259.0.30.004. Available at <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1259.0.30.0042006?OpenDocument> [Verified 25 May 2010]

Australian Bureau of Statistics (2008a) Mesh block digital boundaries, Australia, 2006. Cat. No. 1209.0.55.002. Available at <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1209.0.55.0022006?OpenDocument> [Verified 25 May 2010]

Australian Bureau of Statistics (2008b) Census of population and housing: socio-economic indexes for areas (SEIFA), Australia – data only, 2006. Cat. No. 2033.0.55.001. Available at <http://www.abs.gov.au/ausstats/abs@.nsf/mf/2033.0.55.001/> [Verified 25 May 2010]

Australian Bureau of Statistics (2009) A picture of the nation: the statistician's report on the 2006 Census. Cat. No. 2070.0. Available at <http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/LookupAttach/2070.0Publication29.01.09> [Verified 25 May 2010]

Bagheri N, Benwell GL, Holt A (2006) Primary health care accessibility for rural Otago: a spatial analysis. In *Proceeding of the HIC 2006 and HINZ 2006*. (Eds J Westbrook, J Callen, G Margelis, J Warren) pp. 365–376. (Health Informatics Society of Australia: Melbourne)

Brabyn L, Barnett R (2004) Population need and geographical access to general practitioners in rural New Zealand. *The New Zealand Medical Journal* **117**(1199). Available at <http://www.nzma.org.nz/journal/117-1199/996/content.pdf> [Verified 25 May 2010]

Department of Health and Ageing (2008a) Medicare Australia statistics. Australian Government, Department of Health and Ageing, Canberra. Available at <http://www.health.gov.au/medicarestats> [Verified 25 May 2010]

Department of Health and Ageing (2008b) District of workforce shortage factsheet. Australian Government, Department of Health and Ageing, Canberra. Available at <http://www.health.gov.au/internet/main/publishing.nsf/Content/work-pr-dws-fact> [Verified 23 September 2010]

Department of Health and Ageing (2008c) General practice statistics: number of general practitioners. Australian Government, Canberra. Available at <http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pcd-statistics-gpnos.htm> [Verified 25 May 2010]

Department of Health and Ageing (2009) Primary health care reform in Australia: report to support Australia's first national primary health care strategy. Publications No. P3–5480. Australian Government, Canberra. Available at [http://www.yourhealth.gov.au/internet/yourhealth/publishing.nsf/Content/nphc-draftreportsupp-toc/\\$FILE/NPHC-supp.pdf](http://www.yourhealth.gov.au/internet/yourhealth/publishing.nsf/Content/nphc-draftreportsupp-toc/$FILE/NPHC-supp.pdf) [Verified 25 May 2010]

Department of Health and Ageing (2010a) Building a 21st century primary health care system: Australia's first national primary health care strategy. Publications No. 6594. Australian Government, Canberra. Available at <http://www.yourhealth.gov.au/internet/yourhealth/publishing.nsf/Content/550436A8DA6839ECCA> [Verified 25 May 2010]

Department of Health and Ageing (2010b) A national health and hospitals network for Australia's future: delivering better health and better hospitals. Publications No. 6620. Australian Government, Canberra. Available at [http://www.health.gov.au/internet/yourhealth/publishing.nsf/Content/report-redbook/\\$File/HRT\\_report3.pdf](http://www.health.gov.au/internet/yourhealth/publishing.nsf/Content/report-redbook/$File/HRT_report3.pdf) [Verified 25 May 2010]

Guagliardo M (2004) Spatial accessibility of primary care: concepts, methods and challenges. *International Journal of Health Geographics* 3(3), Available at <http://www.ij-healthgeographics.com/content/pdf/1476-072X-3-3.pdf> [Verified 25 May 2010]

Guagliardo M, Ronzio C, Cheung I, Chacko E, Joseph J (2004) Physician accessibility: an urban case study of pediatric providers. *Health & Place* 10, 273–283.  
| [CrossRef](#) | [PubMed](#) |

Hyndman JCG, D'Arcy C, Holman J (2001) Accessibility and spatial distribution of general practice services in an Australian city by levels of social disadvantage. *Social Science & Medicine* 53, 1599–1609.  
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Joseph A, Phillips D (1984) *Accessibility and utilization: geographical perspectives on health care delivery*. (Harper & Row: New York)

Langford M, Higgs G (2006) Measuring potential access to primary healthcare services: the influence of alternative spatial representations of population. *The Professional Geographer* 58, 294–306.  
| [CrossRef](#) |

Luo W (2004) Using a GIS-based floating catchment method to assess areas with shortage of physicians. *Health & Place* 10, 1–11.  
| [CrossRef](#) | [PubMed](#) |

Luo W, Wang F (2003) Measures of spatial accessibility to healthcare in a GIS environment: synthesis and a case study in Chicago region. *Environment and Planning B: Planning and Design* 30, 865–884.  
| [CrossRef](#) |

McGrail M, Humphreys J (2009) Measuring spatial accessibility to primary care in rural areas: improving the effectiveness of the two-step floating catchment area method. *Applied Geography (Sevenoaks, England)* 29, 533–541.  
| [CrossRef](#) |

Reed R, Roeger L, Reinfeld-Kirkman N, Howard S (2008) Access to general practitioners in South Australia: a population survey. *The Medical Journal of Australia* 189, 95–99.

Schoen C, Osborn R, Doty M, Bishop M, Peugh J, Murukutla N (2007) Toward higher-performance health systems: adults' health care experiences. *Health Affairs* 26, w717–w734.  
| [CrossRef](#) | [PubMed](#) |

Scott J, Larson A, Jefferies F, Veenendaal B (2006) Small-area estimates of general practice workforce shortage in rural and remote Western Australia. *The Australian Journal of Rural Health* 14, 209–213.

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Turrell G, Mathers C (2000) Socioeconomic status and health in Australia. *The Medical Journal of Australia* **172**, 434–438.

Wang F (2006) *Quantitative methods and applications in GIS*.<sup>TM</sup> (Taylor & Francis: Boca Raton, FL)

Yang D-H, Goerge R, Mullner R (2006) Comparing GIS-based methods of measuring spatial accessibility to health services. *Journal of Medical Systems* **30**, 23–32.

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