Child survival in England: Strengthening governance for health[☆]

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ABSTRACT

The United Kingdom, like all European countries, is struggling to strengthen health systems and improve conditions for child health and survival. Child mortality in the UK has failed to improve in line with other countries. Securing optimal conditions for child health requires a healthy society, strong health system, and effective health care. We examine inter-sectoral and intra-sectoral policy and governance for child health and survival in England.

Literature reviews and universally applicable clinical scenarios were used to examine child health problems and English policy and governance responses for improving child health through integrating care and strengthening health systems, over the past 15 years. We applied the TAPIC framework for analysing policy governance: transparency, accountability, participation, integrity, and capacity.

We identified strengths and weaknesses in child health governance in all the five domains. However there remain policy failures that are not fully explained by the TAPIC framework. Other problems with successfully translating policy to improved health that we identified include policy flux; policies insufficiently supported by delivery mechanisms, measurable targets, and sufficient budgets; and policies with unintended or contradictory aspects.

We make recommendations for inter-sectoral and intra-sectoral child health governance, policy, and action to improve child health in England with relevant lessons for other countries.

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1. Introduction

The United Kingdom has experienced marked improvements in child health and survival over the past century. These health gains undoubtedly result from the combined efforts of the UK's public health and health care systems, research communities, and wider societal efforts focused on improving the conditions for health. Profound challenges remain, however, and there is growing concern that the UK is not performing as well as it could be, or should be, in securing and promoting children's health [1].

All countries are struggling to improve care, contain costs, and adapt to meet the challenges of the epidemiological transition to chronic conditions. Although health system strengthening measures are the common response, countries develop and implement policies differently, presenting opportunities for learning. The challenges the UK faces in trying to improve conditions for child health and survival offers useful insights to others.

Nation states are responsible for protecting and promoting the health and survival of their peoples, and infant mortality rates are considered a sensitive indicator of a country's ability to protect its most vulnerable citizens. However, in the UK infant, child, and adolescent mortality rates have failed to improve in line with those seen in comparable countries. In 1970 the infant mortality rate in the UK was around average among other European countries, but by the mid 1990s it had slipped to the worst quartile and by 2012 was well above the 90th centile [2]. The reasons for this growing gap between the UK and comparable countries are not clear. One area relatively unexamined up to now is the policy and governance conditions for child health and survival in the UK.

Child survival is the outcome of a complex web of determinants including socio-economic conditions, intermediate determinants such as environment, lifestyle, and nutrition; and determinants that directly affect risk and protective factors such as health systems and healthcare. Although it is essential to emphasize the importance of non-health sector determinants in creating health,

the health sector remains the social owner of health issues. Primary care exemplifies a comprehensive approach to health, and is the entry point to the health system, embodying the interface between the health system and wider society. Therefore, we will examine both inter-sectoral governance for health, and intra-sectoral health governance. We use mortality as a practical output of governance for health. Mortality is a blunt metric, but it encompasses a spectrum of poor child health and wellbeing outcomes. This broad perspective draws on several important publications, including the WHO Health in All Policies strategy and Governance for Health in the 21st century; the Alma Ata Declaration on the strengths and importance of primary care; and the European Observatory on Health Systems and Policies' publications on Strengthening Health Systems and Governance.

To examine important conditions for promoting children's health and survival, we will use an adapted OECD framework of health determinants that includes aspects of health care, health system, and non-health system determinants [3,4]. However, the divisions between levels of determinants is to some extent a construct. Securing optimal conditions for child survival, health and development requires a comprehensive approach: healthy society, strong health system, and effective health care. Macro, meso, and micro health determinants can be brought together conceptually by describing different dimensions of integration [3]. Vertical integration is intra-sectoral, between primary and secondary physical and mental healthcare. Horizontal integration for children differs from the health and social care integration that dominates the policy discourse for the elderly population. Vulnerable children may be reliant on social care, but most children rely only on their families, and the institutions and practitioners that provide supplementary care and education, including nurseries, childminders, pre-schools and schools, therefore horizontal integration is largely about health and school. Many children experiencing adverse outcomes have parents who require support from the social sector. So, inter-sectoral horizontal integration for those children means health, education and social sectors. And all children need the health sector effectively to coordinate with public health and healthy public policy. Finally, longitudinal integration is about effective coordination of health and non-health sectors in an age or developmentally appropriate way. These intra-sectoral and inter-sectoral relations are illustrated in Fig. 1.

Children's health systems and policy research is not well developed, especially in high-income countries. Although there is a paucity of systematic evidence, there are useful early insights from country exemplars, as shown in Supplementary material Box 1, which demonstrate the common approaches to addressing complex problems of health, and help lay the groundwork for investigating governance conditions for health.

Despite the lack of systematic evidence supporting integrated care for children, the current policy environment is heavily focused on integration, and it is plausible that comprehensively integrated services, systems, and policies should produce a coherent whole system that supports the conditions for child health. An EU-wide research programme currently underway, MOCHA, is describing and analysing European primary care for children, including health systems and governance and should provide some of the answers [11]. Here we focus specifically on English policy, since there is a degree of national devolution regarding health policy among the four nations of the UK. Paradoxically however, child health outcomes are often reported across England and Wales, or the UK. A systematic description and analysis of governance for children's health in England should provide helpful insights for strengthening health systems throughout Europe and beyond.

Mindful of the four dimensions of integration described above, we will use child health case scenarios as lenses through which to focus our attentions on the conditions for meeting complex and real-life needs. We will then examine a selection of major policies intended to secure conditions for improving child health and survival in England. We will use the TAPIC framework described by Greer et al., comprising Transparency, Accountability, Participation, Integrity, and Capacity to examine governance and consider what part it plays in the UK's current failure to secure optimal conditions for child health and survival [12]. Finally, we will make recommendations to improve governance, policy, and action to promote child health and survival.

2. Methods

We conducted multiple literature searches for evidence around child health and survival in England and the UK, and the policies and governance that secure the conditions and circumstances for optimal child health. We used PubMed as a search engine and the following search terms: child health, mortality, survival, policy, policy evaluation, social policy, UK, Britain, England, high-income countries, health governance, governance for health, and health in all policies. We restricted searches to literature published in the English language between 2000 and 2017. Additionally, we reviewed relevant reports from WHO, the English Department of Health and other UK government departments, the National Health Service, and reports from UK child health institutions including Medical Royal Colleges. Finally, we employed a snowball technique to find additional relevant material mentioned in papers and reports obtained through more systematic literature searching.

We constructed child health scenarios with which to examine universally applicable challenges in child health and the governance and policy conditions for improving child health, so that many of the policy lessons will be widely applicable. We based the scenarios on previous work, and adapted them for use in this context [5,11]. The three scenarios and dimensions of integration required to meet their needs, are shown in Supplementary material Box 2. Each scenario overlaps with the others, and implicit in all scenarios is that a child lives and grows in the context of its family and community, and their needs are often common. The idealized scenarios are applicable in any country, and require fully integrated services that are adequately funded, with strong intra-sectoral and inter-sectoral governance, and a stable conducive political climate.

Since optimal child health and survival depend on a wide range of health and non-health sector determinants, we selected both child-specific policies and general policies around integration and system strengthening, and included major reports and official publications that were particularly influential. Between them, the policies, papers, and reports we examined encompass the four dimensions of inter-sectoral and intra-sectoral integration we described. We then applied the TAPIC framework to assess governance for child health in England.

3. Results

A comprehensive strategy to improve child health should include action across all the domains and determinants of health. Our literature review revealed a plethora of policies important for child health, few high-quality policy evaluations or service changes directly related to policy, and no governance concepts specific to developing and implementing child health policies. Therefore, we considered general concepts and evidence about governance, and adapted them to examine the conditions for child health and survival.

In this section, we begin with an overview of important English health policies for child health and survival, and then present an analysis using the TAPIC framework for governance. Finally, using
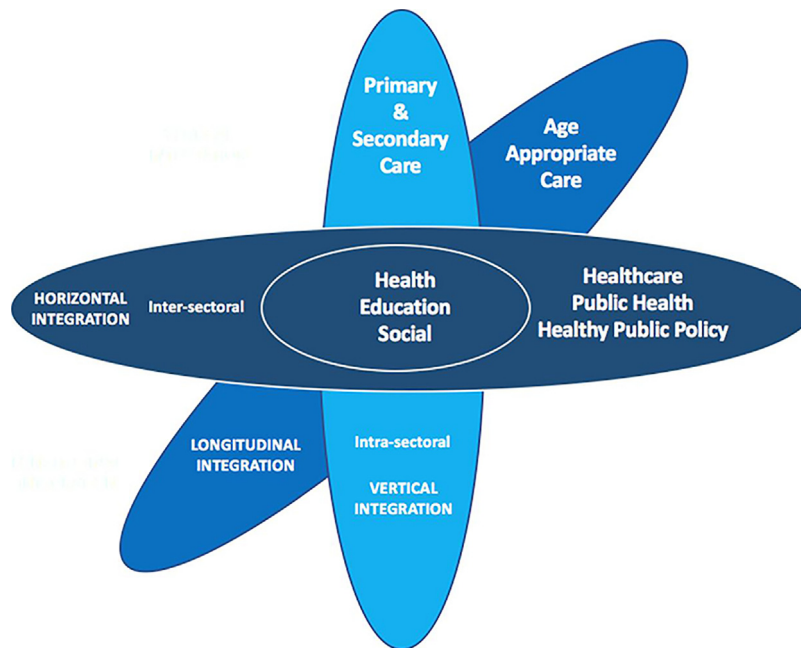
Fig. 1. Intra-sectoral and inter-sectoral integration for child health.

our case studies, we illustrate how strong governance could benefit real children in real situations, at a population and individual level.

3.1. Policy responses to improve child health in England

We present a brief overview, in Supplementary material Box 3, of a selection of important child-specific and general policies that were designed to improve health through integration and system strengthening.

Despite the plethora of policies, papers, and programmes in recent years and decades, all focused on improving health, in many regards child health and survival in England is worse than in comparable countries, and the gap continues to widen. We now apply the TAPIC framework for governance to consider what part governance plays in the crowded policy landscape that has still failed to lead to improvement in child survival [12].

3.2. A TAPIC framework analysis of governance for child health

3.2.1. Transparency

Transparency is about information and knowledge and is necessary for accountability. Transparency is enabled through standards, data, and indicators on structures, processes and outcomes, and mechanisms for reporting and/or inspecting quality.

Standards exist for workforce, clinical practice, and outcomes. However, standards alone are not sufficient. For example, the Children's NSF was one of several standard-setting National Service Frameworks, as part of a widespread NHS Improvement Plan. Other earlier NSFs, such as that for Coronary Heart Disease (CHD) had 12 measurable targets and a budget of £230million per year and £120 m capital investment for delivering the improvements [24]. The CHD NSF achieved measurable improvements in important clinical processes and outcomes including mortality due to myocardial infarction [25,26]. By contrast, the Children's NSF specific targets were replaced with softer standards and recommendations, and there was no accompanying budget for delivery.

More recently, the Health and Social Care Act determined a process by which the Secretary of State for Health sets the national Outcomes Framework, guided partly by the National Institute for Health and Care Excellence (NICE) which provides national practice guidelines and quality standards. National Outcomes Frameworks translate into local level commissioning frameworks for CCGs and local authorities, against which the system could be held to account. There are several relevant child health outcomes in the Outcome Framework, some directly around reducing mortality [27].

There is a variety of data sources about processes and outcomes. ChiMat have made available sophisticated data and analyses, particularly on child health outcomes, supplementing routine administrative data available at local and national levels [28]. However, data for assessing service quality is often by single organization rather than by service pathway, thus making it more difficult to understand the system-wide causes for problems and devise relevant solutions. Achieving data by pathway requires integrating or linking data from different sources. Currently, data from different sources is held separately, and bringing them together is neither routine nor simple. The Health and Social Care (Safety and Quality) Act 2015 enables integration of health and adult social care data using unique identifiers, however children are not included in the provisions [29].

Professional bodies such as the Royal College of Paediatrics and Child Health set standards for Paediatricians, the Royal College of General Practitioners for GPs, the Royal College of Nursing for nurses, and so on. Children's health workforce data is relatively poor, particularly for child health professionals other than doctors and nurses, on workforce emigration trends, and key demographic information such as gender [30–32]. For example, while National Health Service data for England are available, only health visitors and school nurses are distinguished from broader professional categories [33]. This paucity of data is compounded by weak analytical capacity at central and particularly local level, make it difficult for any agency to hold Health Education England or government to account for key workforce decisions.

The Care Quality Commission (CQC) inspects and regulates health and social care provider organisations. The CQC coordinates child-specific inspections for an inter-sectoral approach to inspection and regulation by bringing together other agencies such as Ofsted (education sector) to examine standards for children with special educational needs, and there is a Child Safeguarding and

Looked-After-Children programme to review care for this vulnerable population. The recently formed NHS Improvement agency oversees NHS providers, and brings together several previous regulatory authorities including Monitor, the NHS Trust Development Authority, Patient Safety and the National Reporting and Learning System.

In summary, there is an abundance of means for transparency in the English NHS and a great emphasis in many of the policy documents described above on data driving change. Yet despite the transparency available, data and inspection regimens usually focus on one sector, and one organization; continuing to operate in silos. Understanding the quality of a pathway of care, or the contributions of the health system in the context of other sectors, largely remains an aspiration.

3.2.2. Accountability

Accountability is about explaining what happened, and mandating corrective action. Delivering the five overarching Every Child Matters outcomes would have required action at all levels of health and other sectors, in common with the NSF [14]. Schools were the central part of inter-disciplinary and inter-sectoral cooperation. The Children Act of 2004 provided legislative authority and accountability for some children's services at local level. For example, Directors of Children's Services, and Lead Members in each Local Authority were given statutory responsibility for children's education and social care. The stated intention for these roles was to provide a clear unambiguous line of accountability [34]. Although ECM and associated policies were comprehensive, funded, backed by legislation, and included strong measures for accountability, there were two major drawbacks which prevented the scale of benefit to children that could have resulted. First, the Children Act came about partly in response to a safeguarding failure; the case of Victoria Climbié, who died after a series of failures by statutory agencies to protect her. This may explain why the Act focused on education and safeguarding, and emphasised the need for information sharing for child protection, with less focus on children's health and healthcare. Similarly, Children's Trusts also focused on vulnerable children rather than taking a comprehensive population-based approach to health and wellbeing. Second, Children's Trusts which were backed with statutory guidance introduced in 2008 but withdrawn in 2010, were not mandated for a long enough period to become embedded and have the chance to demonstrate results, even though they were accompanied by pooled financing and an integrated governance structure to foster inter-sectoral working [16,35–37]. A prospective mixed methods study of Children's Trusts demonstrated joint commissioning but with most focus on children with mental health problems and physical disabilities, and more join-up between social and education sectors than with health [38]. The study also found that some Trusts made more progress than others, especially those that were motivated and empowered. Others were mired in organizational and professional divisions. A series of interviews with key individuals involved in ECM, five years after the programme began, provides helpful insights, summed up as a gross underestimation of the complexity of implementing such a comprehensive change programme, and that a long time was needed to realise benefits [39]. In short, ECM and associated policies were not in place long enough fully to test the accountability measures they included, nor fully to realise benefits for children's health and wellbeing. The Children Act introduced the mandated role of Children's Commissioner whose primary function was initially to promote awareness of children's concerns and later (in 2014) the role was strengthened to promote and protect children's rights, explicitly referencing the United Nations Convention on the Rights of the Child [15,40]. Given the major upheavals in the policy landscape during the years since the inception of this role, it is not

clear yet what influence the Children's Commissioner has in policy planning or implementation at national or local level.

While there have been numerous government and non-government documents, policies, and initiatives about integrated care produced in recent years, nothing has approached the complexity of the Health and Social Care Act which multiplied the number of accountability agencies without clear lines of accountability at national and local levels. For example at national level there is the Department of Health, National Institute for Health and Clinical Excellence (developing quality standards), The Care Quality Commission (inspecting quality across health and social care), the NHS Commissioning Board (which became NHS England), and Monitor, as an economic regulator [22,23]. At local level, Clinical Commissioning Groups (CCGs) were intended to bring local accountability to decision-making in health together with local Health and Wellbeing Boards and HealthWatch. Concern was expressed at the outset that while each organization's remit and accountability was set out, it was not clear how they would relate to eachother, nor at a national level how coordinated governance would work [41,42]. Statutory guidance for Children's Trusts, and the requirement for a local Children and Young Person's Plan was withdrawn in the changes surrounding the HSCA, although the duty to cooperate (non-specifically) remained [37]. The landscape of accountability at both national and local levels has remained far from clear, as highlighted by the recent Public Administration Select Committee, which appears to be taking on some of the role of the recently abolished Audit Commission [43].

The CYPHOF operated between 2012 and 2016, identifying problems with outcomes and specifically noting the lack of meaningful participation and clear lines of accountability for children's health. However, since some of its recommendations were taken up, particularly in improving availability and utility of child health outcomes data, the Forum itself provided a means of accountability [21]. The Forum's achievements were largely accomplished through its soft power and influence, rather than by a direct means of mandating change.

Accountability for child health and survival is not clear at national or local levels. While there is an abundance of organisations and agencies involved, political short-termism and silo working continue, and it is not clear how organisations relate to eachother for overall accountability, nor is there a clear simple process for mandating corrective action at a systems level.

3.2.3. Participation

Participation is meaningful involvement, of those who are affected, in decision-making. The effectiveness of participation in improving legitimacy, ownership, and effectiveness has been demonstrated for example by the impact of consultation with young people on the attendance rates at outpatient CAMHS clinics [44]. Participation, especially in the form of consultation, is a widespread feature of the English policy landscape. However meaningful participation appears to be much less frequent. Lack of participation is one cited reason for the failures of large scale efforts to achieve integrated data systems needed for delivering integrated care. Some of the ambitions of the NSF, and every other major policy initiative aimed at health system strengthening examined, could have been realized through the NHS National Programme for Information Technology (NPfIT). This enormously ambitious programme aimed to improve national infrastructure and local integrated IT systems. Although it was widely considered to have failed overall, it achieved progress in select areas such as secure NHS email, and a secure network (N3 Network) which are important milestones facilitating greater joined up governance. A policy analysis case study reported several problems including its top-down nature which inhibited meaningful participation and buy-in, and precluded a nuanced understanding of local need; the

haste with which such a large complex and centrally driven programme was introduced (the abbreviated delivery timetable was apparently an attempt to secure successful outcomes in time for a general election); and for a general lack of clear direction and programme management (integrity) in a governmental culture that discouraged identification and correction of problems in strategy or technical execution [45].

The HSCA was notable for the lack of participation in its conception. During the election campaign the year before its announcement, there were overt statements about not introducing a top-down reorganization in the NHS. There was widespread discontent among the health professions following the introduction of the Bill, provoking considerable political disquiet. The NHS Future Forum was therefore established, as an independent group to "pause, listen, and reflect". The Future Forum's work involved public and professional participation mostly in the form of consultation events, and led to recommendations and some revisions of the Bill. Integration became an explicit priority, despite the fragmented commissioning arrangements of the Act that made joined up working more difficult to achieve [46]. The CYPHOF also introduced a means of enhancing professional and expert participation in the implementation of the HSCA, and itself highlighted the need for meaningful participation from children, young people, and families. The HSCA strengthened clinical participation in commissioning, with GPs taking the lead role. The stated rationale was that GPs know their patients best, however they are trained to treat individual patients and are not necessarily equipped to take population perspectives needed for planning and commissioning services. Regarding patient participation, the HSCA's intentions are summed up by the widely-used phrase "no decision about me without me". However, the notion of choice and control loses meaning when there is inadequate information to inform choices or when children's health services and workforce are insufficiently funded [47].

It is not apparent that participation in recent policy, by public or professionals, has made services and systems more responsive to children's health needs.

3.2.4. Integrity

Integrity in policy governance is defined here in two ways: clear organizational roles underpinned by rigorous management procedures; and relatedly the more lay definition of integrity, about being true to stated purpose and word.

Clinical Commissioning Groups led by GPs were introduced by the HSCA to enable GPs to use the knowledge they have about their patients to effect changes in services through wielding commissioning power. However, the inherent conflicts of interests with GPs as commissioners and providers of care were raised from the outset, and furthermore questions about the skills needed for commissioning services for a population contrast with those for delivering care between doctor and individual patient [48]. Moreover, since children's health needs are distinct from those of adults and the elderly, it is important that children's policy is shaped by adequately informed, committed, and authoritative professionals with skills in population health. There does not appear to be published research available yet, but widespread experience suggests that CCG governing bodies and other executive and management boards do not consistently prioritise children's needs. It is often the case that child health is included in another remit, and the responsibility of more junior members of commissioning teams. However, there are signs that this may be changing as the CCGs mature, for example some CCGs have constituted Children's Commissioning Boards. Integrity defined as being true to stated purpose and word has not been well realized in child health policy in England, as evidenced by numerous policy documents from at least the Court Report in the mid 1970s [49]. Each paper documents

similar problems and makes similar recommendations. By contrast there has been slow progress in changing systems and services, and improving outcomes. The lack of progress towards achieving a transformative approach to workforce is also a problem of integrity. The NSF and numerous other policy documents purport a shared ambition to improve cross–disciplinary training and working. The Medical Royal Colleges whose responsibility it is to define standards for training also aim to improve population health through workforce, yet perpetuate professional monopolies and mono-professional training and accreditation.

Policy integrity in English child health is lacking as demonstrated both by lack of clear and appropriate organizational roles and by the disconnect between the stated intentions of policy, and their content and political and economic environment.

3.2.5. Capacity

Policy capacity is about the ability to develop policy that reflects needs, is aligned with goals, and backed up with adequate resources to achieve those goals. Therefore, policy capacity is about translation of knowledge into policy and then into action.

In seeking to understand the lack of progress in improving child health, the Kennedy report found that a major barrier in developing services for children and their families, was the lack of national strategic clarity between two major Government departments, the Department for Children Schools and Families (DCSF), and Department for Health (DH). Within DH, children and young people are one of several health priorities, competing against other interests and needs such as those of older people, who have greater political capital than children. The successor to DCSF, Department for Education was considered a good bet for holding responsibility for many aspects of children's health and wellbeing since children and young people are their exclusive concern. However as was shown in analysis of ECM, capacity for policy directed specifically towards children's health can be lost.

England's policy capacity for child health at national level was lacking in the debate surrounding the HSCA. For example, there was widespread political support for the enhanced competition and decentralization that the Act brought, without convincing evidence for benefit to child health to support these changes in policy [50]. Policy capacity was further diminished by Austerity economic policies which led to drastic cuts in Department of Health staff [46]. And at local level the problems are equally, if not more, acute. The lack of policy capacity specific to child health is evident by the lack of child-focused perspectives in major health policy documents and initiatives such as the Five Year Forward View, Pioneer and Vanguard programmes, Better Care Fund, and many of the recent Sustainability and Transformation Plans [51].

3.3. Beyond TAPIC: is it a governance problem?

We have shown examples of strengths and weaknesses in child health governance in all the five TAPIC domains. However there remain policy failures that are not fully explained by the TAPIC framework, suggesting that something other than, or in addition to, failures of governance, is to blame. There are multiple examples of such problems, including policy flux; policies insufficiently supported by delivery mechanisms, measurable targets, and sufficient budgets; policies with unintended or contradictory aspects; and political challenges beyond the health sector and sometimes stretching across national boundaries. The Marmot Report highlighted the importance of investment in the early years, however disproportionate disadvantage towards children and families persists [52,53]. Similarly, the Wanless Report emphasised the importance of investment in health promotion and disease prevention and long-term sustainable financing of the NHS, however

budgets are increasingly strained and decision-making is still mired in short-term political cycles [54].

The failure fully to realise the aims of the children's NSF is perhaps the most significant example of problems within and beyond governance in recent English child health policy. The NSF was a hugely ambitious comprehensive policy document, published amid a flurry of other important and ambitious child health policy documents. There was confusion about priorities in the many policies, which when combined with a lack of measurable targets for the NSF, and no accompanying budget, signaled challenges from the outset [55]. By contrast, Every Child Matters, the Children's Act, and Children's Trusts had legislated structures with strong governance and clear accountability mechanisms. Many professionals reported substantial progress, until the incoming new government in 2010 changed direction suggesting that policy flux rather than governance was a significant problem [39].

Achieving integration through co-location was a main theme of the NSF, and this failed partly due to other political challenges and cultural barriers. The Darzi proposal for polyclinics to bring GPs and specialists together in community settings provoked a political firestorm of protest from doctors and patients. The proposals happened in the late 2000s, around the same time as the global financial crisis set in, and during a period of anxiety about increasing privitisation in the NHS, and the argument was lost in the noise [56–59]. Policy flux also affected Getting it Right for Children and Young People which was published just before a general election brought in a new government, with new priorities, and attention was soon directed elsewhere [18]. This may explain why it had less impact than its tight recommendations around governance may otherwise have achieved.

The HSCA was beset with unintended consequences and contradictory policy objectives [46,60]. Although accountability was an explicit goal of the HSCA, irrespective of the opaque lines of accountability between agencies and structures, the HSCA coincided with a global economic crisis and an Austerity economic policy response in England. Therefore, even if accountability would have been clear, local policy for child health remained insufficiently backed by funding to deliver the required improvements, funding cuts continue, child poverty is rising, and child health and survival continue to be jeopardized [52–54]. Several initiatives followed the HSCA all with the aim of enhancing integration, some implicitly finding ways of collaborating despite the restrictions of the HSCA. For example the Five Year Forward View NHS strategy which proposed new care models for integrating services across primary and secondary care [23,61]. Sustainability and Transformation Plans followed, and several areas have begun to integrate services, budgets, and governance arrangements across health and social care. It is too early to know what adult health outcomes may result from the Pioneer and Vanguard initiatives, but there is very little focused work on new care models for children in these programmes. There are local programmes developing and testing new care models and governance arrangements for children's health and care which are outside the nationally supported work, but they are also in early stages [62,63].

Workforce policy in England is still based more on traditional professional boundaries rather than the current and evolving needs of children. Despite the NSF and accompanying policies, doctors are still trained to work in existing environments and structures rather than starting with a comprehensive understanding of the health needs of children. Health Education England was founded as part of the Health and Social Care Act in 2012, and exists as a non-departmental public body. It is responsible for providing leadership for education and training, ensuring the workforce has the right skills, behaviors, and training to meet population health needs, support the delivery and improvement of excellent healthcare. HEE funds paediatric training, but the Royal College of Paediatrics and Child Health is responsible for setting standards for paediatricians' postgraduate training, and ensuring standards through examination and continuing professional development. Like all Medical Royal Colleges, the RCPCH's work is largely predicated on a single professional view, and directed towards Paediatricians. Meanwhile, although children and young people represent one fifth of the population, and the average GP sees 400–600 children in a 6-month period, it is estimated that only 1 in 3 GPs will have received specialist postgraduate paediatric training [64]. Attempts to increase flexibility in training and provide a more rigorous grounding in paediatrics for future GPs have long been suggested, and have been attempted with programmes such as Broad Based Training, however, this programme was ceased by HEE due to 'prioritising' of investment [64]. The unintended consequences therefore of English health workforce policies and lack of funding is the entrenchment of mono-professional training, a cultural barrier to integrated working noted as long ago as 1976 in the Court Report and more recently in the 2010 Kennedy report [18,49].

4. Discussion

There is no shortage of strategies and policies about child health in England. However, most policies focus on healthcare and the health system, but few attempt to bring in social, economic, and environmental determinants beyond the health system. While there have been tremendous successes in English child health in recent years, in many regards the heath system and non-health system responses to evolving health needs have been inadequate. The result has been a failure to ensure optimal conditions for child health and survival. Our TAPIC framework analysis revealed some strengths and numerous weaknesses in child health governance, and policy failures that are rooted in problems beyond governance. These include cultural barriers, failure to provide sufficient and sustained investment for policy implementation, and lack of long-term consistent political vision for health. In summary, there has been a failure in successfully turning policies into improved child health and survival.

Child health is created both by health and non-health sector influences, contributing to health through governance, policy, and action. A comprehensive and effective strategy to secure children's health and wellbeing would therefore focus on strengthening the health system and healthcare services to meet the specific needs of children and young people, while reducing poverty, inequalities, and social disadvantage [5]. What conditions are needed for achieving such a successful strategy? In England, the introduction of the internal market, purchaser-provider split, and new public management in the 1980s described a rationalist approach to governance. Ever increasing costs and a failure to increase quality and efficiency of care in line with expectations have led to a shift in approach to policy and governance. Pathways of care and networks of services have become accepted as the ways to deliver integrated care, and a more networked type of governance that supports cooperation and partnership to deliver coordinated care has emerged. This trajectory is illustrated in the differences between the Health and Social Care Act which emphasised competition, tendering, and Any Willing Provider as major policy themes in the new public management tradition, and the Five Year Forward View, with service networks, pooled health and social care budgets and joint networked governance.

A networked approach to governance, supporting collaboration between active state, citizens and civil society has become the new imperative for health [65]. Kickbusch describes a rights-based framework for governance with child health and wellbeing as a shared social goal. In this vision, informed active citizens lead a strategy for health which relies on innovative partnerships, open

data sharing and mechanisms for tracking outcomes. Governance for health is achieved through smart power; a balance of collaboration and engagement, regulation and persuasion, producing a system that fosters adaptation, resilience, and anticipation of future needs.

5. Conclusions and recommendations

Drawing on our analyses, and considering the needs of the three illustrative child health scenarios, here we make constitutive, directive, and operational recommendations for improving child health through inter-sectoral and intra-sectoral child health governance, policy, and action [66].

5.1. Governance

- The World Health Organisation's Accountability Framework for maternal and child health is applicable to high income countries including England. The concept is simple: a cycle of monitoring, reviewing, and action [67]. Every policy should include an explicit accountability mechanism.
- Responsibility for national policy about children's health and wellbeing, including determinants beyond health and healthcare, should be held by one cross-departmental government minister, with a commensurate budget, and accountability for policy implementation in a system that fosters long-term planning beyond political cycles.
- Responsibility for planning, delivering, and improving children's health and care services at local level should be held by strong local partnerships with decision-making power, setting spending priorities for meeting local need, and accountable to the populations they serve.

5.2. Policy

- Learning Health Systems should be developed to maximize the regular and systematic use of data for driving changes in policy and practice [68,69]. Learning Health Systems can be used to support knowledge generation, dissemination, sharing, and translation of learning to governance, policy, and action, crucial for addressing complex problems of child health [66].
- Integration across and within sectors and agencies is needed, with co-location of services where possible, as a means of fostering cooperation and building trust. A strong primary care system for children is essential, vertically integrated with specialist care, and horizontally integrated with public health, schools, and social care.
- Performance measurement, incentives, and regulation should be according to population and pathway, as well as by provider and profession.

5.3. Action

- Capacity building is needed for child health policy research and policy-making, and to support a Health in All Policies (HiAP) approach building on empirically tested conceptual frameworks for translating research evidence into policy and practice [66].
- A transformative approach to education and training, that suits the needs of the population rather than professional traditions could be achieved through devising team-based competencies for delivering services in primary care settings, for example in one of the many new integrated care models that are currently arising in England [62,63]. However, more fundamental institutional and instructional reforms that allow cross disciplinary training and education are needed for a truly transformative approach

to interdependent professional working, − for equity as well as quality in health [70].

- Data sharing and linked data are needed to enable a deeper understanding of child health, health needs, and system performance than is current available. For example, a programme of data sharing across multiple sectors and agencies to enable coordinated informed support and care is currently underway in the north of England as part of the Connected Health Cities initiative [71]. The plan here is to produce a data platform that provides a user-friendly data interface allowing key workers secure access to data to map comprehensive needs and plan services for children and families.

In conclusion, there is much that England could do to strengthen governance and conditions for child health and survival, and there is scope for countries to learn from England's experience in seeking to improve the conditions for children to thrive. Recently published findings that infant mortality in the UK increased in 2015 for the first time in more than a decade, and among poor children since 2010, suggests that England's child health problems require attention more urgently than ever [72,73].

6. Conflict of interest

The authors declare that they have no conflicts of interest.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.healthpol.2017.09.004.

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