

Inequalities in children's health in the UK

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Abstract

Health outcomes for children in the United Kingdom vary depending on socioeconomic risk factors. This article explores the evidence for this association including data on child mortality, developmental progress, educational outcomes and obesity. *Fair Society, Healthy Lives* was a 2010 report chaired by Professor Marmot and this article describes the framework proposed in the Marmot report to understand how health inequalities occur and what policy objectives could reduce the gap between outcomes for the wealthy and the poor in British society.

Keywords child health; health inequalities; socio-economic status

Introduction

There has been a long history in the United Kingdom (UK) of reports into health inequalities. One of the most important, the Report of the Working Group on Inequalities in Health was published in August 1980 by the Department of Health and Social Security and was also known as the Black Report because its chairman was Sir Douglas Black, President of the Royal College of Physicians. This seminal work was commissioned by the previous Labour government and was not welcomed by the new Secretary of State for Social Services, with few copies of the Report printed and little media attention.

But the Black Report is an important document on inequalities in health and their causes and remains a good read for anyone interested in the issue, the evidence and what action can be taken. It looked at inequalities across the life course, found a gradient across social classes, and considered four main explanations for these variations in health. These were that inequalities were:

- An artefact of the measurement process
- Natural selection (lower social classes are inevitably made up of less healthy people who struggle to improve their circumstances)
- Structural problems (poverty and social deprivation affect health adversely)
- Cultural/behavioural (people damage their own health by excessive consumption of harmful commodities).

The Report concluded that health inequalities were real and mainly attributable to other social inequalities including income, education, housing, diet, employment, and conditions of work. The Report recommended a wide range of social policy measures to combat inequalities in health.

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Since the Black report there has been a series of reviews of the evidence on health inequalities, sometimes across the life course (Whitehead; Acheson; Marmot) and sometimes focussed on children (Spencer).

Evidence for a gradient of child health outcomes by social class

All these reports describe a gradient in child health outcomes by social class with children from poorer families always doing worse. The most recent is *Fair Society Healthy Lives*, also known as the Marmot report, published in 2010. In this article some of the evidence for a gradient in outcomes from the Marmot report is presented to make the case for why this remains a key paediatric issue; one that demands intelligent action.

Figure 1 shows life expectancy and disability free life expectancy (DFLE) at birth by neighbourhood income level. The lines are not flat, there is a gradient, with a DFLE of 57 years for children born into the most deprived neighbourhoods compared to 69 years in the most advantaged neighbourhoods and a life expectancy of 73 years compared to 82 years for children born in the least deprived neighbourhoods (Figure 1).

Thankfully child deaths in the UK are rare, but they do occur and some causes of death show a social class gradient. For instance road traffic accidents, which is an important cause of death in childhood, shows a social class gradient irrespective of whether the child is a pedestrian, in a car or riding a bicycle. Living in a family where the father is unemployed and has never worked has the most dramatic effect on chances of death from this cause (Figure 2).

Deaths in the first 12 months of life measured using the infant mortality rate (IMR), is a second important cause of death in childhood. In the United Kingdom the IMR has been falling for some time (Figure 3) but the fall masks the fact that there is a differential mortality rate by social class. Figure 3 shows IMR is consistently 15% higher in families where fathers are employed in manual and routine occupations compared to all children with parents married or jointly registered. This difference persists at exactly the same level despite the technological developments from 1994 to 2007 (Figure 4).

The impact of these differences is brought home by the data presented in Figure 5 which shows an estimate of the number of infant deaths avoided if all social classes had the same level of mortality as the least deprived. An additional 200 full term babies and almost 300 premature babies would survive beyond the first year in this model (Figure 5).

These data describe a significant social gradient in child mortality, but there is evidence for an impact of material circumstances on health outcomes considerably broader than mortality alone. The United Kingdom has a long history of longitudinal cohort studies and these collect good quality observational data. Figure 6 shows how socioeconomic status impacts on the developmental trajectory for a group of children from the 1970 birth cohort from 22 months to 10 years of age. Irrespective of their developmental quotient at 22 months of age, children from families of high socioeconomic status did better over the 8 years of the study than children from families of low socioeconomic status (Figure 6).

There is other data showing that this developmental impact persists in school attainment so that at school examinations at 16 years of age there is a social gradient in results (Figure 7) and is identifiable in health issues such as prevalence rates of obesity (Figure 8).

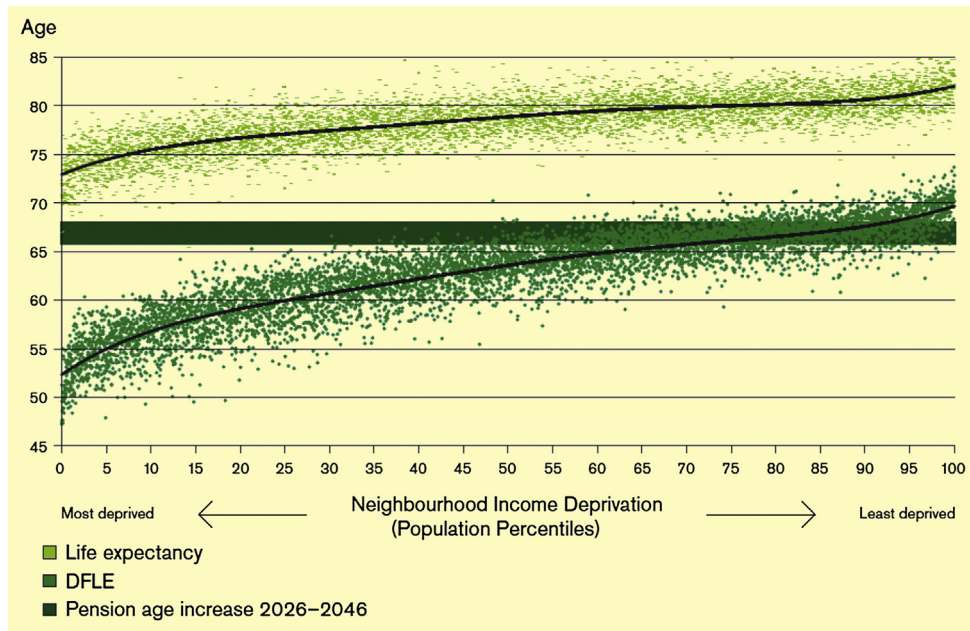


Figure 1 Life expectancy and disability free life expectancy (DFLE) at birth, persons by neighbourhood income level, England 1999–2003.

Mediating factors for the effect of socioeconomic status on child health

So there is a large body of evidence across several decades supporting the relationship between socioeconomic status and health outcomes. *Fair Society Healthy Lives* is the most recent report presenting data on this relationship. But how does socioeconomic class have this impact, what mediates its effect? Once again the Marmot report provides data on this issue. [Figure 9](#)

shows four risk factors for poor child development that are patterned by social class and may be mediators for the effect of socioeconomic class on development; birth weight, maternal post natal depression, daily reading to children aged three and a regular bed time aged three ([Figure 9](#)).

A second piece of data looks at school readiness; how prepared children are for learning in school. [Figure 10](#) shows that this is socially patterned with similar social patterning for vocabulary aged 3 years, vocabulary aged 5 years, and high rates of

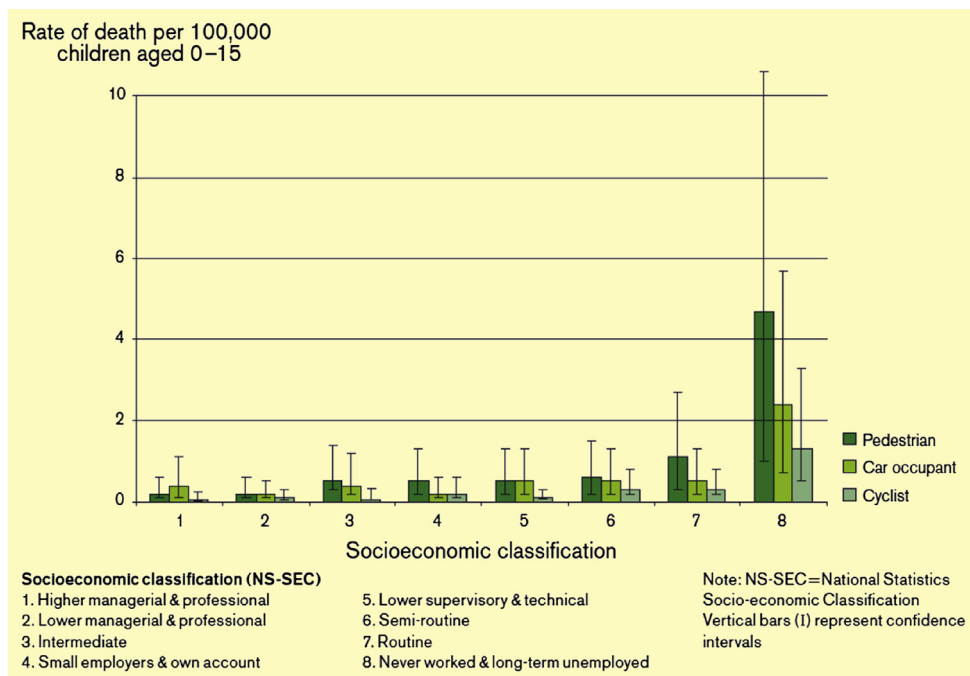


Figure 2 Child deaths by socioeconomic class (NS-SEC), 2001–3.

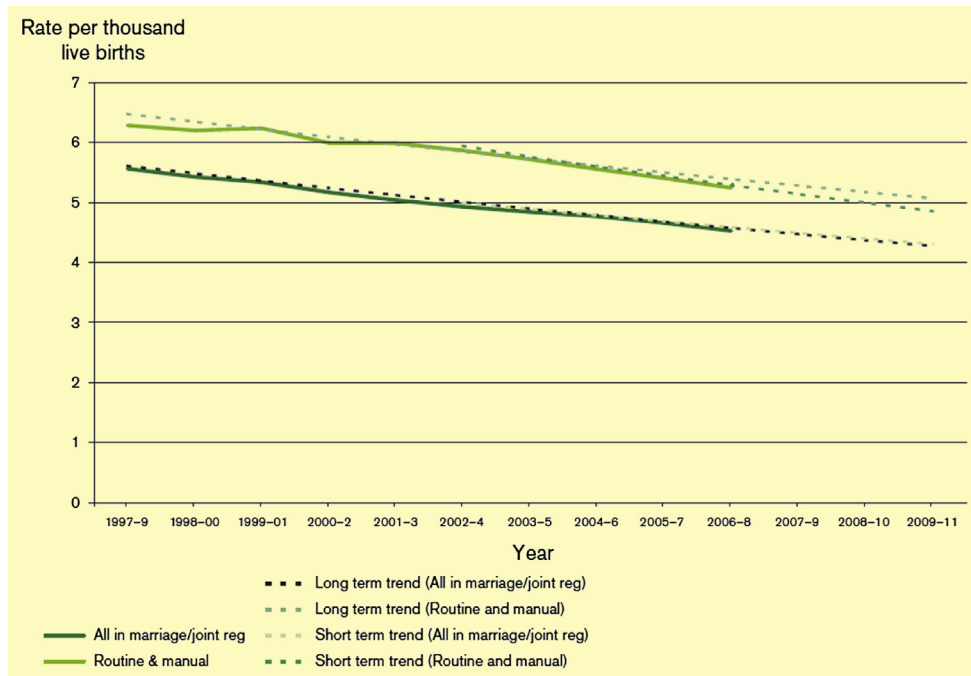


Figure 3 Trends in the infant mortality PSA target indicator 1997–9 to 2006–8 and projections to 2009–11.

hyperactivity and conduct problems in children from low socioeconomic groups (Figure 10).

Policy and practice interventions to reduce child health inequalities

Much of the evidence presented is observational in nature, describing associations in time but not causation. However the Black report concluded that to address health inequalities required a wide range of social policy measures and the Marmot report came to similar conclusions. *Fair Society Healthy Lives* developed a model to explain the relationship between socioeconomic circumstances and health outcomes. This was based on the whole life course and saw the impact of

socioeconomic class happening through a myriad of positive or negative interactions which cumulatively had an effect on health (Figure 11).

Fair Society Healthy Lives then proposed a conceptual framework to reduce inequalities and improve health and wellbeing for all by creating an enabling society that maximizes individual and community potential and ensures social justice, health and sustainability are at the heart of policies (Figure 12).

What does this mean in reality? Clearly clinicians are at the sharp end dealing with the consequences of ill health every day. Most of us will be aware of health inequalities but may not know about local or national policy developments and action plans aimed at reducing the inequalities. The Marmot review website

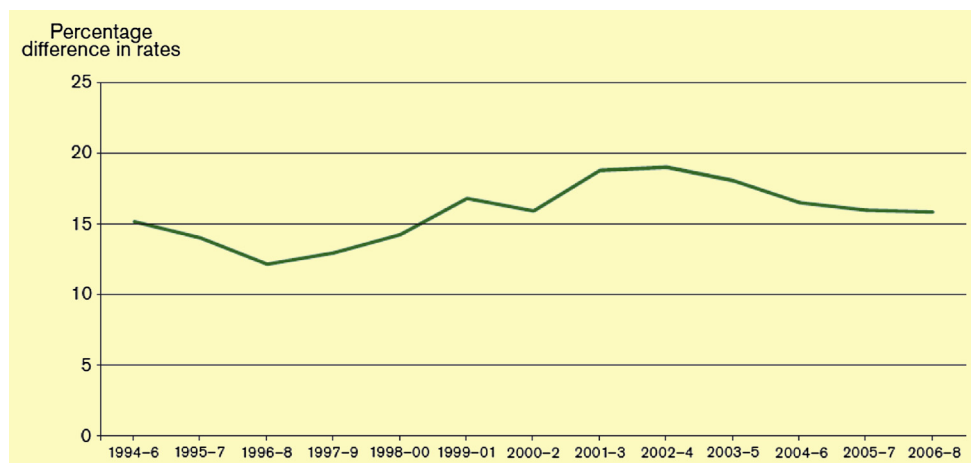


Figure 4 Relative difference in infant mortality rates between babies with fathers in manual and routine occupations and all with parents married or jointly registered 1994/6–2007/9.

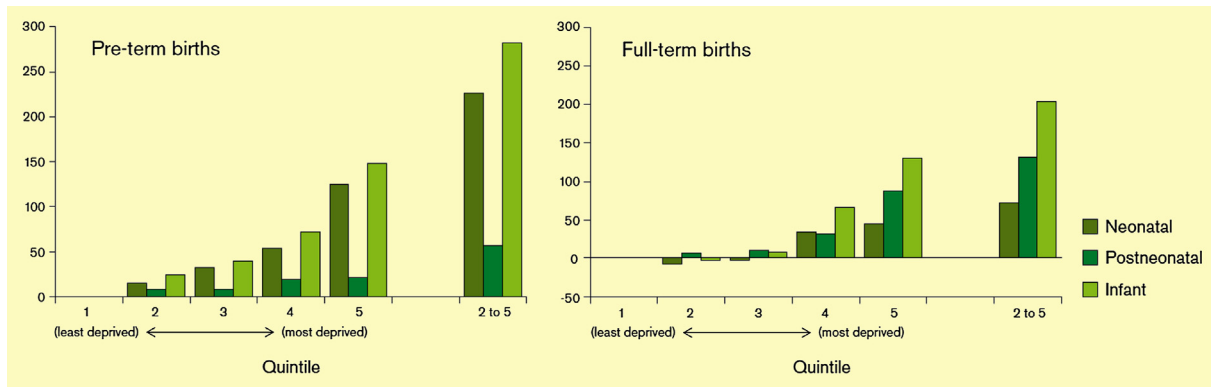


Figure 5 Estimated number of infant deaths that would be avoided if all quintiles had the same level of mortality as the least deprived, 2005–6.

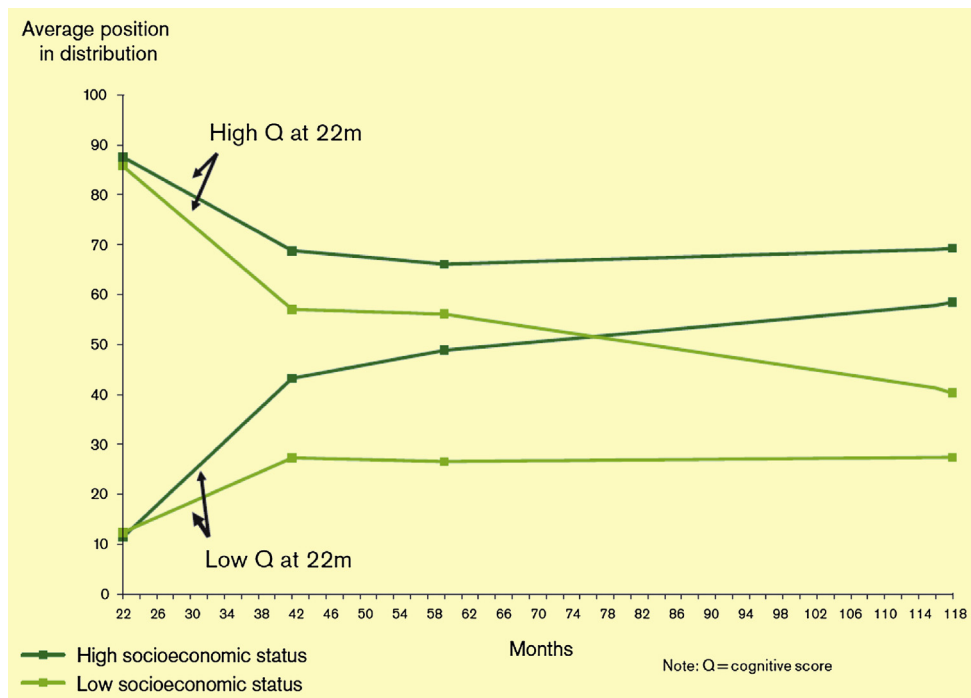


Figure 6 Inequality in early cognitive development of children in the 1970 British Cohort Study, at ages 22 months to 10 years.



Figure 7 Percentage of pupils achieving 5+ A*-C grades including English and Maths at GCSE by income deprivation of area of residence, England, 2008/9.

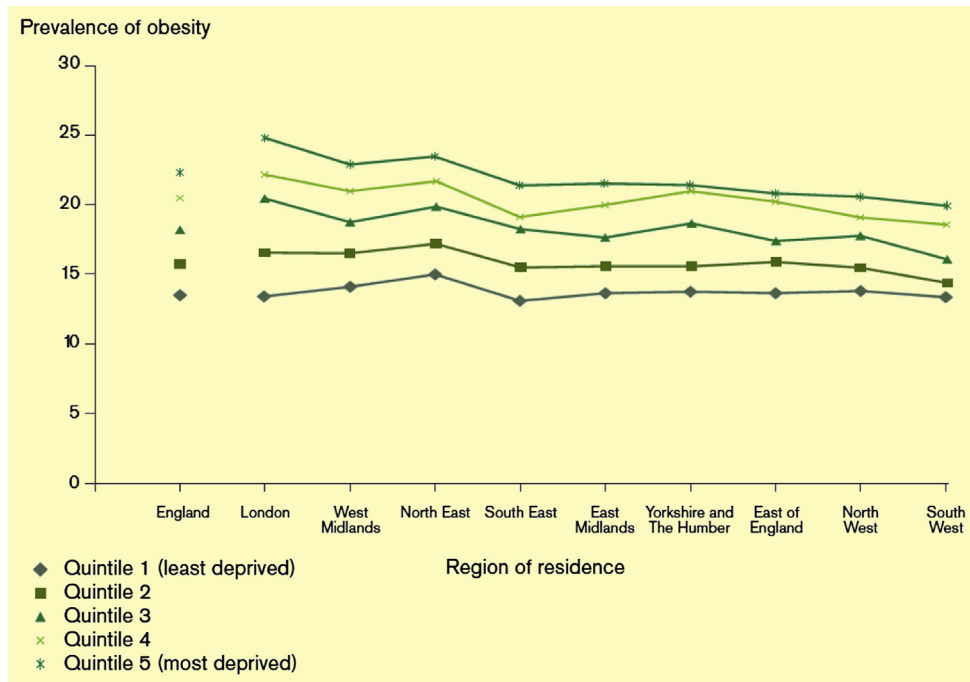


Figure 8 Prevalence of obesity (>95th centile) by regions and deprivation quintile for children aged 10–11 years, 2007/8.

(www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review) has a wealth of information on initiatives but some examples may assist.

Policy objective recommendations in the Marmot review

Fair Society Healthy Lives suggests six policy objectives (Figure 12) but is explicit that Policy Objective A – give every child the best start in life is the most important as interventions later in life are less effective than a good foundation in the pre-school years. The Sure Start programme went some way in

providing support in parenting but the review recommends further action; a second revolution in the early years with an increase in the proportion of overall expenditure allocated to the early years with the expenditure focussed progressively across the social gradient. It also recommends supporting families to achieve progressive improvements in early year's development by four actions:

- Giving priority to pre and post-natal interventions such as intensive home visiting programmes that reduce adverse outcomes of pregnancy and infancy

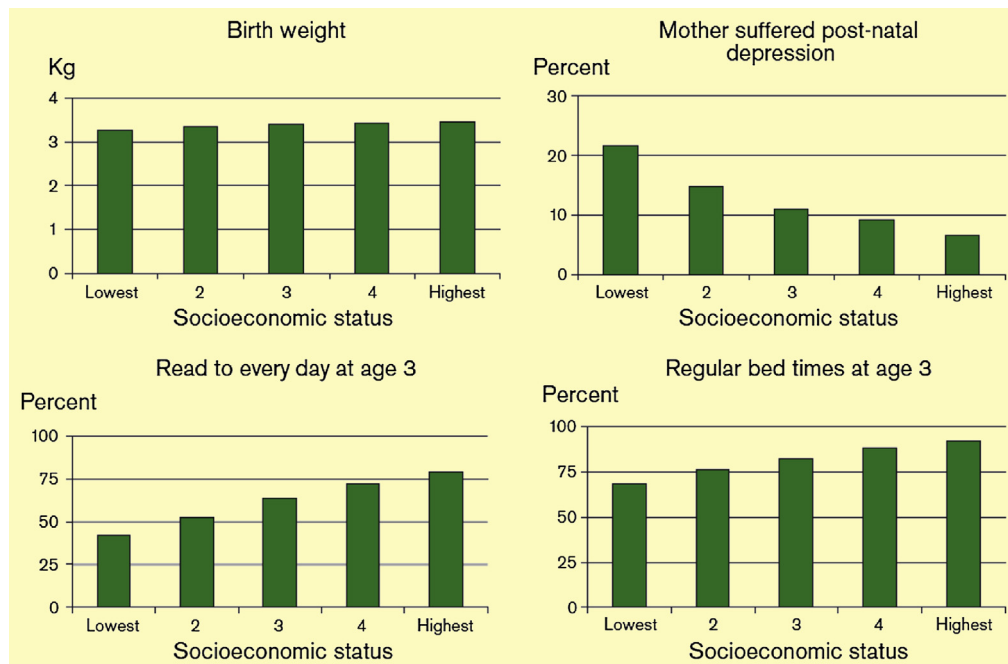


Figure 9 Links between socioeconomic status and factors affecting child development, 2003–4.

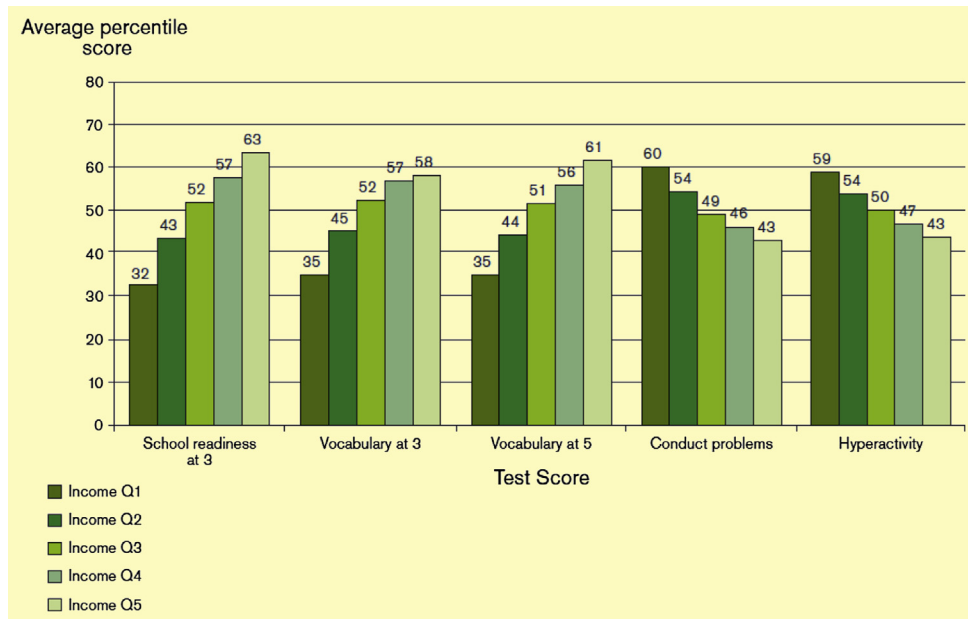


Figure 10 Indicators of school readiness by parental income group, 2008.

- Providing paid parental leave in the first year of life with a minimum income for healthy living
- Provide routine support to families through parenting programmes, children's centres and key workers, delivered to meet social need via outreach to families
- Developing programmes for the transition to school.

There has been progress in some of these areas; the investment in health visiting in 2010–13 has increased this cadre of early years worker significantly. The Family Nurse Partnership has provided access to an intensive home visiting programme and has been expanded by the government. The initiative, based on a model developed by David Olds in the USA is being

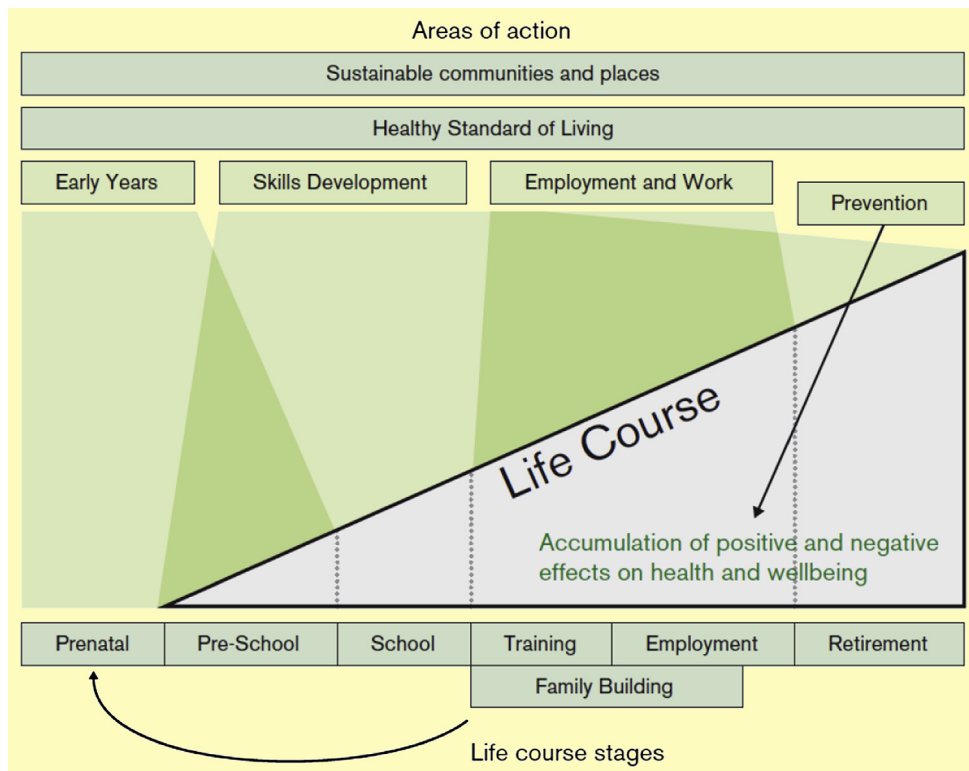


Figure 11 Action across the life course.

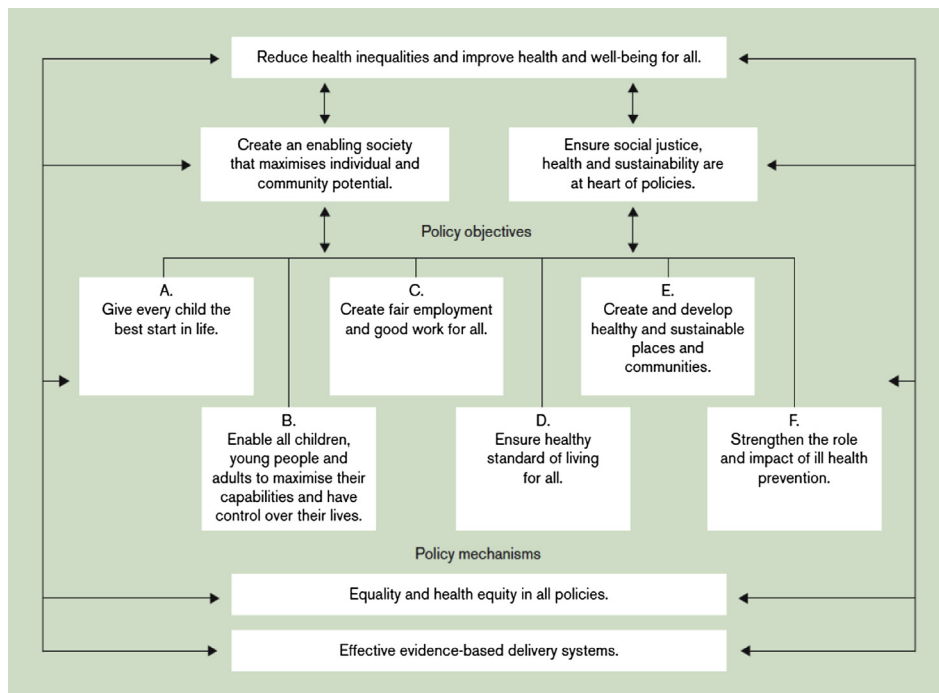


Figure 12 The conceptual framework.

evaluated in a randomized controlled trial with results due in 2014. A number of parenting programmes are known to be effective, particularly in managing behavioural concerns and are available across the country and the National Academy for Parenting Practitioners (www.preventionaction.org/reference/national-academy-parenting-practitioners) provides guidance on research and service developments.

Understanding the impact of health inequalities and the evidence for interventions is an important competency in paediatricians, who continue to have an important role advocating for better health for all children. ♦

FURTHER READING

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