NHS Education for Scotland. Evidence Search and Summary.

Does large scale structural change lead to better outcomes?

Alison Bogle, Librarian, Health Management Library and Information Service

NHS National Services Scotland

Contents

1. Summary of the Key Messages

Does large scale structural change lead to better outcomes?

The evidence provides a number of general conclusions that can be drawn about the relationship between organisational structure and outcomes.

There is substantial evidence to suggest that highly centralised and hierarchical organisational structures are likely to have dysfunctional effects, and that adaptive, more organic, organisational structures are more conducive to better performance in uncertain, unstable environments. However, certainly in a UK context, there is no clear evidence that decentralised structures are associated with better outcomes. (Section 7.1) There is evidence, though limited, to suggest that hospitals which change their structures outperform those that do not with respect to a variety of financial and operational indicators. (Section 7.5)

The evidence suggests that when planning organisational structural change it would be misguided to search for the one size fits all approach for NHS organisations. (Section 7.5)

In addition, the research shows that although integrating or consolidating administrative functions can be achieved quickly and successfully, this does not provide a template for, or aid, subsequent more complex clinical-service integration. (Section 7.5)

Does large-scale structural change lead to better health and wellbeing outcomes or better patient/service user experience and quality of life?

The literature on the relationship between organisational structures and outcomes is very much focused on *healthcare provider* outcomes rather than *patient or consumer* outcomes. Only one study specifically addressed whether quality of patient care changed when hospitals merged or participated in multi-hospital systems – this study found no quality improvements arising from hospital consolidation and some evidence of deterioration on a few indicators. (Section 7.3)

There is some evidence to suggest that decentralisation challenges equity in health care and risks creating health inequalities *between* geographical areas. However, it may improve equity and outcomes *within* a geographical area as a result of improved responsiveness to and responsibility for the local community. (Section 7.2)

Does large-scale structural change lead to more efficient and effective use of financial resources or better economic outcomes?

There is some evidence to indicate that when organisations move from independent, unintegrated states to consolidated, integrated states either via mergers or as multi-hospital systems, there are potential gains in financial performance and stability, and cost-savings to be made for the organisation. (Section 7.5) However, there is no clear evidence that either

decentralised or integrated systems make a positive impact on national public expenditure. (Section 7.6)

Does large-scale structural change lead to a more engaged and satisfied workforce?

The evidence on the impact of changes to organisational structure on the outcomes in staff is mixed. It cannot be concluded that particular types of change or organisation are universally positive or negative. On the positive side, there is evidence to show that physician satisfaction and quality-of-life can be increased depending on the integrative structures that are implemented. On the negative side, there is some evidence to suggest that mergers are likely to decrease morale and productivity. The evidence on the relationship between decentralisation and staff morale is 'equivocal at best'. (Section 7.4) There is no convincing evidence of an association between organisational change and mental health problems in staff. (Section 7.2)

One important finding is that workforce outcomes are often not explicitly considered in governance mechanism planning efforts, but given the importance of the workforce for improving patient outcomes, organisations need to ensure that they understand the issues facing the workforce and take these into account when designing new structures. They also need to focus on engaging staff in the organisational change process and instilling trust in order to have a positive impact. (Section 7.4)

Limitations of the evidence base

Nine systematic reviews have been identified for this summary and these suffer from a range of methodological limitations. Some of the issues identified by the authors of the included reviews include the weak methodologies underpinning the studies, the quality of the studies not being high enough to draw firm conclusions and the little high quality evidence with specific relevance to the UK.
(Section 6)

Several research gaps have been identified by the authors of the reviews, in particular, the need for more studies on the long-term effects of organisational change and, in the light of a bias towards studies of successful transformation, the need for research which examines partially successful or unsuccessful attempts at radical organisational change. (Section 8)

2. Background

The evidence summary was requested by Professor Jason Leitch, Clinical Director, and Professor Craig White, Divisional Clinical Lead, both of the Quality Unit at the Scottish Government Health and Social Care Directorate.

The question arises against the background of two major structural reforms in Scotland:

- The Police and Fire Reform (Scotland) Act 2012[1] which restructured eight police forces and eight fire brigade services into a single national police service and a single national fire and rescue service.
- The Public Bodies (Joint Working) Scotland Act 2014[2] which legally requires integration between health and social services.

The Public Bodies (Joint Working) (National Health and Wellbeing Outcomes) (Scotland) Regulations 2014[3] defines in statute nine national health and wellbeing outcomes. From April 2015, there will be 31 new Integrated Authorities which will have to report on performance in relation to the National Health and Wellbeing Outcomes.

3. The Review Question and Sub-Questions

Does large scale structural change lead to better outcomes?

To define o*utcomes,* the Public Bodies (Joint Working) (National Health and Wellbeing Outcomes) (Scotland) Regulations 2014 was used and this led to the creation of a number of sub-questions which were used to help answer the main question:

- Does large scale structural change lead to better health and wellbeing outcomes?
- Does large scale structural change lead to better patient/service user experience and quality of life?
- Does large scale structural change lead to a more engaged and satisfied workforce?
- Does large scale structural change lead to more efficient and effective use of financial resources?
- Does large scale structural change lead to better economic outcomes?

Subsequently a further question was raised:
- What is the impact/influence of clinical and/or population level health strategies informing the structural changes?

[1] The Police and Fire Reform (Scotland) Act 2012. (2012). Norwich: The Stationery Office.

[2] The Public Bodies (Joint Working) Scotland Act 2014. (2014). Norwich: The Stationery Office.

[3] The Public Bodies (Joint Working) (National Health and Wellbeing Outcomes) (Scotland) Regulations 2014. Scottish Statutory Instruments 343 (2014). Norwich: The Stationery Office.

4. Search strategy and methods

The focus was on identifying secondary level evidence from systematic reviews and a search for relevant evidence was carried out between January-March 2015 within the following sources:

Sources to identify systematic reviews: The Cochrane Library, Epistemonikos, Health Systems Evidence, Joanna Briggs Database of Systematic Reviews, National Institute for Health Research, All Wales Systematic Review Register, Campbell Collaboration, Centre for Reviews and Dissemination, EPPI Centre Evidence Library, Sax Institute.

Bibliographic databases: Medline, ABI Inform and the HMIC database.

Websites: Social Care Online, The Health Foundation, The King's Fund, the Scottish Government, The Nuffield Trust, NHS Confederation, UK Government, NHS Improving Quality, NHS Evidence, ECSR and Google.

Search strategies for each source were constructed around three concepts (structural change, outcomes and systematic reviews) which were combined using Boolean operators.
(See Appendix 1 for an indicative search strategy).

Only studies published in English during the past 20 years were eligible.
Specialist reviewing software, EPPI-Reviewer 4, was used to manage the entire process.

5. Selection criteria and screening process

The following inclusion/exclusion criteria were used to screen the results of the search.

Structural change - defined broadly as changes to organisational or management structure (and excluding process changes or quality improvement initiatives)

Large scale – defined as larger than a single hospital/institution. To include studies based on change that is system-wide / whole system / city-wide / province-wide / country-wide / national / multi-organisational /cross-organisational / cross-boundary / cross-sector

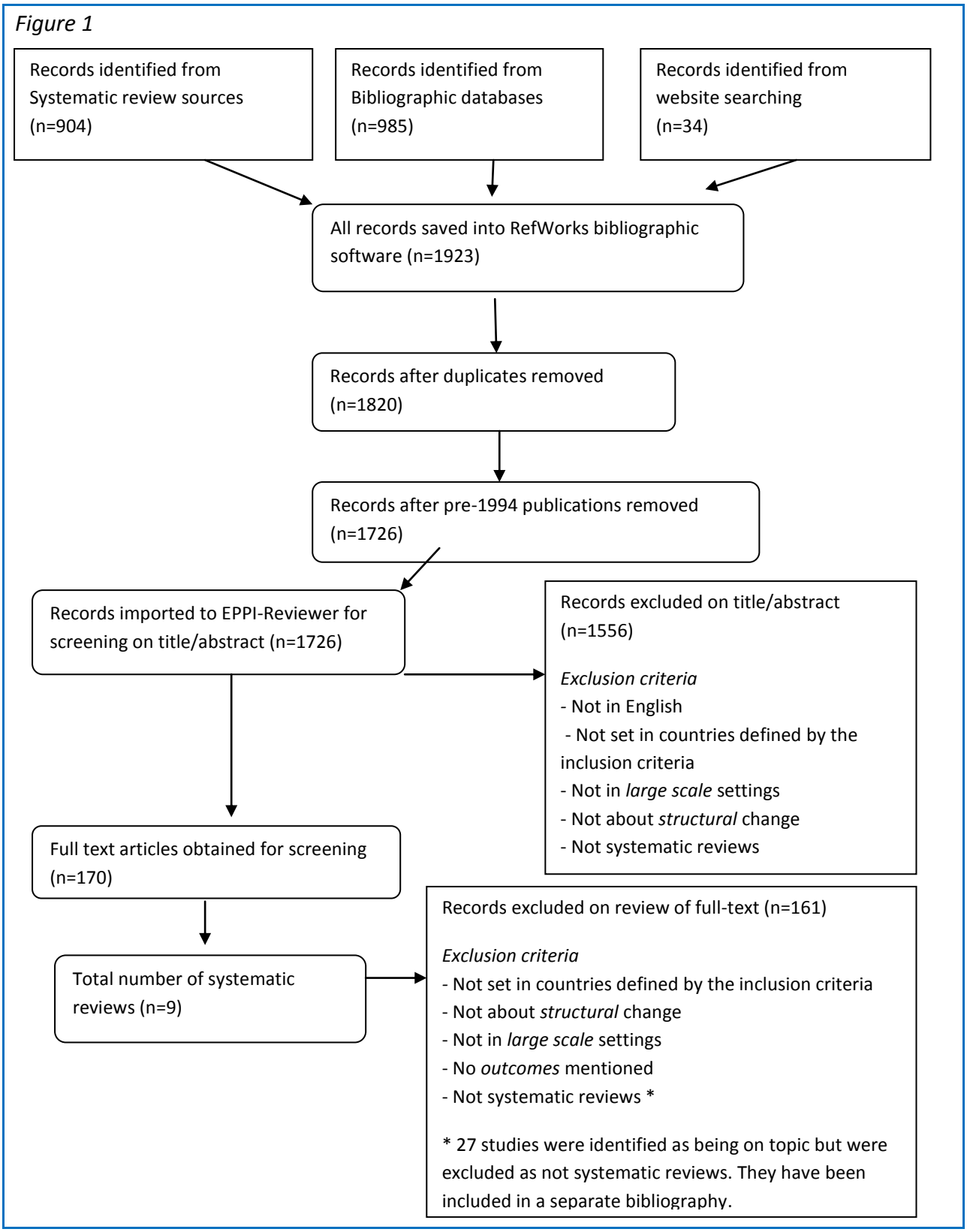
Setting – to include studies set in the public sector (health, social care, education, fire service, police service, social services, local government) & include large service-related industries in the private sector.

Outcomes – defined by the National Health and Wellbeing Outcomes to include change in health and wellbeing outcomes, better patient, client or service user experience and quality of life, more engaged and satisfied workforce, more efficient and effective use of financial resources, better economic outcomes.

Country – to include studies set in the UK, Western Europe and Scandinavia, North America and Australasia only.

Results of the screening and selection process are shown in *Figure 1.*

Figure 1


Records identified from Systematic review sources (n=904)
Records identified from Bibliographic databases (n=985)
Records identified from website searching (n=34)
All records saved into RefWorks bibliographic software (n=1923)
Records after duplicates removed (n=1820)
Records after pre-1994 publications removed (n=1726)
Records imported to EPPI-Reviewer for screening on title/abstract (n=1726)
Records excluded on title/abstract (n=1556)
Exclusion criteria
- Not in English
- Not set in countries defined by the inclusion criteria
- Not in large scale settings
- Not about structural change
- Not systematic reviews
Full text articles obtained for screening (n=170)
Total number of systematic reviews (n=9)
Records excluded on review of full-text (n=161)
Exclusion criteria
- Not set in countries defined by the inclusion criteria
- Not about structural change
- Not in large scale settings
- No outcomes mentioned
- Not systematic reviews *
* 27 studies were identified as being on topic but were excluded as not systematic reviews. They have been included in a separate bibliography.

6. Details of Included Reviews

Author (Date)	Aim of the Review	Quality of the Review	Authors' comments on quality of included studies	Number of studies included & countries covered by the review
Bamberger, SG. *et al* (2012)	To examine the literature regarding the impact of organisational change on mental health.	The review was conducted in accordance with the PRISMA statement.[4]	Out of 17 studies, the authors state that 3 included a high risk of confounding (i.e. could be an alternative explanation for an association between an exposure and an outcome).	17 studies Belgium, Canada, Denmark, Finland, Germany, Russia, Sweden, UK, USA
Bazzoli, GJ. *et al* (2004)	To examine the literature on organisational change in health care to assess what has been learned through two decades of research (1980s & 1990s) during which there was a substantial wave of organisational restructuring among hospitals and physicians.	Amstar score rating[5] 4/9	Not stated	101 studies Canada, USA
Gelormino, E. *et al* (2011)	To review the literature on the effects on health inequalities of European health care reforms.	Has explicit search strategy and inclusion criteria & articles appraised	Overall, the quality of the research was poor. Considering the quality of the research available, we had difficulties classifying study designs and forming opinions about their internal validity.	29 studies Western Europe, Eastern Europe

[4] Moher, D. Liberati, A. Tetzlaff, J. et al. Preferred reporting item for systematic reviews and meta-analysis: the PRISMA statement. BMJ 2009 339:332 http://www.bmj.com/content/339/bmj.b2535

[5] AMSTAR checklist http://amstar.ca/Amstar_Checklist.php *(This is an indication of the quality of the systematic review)*

Author (Date)	Aim of the Review	Quality of the Review	Authors' comments on quality of included studies	Number of studies included & countries covered by the review
Hastings, SE. *et al* (2014)	To review the literature examining the relationship between health system governance and health workforce outcomes. The review was guided by 4 questions: 1. How are workforce outcomes accounted for in governance mechanisms in Canada and internationally? 2. What is the impact of governance mechanisms on health workforce outcomes to support health system change? 3. What elements of governance mechanisms are critical to workforce outcomes? 4. How do health system governance mechanisms facilitate workforce changes and contribute to health system change?	Amstar score rating 7/9	Although the majority of literature did agree on key points the quality of papers we reviewed was not high enough to draw firm conclusions about many of the topics under consideration. A segment of the research we reviewed was conducted by individuals working in the organisation under study, which raises the question of conflict of interest. Overall, the quality of evidence hampered our ability to draw strong inferences about the effectiveness of the governance structures and processes we reviewed.	113 studies Australia, Canada, Netherlands, New Zealand, UK, USA
Johri, M. *et al* (2003)	To assess the effect of comprehensive community-based care reforms for the elderly in OECD countries on the rates of hospitalisation and institutionalisation, and to	Amstar score rating 0/10	The authors did not explicitly state that they assessed validity, but some aspects of validity were discussed in the text. Such aspects included the potential for selection bias and the degree to which the participants were representative of the general population.	10 studies Canada, Italy, UK, USA

Author (Date)	Aim of the Review	Quality of the Review	Authors' comments on quality of included studies	Number of studies included & countries covered by the review
	identify features common to effective integrated care systems.		The authors did not state how the validity assessment was performed. (CRD Summary[6])	
Lee, SY. *et al* (2013)	To review the empirical research on transformational change in both health care and non–health care literature, with a focus on the antecedents, processes (or paths), and outcomes of transformational change.	Amstar score rating 4/10	The quality of research varied: 57% of articles provided detailed descriptions of the study sample, data collection and analysis procedures; the remaining omitted some important details about study methods or provided little or no methodological detail.	56 studies Australia, Canada, Chile, Cuba, Czech Republic, Germany, Japan, Netherlands, New Zealand, Norway, Russia, South Korea, UK, USA
Lee, SY and Alexander, JA. (1999)	To review the literature on the rationale and performance implications of hospital organisational change in 3 areas: (1) the development of new multi-institutional arrangements, (2) change in traditional ownership and management configurations, and (3) diversification in organisational products/services and consolidation of organisational scale.	Amstar score rating 2/10	Several problems can be identified from those studies that may account for the mixed findings regarding the relationship of organizational change and hospital outcomes: (1) use of cross-sectional designs, (2) neglect of self-selection, (3) inconsistent conceptualization of organizational change or strategy, (4) limited samples of hospitals, (5) failure to consider contingencies of organisational change, (6) use of short-term performance indicators, (7) lack of comparative analysis of organisational change.	45 studies USA

[6] CRD Summary http://www.crd.york.ac.uk/crdweb/ShowRecord.asp?LinkFrom=OAI&ID=12003000785E

Author (Date)	Aim of the Review	Quality of the Review	Authors' comments on quality of included studies	Number of studies included & countries covered by the review
Peckham, S. *et al.* (2005)	To examine the evidence on the nature and application of decentralisation as an organisational model for health care in England. The review identifies the effect of particular decentralised/devolved organisational, structural, procedural and accountability arrangements, and their relationship to performance, identifying lessons for the NHS in England.	The method adopted for this literature review followed 'methods used in previously successful studies' An initial batch of 20 articles was analysed by all team members and summaries were compared. This ensured that consistency of terminology and approach was secured at the outset. Variance was discussed, and a common approach agreed.	In assessing the quality of the evidence we used three general criteria. The first was the quality of the study reviewed in terms of other evidence hierarchies. Using an assessment based on a conceptual hierarchy of evidence combined with measures of methodological quality, quality of journal, etc. we classified the evidence as strong, medium or weak. In particular, much of the evidence is context-specific and we found little evidence of high quality that is specifically relevant to the UK context.	205 studies Australia, Belgium, Brazil, Canada, Finland, Germany, Italy, New Zealand. Norway, Sub-Saharan Africa, Sweden, UK, USA, Other international (Latin America, Mexico)
Sheaff, R. *et al.* (2004)	To review the evidence about organisation and performance to assess the validity of the assumption that 're-organisation is an effective way to making the NHS function better'	The literature review methods drew on systematic review guidelines but these were adapted according to constraints of time.	The authors highlight 'the weak methodologies underpinning many of the studies'.	1568 studies Australia, Canada, China, India, Israel, Japan, New Zealand, UK, USA. Other European

7. Narrative Summary

Nine reviews have been identified which address the question.

- Two reviews answer the question across a broad range of outcomes: Peckham et al (2005) and Sheaff et al (2004).
- Six reviews examine a much narrower set of outcomes: Bamberger et al (2012), Bazzoli et al (2004), Gelormino et al (2011), Hastings et al (2014), Johri et al (2003) and Lee & Alexander (1999).
- One review addresses the antecedents of change: Lee et al (2013).

Details of the reviews, including their aims, the number of studies included and the countries that the review covered are provided in Section 6. Together, this body of evidence answers the sub-questions, which is be used to shape the analysis.

7.1. Does large scale structural change lead to better outcomes?

Two reviews address the question across a range of outcomes and they draw some general conclusions about the relationship between structural change and outcomes.

i. Peckham et al (2005) examined the evidence on the nature and application of decentralisation as an organisational model for health care in England. The review identified the effect of particular decentralised/devolved organisational, structural, procedural and accountability arrangements, and their relationship to performance. One section of the review looked specifically at outcomes but the authors found relatively few studies examining the relationship between decentralisation and outcomes. The evidence was limited in quantity, and covered a wide range of contexts. In particular, apart from one study from Canada, most of it was based on low and middle-income countries. Aspects of this review which address sub-questions are discussed in the sections to follow. However, the overall conclusion of this review is that although the balance of evidence suggests that decentralisation is associated with better outcomes, the implications for the British NHS are far from clear.

ii. Sheaff et al (2004) reviewed the evidence about organisation and performance to assess the validity of the assumption that 're-organisation is an effective way to making the NHS function better'. This study, which was international in coverage, reviewed the literature across a range of health and social care settings and focused on 7 outcomes: Outcomes for patients; Process quality; Humanity; Staff satisfaction; Equity; Efficiency; Adherence to external performance target. Again, aspects of this review which answer sub-questions are addressed in the sections to follow.
Part of this review examined specifically the relationship between organisational structure and outcomes. The key findings within this section were that different organisational structures (e.g. hierarchical or networked) and cultures (e.g. clannish or rational) appear to be associated with different kinds of outcome. There is substantial

evidence to suggest that highly centralised, hierarchical and vertically differentiated organisational structures are liable to have dysfunctional effects. Decentralisation assists innovation, efficiency, staff morale and capacity for incremental change. The size of the health organisation has no direct bearing upon efficiency or patient satisfaction and affects health outcomes only for certain care groups. Adaptive, more 'organic' structures are more conducive to better performance in uncertain, unstable environments than vertically rigid hierarchies.

The following sections discuss the literature addressing specific sub-questions.

7.2. Does large scale structural change lead to better health and wellbeing outcomes?

Three reviews addressed this sub-question: Bamberger et al (2012), Gelormino et al (2011), and Peckham et al (2005).

i. Bamberger et al (2012) reviewed the literature on the impact of organisational change on employee mental health. Their study population was individuals employed in healthcare, police, civil service and private companies undergoing some sort of organisational change, including mergers, downsizing and reorganisations. In eleven out of seventeen studies, an association between organisational change and increased risk of mental health problems was found. There were five studies on downsizing and three of these found an association between organisational change and mental health problems. In two out of four studies on restructuring, an effect on mental health was seen.
From two studies considering the effects of mergers on mental health, one found an association between the exposure and postmerger psychiatric events. And of two studies which looked at exposure to multiple types of organisational changes, both found an association with negative health effects.
However, the authors warn that because different study designs and study population sizes were used and the outcomes defined and measured differently, the results should be considered with care. They conclude that there was no convincing evidence of an association between organisational change and employee mental health problems.

ii. Gelormino et al (2011) reviewed the literature on the effects on health inequalities of European health care reforms. They found few studies that looked at health outcomes. The review does highlight the potential risks of decentralisation processes, including the risk of creating geographic health inequalities within countries and among citizens. The authors found one study analysing the situation in Spain after decentralization of the national health service which showed that devolution did not lead to interregional inequalities in health. However, they found three studies suggesting that decentralization does challenge equity in health care.

This review concludes that political traditions more committed to redistributive policies were generally more successful in improving the health of populations (using infant mortality as an outcome), the lowest poverty rates, and having the highest coverage (total public medical care divided by population). It also concludes that devolution of power and other political options that shape the distribution and exercise of power (between central government & regions; parliaments & governments; politics & bureaucracy) within a country potentially produce heterogeneity in welfare and health care provision.

iii. Peckham et al (2005) found evidence on the link between decentralisation and health outcomes to be weak, with most studies based in low and middle-income countries. One study from Canada did find a positive relationship between decentralisation and infant mortality, but the authors warn against generalising this to wider health outcomes in different systems such as the UK. They also found that the evidence on decentralisation and equity/health inequalities is mixed. While most evidence suggests that decentralisation will lead to inequity at the *inter*-area level, it may improve *intra*-area equity via improved responsiveness.
In conclusion, they found no clear evidence that decentralisation has increased equity.

This review also considers 'humanity' as an outcome and in the context of the review, this concept is defined as the 'extent to which NHS organisations focus on the well-being of the population/service users'. (Peckham et al, 2005, p.87) The authors found no direct evidence to support the assumption that decentralisation increases humanity based on WHO criteria. There is some evidence from the United Kingdom to suggest that local health boards may have an increased responsibility to their local community. There is also good evidence that closer patient partnerships improve outcomes. However, there are dangers within decentralised units that local agendas are dominated by groups with more resources.

7.3. Does large scale structural change lead to better patient /service user experience and quality of life?

Three reviews partially addressed this sub-question: Bazzoli et al (2004), Johri et al (2003), Sheaff et al (2004).

i. Bazzoli et al (2004) in their review of the literature on organisational change during the 1980s and 1990s found only one study which examined whether quality of care changed when hospitals merged or participated in multihospital arrangements. It found no quality improvements resulting from hospital consolidation and limited evidence of quality deterioration on a few indicators. (e.g. mergers had no measurable impact on inpatient mortality, and in some cases merged hospitals had increased readmissions). The authors state that this study is the only one to their knowledge that looks beyond financial

effects of hospital consolidation and integration. In their examination of the transition from independent, fragmented physician practices to larger integrated physician organisations, the authors found that patients in solo practice had higher overall satisfaction than patients of group practices.

ii. Johri et al (2003) set out to assess the effect of comprehensive community-based care reforms for the elderly in OECD (Organisation for Economic Co-operation and Development) countries on the rates of hospitalisation and institutionalisation, and to identify features common to effective integrated care systems. They carried out a systematic review of recent demonstration projects in the UK, USA, Italy and Canada which tested innovative models of care for the elderly or frail elderly. For each project, the authors report results on rates of acute hospitalisation, long term care institutionalisation, and cost-effectiveness. The authors conclude that community-based integrated care systems for the frail elderly can reduce the rates of institutionalisation and the costs. Elements common to successful projects were case management, geriatric assessment, and multidisciplinary team.
The other key conclusion was that successfully implementing systems outside a test setting presents a challenge.

iii. Sheaff et al (2004) found that, on balance, the literature on relationships between organisational structures and outcomes is provider rather than consumer-oriented in terms of its focus of interest and outcomes studied.

7.4. Does large scale structural change lead to a more engaged and satisfied workforce?

Six reviews addressed this sub-question: Bamberger et al (2012), Bazzoli et al (2004), Hastings et al (2014), Lee & Alexander (1999), Peckham et al (2005), Sheaff et al (2004).

i. Bamberger et al's (2012) review of the impact of organisational change on employee mental health is discussed in 7.2.

ii. Bazzoli et al (2004) examined physician and hospital organisations linking together through a variety of arrangements that were intended to integrate service delivery and financing functions. Most of the studies focused on physician satisfaction with, or commitment to, their hospital or health system and how specific organisational processes implemented during the change process affected satisfaction or commitment. The authors found that hospitals can increase physician satisfaction based on the specific integrative structures and arrangements they implement.

iii. Hastings et al (2014) reviewed the literature examining the relationship between health system governance and health workforce outcomes. One important finding of this review is that workforce outcomes are often not explicitly considered in governance mechanism planning efforts. Many of the articles were written by researchers studying an initiative after its planning phase, rather than by planners intentionally including the impact to the workforce as a factor in the design of governance mechanisms. Part of this review examined aspects of the structure and reorganisation of healthcare delivery. The authors found that making changes to how healthcare delivery is organised had mixed results. One study in Canada found that a move to regional health systems had a substantial impact on professional identity for staff. Changing to team-based care is sometimes accompanied by increased stress and concerns about role clarity. However, a move to physician co-operative clinics and structures improved quality of life and stress levels among most respondents.

    Overall, the evidence on the impact of governance mechanisms on outcomes in the health workforce is patchy and it cannot be concluded that particular changes or types of organization are universally positive or negative. Instilling trust in the workforce is an important factor in any change process or initiative. Given the importance of the workforce for improving patient outcomes, organisations need to make sure that they understand the issues facing the workforce and take these into account when designing new care structures.

iv. Lee & Alexander (1999) found that hospital mergers are likely to decrease employee morale and productivity and strain physician and community relations because of the incompatibility of organisational cultures and elimination of jobs and services.

v. Peckham et al's (2005) review of decentralisation as an organisational model for health care in England found that the 'evidence to link decentralisation to staff morale is equivocal at best'. (Peckham et al, 2005, p.98) They conclude that the evidence suggests that a wide variety of factors influence morale and motivation, and decentralisation may not be a single determining factor. Studies in the NHS suggest that internal and external environmental factors play a more important role in staff morale and motivation than decentralisation per se.

vi. Sheaff et al (2004) conclude that organisational change needs to focus on the engagement of staff in order to have a positive impact. In addition they state that 'it would be naïve to expect structural changes either to eliminate differences between occupational cultures or to remove the need to consider professional culture as a central element in organisational processes as change management'. (Sheaff et al, 2004, p.142) However, they also find that teamwork and networking tends to aid innovation and service co-ordination.

7.5. Does large scale structural change lead to more efficient and effective use of financial resources?

Three reviews addressed this sub-question: Bazzoli et al (2004), Lee et al (1999) and Sheaff et al (2004).

i. Bazzoli et al (2004) examined studies of (a) horizontal consolidation and integration of hospitals, (b) horizontal consolidation and integration of physicians, and (c) vertical integration and relationship development between physicians and hospitals.

(a)Thirty eight studies examined horizontal consolidation and integration of hospitals, specifically the transition of independent hospitals into mergers or multihospital networks or systems. In general, the studies agreed that hospital consolidation or integration was pursued to achieve improved or more stable financial conditions. The literature found that full asset mergers that lead to one owner and one operating license result in cost savings, especially for small and initially inefficient hospitals. This literature also found that horizontal hospital consolidation of any sort typically leads to higher prices or price growth.
(b) Thirty studies examined the transition from independent, fragmented physician practices to larger integrated physician organisations, including medical groups, independent practice associations (IPAs) and physician practice management companies (PPMCs). Overall, these studies found limited effects on practice costs – some studies found that economies of scale were achieved as the number of physicians in a practice group increased but other studies found no such efficiencies. However, the studies did find important effects on health resource use, including the finding that physicians in solo practices had higher hospitalisation rates than group physicians.
(c) Thirty three studies examined physician and hospital organisations linking together through a variety of arrangements that were intended to integrate service delivery and financing functions. In considering how physician integration affected a hospital's costs and profitability, the authors found that it is not clear from the results if hospitals financially benefit from their physician-integration activities.

The authors state that these studies assessed outcome effects within 1 to 3 years after hospital consolidation so at best they are measuring the short-term effects of hospital consolidation rather than long-term effects. This emphasises the need for research studies on the long-term effects of organisational change. The overall conclusion from this review is that all three types of change speak to potential gains in financial performance and financial stability that organisations could achieve as they transition from an independent, unintegrated state to a consolidated, integrated state.

One interesting finding was that in all three types of organisational change, the literature showed that organisations were able to achieve consolidation of administrative units and functions quickly. But clinical consolidation and integration has been harder to achieve. In one study, the hospitals studied focused on consolidating patient support functions and low-

volume clinical services. This succeeded without much difficulty, but the hospitals struggled with the next step which was wide-scale clinical service consolidation. Three years after hospital mergers were legally established, the involved hospitals were still trying to integrate medical cultures and had made little progress in actual clinical consolidation. Thus it cannot be assumed that success at administrative integration will aid subsequent, more complex clinical integration. The research found that even two or three years after initiation of a change effort, organisations typically had not implemented the major operational or clinical changes that were needed.

ii. Lee & Alexander (1999) reviewed the literature on the performance implications of hospital organisational change in 3 areas: (a) the development of new multi-institutional arrangements, (b) change in traditional ownership and management configurations, and (c) diversification in organisational products/services and consolidation of organisational scale. The studies reviewed mainly used accounting and financial indicators as measures of the success or failure of organisational change.

(a) Twenty studies examined multi-institutional arrangements and found the evidence to be mixed. Many empirical studies have not been able to demonstrate substantial advantages of multihospital systems over freestanding hospitals except for improved access to capital markets and greater efficiency in hospital staffing. Some studies showed greater leverage and higher profitability among system hospitals, but others showed evidence of higher costs in system hospitals. One problem of most existing studies is their focus on the short-term impact of multihospital system affiliation on hospitals.
(b) Seventeen studies examined ownership and management configuration. When considering consolidation of hospital facilities through mergers, the authors found that although greater economic efficiencies are likely after mergers, especially among small hospitals and those operating in highly competitive markets, they do not necessarily translate into higher hospital profits. Some hospitals may experience financial downturns as a result of merger. Despite the frequency of corporate restructuring, the authors found only three studies on this topic so empirical research on the consequences of hospital corporate restructuring is rare. No significant relationships were found between restructuring and financial performance or survival of hospitals.
(c) Nine studies examined diversification in organisational products/services and operational reduction. The evidence around the consequences of service diversification is mixed. Despite its frequency, operational reduction is very under-researched. One case study of a medical centre indicated positive financial outcomes associated with downsizing. But in a survey of a national sample of rural hospitals in the US, no relationship between downsizing and hospital financial stability was found.

The key finding from this review was that there is only limited evidence to suggest that hospitals that modify their structures outperform those that do not with respect to a variety of financial and operational indicators. The review found limited and inconsistent findings in

the literature and the authors conclude that we are a long way from understanding the implications of organisational change.

iii. Sheaff et al (2004) found that in relation to mergers the evidence suggests that it would be misguided to search for the 'one right size' for each kind of NHS body. Mergers that simply unite organisations which otherwise retain separate core working activities and physical resources are unlikely to make much practical difference to productivity or efficiency.

7.6. Does large scale structural change lead to better economic outcomes?

Two reviews partially addressed this sub-question: Gelormino et al (2011) and Johri et al (2003).

i. In Gelormino et al's (2011) review of the effects on health inequalities of European health care reforms, the authors found one study of reforms in Finland which is now the most decentralised health system in the world. The resulting two-tier financing system has led to increased household health care expenditure and increased user charges to patients. The authors conclude that the Finnish health system is now slightly more regressive.

ii. Johri et al's (2003) review of innovative, demonstration projects as discussed in section 7.2 concluded that community-based integrated care systems for the frail elderly can reduce costs, but the potential for any of the programmes to make a positive impact on national public expenditure depends on the ability for them to be extended beyond the demonstration phase. The authors report that none of the experimental models described in the review have been successfully generalised on a large scale.

7.7. What is the impact/influence of clinical and/or population level health strategy informing the structural changes?

One review addressed this sub-question: Lee et al (2013).

i. Lee et al (2013) reviewed the empirical research on transformational change in both healthcare and non-healthcare literature. The majority of the included studies examined the antecedents of transformational change. Studies of organisational transformation in the US health sector cited institutional change (in particular the shift from cost-based reimbursement to prospective payment) as an important factor for transformation. In the UK health sector, New Public Management (policy reforms to stimulate competition, promote accountability, produce efficiency, cost reduction, and service improvement) drove organisational transformation efforts in the mid-1980s.
In the private sector (including telecommunications, computer, transportation,

cosmetics, social service, education, and sports industries), external shocks, such as increased government oversight, deregulation, privatization, market competition, and new consumer demands, were cited as critical factors for organisational transformation. Nearly half the studies cited sustained poor performance or declining performance as drivers for organisational transformation.

8. Evidence Gaps

The authors of these reviews identified the following research gaps:

- More studies of long-term effects of organisational change are required. Existing research has used short-time frames. Organisational change often unfolds over many years and cannot be examined properly when it is only followed for a short period. *Bamberger et al (2012); Bazzoli et al (2004); Lee et al (2013) Peckham et al (2005)*
- Existing research literature reflects a bias towards successful transformation. There is a lack of examination of partial or unsuccessful attempts at radical organisational change. *Lee et al (2013)*
- There is a need for research that examines specifically the relationships between and within the different levels of a health care system rather than simply on individual organisations. *Peckham et al (2005)*
- There is a need for a constant review of new organisational structures in health care and the public sector more generally outside the UK in order to widen the range of organisational options known to UK policymakers and NHS managers. There is lots of research on measuring outcomes for NHS users but almost nothing on using these measures to discover which organisational structures produce what performance results and how they do so. *Sheaff et al (2004)*
- More in-depth exploration of the contextual influences on transformational change in complex organisations is required. The evidence base on the consequences of various types of governance and the mechanisms through which they affect the workforce needs to be developed. *Hastings et al (2014)*

9. References

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Note

In March 2015, the National Institute for Health Research published research relevant to this summary. As it was published after the literature search for this summary had been completed, it has not been included in the summary.

The reference is given here and it is also included within a bibliography compiled to accompany this summary.

Imison, C. Sonola, L. Honeyman, M. et al. (2015) Insights from the clinical assurance of service reconfiguration in the NHS: the drivers of reconfiguration and the evidence that underpins it – a mixed-methods study. *Health Services and Delivery Research* 3(9)

This research explores the reconfiguration and restructuring of clinical services within the NHS in England, the pressures for reconfiguration and the evidence underpinning the clinical case for change.

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For further information please contact:

Alison Bogle, Librarian.
Health Management Library and Information Service, NHS National Services Scotland
alison.bogle@nhs.net

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Appendix 1: Example Search strategy

Database searched: HMIC Health Management Information Consortium
(Similar search strategies were adapted for the other sources searched)

1 Structural change.mp. or exp Structural change/ (243)

2 Organisational change.mp. or exp Organisational change/ (3851)

3 Management structure.mp. or exp Management structure/ (518)

4 Organisational structure.mp. or exp Organisational structure/ (1563)

5 Mergers.mp. or exp Health service facility mergers/ or exp Health authority mergers/ or exp Mergers/ or exp Hospital mergers/ (606)

6 Organizational innovation.mp. (8)

7 organizational change.mp. (108)

8 organizational structure.mp. (45)

9 restructur$.mp. [mp=title, other title, abstract, heading words] (949)

10 reorganization.mp. [mp=title, other title, abstract, heading words] (65)

11 reorganisation.mp. or exp Reorganisation/ (3058)

12 reconfigu$.mp. [mp=title, other title, abstract, heading words] (400)

13 transformational change.mp. (43)

14 major change.mp. (166)

15 redesign$.mp. (770)

16 service change.mp. (99)

17 systemic change.mp. (11)

18 system-wide change.mp. [mp=title, other title, abstract, heading words] (5)

19 system-wide intervention$.mp. [mp=title, other title, abstract, heading words] (2)

20 centralised.mp. or exp Centralisation/ or exp Centralised health services/ (554)

21 centraliz$.mp. [mp=title, other title, abstract, heading words] (124)

22 decentralised.mp. or exp Hospital decentralised services/ or exp Decentralised services/ (381)

23 decentraliz$.mp. [mp=title, other title, abstract, heading words] (155)

24 reorganis$.mp. [mp=title, other title, abstract, heading words] (2892)

25 reorganiz$.mp. [mp=title, other title, abstract, heading words] (111)

26 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 (9483)

27 systematic review$.mp. or exp Systematic reviews/ (3874)

28 literature review$.mp. or exp Literature reviews/ (6555)

29 meta-analysis.mp. or exp Meta analysis/ (1396)

30 synthesis.mp. (900)

31 narrative review$.mp. (150)

32 overview$.mp. (4422)

33 exp evidence based management/ (28)

34 exp Evidence based policy/ (408)

35 exp Evidence based practice/ (2263)

36 syntheses.mp. (35)

37 handsearch.mp. (2)

38 hand search.mp. (37)

39 summar$.mp. (18228)

40 critique$.mp. (706)

41 review$.mp. (36413)

42 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 (57049)

43 26 and 42 (1882)

44 exp Health outcomes/ or outcome$.mp. or exp Clinical outcomes/ or exp Outcomes/ (30165)

45 outcome assessment.mp. or exp Outcome measurement/ (628)

46 health status.mp. or exp health status/ (6225)

47 health indicator$.mp. or exp Health indicators/ (688)

48 wellbeing.mp. (1775)

49 well-being.mp. (2325)

50 quality of life.mp. or exp "Quality of life"/ (5457)

51 patient satisfaction.mp. or exp Patient satisfaction/ (3571)

52 patient experience.mp. or exp patient experience/ (1180)

53 client satisfaction.mp. or exp Client satisfaction/ (97)

54 client experience.mp. (8)

55 user satisfaction.mp. or exp Consumer satisfaction/ (3379)

56 user experience.mp. or exp Client views/ (460)

57 patient views.mp. or exp Patient views/ (1954)

58 job satisfaction.mp. or exp Job satisfaction/ (1463)

59 exp Staff surveys/ or exp Staff participation/ or staff engagement.mp. (539)

60 employee engagement.mp. or exp Staff morale/ (216)

61 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 (48137)

62 43 and 61 (287)

63 organisational performance.mp. or exp Organisational performance/ (261)

64 exp Performance monitoring/ or exp Performance measurement/ or exp Performance evaluation/ (10805)

65 efficiency improvement.mp. or exp Efficiency improvement/ (382)

66 organizational performance.mp. (37)

67 performance management.mp. or exp Performance management/ (1104)

68 cost benefit analysis.mp. or exp "Cost benefit analysis"/ (889)

69 economic evaluation.mp. or exp Economic evaluation/ (1747)

70 economic efficiency.mp. or exp Economic efficiency/ (800)

71 cost effectiveness.mp. or exp "Cost effectiveness"/ (6678)

72 exp Economics/ or economic performance.mp. (5598)

73 financial performance.mp. (131)

74 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 (25300)

75 43 and 74 (252)

76 62 or 75 (490)