



**October 2018**

**The first 1,000 days of life**

**Nuffield Trust submission to the Health Select Committee**

## **1. Overview**

### **1.1. The Nuffield Trust**

The Nuffield Trust is an independent health think tank. We aim to improve the quality of health care in the UK by providing evidence-based research and policy analysis and informing and generating debate.

Developing the evidence base for policy on child health and improving the standing of child health policy is a key strategic priority for the Nuffield Trust. We therefore welcome the committee's inquiry into the first 1,000 days of life.

We remain concerned that in important areas, children's health has not received the attention it deserves and that inequalities are worsening. Over the past two years, our research and policy analysis has sought to shed light on key areas where health services can improve for children and young people. Through our network of clinical fellows and researchers, we have highlighted areas of concern on issues from emergency admissions to international comparisons of child health.

## 1.2. Our submission

This submission draws on our own research, bringing to the committee's attention evidence that is relevant to the key questions in the Terms of Reference.

Given the focus of our work, the majority of this submission is primarily of relevance to the first question on priorities for a national strategy.

The main sources we draw on are summarised below:

1. **Cheung R (March 2018) *International comparisons of health and wellbeing in early childhood***  
(<https://www.nuffieldtrust.org.uk/research/international-comparisons-of-health-and-wellbeing-in-early-childhood>)

This study explored how the UK compares on several measures of child health for the 0-5 year age group with 14 similar countries (Australia, Belgium, Canada, France, Germany, Greece, Ireland, Italy, the Netherlands, New Zealand, Portugal, Spain, Sweden and the United States).

2. **Keeble E and Kossarova L (April 2017) *Focus on: Emergency hospital care for children and young people. What has changed in the past 10 years?*** (<http://www.qualitywatch.org.uk/cyp>)

Analysing Hospital Episode Statistics from 2006/07 to 2015/16, this report looked at the use and quality of emergency hospital services for children and young people aged up to 24.

3. **Kossarova L, Cheung R, Hargreaves D and Keeble E (December 2017) *Admissions of inequality: emergency hospital use for children and young people*** (<https://www.nuffieldtrust.org.uk/research/admissions-of-inequality-emergency-hospital-use-for-children-and-young-people>)

We used Hospital Episode Statistics for A&E attendances and emergency hospital admissions for children and young people in England, with deprivation quintiles derived according to their registered address.

4. **Kossarova L, Devakumar D and Edwards N (2016) *The future of child health services: new models of care***

(<https://www.nuffieldtrust.org.uk/files/2017-01/future-of-child-health-services-web-final.pdf>)

Drawing on an expert workshop, this briefing analyses emergent models of care for child health.

## 5. QualityWatch indicator analysis

QualityWatch is a joint programme with the Health Foundation, through which we regularly track and analyse indicators relating to care quality. For this submission we draw on indicators relating to smoking and pregnancy, vaccination coverage for children and mothers, workforce statistics on health visitors, and updated international comparisons of infant and neonatal mortality looking at the UK and 18 similar countries.

We supplement this with analysis of existing data from the Office for National Statistics (ONS) and NHS Digital.

## 2. National strategy: The top priorities for a national strategy, based on existing evidence and lessons from other countries, particularly the devolved administrations

Our research highlights a number of specific areas where child and maternal health could be better, either in comparison with other similar countries, based on past trajectories, or areas where data are concerning.

The areas below are not an exhaustive list of priorities, but offer an evidence-based starting point for any national strategy aiming to improve the health of babies and children from conception to the age of two. We divide them into two sections: the ultimate goals that a national strategy should achieve in terms of health outcomes and activity, and the ways to achieve these goals.

## 2.1 Ultimate goals of a national strategy

### 2.1.1 Reducing rates of stillbirth

Analysis of ONS figures shows that in the UK, the stillbirth rate (babies born stillborn from 24 weeks' gestation) has decreased overall since 1993, from 5.7 stillbirths per 1,000 live births and stillbirths to 4.4 in 2016. In 2017 in England and Wales the rate was 4.2 stillbirths per 1,000 live births and stillbirths.

However, while the stillbirth rate has been improving over time, our international comparisons analysis shows that the UK continues to have a relatively high stillbirth rate, and has not seen the same level of improvement as some other countries. For example, looking at babies stillborn after 27 completed weeks' gestation (some countries do not register stillbirths until later in pregnancy), the UK has a higher stillbirth rate (2.9 per 1,000 births) than Germany, New Zealand, Portugal and the Netherlands (which has the lowest, at 1.8).

In England, just over half (52%) of stillbirths are unexplained, with the remainder resulting from lack of oxygen or trauma just before or during birth (19%), congenital anomalies (17%), other specific conditions (7%) or infections (2%).

Furthermore, there appears to be a strong link between stillbirths and inequalities. In England the stillbirth rate in the most deprived areas was 5.5 per 1,000 live and stillbirths in 2016, whereas in the least deprived areas it was 3.9 per 1,000 live and stillbirths.

While the government has prioritised initiatives to reduce stillbirths and promised to halve the rate of stillbirths, neonatal and maternal deaths in England by 2025, our relatively high rate of stillbirths remains a concern, particularly given the link to inequalities. We would urge the committee to ensure the government continues to prioritise improvements in this vital area.

### 2.1.2 Investigating stalling infant mortality rates

Across all countries of the UK, infant mortality rates (deaths before the age of one) have reduced significantly over time. In 2016, there were 3,004 infant deaths in the UK (3.9 per 1,000 live births). A large proportion of infant deaths occur in the neonatal period (first 28 days of life). In 2016, there were 2,136 neonatal deaths in the UK (2.8 per 1,000 live births).

However, 2016 saw the first rise in neonatal mortality in the UK since 2003, and infant mortality rates have stalled since 2013.

When comparing data with other similar countries, the UK had the fourth highest infant mortality rate (3.9) among comparable countries in 2016, and one of the highest among comparable European countries. From 1994 onwards, the US has consistently had the highest rate, with 5.6 infant deaths per 1,000 live births in 2016, compared with Finland with the lowest rate at 1.9. If the UK had the same infant mortality rate as Finland, there would have been at least 1,500 fewer infant deaths in 2016.

Like stillbirths, infant mortality rates are linked to deprivation. In England, the rate was 4.9 infant deaths per 1,000 live births in the most deprived areas in 2016, whereas it was 2.6 per 1,000 live births in the least deprived areas.

Our stalling progress in driving down infant deaths is a concern for practitioners and policymakers alike. There is unlikely to be a single cause of this decline and the data warrant further exploration. Nonetheless, the trends should serve to alert policymakers to the risks that reductions in public health investment pose, particularly for early years preventive services – both universal and targeted at families in need.

### 2.1.3 Reducing low birth weight and avoidable congenital abnormalities

In 2016, 6.9% of live births in the UK weighed less than 2,500 grams – around average when compared with the other 14 comparator countries in our international study. However, the prevalence of low birth weight babies in the UK has been virtually unchanged for the past decade.

The most common severe congenital anomalies include heart defects and neural tube defects (defects related to the development of the central nervous system). The UK has comparatively lower rates of heart defects than other similar countries, but data from 2011-2015 shows the UK having the second highest rate of babies born with neural tube defects (12.8 per 10,000 births, compared to an average of 10.3 across EUROCAT countries).

Neural tube defects can be prevented with supplementation with folic acid, ideally before conception and throughout early pregnancy. Together with our stalling progress on reducing low birth weights, the data on neural tube defects in the UK suggest that much still needs to be done on antenatal maternal health promotion.

#### 2.1.4 Reducing preventable admissions to hospital

Our 2017 analysis found that infants (less than a year old) had the highest rates of A&E attendances among the 0-24 age group, at 74,522 per 100,000 population. This compares to a rate of around 43,000 in the general population and around 38,000 in the overall 0-24 age group. Furthermore, they experienced a 30% rise in emergency admissions over 10 years (or 23% when adjusted for population change). Young children (one- to four-year-olds) also experienced around a quarter more emergency admissions over the decade (or 11% when adjusted for population growth).

In addition, infants had the highest emergency readmission rate (emergency readmissions in the 30 days following discharge from a previous emergency admission) of all age groups.

Many of these unplanned admissions will have been necessary, but a proportion of these admissions were for potentially preventable conditions. For example, there were concerning rises in emergency admissions for jaundice and respiratory problems for infants. This may be partly explained by more infants with complex disabilities surviving and requiring more intensive health care support, or possibly the premature discharge of mothers and their babies. However, the quality of community and maternity services may be linked, especially with a recent review by NHS England highlighting the need for improved breastfeeding and follow-up support to new mothers in the community, focusing on conditions including jaundice.

As well as potentially preventable conditions resulting in an emergency admission, our research suggests a link between hospital use and deprivation. Our 2017 study showed that for children under the age of five, the A&E attendance rate in the most deprived quintile was over 50% higher than that of the least deprived quintile (709.0 compared to 461.9 per 1,000). Across the 10 most common conditions leading to unplanned hospital visits for all age groups, the rates of admission were consistently highest among children and young people from the most deprived areas.

## 2.2 Ways to achieve these goals

### 2.2.1 Improving vaccination uptake among children and pregnant women

Vaccine uptake for childhood vaccinations in the UK generally compares well with other countries. However, data from 2016 show a slight reduction in uptake of all three major early childhood vaccines in the UK.

Furthermore, MMR (measles, mumps and rubella) vaccine coverage is still below 95% for children receiving two doses by their fifth birthday, and around 50,000 children in England each year are at risk of MMR because they have not been immunised against the diseases.

Pertussis immunisation has been offered to pregnant women since 1 October 2012, to protect infants by boosting the short-term immunity of babies until they can be vaccinated themselves. Pertussis vaccination coverage in pregnant women in England is not especially high, but since its introduction in 2012 there has been an increase in uptake from 43.7% to a maximum of 73.8% in March 2018.

There is clearly much more to be done both in reversing the deteriorating trends in uptake of the major early childhood vaccines in the UK, and improving rates of pertussis vaccination among pregnant women.

## 2.2.2 Supporting better maternal physical and mental health

### *Smoking in pregnancy*

There is extensive evidence showing that smoking during pregnancy can have devastating consequences for mothers and their babies. Smoking while pregnant has been associated with a number of adverse outcomes, including stillbirth, preterm birth and low birth weight. In July 2017, the Department of Health introduced a target to reduce the prevalence of smoking in pregnancy to 6% or less by the end of 2022.

The percentage of women in England who are known to be smokers at the time of delivery has been decreasing over time. In 2006/07, 15.8% of pregnant women were smokers and this decreased to 10.8% in 2017/18. Despite this 5% decrease in prevalence, the reduction in smoking rates among pregnant women has slowed and stalled in the past couple of years, with a percentage decrease of only 0.3% between 2015/16 and 2016/17 and percentage increase of 0.1% between 2016/17 and 2017/18.

### *High BMI in pregnancy*

Being overweight in pregnancy can increase the risk of complications for pregnant women and their babies. The higher a woman's BMI, the higher the risks. These complications include miscarriage, gestational diabetes, pre-eclampsia and blood clots for the women and premature birth and foetal abnormalities.

In May 2018 there were 9,953 women in England attending antenatal booking appointments who were classed as obese, based on their BMI measurements taken at the appointment. This equates to 22% of all women who attended and who had BMI values recorded. Since April 2015 the percentage of women classed as obese has increased over time, ranging between 18.5% and 22%.

### *Breastfeeding*

The UK has one of the lowest breastfeeding rates in the world: 34% of babies are receiving any breastmilk at six months, compared with 62.5% in Sweden. Countless initiatives are underway to improve breastfeeding rates in the UK, but we remain concerned that shortages in health visitors and community midwives (see section 3.2 below) make this an uphill struggle.

### *Health promotion*

The benefits of early targeted investment in maternal and perinatal health to improve health and developmental outcomes for children, well into adulthood, are well recognised. This was clearly enough understood by policymakers to ensure the introduction of progressive policies such as the *Healthy Start* and the *Healthy Child* programmes.

However, these have been put at risk by the considerable pressures that public health budgets have come under in the last few years, potentially undermining or even reversing some of the progress previously made. The economic case for prevention and early intervention in maternal health is well rehearsed, but there is a serious risk that, for local authorities on diminishing budgets, these are seen as a luxury for times of feast rather than famine. We would urge the committee to make the case for continued investment in maternal and perinatal health.

### *Maternal mental health*

There is a long-overdue and growing recognition that supporting maternal mental health and wellbeing both during pregnancy and afterwards is an essential part of improving child health outcomes.

While this area has not yet been explored by Nuffield Trust research, there is a wealth of evidence pointing to the need to improve mental health support to new mothers and their families. Findings from the [MBRRACE-UK team](#) at the National Perinatal Epidemiology



Unit in the Nuffield Department of Population Health suggest that around one quarter of all maternal deaths between six weeks and a year after childbirth are related to mental health problems. Yet according to the [Maternal Mental Health alliance](#), pregnant women and new mothers across almost half of the UK have no access to specialist community maternal mental health services.

### 2.2.3 Reducing inequalities and child poverty

As we have seen, inequalities in child health are stark across the deprivation groups. From stillbirths to infant mortality to unplanned hospital admissions, the most deprived children are more likely than their richer counterparts to experience death, ill health or hospital use in early childhood.

Our international comparisons analysis suggests that the UK could be doing much better when it comes to protecting children and young people from the effects of poverty and worklessness. While the proportion of children living in workless families is declining, the UK fares poorly in comparison with other countries, with the second highest proportion of children in households where no adult is working (15.4%) according to OECD data, behind only Ireland (16%).

Similarly, using the current government's own preferred poverty measure (60% threshold relative low income), since 2013/14 relative income poverty for children has deteriorated to levels not seen since 2009/10. In addition, the Institute for Fiscal Studies also [projects](#) that relative child poverty (after household costs) will also continue to increase to 37% by 2021 (from 30% in 2015). This, combined with the knowledge that poverty profoundly influences outcomes across a wide range of health indicators, means that tackling poverty and inequality, and improving social mobility for young children and their families, must remain the highest priority.

We would therefore urge the committee to ensure that any strategy on the first 1,000 days of life must have tackling child poverty and inequality at its heart.

## 3. Local provision

### 3.1. The scope, scale and current performance of provision for first 1,000 days of life

Child health has changed – over the last 45 years mortality data show an epidemiological transition away from acute infectious illnesses towards chronic long-term conditions. But the way health care services are provided is still heavily hospital focused and reactive. There is also wide variation in the quality of children and young people’s health services provided across the UK.

In 2016 we published a briefing drawing on a workshop looking at emergent new models of care in child health. The key findings of relevance to the committee are summarised below.

New models of care have tended to focus on adults. However, a variety of different models of children’s health services have emerged over the last few years to reduce pressure on GPs – from the redesign of paediatric outpatient services to paediatric nurse-led walk-in centres. These models offer different ways of managing the needs of children and young people with acute and chronic conditions.

These new models of care have emerged in response to a series of problems in the current services for children and young people, in particular: the increasing use of hospitals to treat conditions that could be dealt with in other settings, and related financial pressures; primary care being under severe pressure in terms of capacity, confidence, knowledge and skills; the often disjointed care provided between hospitals and the community, as well as other non-health services; and dissatisfaction among children, young people and their families.

Common features of the new models of care that are emerging include: having a focus on understanding the needs of different sections of the child population and their families, and organising care to meet these needs; strengthening early and easy access to appropriate expert paediatric assessment in the community; understanding how children and their families use the health system, helping them use it more effectively, and actively working with them to design and improve the quality of services; and addressing the wider needs of children and their families by working in multidisciplinary teams and joining up health records.

Our analysis concluded that new models of care provide an opportunity to improve the quality of services for children and young people and increase efficiency; for professionals to develop and learn from each other, and break down barriers; and to link up not only services, but information across disciplines, professionals, patients and their families. But there are major challenges, such as the financially constrained environment, complex funding arrangements and inequalities in provision.

While child health has had a relatively low profile in recent policy drives to reform health care, which have focused more on the need to join up care for older populations, it is encouraging that the Chief Executive of NHS England, Simon Stevens, has stated that child health is a key priority in the forthcoming Ten Year Plan. We look forward to further detail on the specific proposals that will sit under this element of the plan.

### **3.2 Barriers to delivery (e.g. workforce shortages, financial constraints on councils)**

Our analysis of indicators of care quality highlights some concerning trends in the provision of health visitors in England and Wales. In October 2010, the government made a commitment to increase the numbers of health visitors by 4,200 by 2015, but this target was missed. The number of health visitors (full-time equivalent) decreased from 8,100 in September 2009 to a low of 7,375 in August 2012, and increased to a peak of 10,309 in October 2015. Since then, the number of health visitors has decreased, and as of April 2018 there were 7,982 health visitors.

Similar concerns apply to shortages of midwives. The Royal College of Midwives estimates there is a 3,500 shortfall in the midwifery workforce in England and, with a third of midwives already over 50 and eligible to consider retirement at 55, this shortfall looks – if anything – set to grow.

The Royal College of Paediatrics and Child Health have recently highlighted concerns over shortages of children's doctors and nurses. A 2017 survey focusing on rota gaps and vacancies among paediatricians found that there were not enough junior doctors to fill 18.6% of places on rotas, with the biggest problems affecting the most senior posts where the vacancy rate was 23.4%. The College's 2017 *Facing the Future* audit found that only around 15% of hospital children's services are backed up by a full-time community nursing service, creating difficulty in discharging children early.

## 4. The current evidence base for improving outcomes in the first 1,000 days

As cited in this submission, there has been extensive work to compare trends in health outcomes between different countries. More recently, there has been some important work to investigate the reasons for some of these country-level differences. For example, a [recent study](#) published in the Lancet identified systemic and socioeconomic reasons for the UK's comparatively poor infant mortality rate.

However, to date there has been relatively little research or policy attention into how national policies contribute to these differences (and thus how UK outcomes could be improved). For example, the NHS offers far fewer preventive care appointments than some other countries. Well-baby care in the US is recommended to include eight visits in the first year, and the Dutch national schedule recommends 10 visits over the first year. In the NHS, there are only three universal checks – at birth, six weeks and at around nine months.

Furthermore, there is concern that a lack of health visiting services contributes to worse outcomes. For example, the Institute of Health Visiting [suggests](#) that falling staff numbers and a loss of professional autonomy are likely to have a knock-on impact on child health and wellbeing, and create a further burden on other services. Anecdotal evidence suggests that shortages of health visitors may result in increased hospital admissions, but research is limited in this area. In addition, health visitors can play an important role in supporting maternal mental health and wellbeing.

Similarly, we anticipate that increases in child poverty will have a negative impact on child health outcomes, but there has been limited work in quantifying this impact or looking at potential ways of mitigating it – something we hope to address in part through our own work.


## 5. Conclusion

The Nuffield Trust's decision to focus on child health as a strategic priority stems from a concern that children and young people's health is both absent from much policy thinking at the moment, and in some cases is being actively harmed by the knock-on effects of public sector austerity. The evidence that we are falling behind some of our peers internationally on measures of child health, as well as the persistent – and in some cases growing – divide between children in rich and poor areas, serves to exacerbate the case for a coordinated national strategy. This should address the priorities we highlight above, as well as focus on the impact of deprivation and the wider determinants of child health and wellbeing.

The committee's focus on this important area is therefore welcome, as is NHS England's commitment to address child health as part of the upcoming Ten Year Plan. We look forward to contributing the insights from our research programme as both initiatives progress.

**Nuffield Trust is an independent health charity. We aim to improve the quality of health care in the UK by providing evidence-based research and policy analysis and informing and generating debate.**

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