

AUSTRALIAN PRIMARY HEALTH CARE RESEARCH INSTITUTE

ROBERT GRAHAM CENTRE FOR POLICY STUDIES

USE OF MEASURES OF SOCIOECONOMIC DEPRIVATION IN PLANNING PRIMARY HEALTH CARE WORKFORCE AND DEFINING HEALTH CARE NEED IN AUSTRALIA

Butler D.C., Petterson S., Douglas K.A., Bazemore A.

POLICY CONTEXT

Australia is in the midst of significant health reform, of which equity and access and the role of primary health care is of priority. Current measures to address workforce maldistribution are determined geographically. This fails to recognize the diversity of need and inequity within areas.

Throughout the world, the variation in health and health care equity is well established to vary along social gradients. As such there is a clear mandate to include measures of the social determinants of health in health care planning.

Nationally and internationally there is growing expertise in and evidence of the power of geographical information systems (GIS) in primary health care policy development, service delivery and evaluation.

This study sought to examine whether measures of remoteness areas adequately reveal high need populations, measured against socioeconomic disadvantage and physician to population ratios using GIS methodology.

KEY FINDINGS

- The percentage of small areas and populations within the most socioeconomically disadvantaged quintile rose with increasing remoteness.
- However, 12.8 per cent of small areas within major cities and 40.7 per cent of outer regional areas were also within the lowest socioeconomic quintile.
- Across all areas in Australia, mortality is associated with socioeconomic disadvantage, workforce shortages and the percentage of people within an area who are indigenous.
- A composite score of deprivation was developed using measures of socioeconomic disadvantage, rurality and physician supply.
- There was a strong relationship between our composite score of deprivation and avoidable mortality, risk rate, diabetes rate and the percentage of people within an area who are indigenous.

- A single measure based on our composite score can be assigned to each small area that can then be mapped and visually displayed to allow areas of greatest need to be readily identified.
- Early regression analysis examined the relationship between each element of the composite score and health outcomes. This revealed a clear interaction between the percentage of people within an area who are indigenous and remoteness areas. The relationship between avoidable death rates and indigenous status is strongest within major cities.

POLICY OPTIONS

USING GIS TO UNDERSTAND HEALTH CARE NEED AND PLANNING HEALTH SERVICES

The use of spatial relationships and maps is a powerful tool for understanding health and health care service issues, and enables immediate visualisation of solutions. The use of GIS in primary health care research and policy has been gaining momentum in Australia and internationally.

Adopting GIS would help provide more useful data at the local area level and empower communities to better understand their needs and advocate from a stronger evidence base.

Within Australia, expertise in this area is developing but hindered by a lack of coordination, duplication, costly data access systems and patchy skill sets. Australia has a wealth of sociodemographic, geographic and health data, far superior than many of our international counterparts. However, access is cumbersome, costly and time consuming. There is a need to further develop this field through increased collaboration, data sharing and advancement in technology and expertise.

International experience demonstrates that a GIS platform dedicated to primary health care acts as a data magnet and provides common ground for collaboration between all key stakeholders, from the community, through to academia and policymakers. This, in turn, has led to improved health outcomes, at a cost saving.

This study provides further evidence of the value of the growing field of spatial epidemiology and GIS in primary health care policy. Investment to further develop this capacity and expertise is essential. Such a platform has the potential to assist in addressing issues of access and equity, provide a practical means for driving innovation, responsiveness and quality within the primary health care sector and monitor the impact of such innovations over time.

USE OF MEASURES OF SOCIAL DEPRIVATION

Incorporating a measure of health inequity in health care planning and resource allocation has been emphasised internationally and within the current Australian health reform. This study demonstrates how such measures of socioeconomic disadvantage can be applied in resource allocation and is a first step in addressing the intention expressed in the current Government's social inclusion policy.

UNDERSTANDING COMMUNITY HEALTH NEED

A composite measure which incorporates a range of variables pertaining to the health care need of an area has applicability to planning primary health care infrastructure and skills mix required to address the needs of that specific community. The application of such a measure is highly relevant to the current reforms in health care planning and delivery through the development of health and hospital networks and primary health care organisations (Medicare Locals).

Many of the social determinants of health such as education and housing lie outside the domain of health. The use of a composite measure of health inequity, which can be mapped for easy visualisation, has potential uses in other government sectors such as education, urban planning

and housing. These composite measures and mapping tools will provide opportunities for effective cross-sector planning and collaboration.

BETTER TARGETING WORKFORCE INCENTIVE PROGRAMS

There are a multitude of medical workforce distribution incentive programs, based on broad definitions of 'rurality'. Use of remoteness areas only to target workforce incentive programs and training requirements are inadequate and fail to recognise the diversity of medical workforce need experienced in Australia. Including measures of socioeconomic disadvantage and medical workforce supply have the potential to address health and health care access inequity in Australia and target resources to where they are needed most.

Our composite measure of deprivation can be mapped and visually displayed. This has the potential for health planners and policy makers to more effectively identify areas that are apriority for action (for example, those communities whose deprivation score lies within the lowest 20 per cent) and to target incentive programs towards those areas.

METHODS

DATA SOURCES

- Social Health Atlas of Australia 2008, for demographic, workforce, mortality and health status data.
- Census data 2006, for the index of relative socioeconomic disadvantage (IRSD).
- ASGC-remoteness areas used to designate each SLA using the centroid rule in Arcview GIS software.

DESIGN

Initial exploratory spatial analysis of relationships between remoteness areas, medical workforce supply and the IRSD were undertaken. Bivariate analyses examined associations between remoteness areas and IRSD. From this analysis, a composite score of deprivation was constructed combining measures of remoteness areas, physician to population ratios and IRSD and validated against health outcome measures. These measures included avoidable mortality per 100,000, risk behaviour rate per 1000 and diabetes rate per 1000. All analyses were conducted at the statistical local area level and weighted to be population representative.

For more details, please go to the [full report](#)

The research reported in this paper is a project of the Australian Primary Health Care Research Institute, which is supported by a grant from the Australian Government Department of Health and Ageing under the Primary Health Care Research, Evaluation and Development Strategy. The information and opinions contained in it do not necessarily reflect the views or policies of the Australian Government Department of Health and Ageing.