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Biopolitics, space and hospital reconfiguration

Abstract

Major service change in healthcare – whereby the distribution of services is reconfigured at a local or regional level - is often a contested, political and poorly understood set of processes. This paper contributes to the theoretical understanding of major service change by demonstrating the utility of interpreting health service reconfiguration as a biopolitical intervention. Such an approach orients the analytical focus towards an exploration of the spatial and the population – crucial factors in major service change. Drawing on a qualitative study from 2011-12 of major service change in the English NHS combining documentary analyses of historically relevant policy papers and contemporary policy documentation (n=125) with semi-structured interviews (n=20) we highlight how a particular 'geography of stroke' in London was created building upon multiple types of knowledge: medical, epidemiological, economic, demographic, managerial and organisational. These informed particular spatial practices of government providing legitimation for the significant political upheaval that accompanies NHS service reconfiguration by problematizing existing variation in outcomes and making these visible. We suggest that major service change may be analysed as a 'practice of security' – a way of redefining a case, conceiving of risks and dangers, and averting potential crises in the interests of the population.

Keywords

Major service change; Reconfiguration; Foucault; Governmentality; Biopolitics; NHS

Introduction

Increasing numbers of authors have turned to the work of Foucault over the last quarter century searching for more sophisticated ways of interpreting the interplay of politics, power, governance and changing conceptions of the state in contemporary society (Burchell et al, 1991; Miller and Rose, 2008; Dean, 2010). This trend has seen the development of governmentality influenced scholarship in medical sociology and healthcare organisation and management studies (Armstrong, 1995; Moon and Brown, 2000; Ferlie and McGivern, 2013; Waring & Bishop, 2018). In this paper we focus upon the under-utilised theoretical contribution of Foucault's work on 'biopolitics' (Foucault, 2007; Dean, 2010; Lemke, 2011) and highlight the potential of analysing major service change as a 'practice of security' (Foucault, 2007) through an engagement with the 'trialectics' of *space-knowledge-power* central to Foucault's work (Soja, 1996; Crampton & Elden, 2007). We apply these theoretical insights to an empirical case study of major service change drawing on qualitative data of a case study of a region-wide service reconfiguration in the English NHS.

The 'reconfiguration' of healthcare services is a specific process of reorganisation that has been defined as *'a deliberately induced change of some significance in the distribution of medical, surgical, diagnostic and ancillary specialities that are available in each hospital or other secondary or tertiary acute care unit in locality, region or healthcare administrative area'* (Fulop et al, 2012; p129). Healthcare service reconfiguration is worthy of research for a number of reasons. Firstly, reconfiguration highlights the act of government as a 'problematizing activity' (Foucault, 2007; Dean, 2010) and opens new vistas for research to explore how multiple organisations construct and understand their own strengths and

inadequacies (Legg, 2005). Secondly, it encourages clinical and managerial healthcare service leaders to develop new techniques to challenge historical failings – this makes the reformed organisational strategy 'visible' to the outside gaze (Dean, 2010). Thirdly, reconfiguration takes place within a milieu of public contestation and conflicting political discourses which adds to the complexity of this form of decision-making (Jones & Exworthy, 2015; Stewart, 2016). A criticism of existing research into healthcare service reconfiguration is that it is conceptually under-developed (Fulop et al, 2012). We seek to remedy this through the application of a governmentality (Foucault, 2007) approach to explaining large-scale organisational change in healthcare, and specifically the contribution of a biopolitics perspective. We ask: how can a biopolitical approach enhance understanding of major service change in healthcare?

Foucault, space and biopolitics

Foucault produced a rich and diverse body of work with distinct emphases that changed over his lifetime. His earlier work demonstrated how marginalised members of society were subjected through a power/knowledge nexus emphasising disciplinary power and states of domination. His later work on governmentality explores the 'conduct of conduct' of non-marginalised members of society and how we think about governing others and ourselves as practices of freedom (Foucault, 2000; p255). He emphasises that the state should not be viewed as an almighty, unified force. Rather, scholars might analyse the ways in which government functions, and how knowledge and power are created and directed via governmental channels (Foucault, 2007). Foucault demonstrated how mentalities of government change over time. The present neoliberal governmentality emphasises the active

willingness of subjects in their own subjectification through the establishment of a culture of enterprise, responsible autonomy and pervasive problematising of the welfare state (Dean, 2010). The importance of space to Foucault's work is contested by scholars. Some influential scholars of human geography are critical of Foucault's work on space – for example – Thrift (2007) argues that space is a 'blind spot' in Foucault's writing. Harvey (2007), another eminent critic, suggests that Foucault prioritises historical approaches over geographical ones. Nonetheless, we argue there is much to offer in the 'trialectics' of *space-knowledge-power* found in Foucault's work (Soja, 1996; Crampton & Elden, 2007) as highlighted for example through his reinterpretation of the cultural production of cartography (Crampton, 2001). Whilst it may be true that Foucault privileged time over space as an analytic concern, Philo (1992) emphasises how Foucault's approach to history 'necessitates a sensitivity to space, place, and geography' (Philo, 1992; p159), a point also emphasised by Legg (2005). This is the case both with respect to technologies of disciplinary order, spatial visualisation, surveillance and control integral to his early work (Huxley, 2007), and also his exploration of 'heterotopia' (Foucault, 1986) in his later work.

Whilst recent years have seen an increased interest in governmentality influenced scholarship in medical sociology – few authors have explored the spatial implications of Foucault's work for healthcare organisation and management studies. An exception is David Armstrong, whose work highlights the dynamic nature of the concepts of time and space in British healthcare (Armstrong, 1985). Armstrong later identified 'surveillance medicine' which, informed by Foucault's work, is concerned with historical changes in the relationship between medical knowledge, population, and the temporal and spatial distribution of illness. Likewise, Moon and Brown (2000), draw on Foucault's work to highlight 'spatializing language' as an 'art of government' to emphasise the importance of 'local' decision making

and responsive management symbolically distancing government itself from the act of governance (Moon and Brown, 2000; p74). This approach combines Foucault's concern with 'spatial' discourses, and how conduct may be 'shaped' in the emergent environment of 1990s NHS management which sought to reorganise how health services had hitherto functioned. More recently, Waring & Bishop (2018) develop insights from Foucault's work on the concept of heterotopia (Foucault, 1986; Soja, 1996). The concept refers to cultural or institutional spaces that juxtapose multiple conflicting meanings and hence may provoke feelings of discomfort. Soja (1996) refers to heterotopias as 'counter-sites'. Building on this Foucauldian appreciation of space, Waring & Bishop interpret hospitals as 'heterotopias of deviation where particular relations of power are realised for the construction and control of medical subjects' (p666). They explore a Public-Private-Partnership (PPP) in the NHS and show how distinct discursive influences shape the spatial configuration of an Independent Treatment Centre designed through the PPP. They highlight how the incongruence of cultural meanings within the hybrid space are interpreted and internalised by patient and professional groups thus opening a window on the relationship between spatial practice and neoliberal governmentality.

Little attention has been paid to the utility of Foucault's work to explore the spatial issues central to major service change in healthcare systems at the regional level. We suggest that Foucault's work has much to offer here. Below, we highlight the relevance of Foucault's work to theoretical understanding in this area, and underline the utility of Foucault's work on 'biopolitics' (Foucault, 2007; Dean, 2010; Lemke, 2011).

A reading of the *1978 College de France* lectures (Foucault, 2007) provides a rich understanding of the development of Foucault's thoughts around biopolitics, and practices of security. Foucault demonstrates how 'starting from the eighteenth century, modern Western societies took on board the fundamental biological fact that human beings are a species' (Foucault, 2007; p1). This required a significant reorientation in the functioning of government and power. He distinguishes between three distinct mechanisms of power. First - juridico-legal mechanisms, second – disciplinary mechanisms and third – security mechanisms. These are not mutually exclusive – rather they co-exist and complement each other (Foucault, 2007; p8). However, Foucault describes the development of these respective mechanisms in historically progressive terms. This is achieved through a three-stage example comparing how lepers in the Middle Ages were excluded from society – this represented a *binary* type of division derived from sovereign power along legal principles. Next, Foucault describes how the Plague regulations developed in the sixteenth and seventeenth centuries imposed quarantine measures on towns based on prohibitions, rules and *disciplinary* power, whilst the third example, that of the smallpox inoculation practices from the 18th Century drew upon novel forms of knowledge and calculation to manage the risk of disease in new ways as *practices of security* (Foucault, 2007). These examples demonstrate how the exercise of power and the centrality of a calculable population as a target of government became more sophisticated over time (Dean, 2010; p128). Moreover, Foucault highlights that biopolitical interventions are 'linked to the phenomenon of the town itself' (Foucault, 2007; p63) and that the 'most biopolitical of ends: [is] the maintenance of life and the wellbeing of the population' (Dean, 2010; p142).

The population becomes both the subject and the object (Foucault, 2007 p61) of these new mechanisms of power from the eighteenth century as the importance of statistics, probability

and normalisation increases as governments expand their remit as practices of security (Dean, 2010). Whilst disciplinary practice is essentially centripetal – it acts to concentrate, focus and circumscribe a space (Foucault, 2007; p44), apparatuses of security are centrifugal – they expand out, drawing on new forms of knowledge and acting with the desires of the population reflexively limiting the explicit force of government (Foucault, 2007; p45) and in so doing emphasise freedom and liberalism. Foucault returns to the example of smallpox inoculation to demonstrate how biopolitical interventions may be seen as 'practices of security' which draw on four distinct notions; case, risk, danger, and crisis. The 'case' here is not the individual (or patient) case – rather it is 'a way of individualizing the collective phenomenon of the disease… in the form of quantification and of the rational and identifiable' (Foucault, 2007; p60). Following this, if a disease can be interpreted both at the group and the individual level, then the 'risk' in terms of mortality and morbidity for different segments of the population can be calculated – an idea also developed by Armstrong (1995). Next the variability of risk highlights which sub-groups from within a given population are in most 'danger' of suffering from a particular disease – Foucault highlights the danger faced by the under-threes living in urban areas posed by smallpox. This emphasises the importance of governing the city as a focus of biopolitics. The final notion is that of 'crisis' which in Foucault's example is described as a 'sudden worsening, acceleration, and increase of the disease' (Foucault, 2007; p61).

The relationship between practices of security, the conception of population as a focus for government, and the role of public healthcare and hospital development within urban spaces is notable in Foucault's work. Elden (2007) highlights the link between medicine and habitat in Foucault's work on the eighteenth century, linking this to 'problems of population, health and the town planning' (Foucault, 1994; p192; Elden, 2007; p73). Indeed, spatial concerns

are intimately linked to the historical transformation of the hospital from 'an institution of assistance for the poor' to a 'medical institution' in the eighteenth century as biopolitical concerns increasingly came to be governmentalized highlighting the inter-connected importance of power, medical knowledge, spatial control and the development of urban governmentality. We suggest this makes the study of major service change in healthcare apposite to theoretical development around the biopolitical theme.

In this paper, we seek to link these aspects of Foucault's work through an analysis of the reconfiguration of stroke care services in London. This high profile case study produced voluminous documentation offering an opportunity to explore the spatial practices involved in the problematisation and redefinition of stroke as an issue for London. Below we introduce the case study, then we discuss our methods before presenting our findings analytically in relation to the case-risk-danger-crisis typology. These findings are then discussed in more detail alongside our conclusions.

The case context: Stroke & London

Daneski, et al, (2010) explored the evolving discourses around the treatment (and limitations thereof) around apoplexy and stroke influenced by Foucault's work on the spatialisation of diseases (Foucault, 1973) demonstrating how the condition has developed from its categorisation as a geriatric problem to that of an acute medical problem where the management of the patient is increasingly regulated through evidence-based policies (Daneski et al, 2010; p378). This transformation is part of an international trend over the last two or three decades (Baeza et al, 2016) leading to stroke now being categorised as 'a

preventable and treatable disease' (RCP, 2008) with new pathways for stroke patients inscribed in government policy over the past decade in the English NHS (DH, 2007).

These developments posed complex organisational challenges for both individual hospitals and strategic level managers across England and Wales. Taking London as our case study site, it is notable that the city has traditionally suffered from some deep seated problems leading to numerous efforts to reconfigure services over the past century. These included too many acute beds, low standards of primary care, patchy specialist provision, and inadequate funding for elderly care (Appleby et al, 2011). A further organisational problem traditionally was the lack of a powerful central managerial strategic force. In response, the New Labour government amalgamated the prior 5 London Strategic Health Authorities (SHAs) in to one pan-London body called 'NHS London' in 2006. NHS London commissioned a review of London's health services in 2006, including an assessment of London's stroke services. The pre-reconfiguration stroke services in the capital were highly variable in terms of outcomes across the 32 hospitals which admitted stroke patients (NHS London, 2008a). In 2008 NHS London published a *Stroke Strategy for London* which argued that all Londoners should be within 30 minutes of a Hyper Acute Stroke Unit (HASU) by ambulance (drawing on isochrone technology) and be offered access to a range of specialist clinical interventions including imaging and thrombolysis if appropriate within 30 minutes of admission followed by HASU care with specialist nursing and swallow assessments, then Stroke Unit (SU) care and rehabilitation (NHS London, 2008a). An additional £23m per annum was provided to fund these proposed improvements (NHS London, 2008a).

These proposed stroke service changes were implemented in full, on time and faced very little opposition from stakeholder institutions or the wider public – despite the fact that some hospitals lost their stroke services altogether or saw them downgraded. This is unusual, marking the case as a 'positive outlier' (Flyvbjerg, 2006; Fraser et al, 2017).

Methods

The research sought to explore the applicability of a governmentality-influenced approach to understand major service change in healthcare. The centrality of 'biopolitics' to a governmentality framing encouraged us to engage increasingly with the case-risk-danger-crisis typology that Foucault developed in his 1977-78 lectures in his discussions around smallpox. We sought to test the contemporary applicability of this typology to an empirical examination of major service change and chose the London stroke service reconfiguration to do so. Our aim in this paper is to explore the explanatory potential of this approach as well as its strengths and limitations. In this way, we hope to both further theoretical and empirical understanding of the London stroke service reconfiguration itself, and also comment on the potential and limitations of a biopolitical approach to the study of major service change.

The research combined documentary analysis of historically relevant policy papers and contemporary stroke reconfiguration documentation published by NHS London (n=125) with semi-structured interviews (n=20). We analysed the government commissioned Strategic Review of London Healthcare led by Ara Darzi (NHS London, 2007) alongside other documentation published by NHS London as part of the public stroke consultation and implementation process building on the Darzi Review recommendations. These consisted of

stroke strategy documents and guidance to health service commissioners, NHS hospitals and other stakeholders including voluminous appendices which highlighted rhetorical strategies for generating wide support for the reforms. It is noteworthy that there have been various policy level attempts and over a long period of time to reconfigure health services across London: the geographical definition of the city has been recurrently used to structure large scale service change efforts. Iterative comparative analyses of these documents alongside previous documentation from earlier efforts at London-wide healthcare reform (e.g. Tomlinson, (1992); Turnberg, (1997)) illuminated discursive shifts in both spatial and technical practices of reform over time. Informed by analysis of the NHS London documents, we identified and approached key actors leading the reconfiguration for interview. Our sampling strategy aimed for depth rather than breadth of involvement. These individuals were purposively selected (Murphy & Dingwall, 1998) because they were closely involved in key clinical and managerial decisions around the design and implementation of the reformed service. We interviewed eight predominantly 'clinical' informants (six senior stroke clinicians – representing medical, nursing and therapies viewpoints; one Public Health Professor; and one London Ambulance Service Assistant Medical Director), and twelve predominantly 'managerial' informants (five senior SHA managers – including Stroke Network Directors; two senior Stroke Project Managers; one Clinical Service Manager; two management consultants; and two stroke charity representatives).

This single case study approach focused (in both practical and thematic terms) on the processes and principles behind major service change – what Stake (1995) terms 'particularisation.' Nevertheless, single case studies may demonstrate 'features or categories relevant to a wide number of settings' (Mays and Pope, 1995). We secured the relevant NHS and University ethical approval prior to collecting data. All interviews were conducted by the

lead author and were then transcribed, analysed and coded using Nvivo software. The documentary and interview data analysis generated multiple themes. In this paper, it is the themes around the problematization of stroke as a pan-London issue, issues linked to evidence, knowledge and power, the development of the spatial as a discourse of government, calculations of risk, and understandings of populations that we explore.

We were keen to develop a wide perspective of the macro-level political factors external to the political process driving change forward internally in the case study. For these reasons, we took a critical approach which contextualises historical and social factors (Alvesson and Skoldberg; 2000; p110). We also wished to explore how information is not only distributed, but produced, and how expertise, claims of truth and power dynamics can be interpreted and understood within this context (Alvesson and Deetz, 1999; p47). There are dangers in taking a purely critical approach that prioritises an 'emancipatory' truth (Dean, 2010); likewise, the contention that knowledge is always interest driven can be seen as rather reductionist and driven by a non-reflexive urge to highlight negative societal features (Alvesson and Skoldberg; 2000). Our analytical approach was tempered by an awareness of these dangers. Following Doolin (1998) we aimed for a 'critical interpretivist' approach reflecting the socially constructed nature of organisations and their reality combined with reflexivity in our interpretation of this. We view research as a 'translation process' on various levels both between researcher and reciprocator and internal to the researcher. In this way, research becomes a process of invention and intervention and of co-construction between the researcher and the researched (Steier, 1991). An awareness of this encourages the researcher not to take the spoken or written word 'at face value' – rather it emphasises an exploration of language and discourse in its complexity.

Finally, it is important to note that the research was retrospective. The key strategic decisions behind the reconfiguration occurred over 2008-09, whilst the interviews were conducted in 2011-12. This historical approach is relatively common in the social science literature relating to healthcare reconfigurations and mergers (Fulop et al, 2005). Whilst recall can be a problem, there are advantages to a retrospective approach – for example, processes developed through the analysis of public documents combined with informant interviews exploring the motivations for, and objectives of change, enables critical examination of 'stated and unstated drivers' behind change (Fulop et al, 2005). There was significant congruence between the documents analysed and the accounts generated through interviews.

Findings

In this section we draw on Foucault's four stage typology of case, risk, danger, crisis to explore how the stroke reconfiguration in London was developed as a biopolitical 'practice of security' (Foucault, 2007; Dean, 2010). Following this, in the discussion section, we reflect on the broader implications this approach has for theoretical understanding of major service change.

Defining the case

The notion of the 'case' is contingent and mediated amongst various parties. How the case of stroke is defined has evolved over time drawing on shifting epistemes (Daneski et al, 2010) and, furthermore, the changes in case definitions have spatial and temporal implications for

practice. Defining a case, and a subsequent governmental response in a particular locale requires processes of multiple stakeholder input and negotiation. By exploring these processes, we may observe power disparities between different actors and epistemes. It is notable that in epistemological terms, this case drew principally upon *medical* evidence and knowledge and the concomitant marginalisation of *therapies* evidence and knowledge in the way in which stroke care was problematized. Interviews with informants highlighted that despite an initial commitment to reform the whole stroke pathway, in reality the chief focus was on the acute (medically dominated) part of stroke care. This was linked to the structural interests of powerful acute care institutions in accessing financially significant service contracts. Moreover, differential epistemic persuasion and calculability issues were significant:

> *'From a rehab background, I can see that it's politically correct to focus on holistic care and all that. And I'm totally signed up to it. But I've been convinced by all of the evidence, both randomised trial and observational and the recent stuff that if you get acute care right, you have a different condition, in fact, with lots of people going home early and it's much cheaper.'*
>
> Doctor 4

The dominance of medical evidence shaped the episteme in which these reformed regimes of government (Dean, 2010) were developed thereby prioritising acute care redevelopment over rehabilitation services.

A key analytic resource is the documentation produced for and by NHS London (the central coordinating body) into the state of healthcare in the city. These documents placed the performance of the pre-existing London stroke care in an international context emphasising

the role of medical evidence and statistics in policymaking decisions and discourse. Medical evidence exists within and promotes a discourse of performative practice thereby establishing 'regimes of calculability' (Dean, 2010). These regimes have political importance. The Darzi Review: *A Framework for Action* (NHS London, 2007) and the subsequent work of the *Healthcare for London* programme to implement Professor Darzi's vision around 6 initial improvement projects (one of which was stroke care) develops as an approach to health service reconfiguration in which medical evidence is central (Fraser et al, 2017). The Darzi Review highlighted the importance of Public Health interventions such as smoking cessation and healthier eating alongside clinical interventions such as clot-busting drugs that highlighted the amenity of stroke as a disease to both prevention and treatment.

The Darzi Report problematized (acute phase) stroke care in London authoritatively and comprehensively becoming thereby successful in creating a space in which dissent (both professional and lay) became effectively irrational (Newman, 2001). This is significant because previous (and subsequent) attempts to reconfigure London health services have been hamstrung by popular dissent and a lack of public legitimacy (Jones, 1993; Clover, 2013).

Prior failed attempts to reconfigure services in London informed the approach that senior planners developed:

> *'London has a history of failed strategies... So my thinking about it was to… try to counteract some of those. So, first of all, it was important to have somebody with a degree of knowledge, clinical knowledge to set out, you know, what's wrong with what we're doing now. So what had happened in the past, somebody from somewhere else has come, done a big report, gone off, lobbed it over the wall, right? So is it any wonder that then it doesn't get [implemented]?.. [T]his review was done by a*

practicing clinician, international repute, working in London... So there was a degree of authority to what he had to say, that I don't think was present in previous reviews.'

Senior Manager 1

Communication strategies developed as part of the reconfiguration also stressed the importance of 'clinical champions' emphasising the 'life-saving' implications of the programme (Fraser et al, 2017).

Darzi argued that the traditional inequalities in provision for London's population had to be challenged:

'London is one of the greatest cities in the world... The inhabitants of a world-class city should not have to settle for anything less than world-class healthcare...However, we know at present that whilst there is excellence in healthcare in London, that excellence is not uniform. There are stark inequalities in health outcomes and the quality and safety of patient care is not as good as it could, and should, be.'

(NHS London, 2007; p2)

The framing of stroke in London in biopolitical terms highlights the political, professional and managerial problem of variation in both process and outcomes across the city's hospitals. A biopolitical view of London as a city sets a frame for the clinical response. A disdain for variation sits closely with an EBM ethos (Timmermans and Berg, 2003). Below we present a selection of graphs and data tables taken from publications produced as part of the Darzi Review and the NHS London Stroke Project documentation. A coalition of practicing clinicians, demographers, epidemiologists, and other academics alongside health service managers, project team members and management consultants were engaged in the

production of these documents. These charts highlight the construction of new fields of visibility (Dean, 2010) of stroke for the public.

Figure 1 here

This graph (Figure 1) places UK stroke performance in an international context. It highlights the poor performance of UK stroke services in 2002. It visually demonstrates that amongst this set of OECD countries, the UK is objectively worse than the majority of its international comparator countries.

> *'[W]e spent as much as the highest spenders in Europe per individual stroke patient, but were getting significantly worse outcomes. So the issue did not necessarily seem to be a lack of spending on stroke care, but the fact that it wasn't being delivered well across the board and outcomes were just not improving.'*
>
> Network Director 1

The quote above highlights the sense that this was not a problem of funding, but organisation. Figure 2 highlights that mortality from Cerebrovascular disease (CVD) in the UK from 1999-2002 was plateauing at a higher rate than the selected comparator nations.

Figure 2 here

These charts highlight that UK performance in stroke care in international terms is substandard and not improving at the same rate as other countries. The charts represent apparatuses of government central to building a specific historical and spatial conception of the case of stroke care in the UK. These draw upon epidemiological techniques and statistics aligned with comparative clinical data taken from burgeoning international audit systems. Medical evidence is combined with economic data and political strategizing to problematize the case of stroke as disease in a specific way (NAO, 2005; DH, 2007).

Conveying the risk

The notion of 'risk' is crucial to practices of security. An awareness and presentation of the calculable likelihood of an adverse event affecting an individual and a wider community legitimises governmental action. As with the concept of the case, the concept of risk is dynamic and subject to revision. It encourages consideration of where the existing and future stroke patients are located thereby heralding a shift from the focus on reactive care in individual hospitals and towards a proactive conceptualisation of the pan-London implications of stroke and the required services in temporal and spatial terms. Figure 3 highlights the extent of variability in stroke performance (as judged against organisational audit criteria) across London's hospitals.

Figure 3 here

These data are based on Royal College of Physician (RCP) bi-annual audits of stroke services. The actual hospital sites are never identified in the NHS documentation – the fact of their variability is sufficient for the point the authors of the documents wish to make. These data are harnessed to further the case for standardizing care for stroke patients throughout the city:

> '*[T]he biggest single thing we could do to deliver quality in the health service is to take out all the variation. And actually, you know the stroke project in London took out the variation and there's nothing special about stroke. It was just a systematic way of taking out a variation'*
>
> Doctor/Manager, Stroke Leadership team

By reducing variation and bringing the low performers in line with the high performers, the London stroke reforms sought to mitigate risk. Figure 4 places London SHA performances within the context of national performance. Whilst Figures 1 and 2 above problematized UK stroke services compared with other OECD Countries, Figures 3 and 4 highlight variation within and across regions. More broadly, as a legitimating device the appeal to variation is very strong because such variations are almost certain to exist in any health system. A context in which stroke care in London is variable and often suboptimal is created by these charts. The effect is the rendering of clear, irrefutable evidence of clinical and organisational variation presented in accessible, understandable ways.

Figure 4 here

This presentational approach heralded by Darzi and the *Healthcare for London* project was new. International and national evidence made stroke failings and variability visible to professional stakeholders and lay groups. It highlights the power of comparative clinical data and sophisticated presentational techniques to make complex arguments more accessible than previously had been the case in reviews of London's health service configuration. The Darzi Review of London health services of 2007 and the subsequent work of *Healthcare for London* was both qualitatively and quantitatively distinct from earlier reviews into London healthcare (e.g. Tomlinson, (1992) and Turnberg, (1997)) firstly, in terms of how the discourse of medical evidence and the utilisation (and presentation) of international, national and local data was used as a governmental technique to 'scientize' decision making; and secondly, in terms of assimilating the views and assent of clinical leaders in the capital in the case for change (Fraser et al, 2017). This reflected the growing importance of the discourse of EBM and the development of the medical speciality of modern stroke care and its potential to establish a shared episteme for professional and management communities to further strategic healthcare policy making. This may be seen to represent the 'centrifugal' nature (Foucault,

2007) of regimes of practice, drawing on increasingly diverse forms of knowledge based on sophisticated understandings of 'the health, habitation, urban environment, working conditions and education of various populations' (Dean, 2010, p266) in the city. The reconfiguration of stroke services in London successfully problematized stroke care in the city as a '*London problem'* for the first time.

As part of the documentation justifying the reconfiguration, stroke incidence rates were cartographically presented to highlight *where* problems are located within the city. This formed part of the development of a 'Healthcare for London Stroke Demand Model' which is a 'composite of several semi-independent models which cover population, death rates, severity, presentations, suspected strokes, intervention and length of stay' (NHS London, 2011). It draws upon population projections 2008-2022 devised by the Greater London Authority; stroke incidence rates by age, sex and ethnicity devised by the South London Stroke Register (SLSR), managed by King's College London and data on ischemic versus haemorrhagic stroke rates also taken from the SLSR. It also draws on re-occurrence rates – cited as 'independent research' from the London School of Economics, and commissioned by the NHS London stroke reconfiguration team (NHS London, 2011). This technique of mobilising epidemiological and audit data (Miller & Rose, 2008) is useful in expressing a conception of risk whereby certain London suburbs with high concentrations of elderly (and certain ethnic minority) populations represent communities for whom stroke is a greater risk than other localities. This permits an examination of health and social inequalities across a certain defined area and prioritises epidemiological forms of knowledge and statistical techniques. These new ways of visualising London's hospitals and populations sit alongside existing narratives around the strengths and weaknesses of historical healthcare provision in the city. A recurring simile of a 'doughnut' was used to describe the London hospital

distribution in many interviews whereby most services were centrally located – away from the populations they ought to serve. This 'doughnut' is presented graphically below in respect of stroke incidence and pre-existing hospitals:

Figure 5 here

Figure 5 forms part of a series of maps produced by the London School of Economics and published in the strategy documents by NHS London as part of the 'Healthcare for London Stroke Demand Model' (NHS London, 2011). Other maps chart ageing, ethnic minority groups and deprivation by concentration highlight how extensively (or not) the areas in which these different populations are located are served by London hospitals. These represent tangible ways in which stroke as a problem which affects people within the population was made visible and placed into specific contexts linked to ageing, ethnicity and socio-economic deprivation. This technology presented stroke as a disease which affects certain, defined populations. This in turn highlighted the responsibility of strategic healthcare leaders and stroke specialists to respond to these population and spatial challenges. This validated intervention and radical action. It also highlighted the importance of the proposed locations for the 8 Hyper-Acute specialist sites in the reformed stroke service for London (Fraser et al, 2017). Further mapping and isochrone work was done by a management consultancy company to evaluate travel times (via blue-lighted ambulance, private car and public transport respectively) to each London hospital which applied for consideration of specialist status:

Figure 6 here

Taken together, these maps and isochrones represent new ways of visualising the disease of stroke, and where and how to treat it, across the city. They reinforce the importance of spatial redesign based on where stroke patients are most likely to live and how far they ought to be

from the hospitals best placed to care for them. They make the risk of the status quo highly evident – thus legitimating radical action. Risk for the population is calculated and graphically presented through the mobilisation of data pertaining to that same population. In this way, expert knowledge is used to highlight spatial inequalities linked to existing and proposed modalities of delivering stroke care in which the population is both the subject and the object (Foucault, 2007). It is interesting to note how 'place' is used in these figures – from international, to national, to London-wide comparisons and how evidence is scaled and presented to convey specific political points.

Demonstrating the Danger

Epidemiological work around risk highlights that it is not evenly spread amongst the population. In terms of stroke, it is 'dangerous' to be over 55, have existing co-morbidities (high blood pressure, diabetes, atrial fibrillation, high cholesterol), lifestyle factors linked to alcohol and tobacco consumption alongside diet. There are also some ethnic groups for whom stroke is more 'dangerous' than others – those from South Asian and African or Caribbean backgrounds may be more at risk of having a stroke. This much is already known of course. The application of Foucault's notion of danger in relation to the study of major service demonstrates how this is interpreted and operationalised in a particular locale. The universal risk factors were mobilised to develop a local response through an engagement with where those in most danger reside (see Figure 5).

The re-invention of stroke as a 'medical emergency' (Daneski et al, 2010) characterised by the mantra 'time is brain' is significant. As the discourse around the disease has shifted so

that the rapidity of the response is integral, it has become dangerous to reside more than thirty minutes from a well performing specialist centre (in London at least – in other parts of England the timeframe is longer). Decisions about target time durations in London were negotiated by clinical specialists and managers with an interest in standardising practice. In this way, new dangers are rendered apparent linked to where people live and how well their local services perform. The approach is to extend the understanding of risk factors beyond those of the individual and the community and to include the quality and location of planned services to render a more dynamic concept of risk and danger.

Some of the dangers of the pre-reconfiguration of London stroke services are articulated below by a charity representative:

> *'[O]n learning that actually significant disability might have been reduced or avoided, not by a huge extra expenditure and finance but simply by the NHS getting its flaming act together and organising itself effectively – the comment from many stroke survivors was that they felt cheated. They felt that they were the victims of NHS poor organisation. So that was a powerful... driver for us to try and force through and pressurise change'*
>
> Charity Representative

This sense of patients feeling 'cheated' and needlessly suffering significant disability provided a powerful narrative to make the case that change was needed and concretised the professional and managerial arguments for change. This sat alongside a palpable sense that the service could perform more effectively to reduce the dangers experienced by sub-groups in the city.

Unlike smallpox, stroke is a non-communicable disease, and therefore the parallels with Foucault's classic example may not be perfect. However, the concept of 'crisis' is useful in contemporary political terms. A recurrent discursive practice is to present non-communicative diseases as crises (e.g. *the obesity crisis, the diabetes crisis* etc.). The availability of statistics on local, national and international stroke trends made the disease amenable to scrutiny and the construction of a 'crisis.' For great swathes of history, apoplexy was deemed unamenable to human action – it is only recently that this has changed (Daneski et al, 2010). For champions and campaigners (such as the Charity Representative quoted above), the lag between the ability to act, and the institutionalisation of 'best practice' was seen as highly problematic and unethical. Additionally, a powerful discourse that emphasised the economic impacts of stroke and long-term disability when not treated optimally served to further the ethical case to radically transform stroke provision. This had been a key element of a National Audit Office (NAO, 2005) report findings on stroke which informed subsequent government policy:

> *'[I]if you read that report [2005 NAO Report] you go, this is shocking. It is utterly appalling. We have to do something about it and we can.'*
>
> SHA manager

The construction of a crisis to justify radical healthcare reform here demonstrates ethical, technological, economic and spatial elements. The ethical component justifies major organisational reform as a practice of security in the interest of the population (as highlighted by the quote from the charity representative) juxtaposing current versus best-practice. The mobilisation of statistical knowledges around long-term population modelling and (increasing) stroke incidence rates – including with reference to specific sub-populations

generates new regimes of truth, calculations of risk and danger (Foucault, 2007; Lemke, 2011). The economic efficiency discourse demonstrated powerfully by the NAO work with respect to the avoidable financial burden linked to suboptimal existing stroke care correlates with a neoliberal governmentality (Foucualt, 2007; Dean, 2010). Finally, the bounded geographical territory in which the crisis occurs renders it both newly visible, definable and ultimately manageable. The implications of these inferences are discussed below.

Discussion

Major service change in healthcare is more than a technical or normative exercise. It may better be characterised as a highly contested set of political processes that dynamically interact with impressions of space over time. Service reconfigurations occur in specific spaces and contexts, prompting serious questions about the transferability of delivery models from one setting to another. The critical purchase of a biopolitical approach to the analysis of such change is to offer a different view of political decision making that is subject to contingent rationalities grounded in social practice (Lemke, 2011; p122). This prompts an explicit consideration of the relationships between space, knowledge, and power (Soja, 1996; Crampton & Elden, 2007) and how these interact with the notions of case, risk, danger and crisis (Foucault, 2007) in the problematization of specific diseases at a population level. Conceptualising health service reconfiguration as a ‘practice of security’ (Foucault, 2007) highlights how policy may be developed with a view to mediating potential and real resistance to change within and across the organisations and communities impacted by the proposed changes by presenting policy change as being in the population’s overall interest.

The nature of the form of power identified in this study is centrifugal (Foucault, 2007). It expands outwards drawing on ever increasing techniques of government to redefine notions of case, risk, danger and crisis and their spatial manifestations. We identify what Dean (2010) terms a 'non-subjective intentionality' to increase management control of professional practice through a recalibrated episteme of stroke (Daneski et al, 2010; Baeza, et al. 2016) which influenced how influential stakeholders conceptualised stroke (both diagnostically and therapeutically) and sought to develop a more coherent regime of practice (Dean, 2010) across the whole city through a deeper understanding of the relationship between this reconceptualised notion of stroke, population health, organisational and clinical practice. In this way, stroke professionals and the wider public undergo processes of subjectification influenced by these techniques of government (Lemke, 2011). Reconfiguration thus becomes a logical and desirable response to a newly defined problem.

Foucault encourages us to challenge the taken for granted nature of both historical narratives as well as spatial understanding (Dean, 2010). His work highlights that space is not 'fixed' (Philo, 1992; Legg, 2005). This holds for both spatialization of individual diseases and the medical closing of spaces (Foucault, 1973) as well as the notion of the case 'integrating individual phenomena within a collective field' (Foucault, 2007, p60). We highlight the spatial transformation of the case of stroke in London through an analysis of maps, isochrones, audit data (international, national, regional) and other documentation as technologies that render the case of stroke spatially visible and present it in a new light. This builds on recent work applying Foucault's concept of heterotopia (Foucault, 1986) to explore spatial practices of neoliberal governmentality in healthcare settings (Waring & Bishop, 2018) and emphasises the critical possibilities of a biopolitical approach to interpreting change at a regional (rather than a hospital) level.

It is the 'absolutely crucial notion of risk' (Foucault, 2007, p60) that furthers the work done to redefine the case. The technologies identified above highlight inequalities within and across populations and geographical areas. By juxtaposing localities which house populations that suffer inordinately from specific diseases with the local paucity of hospitals available to treat them optimally it is possible to spatially represent 'risk' for sections of the populace. Certain spaces can then be framed as 'dis-organised' or 'dangerous' (Foucault, 1974/2007). This political framing legitimates action in the interest of local populations – activities develop as 'practices of security' (Foucault, 2007) as public health dangers are rendered visible in new, compelling ways. This builds on Armstrong's concept of 'medical surveillance' (Armstrong, 1995). As part of a broader biopolitical system of knowledge, these technologies help render 'the reality of life conceivable and calculable in such a way that it can be shaped and transformed' (Lemke, 2011; p119). The stroke reform programme was led by senior health service managers, management consultants and high-level clinicians. They contributed to a knowledge/power nexus (Ferlie and McGivern, 2013) drawing upon clinical audit data, alongside organisational and management performance data from individual hospitals, population level epidemiological data and statistical modelling techniques that render a set of specific (predominantly medical) understandings about the biopolitics of stroke in the capital. Through the construction of these data and production of reports drawing on the presentational and public relations skills of commercial management consultancy firms (Fraser et al, 2017) a well-defined narrative around the residual problems of stroke care coordination was developed and presented to the public and political stakeholders. This was accompanied by authoritative claims about how a better future could be achieved.

The notion of 'danger' is profoundly dependent upon the practices of government that are used to calculate 'risk'. Danger re-individualises the phenomena identified in the case and abstracted to the community level through the work on risk calculation. It is through the articulation of danger that ethical imperatives justifying governmental decisions are highlighted and articulated by influential actors. The spatial element of danger is particularly compelling in the case of stroke care in London as an instrument of government as it legitimises existing discourses around health inequalities and rational planning modalities to reconfigure hospital services more optimally in ethical and economic terms. The notion of 'crisis' is perhaps less applicable to the study of major service change to manage a non-communicable disease like stroke, than to a communicable disease outbreak such as smallpox. Nonetheless, in current healthcare politics, the discourse of 'crisis' in relation to non-communicable disease (including stroke) is recurrent and potentially powerful. This may be viewed as the rhetorical mobilisation of the work done to define the case, risk and dangers of a specific illness.

Finally, we discuss our contribution beyond the case of stroke and London. Analytically, attention to how space is reimagined, by whom and through which technologies offers a useful angle to critique public policy, politics and management more generally (Soja, 1996; Crampton & Elden, 2007; Waring & Bishop, 2018). We demonstrate that biopolitics – with its focus on the calculability of specified populations and sub-populations - includes an inherently spatial element. Furthermore, because biopolitics explores 'how strategies of power mobilise knowledge of life and how processes of power generate and disseminate forms of knowledge' (Lemke, 2011; p119), we suggest a biopolitical approach enables a revisualisation of the historical, social and spatial understandings of the prior, current and future needs for specified populations (Foucault, 2007; Dean, 2010; Lemke, 2011).We

thereby emphasise the importance of the population as both subject and object of the trialectics of *space-knowledge-power* (Soja, 1996; Crampton and Elden, 2007; Waring & Bishop, 2018).

Conclusion

This paper contributes to the theoretical understanding of major service change across a large city by demonstrating the utility of interpreting health service reconfiguration as a biopolitical intervention (Foucault, 2007). We demonstrated how a particular 'geography of stroke' or a 'representation of space' (Soja, 1996) in London was created building upon multiple types of knowledge: medical, epidemiological, economic, demographic, managerial and organisational. This spatial practice of government provided legitimation for significant political upheaval by problematizing existing variation in outcomes, making these visible and their resolution desirable. We suggest that major service change may be fruitfully conceptualised as a practice of security – a way of redefining a case, conceiving of risks and dangers, and averting crises in the interests of the population.

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Figures

Figure 1: 'Simple Stroke Statistics' Appendix 4; *Preliminary Stroke Strategy*.

Appendix Title: Scale of the problem. (NHS London, 2008c)

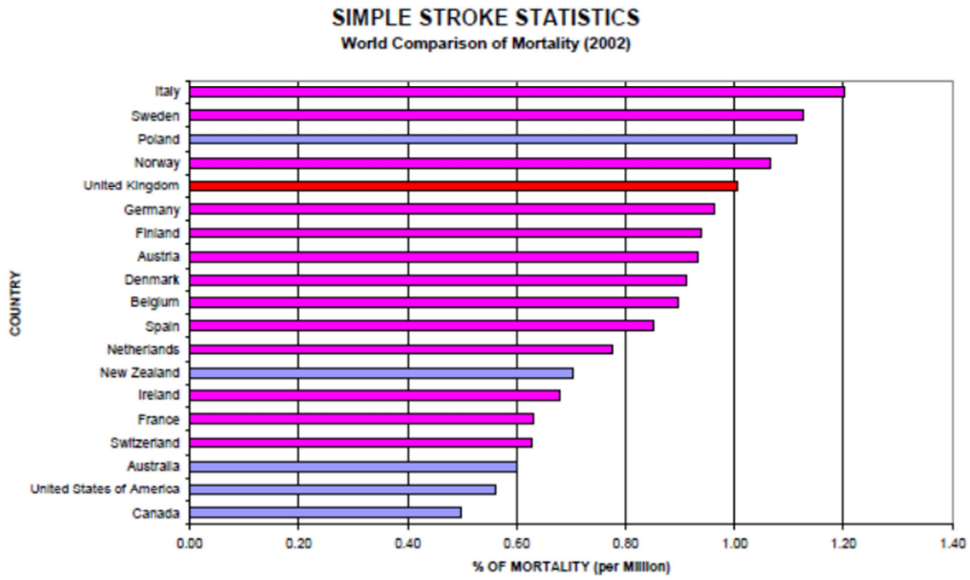


Figure 2: 'Mortality from CVD, international Comparisons 1992-2002' *Preliminary Acute Stroke Strategy for London* (p12) (NHS London, 2008c)

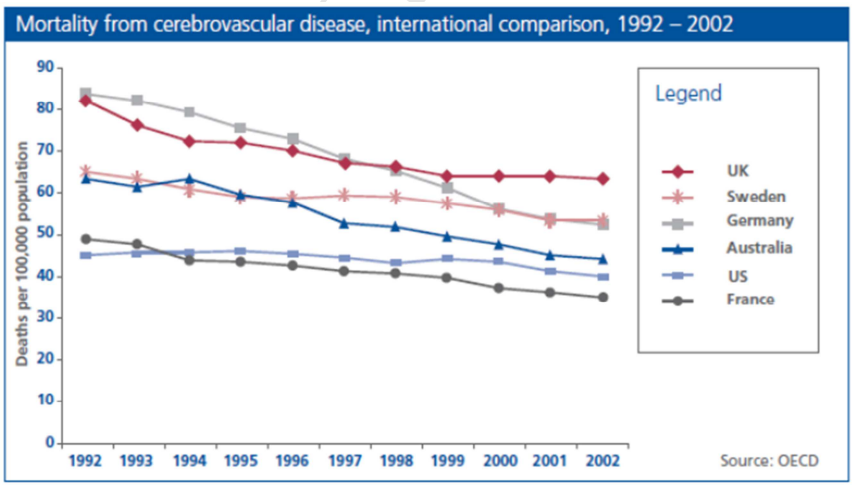


Figure 3: '2006 Sentinel Audit, London' *Preliminary Acute Stroke Strategy for London* (p4) (NHS London, 2008c)

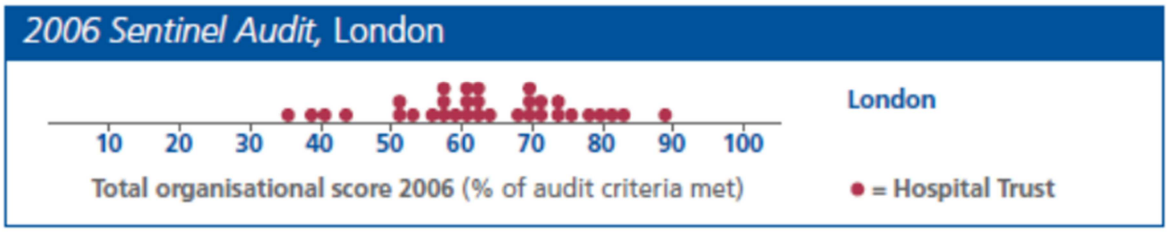


Figure 4: 'Variable Performance Within SHAs' *Preliminary Acute Stroke Strategy for London* (p14) (NHS London, 2008c)

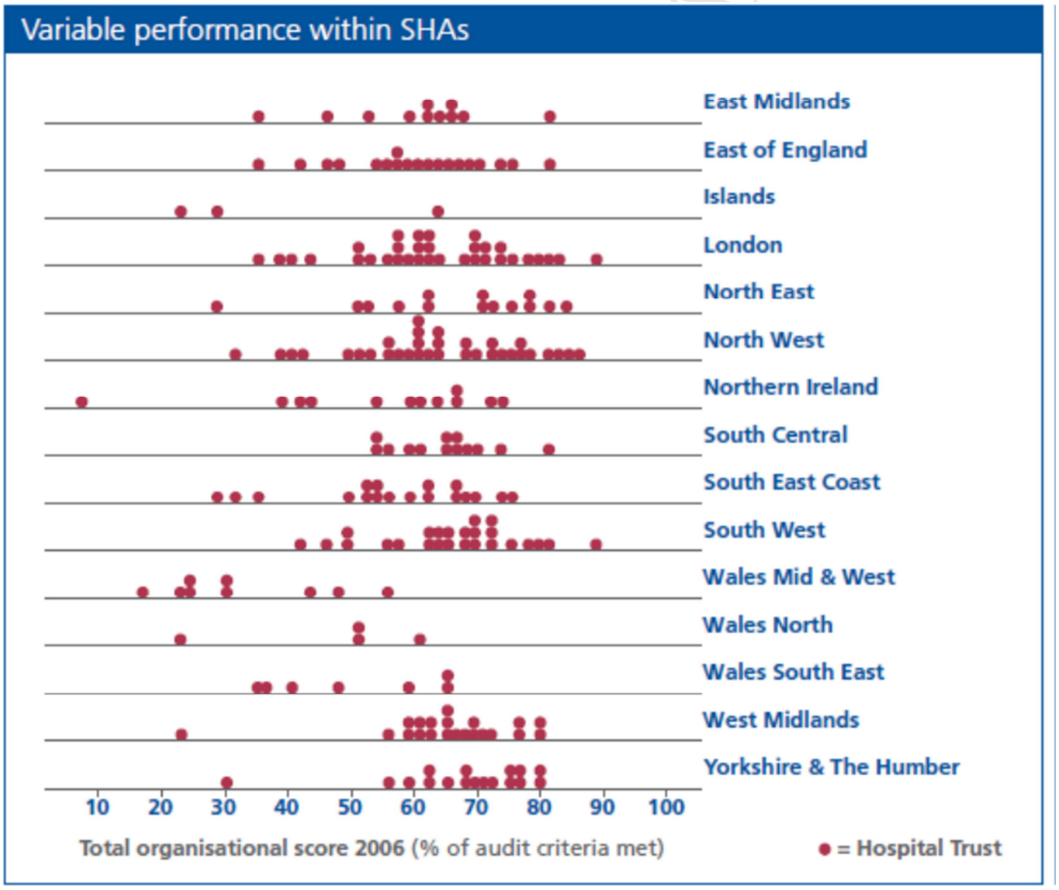


Figure 5: 'Stroke Incidence in London' *Preliminary Acute Stroke Strategy for London* (p28) (NHS London, 2008c)

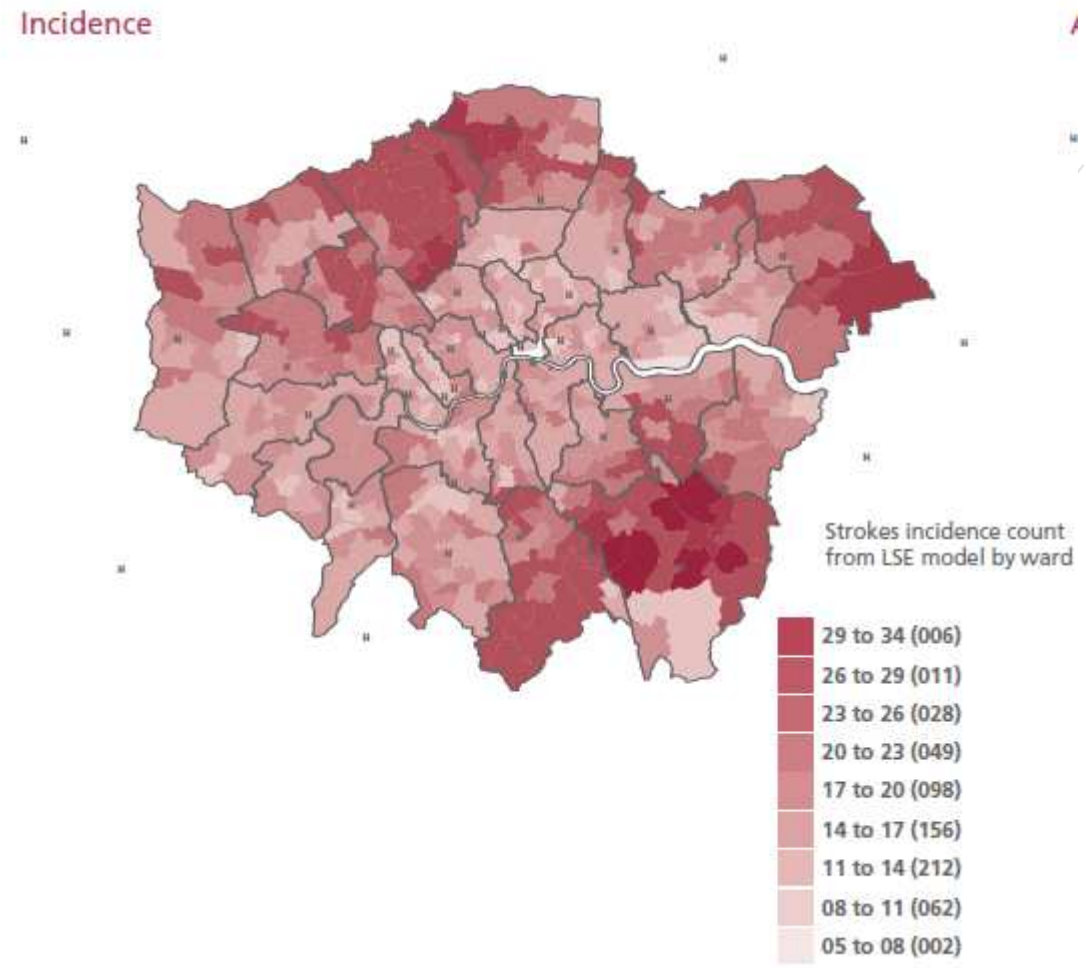
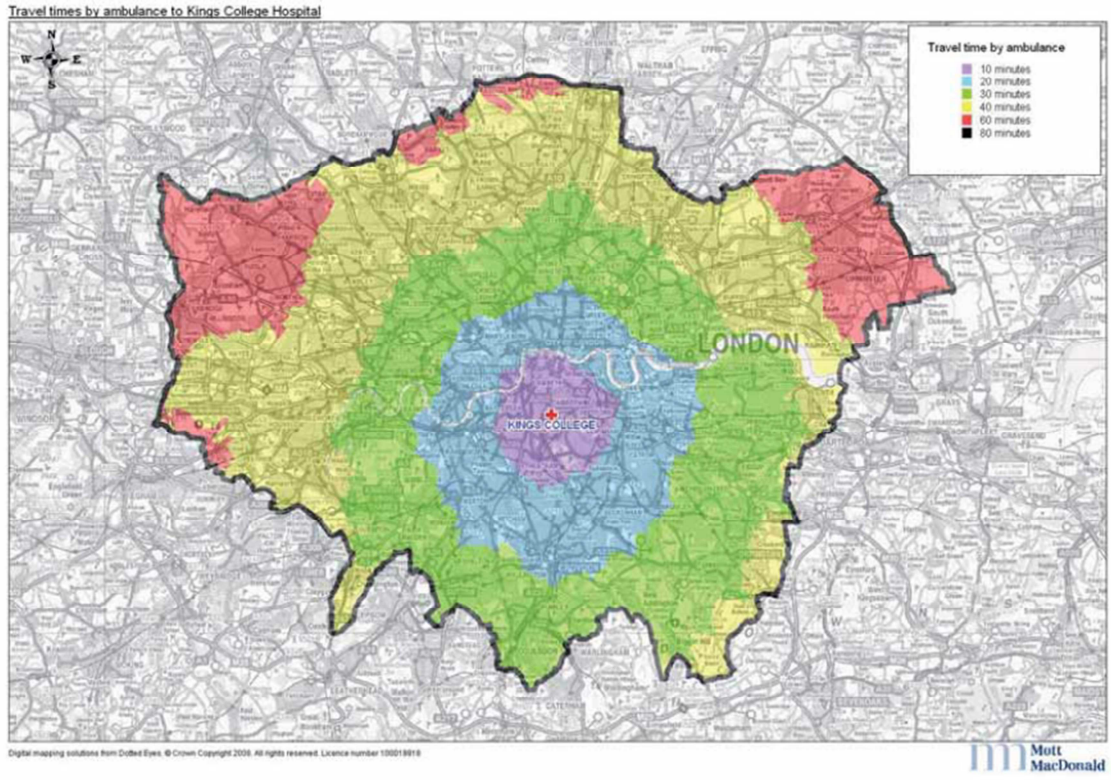


Figure 6: Travel times by ambulance to King's College Hospital (Mott Macdonald, (2009) integrated impact assessment stroke appendix C 2 1; p18)



Highlights

- Foucault's work on biopolitics is applied to analyse major service change
- The reconfiguration of stroke services in London is explored
- Empirical and theoretical implications are discussed