

Using GIS in policy implementation: the Caerphilly Health and Social Needs Study

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Background

Caerphilly County Borough, population 170,000, is one of twenty two local authorities in Wales, UK and stretches over 40km between Wales' capital city, Cardiff, in the south to the Brecon Beacon mountain range in the north. The decline of the coal and steel industries in the area has resulted in high levels of unemployment and social and economic deprivation. Welsh health policy has identified collaborative multi-agency working as the key to combating high levels of deprivation and ill health.

Objective

We set up the Caerphilly Health and Social Needs Study in 1998 with the overall aim of achieving a greater understanding of the local relationships between the social, environmental and economic determinants of health and social outcomes to inform local planning to improve health and reduce inequalities. The principal objective was to identify and share data between the agencies that implement policy in Caerphilly Borough (health authority, local government and others) and to analyse these data, together with routine census and vital statistics data at small area geographical level (33 electoral divisions, average population 5,000 and 325 enumeration districts, average population 500).

Methods

Thematic maps were created using the MapInfo Geographic Information System to illustrate the small area distribution of health determinants and outcomes. A metadata database was created to provide a standard for the repetition of this work in other local authority areas. Ecological analysis of the relationships between deprivation and health and social outcomes was undertaken using SPSS statistical software.

Results

Considerable geographical variation in levels of multiple deprivation and health and social outcomes was found. Areas of greatest need were highlighted. Deprivation was found to be strongly associated with many outcome variables including deaths and cancer incidence for a variety of causes, self reported limiting long term illness and uptake of non-means tested disability benefits, non-attendance for breast and cervical cancer screening, higher proportions of low birth weight babies, lower educational achievement and higher rates of referral to social services.

Conclusion

The study has shown that the use of GIS in identifying areas of health inequalities and deprivation has enhanced the collaborative work undertaken between agencies implementing policy in Caerphilly County Borough. Thematic maps and accompanying data are currently being used in a wide range of local policy planning and implementation, including the local authority Community Planning process where statutory, voluntary and private sector organisations work with each other and local communities to improve the social, economic and environmental well being of the area, and the local Health Improvement Programme. A successful £1.1 million Healthy Living Centre bid in the north of Caerphilly, involving 18 projects with 11 partners illustrates the importance of multi-agency working and the Caerphilly Health and Social Needs Study has shown that the use of GIS is making an important contribution to the policy planning and implementation process.