

HEALTH AND DISEASE IN IRELAND

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INTRODUCTION

Health was defined in the founding charter of the World Health Organization in 1946 as “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” (Meade and Earickson, 2000: 2). This definition is useful because it defines health as a positive attribute to be promoted, rather than simply a neutral state found in the absence of disease. It also draws attention to the fact that health should be viewed as more than simply a state of physical well-being. The definition therefore defines the (probably unachievable) goals that, as a global society, we should work towards. However, it does not provide an easily implemented framework for the development of research instruments, so for practical research purposes health is usually defined *de facto* as the absence of disease (i.e. the focus tends to be on disease rather than on health *per se*).

It is important to retain a clear distinction between people’s health (or ill-health) and their access to the health (i.e. medical) services. Geographers tend to have a strong interest in spatial (and by implication social) inequalities, whether they be inequalities in health or inequalities in access to the health services. This review looks briefly at some aspects of the inequalities in health in Ireland, before reviewing some of the ongoing changes in the Irish health services. The review concludes with a brief discussion of the potential role of a spatial perspective to improving disease surveillance and health service planning in Ireland.

TEMPORAL TRENDS IN HEALTH AND DISEASE

Life expectancy at birth is arguably the best single indicator of the overall health of a population, although it tends to be especially sensitive to changes in the death rate of those in the younger age groups (especially infants). Life expectancy at birth in Ireland increased markedly throughout the 20th century from 49.3 years in 1901 to 75.1 years in 2002 for males, and from 49.6 years to 80.3 years for females (Central Statistics Office, 2004). The biggest increases were in the two decades before independence and in the period 1946-1961.

As in most economically developed countries, there was a marked change in the causes of death. Infectious diseases, although declining as a cause of death since the mid-19th century, remained a major cause of death at the beginning of the 20th century, but by the end of the 20th century they had become a comparatively insignificant cause of death. This decline in deaths from infectious diseases, and the corresponding increase in life expectancy, is usually referred to as the *epidemiological transition*. This transition is often attributed to the introduction of effective therapeutic drugs in the 1940s and 1950s, but several commentators, most notably Thomas McKeown (1976; 1979; 1988), have noted that deaths from the major infectious diseases in other countries were in decline long before the introduction of effective drugs. Nevertheless, much of the increase in life expectancy in Ireland in the period 1946-1961 was probably due to a massive decrease in deaths from

tuberculosis, which in turn probably reflected the introduction of more effective medical interventions.

As infectious diseases declined as a cause of death, deaths from non-infectious diseases (sometimes referred to as degenerative diseases) increased. Deaths from non-infectious diseases, such as heart disease and cancer, are more common in developed countries, and in the developed countries they were initially more common in the more affluent social groups. They are therefore sometimes referred to as diseases of affluence. However, as the 20th century progressed, deaths from most of the so-called diseases of 'affluence' in developed countries, including Ireland, actually became more common amongst the less affluent social groups.

One issue that continues to generate debate is whether the increase in deaths from non-infectious diseases should be viewed negatively as an 'epidemic' indicating a deteriorating situation, or (given that everyone must die from something) whether this increase should be viewed more positively as a natural outcome of the decline in the number of deaths at a younger age from infectious diseases. It might be noted, in this context, that there have been changes in recent years in the relative importance of different types of non-infectious disease, suggesting that deaths from non-infectious diseases should not be regarded simply as a residual effect. For example, ischaemic heart disease (ICD 410- 414) was the largest killer in Ireland throughout much of the 20th century (accounting, for example, for 8,326 deaths in 1980) but, as in many countries, it has been declining as a cause of death since the 1980s and accounted for 6,589 deaths in 2000. Meanwhile, cancer (ICD 140-208) which accounted for 6,287 deaths in 1980 has increased to overtake IHD as the leading cause of death, accounting for 7,666 deaths in 2000.

When making comparisons over time it is necessary to take account of changes in the age composition of the Irish population. Using standardised rates, to take account of Ireland's increasingly ageing population, it would appear that there has been comparatively little change in cancer rates over the past two or three decades. However, there has been a very substantial decline in ischaemic heart disease mortality indicating a considerably reduced risk now compared with 20 years ago.

SPATIAL VARIATIONS IN HEALTH AND DISEASE

Information on the spatial variations in health and disease in Ireland is comparatively sparse. The main source is the *Annual Report on Vital Statistics*, which on occasions included maps of tuberculosis mortality, infant mortality or all-cause mortality. The *Reports* for 1899 to 1901 included maps of deaths from tuberculosis, whilst maps of tuberculosis and infant mortality were included in 1911 to 1914. No further maps appeared until 1950, after which maps of all cause mortality were published most years until 1990 (Houghton, 2002). However, they were based on directly standardised rates (which are more sensitive to stochastic variations) and were not particularly informative. There was also a steady deterioration in their cartographic quality until they eventually became downright embarrassing. The *Reports* since 1990 contain no maps, and since 2001 they do not even include spatially disaggregated information on the age of death for specific causes, thereby eliminating the possibility of calculating age specific rates.

On the plus side, there would appear to be a growing awareness of the importance of the spatial dimension within health-related public bodies such as the National Cancer Registry, Health Protection Surveillance Centre

and the Institute of Public Health, each of which have produced reports containing maps in recent years (e.g. Balanda and Wilde, 2001; National Cancer Registry, 2001; Walsh et al., 2001). Likewise, the Department of Health and Children regularly produces a database called the Public Health Information System (PHIS), which contains an option to map morbidity and mortality data.

Maps of all-cause mortality and deaths from selected causes over the past 35 years generally indicate a higher death rate in the major urban areas (i.e. the county boroughs), although Galway tends to be an exception in this regard (Creton and Pringle, 1991; Howell et al., 1993; Pringle, 1982; 1986a; 1986b). Higher mortality in urban areas is consistent with the patterns found in other countries. For the 1970s the maps also indicate a regional disparity between the more prosperous south and east of the country, and the less prosperous north and west (see Figure 1). However, the regional disparity is the inverse of that most commonly found in other countries. Normally the areas of higher mortality are found in the less prosperous areas, but in Ireland the areas normally regarded as the economically most disadvantaged (i.e. in the north and west) actually had the lowest rates of mortality and therefore the highest life expectancy. A similar anomalous pattern was found for infant mortality for the period 1915-35 (Pringle, 1998).

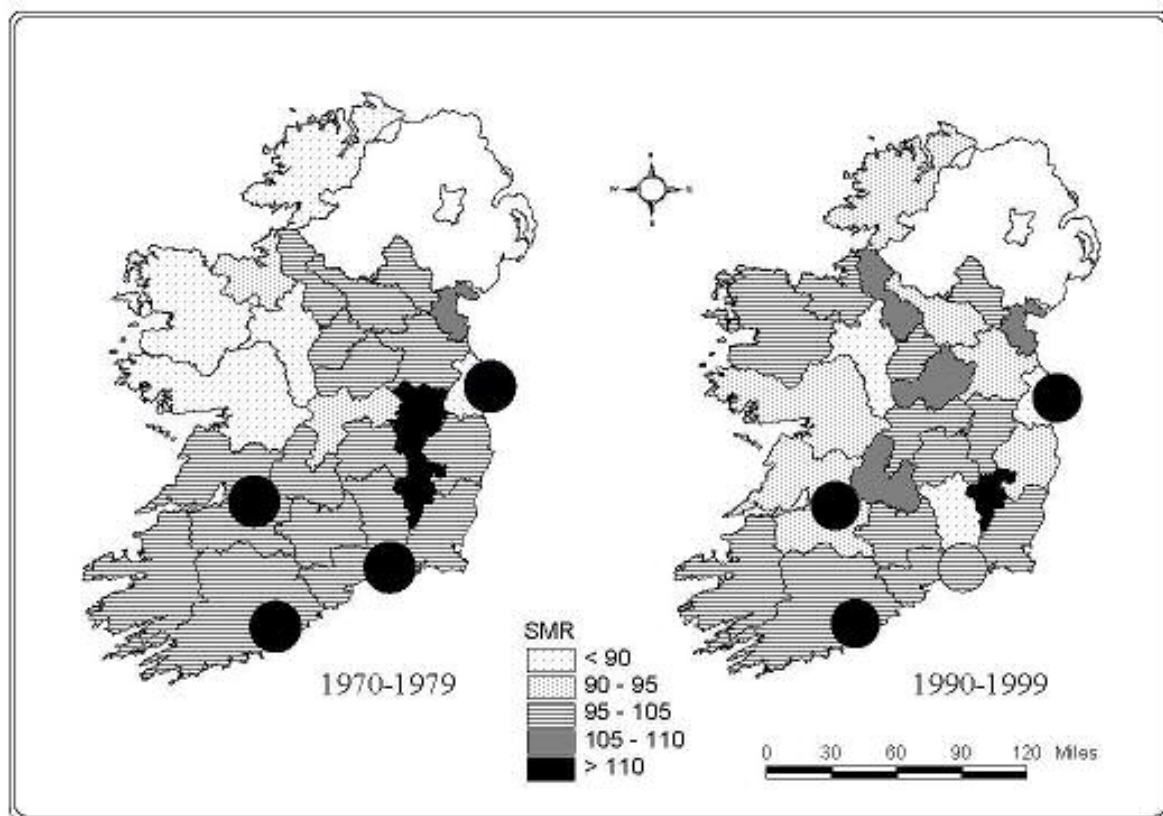


Figure 1. Age-Sex Standardised Mortality Ratios, 1970s and 1990s. The lowest mortality rates in the 1970s were mainly in the less developed west and north-west, whilst the highest mortality rates were in the major cities (represented by circles) and urbanised counties such as Louth, Kildare and Carlow. By the 1990s the major urban areas still had the highest mortality rates, but the relative advantage of the west and north-west was beginning to disappear, possibly due to a breakdown in social capital as a by-product of the Celtic Tiger.

This anomaly is difficult to explain. Studies of mortality at an individual level consistently show a strong association between high mortality and low socio-economic status (e.g. Nolan, 1990; O'Shea, 1997, 2003; O'Shea and Kelleher, 2001). However, the socio-economic groups with the highest death rates are predominantly found in urban areas. Given that there is a higher density of medium sized towns in the south and east of the country, it is possible that the regional disparities in mortality may to some extent reflect regional variations in the degree of urbanisation. However, even when spatial variations in urbanisation are taken into account, the anomalous regional patterns in the 1970s persist.

More recent evidence suggests that the anomalous regional pattern of mortality found in the 1970s may be beginning to break down. Life expectancy has increased everywhere in Ireland since the 1970s, but it would appear that parts of the north and west have lost their comparative advantage. The reasons are far from clear, but one possibility is that the high levels of social capital (see below) that previously existed in such areas may have been undermined by social changes associated with the Celtic Tiger, creating a situation that is less conducive to good health. The negative implications of the Celtic Tiger for health inequalities are discussed in more detail in a slightly different context by Cullen (2004).

Studies of health and mortality at an intra-urban level are few, but the existing evidence suggests that in Dublin at least there is an association at ED level between higher mortality and lower levels of affluence, conforming with the pattern generally found in other countries (Johnson and Dack, 1989; Johnson and Lyons, 1993; Pringle 1987). The patterns are not as clear-cut as one might assume, but this is probably a function of mapping rates based upon relatively small numbers of deaths.

SOCIAL CAPITAL AND HEALTH IN IRELAND

Significant attention has been focused over the last decade on the issue of social capital and its effects on health. Social capital is a nebulous concept and despite a significant amount of work on this theme, there is little agreement on what exactly it is, or how it should be measured. However common themes associated with social capital include trust, neighbourliness, civic participation and reciprocity. Much of the debate around social capital was sparked in 1996 with the publication of the seminal work *Unhealthy Societies: The Afflictions of Inequality* by R.G. Wilkinson. However the subsequent publication of *Bowling Alone* by R. Putnam (2000) has helped propel these concerns into the international limelight. In *Unhealthy Societies* Wilkinson presented data to show that health indicators in developed countries were unrelated to the total wealth of the countries, but that countries with a less equitable distribution of wealth had poorer health outcomes than more egalitarian countries. Wilkinson argued that income inequalities were associated with lower levels of community cohesion resulting in less civic trust and public engagement (i.e. social capital). Through these, and other mechanisms, he argued that people may become more isolated, introspective and alienated from wider community life and potential social support. They were consequently more vulnerable to psychosocial stresses, which translated to individual psychological stress and negative physical health through a myriad of pathways.

Wilkinson's work draws heavily on an earlier work by Putnam et al. (1993) which contrasted the more wealthy, democratic and civic minded Northern Italian regions, with the poorer southern Italian regions which he

categorized as being characterized by amoral familism. The income inequality and health hypothesis remains hotly contested with what appears to be a significant volume of research equally both supporting and refuting this proposed relationship (Subramanian and Kawachi, 2004). The added importance of this hypothesis for Ireland lies in the growing level of income inequality experienced in Ireland in recent times, particularly since the beginning of the economic boom in the mid to late 1990s (Cullen, 2004).

The impact of *Bowling Alone* has been significant. A significant volume of national and international reports have investigated and explored this theme. Ireland, and the Irish have been the subject of a number of studies examining the relationship between social capital and health. The most comprehensive of these, conducted by Balanda and Wilde (2003), reported that 'many aspects of the social environment, measured by ... social capital indicators ... play an important role in health on the island'. This study, which examined perceived health, is based on the All-Ireland Social Capital and Health Survey and included a total of 2,000 participants (1,000 in each jurisdiction). Balanda and Wilde (2003) note that a number of indicators of social capital used in their study were found to have significant independent effects on perceived health including: whether or not a person is civically engaged; whether or not people trust most of their neighbours; social support networks; social contacts; views about services in the local area; and views about problems in the local area. For example exploring the issue of trust, Balanda and Wilde (2003) note that 'people who do not trust most of their neighbours are a quarter as likely than those who do to have excellent/very good general health'. Balanda and Wilde report, with regards to social contact, that 'people who have infrequent contact with their friends are a third less likely than those who have frequent contact to have excellent/very good general health'.

HEALTH SERVICES ORGANISATION

The health services in Ireland are currently undergoing a period of intense reorganisation and restructuring. Unlike many Western Economies, such as the UK and New Zealand, which have spent much of the last 25 years organising and reorganising their services, Ireland has undergone few changes in the organisation of its health services since the early 1970s when eight regional health boards were established and health care ceased to be a function of the local authorities.

On 1st January 2005 the Health Services Executive (HSE) was formally established and is now responsible for running the state's health services. This date also marked the formal dissolution of the country's health boards (and the Eastern Regional Health Authority). The details of the new health structures are still being worked out at the time of writing, but the system is moving towards having three distinct pillars. These are the National Hospitals Office (NHO), the Primary, Community and Continuing Care (PCCC) directorate, and the Shared Services pillar.

The NHO runs the country's 53 acute general hospitals, which are organised into ten local hospital networks. Much of the reorganisation of the acute hospital services in Ireland is based on the findings of the Hanly report (National Task Force on Medical Staffing, 2003). This report which focussed on two former health board areas outlined the need for hospital networks, the expansion of regional hospitals and the downscaling of other acute hospitals, including their A&E units. These proposals have already encountered significant public opposition,

forcing some political backtracking on this issue. As Wren (2003: 176) notes 'there are few more potent issues in Irish politics than the local hospital'.

The PCCC directorate has responsibility for primary care including general practice, community-based health and personal social services, services for older persons and children, disability services, mental health services and social inclusion. The PCCC directorate will have 32 (i.e. county-based) local health offices, designed to provide a more local orientation of health services offering greater user-involvement. Currently there are severe concerns as to how health and social care services, particularly in relation to mental health, will integrate between the NHO – PCCC pillars to provide the much needed and talked about 'seamless service'.

Having dissolved the health boards the HSE has formally established four regions (Western; Southern; Dublin/North-East; Dublin/Mid-Leinster). It remains very unclear at present however what the exact role of these regional offices will be.

Mr Kevin Kelly, the former interim Chief Executive of the HSE, conceded that the reorganisation of the health boards in Ireland into a unitary health system is part of a 'centralisation journey'. However it is interesting to note that parallel to this centralisation journey within the health services is the somewhat contrary current strategy involving the rollout of primary care services. The latest Irish health strategy notes that 'Primary care must become the central focus of the health system' and states that primary care 'is the appropriate setting to meet 90-95 per cent of all health and personal services needs' (Dept. of Health and Children, 2001a: 95). The reasons behind this proposed re-orientation of the health service range include improved effectiveness and value for money. The Department of Health and Children (2001a: 95) states that 'a properly integrated primary care service can lead to better outcomes, better health status and better cost effectiveness'.

The essence of the Primary Care Strategy is the formation of locally based Primary Care Teams. As the Primary Care Strategy states: 'a group of primary care providers will come together to form an inter-disciplinary team, known as the primary care team' (Dept. of Health and Children, 2001b: 22). The health strategy outlines the full range of health and allied disciplines that will constitute the Primary Care Team. It is envisaged that between 600 and 1,000 Primary Care Teams (PCTs) will be established across the country. Each PCT it is suggested will service a population of between approximately 3,000 – 7,000 people. The variation in PCT size, it is thought, will depend upon whether the region involved is rural or urban, while the number and ratio of staff will reflect the result of a local health 'needs assessment' as well as 'location and population size' (Department of Health and Children, 2001b: 22). The Primary Care Strategy also details how access to less routine health services will be organised and developed. It is envisaged that small groups of PCTs will be organised into Primary Care Networks, which will facilitate access to more specialised services.

Few people involved in the Irish health services would challenge the need to substantially develop primary care services. A significant proportion of GPs are still operating in isolation without adequate out-of-hours cover, or the assistance of practice nurses or computerisation. In relation to the roll-out of the Primary Care Strategy it should be noted that at present only 10 pilot PCT projects have been initiated throughout the country, and these have encountered not only their fair share of problems, but also concerns over future funding.

The critical, and related, issues of PCT premises and funding undoubtedly present enormous issues to the successful implementation of the Primary Care Strategy. However other serious challenges also beset this process. In addition to the manpower crisis afflicting most occupations within the health services, there is also the issue of trying to introduce such changes during a period of uncertainty and reorganisation within the wider health services. Additionally there is a lack of a culture of working with other disciplines among General Practitioners within primary care, as well as the issue of a lack of trust and familiarity and knowledge between different disciplines. Further impediments include trade union intransigence, professional loyalties and boundaries and the reality that, in the largely private system of primary care that currently operates in Ireland, some GPs see other GPs and allied health professionals as little more than economic rivals.

THE POTENTIAL ROLE OF A SPATIAL PERSPECTIVE

These changes in the health services have obvious spatial implications. There is consequently an enormous potential role to be played by geographers, and others adopting a spatial perspective, in helping to maximise the benefits of the changes whilst ensuring their costs, both economic and social, are minimised. Teljeur et al. (2004), for example, have examined the likely impact on access to accident and emergency services of the Hanly proposals using GIS. GIS also has a major role to play in an objective assessment of the health implications of suspected hazards, such as landfills, high voltage powerlines, and air pollution sources, as well as the surveillance of infectious diseases. However, this potential has remained largely untapped until now. Nevertheless, there are a number of reasons for cautious optimism that things might improve.

Within the health services there appears to be a slow, but growing acceptance of the role of GIS and spatial analysis in examining health and healthcare provision. At present the development of GIS within the Irish health system is haphazard, uneven and uncoordinated. It is anticipated that the new Population Health Directorate will be able to coordinate, streamline and progress developments in this field.

Perhaps one of the most important factors that may influence the development of the mapping of health and diseases in Ireland may be that of politics. Here there are a number of distinct and potentially contrary elements. The first of these appears to be the desire of the Irish state to avoid any real discussion on the issue of inequalities, including spatial inequalities in health status and health care provision. The decline in the detail and usage of meaningful maps of disease in the *Annual Report on Vital Statistics* is mirrored by the absence of such maps in other official publications. Only those organizations with a formal link beyond the Republic of Ireland appear to be routinely using disease maps. As mentioned earlier both the National Cancer Registry of Ireland and the Institute of Public Health in Ireland have recently produced numerous all-Ireland disease maps. It is worth questioning why these two organizations, have incorporated significant numbers of such maps when involved in the production of reports spanning both Ireland and Northern Ireland, but such disease maps are used so infrequently elsewhere in Ireland. It is clear that part of the reason may lie in the reality that the UK has a much stronger tradition of disease mapping and spatial epidemiology, as exemplified in the work of John Snow's investigation into the cholera epidemic of 1849, and reinforced by critical works, such as the Black Report (Townsend and Davidson, 1982). However it seems clear that this is only part of the reason. By operating on a cross-border basis, one might surmise that these institutions have 'permission' to use such

techniques, something that other official agencies in the Republic of Ireland may not feel they have. The absence of maps of health and disease in official reports, and the decline and then disappearance of disease maps from the *Annual Report on Vital Statistics* is suspicious. Their decline and disappearance came at a time when computerized mapping packages and geographical information systems were becoming more common, more user-friendly, and significantly less expensive. It seems more probable that it reflects a reluctance on the part of the state to acknowledge both inequalities in health status and health care provision, particularly in relation to spatial inequalities (Houghton, 2005). While such debates are clearly 'out in the open' in the UK, they remain peripheral to date in Ireland.

Given the geographical basis of political representation, the potential for spatial inequalities in health status and health care provision to become significant political issues is huge. What undoubtedly makes this prospect more daunting for the Irish State is the absence of any objective funding formula for Irish health services, coupled with significant regional variation in funding levels. Unlike the UK, which first tackled the issue of spatial inequalities in healthcare funding with the introduction of the RAWP formula in the mid 1970s, Ireland's funding formula appears to follow the more traditional basis of: 'what you got last year, plus an allowance for growth, plus an allowance for scandals' (Maynard and Ludbrook, 1988).

Although politics may in one way hinder the development of disease mapping in Ireland, it may also advance it. The National Anti-Poverty Strategy (NAPS) and subsequent work in this field has set a number of health targets which the government is obligated to achieve within set timeframes. More importantly perhaps this process has identified significant information gaps relating to Irish information on health and poverty / deprivation. Similarly, growing pressure from the European Union for accurate and timely information is forcing Irish Government Departments to improve and update their information systems. Therefore despite what may be the best efforts of the Irish State to dampen the development of a spatial analysis of health and health services provision, it appears to have a challenging and relevant future in Ireland.

CONCLUSION

The day to day administration of the health services in Ireland has traditionally been decentralised, either through the health boards since 1971 or, before then, at county and even sub-county level (e.g. Poor Law Unions). This has inevitably resulted in regional disparities in the provision of health services. The recent creation of the Health Services Executive provides a potential framework for addressing these disparities, but there is a deficiency of spatial information currently available which could form the basis for rational evidence-based decision making. This deficiency is especially marked with regard to small area data on health outcomes, without which it is impossible to accurately gauge service needs or to assess the effectiveness of alternative service provision strategies. It also precludes the possibility of using spatial epidemiological techniques to identify potential health risk factors and thereby develop effective preventive measures. There are some indications of an improved awareness of the importance of the need for a spatial perspective in some branches of the health services, even if it is simply to get into line with the rest of western Europe, but there are also unfortunately many indications of a continued aspatial myopia as, for example, in the continued push towards a reorganisation of services driven by economies of scale with seemingly little consideration given to the

implications for spatial accessibility.

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