

The Healthcare Market for Geographical Information

How change may affect the spatial industry – 2010 to 2015

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Scope

This paper reviews the current use of geographical information in the UK healthcare market and considers some factors which may affect its development over the next five years.

The current application of spatial analysis and presentation is considered to be limited, in view of its potential for improving the effectiveness of one of the most costly public services.

In times of economic hardship such as those predicted for most of the period under review, the natural instinct of senior managers may be to cut further the limited resources using geographical information.

Successful marketing by the spatial industry, however, may lead to an increasing role for planning and monitoring techniques similar to those used elsewhere in the public sector and commercial markets.

Current position

The National Health Service (NHS) in the UK provides taxpayer-funded healthcare, free at the point of use by patients. In parallel with the NHS, private medical care continues to be used by about 8% of the population, largely paid for by private insurance, to supplement the NHS services.

- In England, the Department of Health (DH) sets policies for health and social care and spends most of its £100bn annual budget on the NHS in England. It also provides guidance and publications for practitioners. These include some politically sensitive targets for health outcomes such as the reduction of waiting times for certain procedures. DH controls the ten Strategic Health Authorities (SHAs), each covering a Government Office Region (GOR) except that the South East region is split into two SHAs. The service is delivered through a series of separate legal bodies known as NHS trusts.
- Primary Care Trusts (PCTs) are responsible for spending 80% of the NHS budget in England. They oversee General Practitioners (GPs) and dentists, commission acute services from other NHS trusts or the private sector and promote good health and well-being, administer vaccinations and control the reaction to epidemics. There are 11 Ambulance Service NHS Trusts in England, one corresponding to each SHA (except that the South West is split into two), and in addition the Isle of Wight PCT operates its own ambulance service. There is an NHS Direct inbound call centre. DH also has a number of arms length bodies including Special Health Authorities whose

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remit is national rather than local, including the NHS Information Centre for Health and Social Care (NHS IC) and the National Institute for Health and Clinical Excellence (NICE).

- In Wales, the Welsh Assembly Government sets policies and funding for NHS Wales (GIG Cymru) and includes the executive agencies Health Commission Wales and Informing Healthcare. The majority of the budget is administered by Local Health Boards, each covering the same area as a local government council, which plan the health services required by their populations and pay the providers of those services. The 12 regional Welsh NHS Trusts administer the District General Hospitals and also provide community care and mental health services. There are additional trusts for the Welsh Ambulance Service (which also manages the NHS Direct Wales inbound call centre) and Velindre (providing services such as public health and cancer intelligence throughout Wales).
- In Scotland, the Health and Wellbeing Directorate of the Scottish Government NHS sets policies and funding for NHS Scotland (SNN Alba). The 14 local NHS Boards are aligned with groups of councils who have representatives on the directly-elected NHS Boards to facilitate the integrated provision of health and social care services through the Community Health Partnerships which contract with GPs and pharmacists. Scotland no longer has NHS Trusts, and hospitals are managed by the acute division of the relevant NHS Board. There are also a number of national Special Health Boards, including NHS Health Scotland (with responsibility for public health), the Scottish Ambulance Service and NHS24 (which runs the inbound call centre).
- In Northern Ireland, the Health Department of the Northern Ireland Executive sets policies and provides funding for the Health and Social Care (HSC) in Northern Ireland. In turn it finances the five Health Trusts, each providing acute and community services for a group of council areas, plus a number of agencies providing ancillary services such as public health and the Northern Ireland Ambulance Service.

Following NHS reforms in England since 1990, PCTs have merged to cover larger areas and are funded according to an assessment of the needs of the population within their catchment areas. They pay fees and allowances to independent GPs, dentists, opticians and community pharmacists. PCTs also commission health and social care services from NHS hospital trusts and other providers – the internal market. In England and Wales PCTs may commission some services from the private sector to increase capacity, though the Scottish Government opposes partnerships between the NHS and the private sector. Nearly all hospital doctors and nurses are employed by NHS trusts.

Ordnance Survey data sets were formerly made available under an NHS Pilot Agreement, which was funded centrally. Following a procurement advertised in OJEU, the Digital Mapping Agreement (DMA)

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was awarded to Dotted Eyes for four years starting in April 2008. The DMA ensures that the 11 Ambulance Services in England are licensed to use a core set of digital mapping products, largely based on Ordnance Survey data sets. It also provides a 'pre-competed' framework enabling other NHS bodies in England and Wales to obtain a wide range of digital mapping products at specially negotiated prices, using standard licence terms which facilitate data sharing between them.

The Welsh Ambulance Service subsequently conducted its own procurement for a different range of products, some of which have been licensed from Ordnance Survey and others from Dotted Eyes. When the One Scotland Agreement was negotiated between the Scottish Government and Ordnance Survey's sponsor, the Department for Communities and Local Government (CLG), it made several Ordnance Survey data sets available to – amongst others – NHS Scotland.

Anticipated changes

Ambulance Services are really a special case of the use of geographical information in the NHS – particularly in their emergency operations as opposed to patient transport services. Their command and control systems rely on comprehensive maps, and particularly 'gazetteers' of addresses and the names of places and landmarks, to dispatch crews rapidly to the scene of an incident.

The funding each Ambulance Service receives depends on meeting Orcon targets, which are now based on the proportion of category A emergency incidents in which a crew reaches the scene within 8 minutes of an emergency call being connected. This means call handlers need a fast and reliable means of identifying not only the nature of the incident but also the exact location being described by a caller who may well be in an emotional state and may speak one of dozens of different languages. That process starts with the approximate coordinates supplied by BT as the source of the call.

Other parts of the NHS typically do not yet have geographical information embedded into their business processes in that way. It seems clear that certain regular tasks, such as public health epidemiology or cancer intelligence and surveillance, would benefit from systematic spatial analysis and mapping, yet those projects are still commonly tackled in an ad hoc way without GIS expertise.

NHS budgets cannot be expected to continue rising, particularly as the steep increases under the present government have not resulted in commensurate improvements to the scope and standards of patient care. As efforts intensify to repay the national debt, particularly after the 2010 general election, NHS expenditure per capita is most likely to be cut in real terms.

In a bid to improve the effectiveness of the internal market, World Class Commissioning (WCC) is a DH initiative to transform the way in which PCTs and other bodies purchase health and care services. WCC requires a number of competencies, which include:

- Work with community partners to... optimise health gains and reductions in health inequalities;

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- Undertake robust and regular needs assessments... of current and future local health needs;
- Priorities investment according to local needs, service requirements and... values of the NHS.

The suggestion has recently been made in the national press that people should be able to register with any GP of their choice, which would dissolve the current catchment areas of PCTs. Any such policy change would have far-reaching repercussions, not least on the procedures used for assigning budgets for health and social care services. It would need to be supported – and could be challenged – by analysis using spatial modelling techniques.

A very small proportion of PCTs currently use Geographic Information Systems (GIS) in-house. However some excellent work has been done by certain units which provide shared services to a group of PCTs, often as part of an outsourced Information Management and Technology (IM&T) service. Applications where this type of analysis has proved valuable are:

- Site selection for the development of proposed facilities;
- Analysis of population demographics within a catchment area;
- Travel times for accessibility to community services.

Progressive changes in PCTs have led to the creation of pioneering polyclinics, combining various primary care services such as GPs, dentists, pharmacists and physiotherapists into one local centre. That is a trend which is expected to continue throughout the next five years. It is estimated that 65% of patients walking in to hospital Accident and Emergency units would not need to be there if they had been able to visit a local minor injury clinic instead.

Health promotion campaigns are increasingly seen as a win-win solution for improving health outcomes while reducing the cost of intervention and treatment. For instance, changing people's behaviour can radically reduce diseases either caused or spread by smoking, sexual activities, lack of exercise and poor diet. Providing preventative medicine can also avoid the need for more costly curative medicine.

Both NHS bodies and local authorities are coming under greater pressure to collaborate in targeting services collectively to meet the community's overall needs. Putting this principle into practice can often be helped by including specific plans in Local Strategic Partnerships (LSPs) and by appointing staff to shared roles which are jointly funded. Any assessment of the healthcare needs of a local population is likely to be affected by such factors as the use of leisure centres, social services care and charitable support such as a meals-on-wheels service.

Impact of changes upon the spatial industry and upon customers

Too often in the healthcare market it seems that spatial analysis is currently used to defend decisions which have already been made, rather than being relied upon to optimise the decision-making process itself. This contrasts with the best practice elsewhere in the public sector, in business and in not-for-

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profit organisations. Senior managers there often have sufficient appreciation of the potential of geographic information systems and services to deploy them strategically at an early stage.

Examples of how the changes identified above may harness the power of the spatial industry include:

- An extension of the shared services model, to provide answers on demand to key business questions, using online services where possible;
- The location of new polyclinics is a sensitive issue, requiring effective community consultation, which would benefit considerably from site optimisation techniques such as those used in planning retail store locations;
- Health promotion campaigns are equivalent to commercial advertising campaigns, and their effectiveness may be optimised by geodemographic analysis, strategy development and testing of the creative treatments and communications media;
- Online access to spatial data and services would facilitate collaborative working between the NHS and community partners including local authorities.

Scenario(s)

The two contrasting scenarios in response to the inevitable pressure on budgets would appear to be:

- Raising the awareness at chief executive level in NHS bodies of the role GIS can play in achieving their strategic objectives, leading to consistent growth over the next five years in the use of software, data and services as piloted by the success of shared services; or alternatively
- A complete freeze on any expenditure which does not directly improve healthcare outcomes for patients, leading to cutbacks in skilled GIS staff and retrenchment during the next five years.

An industry-wide senior level drive to inform, educate and influence decision makers and leaders should be mounted to improve the chances of the first, optimistic scenario being realised.

Summary of 5 key points

- The Ambulance Services depend on geographical information as an integral part of their work.
- The use of geographical information elsewhere in the healthcare market is generally limited.
- The healthcare market is one of the largest in the UK, at about £120bn pa or almost 10% of GDP.
- The budget per capita is likely to reduce in real terms by 2015, so efficient use of resources is key.

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- World class commissioning is a political initiative in which the spatial industry should play its part.

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