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The human factor: Re-organisations in public health policy

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ABSTRACT

Introduction: Public health policy-making activities are currently split between local authority and NHS organisations. Despite an increasing body of research on evidence-based policy (EBP), few studies explore the process of policy-making. Little is known about how policies are made in a local context, or how (scientific) evidence is used. Previous research has ignored the ‘human element’ in EBP. Social network analysis (SNA) techniques are becoming increasingly important in health policy. This paper describes an innovative study giving a fresh perspective on policy-making processes in public health.

Methods: A social network analysis of public health policy making networks in Greater Manchester based on publicly available data (documents, websites and meeting papers) and an electronic survey, asking actors to nominate those who influenced their own views, those who were powerful, and those who were a source of evidence or information.

Results and conclusions: Policy-making networks are described. Formal executive roles are loosely related to perceived influence and power. Evidence-seeking networks are less coherent, with key organisations not represented. These data indicate the importance of collaboration and good relationships between researchers and policy-makers, but few academic researchers with a direct impact on health policy were identified within the networks.

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1. Introduction

Public health in the UK is currently split between Primary Care Trusts (PCTs) and local authorities (LAs), although functions previously housed by PCTs will be moving to local authorities over the next two years [1]. Successive governments have continued to act in the apparent belief that optimising organisational structure equates to optimal performance. There is little evidence to support this view, and in fact organisations have significant

negative impacts, both financially and in terms of human resources. NHS re-organisations have largely been expensive, demoralising, and created a downturn in service outcomes [2].

Policy-making is a collaborative process, where decisions are developed by groups of people, and informed by a range of evidence [3]. This suggests personal relationships will affect how policy is made.

However, this human element is rarely referred to in justifications of or proposals for new re-organisations [4]. This study uses social network analysis between public health policy organisations in a large urban area in the UK to describe these relations. Public health policy-makers across a large urban area in the UK were surveyed about their perceptions of who is powerful, who influences their own views, and who is a source of evidence about public

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health. This is analysed using network analysis to explore formal and informal relationships and identify key actors.

1.1. Public health governance

Hunter et al. (2009) describe the public health system in the UK as a “complex adaptive system”. [5] The task facing the public health system is often divided into three domains of health improvement, health protection, and improving health services. This includes addressing wider socioeconomic or environmental factors not amenable to intervention through NHS services [6,7], often through partnership working with local authorities; the historical home of public health [8] and also whence public health functions will be re-locating over the next two years [1]. Reflecting the broader definitions of public health which acknowledge the role of the wider determinants of health, the workforce itself includes council staff, police, or anyone able to impact on these determinants, as well as health professionals.

This re-organisation forms part of larger re-structuring plans for the NHS [1] which seek to improve performance and cut costs by optimising the structure and governance of the health service. Criticisms of previous NHS reforms have focused on patient-related outcomes such as waiting times, general morbidity and mortality, and cost [9]. There are also workforce implications such as loss of corporate memory and individual expertise [10]. Frustration amongst managers, staff and academics is growing with the apparent lack of willingness to learn lessons from experience [11].

1.2. Public health policy networks

Recent research on the use of evidence by policy-makers suggests that personal interaction and relationships between policy-makers and researchers are the biggest facilitators of evidence-use, and hence to understanding the policy-making process [12,13]. The policy process itself is increasingly seen as a collaborative exercise, involving groups of individuals and organisations – or networks. Policy networks are regarded by many analysts as a mode of governance, or a metaphor explaining how the business of government is enacted [14,15]. However, network analysis is also a formal research method which takes a relational approach to social science phenomena, using its own methods and theories [16]. It examines types of ties or relationships (for example, employment, or friendships) between actors (or nodes) – which may be either organisations or individuals.

Individual actor-based approaches have been increasingly used in health policy analysis, to explore influence, informal decision-making and elite theory. One Australian case study exploring medical profession in agenda setting and policy-making found that actors’ position in the network was the actors’ key to wielding power, with associated key attributes: main discipline, employment in academia, health bureaucracies, and public teaching hospitals [17]. This was followed up by several network studies using positional and reputational approaches to test the hypothesis that medicine position in health policy-making has declined, and to unpack patterns of connectedness which identified influential individuals and groups, and

to “unpack personal and positional resources”. Lewis concluded that structurally it looked as though medicine was less formally represented (organised medicine not highly represented in structurally important roles), but when individual ties are examined using scores for homophily, centrality and betweenness, it becomes clear that informal networks have a greater power to explain influence [18].

Widely used across business, policy, and innovation studies, we present a novel application in the field of UK public health policy, using network analysis to take a snapshot of these personal relationships in public health policy-making.

2. Materials, methods and results: collecting network data

The results presented here are drawn from two data sources. Firstly, employment data from public health organisations in a large conurbation in the UK was collected from policy documents, archived meeting minutes, and biographies, from 1997 to 2011. For each organisation, employment data was collected on the main policy makers at that organisation (names and job roles), including current employment status, previous employers, and board membership (e.g. of charities or private business). Secondly, an electronic survey of a sample of key public health personnel (actors) was undertaken, asking each actor to nominate: (a) who they considered to be the most powerful people in public health policy in the conurbation, (b) who had the most influence on their views about public health, and (c) who was a source of information or evidence about public health. These data were collected and analysed using UCINET software and visualised using Netdraw [19].

2.1. Employment networks

Within the conurbation, the formal public health governance structures can be easily described; 10 local authorities, co-terminus PCTs, sub-regional umbrella organisation for both LA and health organisations, and regional bodies (Government office and Strategic Health Authorities respectively). The main decision-makers with the executive ability to make decisions for public health policy are therefore clearly identifiable as Chief Executives of PCTs and councils, regional and local Directors of Public Health (DPHs) and executive boards and directors below them. If this were the case, re-organisation would have little or no impact on the workforce, since key actors would simply be re-situated. Similarly, organisations tasked with gathering and analysing public health intelligence such as the Public Health Observatories should also be easily locatable, and re-organisation would not affect the flow of evidence to policy-makers – since it would remain clear to whom to send what information.

In order to see if this corresponds with the real-world workforce, a network analysis of employment data was undertaken. An exhaustive search strategy covering electronic and paper archives has identified 279 organisations as part of the conurbation’s public health network from 1997 to 2011. Drawing on the employment data from

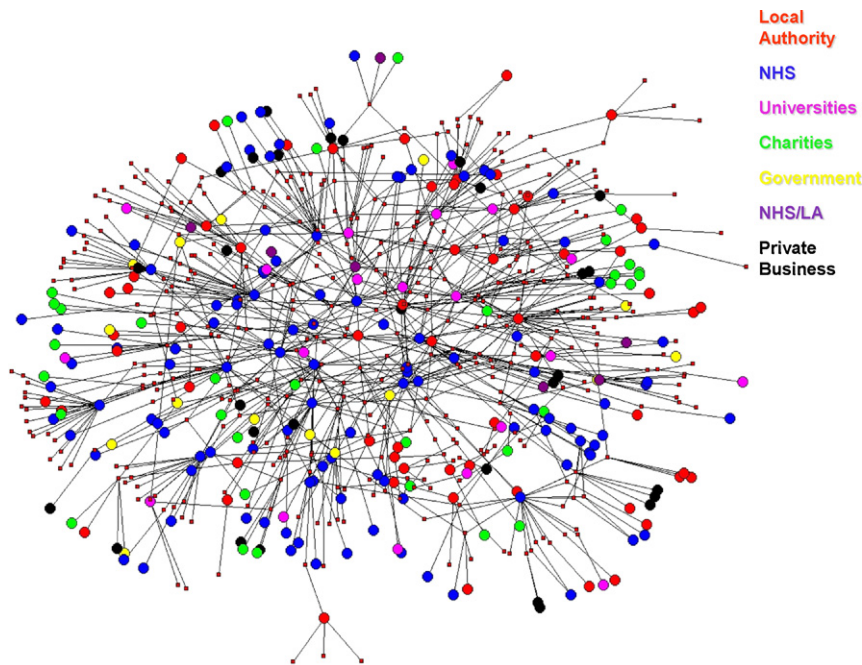


Fig. 1. Network graph describing the public health workforce in a large UK conurbation, describing employers, employees and board memberships.

electronic and paper archives for the same conurbation, the public health workforce has been shown as a graphical network in Fig. 1.

Here, the ties investigated were between organisations (round nodes) and employees (square nodes) involved in gathering or analysing public health data, making or influencing public health policy decisions, or implementing those decisions. A black line indicates an individual currently, or previously worked for an organisation, or if they are a board member – for example, of a PCT, or a charity. The employment networks show how individuals and organisations are connected across the conurbation. Fig. 1 indicates that the workforce in terms of employers and employees is both more complex and more varied than the description above would suppose. Although a complex picture, it is obvious that the range of actors and organisations involved in public health policy making across the conurbation stretches across public, private and third sectors. The connections between these organisations are more complicated than the governance structures suggest. Structurally equivalent organisations (such as the 10 PCTs) vary in their connectedness to umbrella organisations, each other, and evidence-producing bodies such as universities. These differences may be mediated by individuals who have worked in several organisations, hold joint positions, or play brokerage roles across the conurbation.

This raises the question of whether the impact of re-organisations on this network has been considered. Of these 279 organisations, 116 are explicitly health-related – PCTs, health authorities, or foundation trusts, for example, 68% of these have already been, or will be closed down in the near future – in the expectation of private sector, charity and community efforts to meet demand (the “Big Society” hypothesis). The complexity of this employment

data indicates workforce networks are more diverse, and more complicated than governance structures show.

2.2. Perceived power, influence, and evidence-seeking networks

To test this, a social network analysis of the workforce in the same conurbation was carried out. The data was collected by identifying a sample of policy-makers from the employment network above. Currently existing organisations from the network above were identified. If the organisation had public health as part of their remit, then actors holding key roles were included in the sample. In practice, this meant chief executives, directors, council staff and leaders, and other actors of director level and above were contacted. Directors, Chief Executives and other key actors from each of the 10 PCTs and councils, and associated public health organisations were contacted. Actors were contacted by email, sent a cover letter, introduction and an electronic link to the survey, together with details about ethical clearance and data security. Non-respondents were re-contacted three times by email, and then by telephone to maximise response rates.

The survey asked respondents to nominate individuals (giving their name, job role and employer) in three categories: (1) who they considered the most powerful people in public health policy in the city area, (2) who influenced their views about public health, and (3) who was a source of evidence or information about public health. For each respondent, a list of names for each question was generated, which were coded according to which sector their employer belonged to (NHS, local authority, third sector, business, or universities/evidence-producing). These were entered into UCINET and analysed to show the

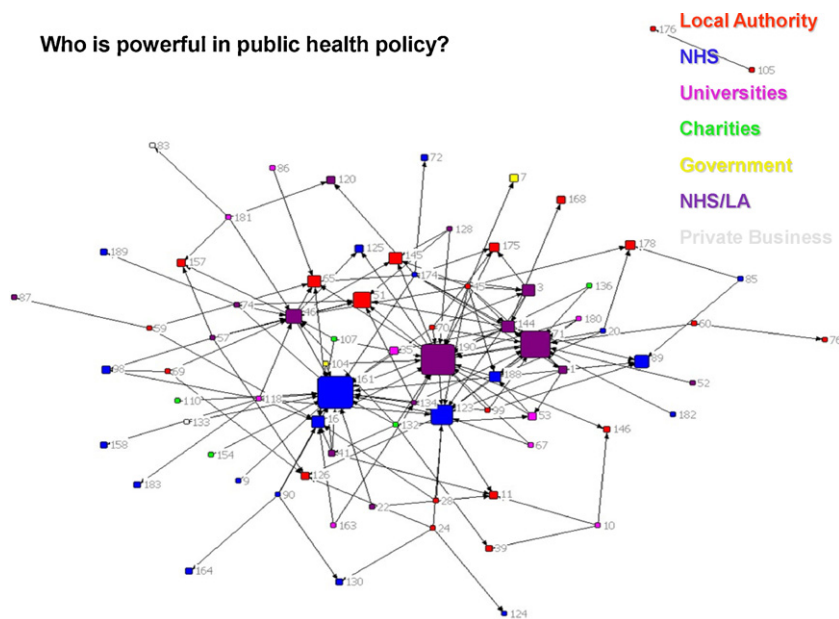


Fig. 2. A network graph showing who policy makers perceive to be powerful in public health.

informal and personal networks between policy-makers, academics, managers and public health intelligence staff across the city. To date, the electronic survey has a response rate of 80%, and a participation rate of 54%. For ethical reasons, all research outputs show anonymised data.

Several policy networks have been described using this process. Each node is an individual involved in public health policy. The colour of each node denotes his or her employment sector. The size of each node has been determined using a Hubs and Authorities analysis which identifies structurally important actors using a natural generalisation of the eigenvector centrality [19]. For each actor, two scores are generated: a hub and an authority score. Kleinberg defines these scores as follows: “A high hub actor points to many good authorities and a high authority actor receives from many good hubs. The authority score of a vertex is therefore proportional to the sum of the hub scores of the vertices on the in-coming ties and the hub score is proportional to the authority scores of the vertices on the out-going ties” [20]. In the graphs shown here, the nodes have been sized using the Authorities scores – so can be considered to be commonly regarded as important actors.

Figs. 2–4 show network graphs derived from nominations by policy makers, identifying who influences their views about public health, who they think are powerful, and who is a source of information or evidence. All three show snapshots of relationships between individuals working in the conurbation.

It is clear that the perceived powerful and influential people are often from the health service, although local authority actors are also represented. The power network is neater and more consistent than the ‘influences my views’ networks, perhaps discriminating between governance and decision-making bodies, and influences representing

the scope of public health activity. Consistently across the three networks (Figs. 2–4), the best authorities were perceived to be individuals with two main characteristics: Firstly, they had jobs which bridged local authority and NHS organisations. Secondly, they were not chief executives or council leaders but managers involved in public health policy. Although a regional executive from a health organisation was also consistently nominated, the actors with the largest scores were people employed to run and chair meetings, write minutes and agendas, to broker relationships, and act as gatekeepers to key decision-making meetings.

Perhaps surprisingly, given the rhetorical importance accorded to evidence-based policy in the UK, universities and other information-disseminating bodies are poorly represented. Actors from these types of institutions were rarely connected directly to important or influential actors, nor were they considered influential themselves.

3. Discussion

These network analyses based on survey and archived employment data suggest that informal relationships underlie formal organisational structure, forming a social network within which public health policy is made. Structural reorganisations are unlikely to be effective unless they take these into account, as it appears that people find evidence, and perceive influence and power to flow through personal ties rather than governance structures.

In addition to previous studies which show that financial and personnel costs of reorganisation of the NHS outweigh the benefits [21,22], this study provides further indications that the reorganisations are likely to impact on more than the balance books. Network analysis provides a way of revealing these relationships which may underpin policy making processes. The snapshots shown by

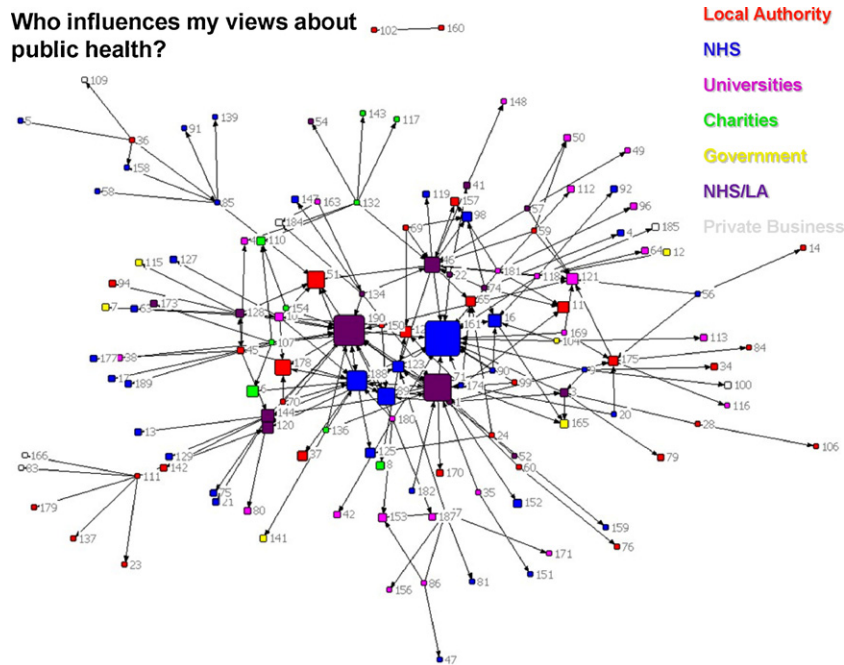


Fig. 3. A network graph showing who policy makers perceive to influence their views about public health.

these maps will be disrupted as individuals leave the conurbation, fall out of public health employment, or have to re-negotiate their relationships on the basis of new formal relationships between their employers. However, it could be argued that personal relationships offer the potential to keep the system working despite the structural reorganisation; a reason – if needed – to value this human aspect of policy making.

3.1. Who's important, and why?

Power and influence were both seen to be connected with managers. These data indicated that being able to manage relationships, bridge groups, run meetings, and control agendas, rather than having executive power, or power conferred through governance structures, were the main characteristics of actors with the highest authority

Who is a source of evidence about public health?

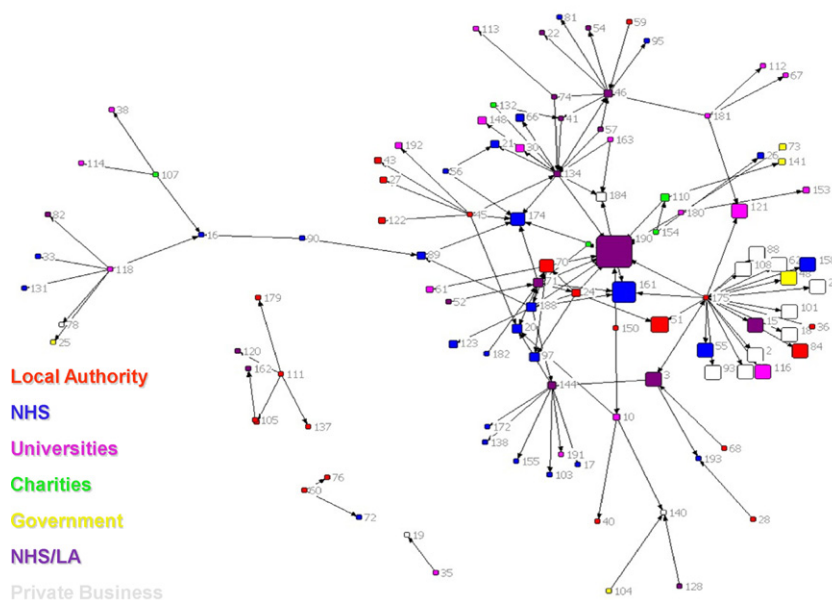


Fig. 4. A network graph showing who policy makers describe as a source of evidence about public health.

scores. In addition, those actors perceived as influential were also seen as a source of information or evidence. This forms a defence of the managerial classes, who broker knowledge and maintain continuity over periods of organisational change.

3.2. What's important – the human factor

The staff of the health service are its biggest single resource, and it has been shown that morale, memory and expertise are eroded by top-down re-organisations [2]. Empirical quantitative data shown here demonstrate how important individuals with expertise in managing relationships and bridging different sectors are perceived to be in influencing policy. As reorganisations do not take personal networks into account, they risk disrupting the flow of evidence and information through established non-formal structures – the informal networks.

This work suggests that individuals are important in defining how, where and what evidence is used. Both in times of change, and in day-to-day business, time and resources should be put aside to generate and maintain these relationships as an activity of real value.

The results show the relative importance of personal relationships over formal hierarchical positions. Non-formal relationships are inevitably disrupted by reorganisations, leading to a loss of corporate memory and expertise. Cost-effectiveness arguments to justify future changes to the structure public administration bodies ought to include these human costs.

Although few individual academics were considered influential or were connected to influential actors, this does not necessarily mean that policy-makers are not accessing evidence from other sources. Further research should investigate how policy makers source evidence, and whether they prefer to access evidence through personal ties, as hypothesised above.

These data are specific to the conurbation from which they are drawn, and represent a preliminary analysis of the results. This may limit generalisability, although we believe the conclusions remain applicable to any reorganisation of policy-making and service delivery bodies. The response rate is relatively low for a network survey, due to the difficulty of collecting data during a time of reorganisation and job losses. However, given the consistency of the results and the high response rate we do not believe this detracts from the generalisability of the results. Moreover, the public health reorganisation is leading to the creation of many new organisations and the closure of others. Rather than hindering the analysis, this longitudinal element may itself be a novel direction of enquiry in policy studies.

4. Conclusions

Social network analysis offers a new perspective on policy analysis and evidence-use debates. Networks can show how complex the policy arena really is – which is not obvious from governance structures. Network analysis also offers the opportunity of exploring the longitudinal impact

of reorganisation on workforce and inter-organisational networks; a new way of counting the human cost of restructuring.

To our knowledge, this is the first application of social network analysis to a real-world policy environment in the UK. The results demonstrate the utility of this method in capturing relational data, which in turn contributes to our understanding of the policy process and the use of evidence by policymakers.

Re-organisations within the public sector risk disrupting these complex networks, hindering the day-to-day business of public health organisations, and the flow of evidence. Researchers and academics can use network analysis to identify key actors as targets for evidence dissemination. This work provides evidence that the same people were considered both as sources of information and as influential in public health policy decision making. Evidence might be more likely to find its way into policy if it were funnelled towards these individuals.

Personal relationships are clearly important in public health policy making. In addition to the other constraints on organisational reform, they should be considered a valuable asset, and indeed a prerequisite for continuity of service delivery. Network analysis may also offer a way to explore the impact of reorganisations on health services.

Contributions

KO is a doctoral candidate at the University of Manchester. She is working on evidence-based policy making and network analysis. She had the idea for the paper, drafted the manuscript, and is the corresponding author and guarantor for the article. ME has a chair in social network analysis at the University of Manchester and is a co-author of the software package UCINET. He advised on the social network methodology. AV is a Senior Lecturer and Honorary Consultant in Public Health in the Manchester Urban Collaboration on Health, School of Translational Medicine at the University of Manchester and NHS Bury. She is the principal investigator and co-ordinator of the EURO-URHIS 2 project and was involved in drafting the manuscript. FdV is a lecturer at the School of Community Based Medicine at the University of Manchester and was involved in design of the study, interpretation of the data and drafting of the manuscript.

Conflict of interest statement

No competing interests declared.

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