

**Early years interventions to
address health inequalities in London –
the economic case**

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Background

This report provides evidence for and analysis of the case for investment in early years interventions to address health inequalities in London. The evidence clearly shows that well designed and implemented early years programmes can have significant benefits in terms of life-long health, educational attainment, social, emotional and economic wellbeing and reduced involvement in crime that far outweigh their costs.

This paper sets out the findings from a significant review of high quality evidence on early years interventions to identify 'what works' and 'what doesn't', provide international and national comparisons and translate data and potential savings into a UK and London context. It has been developed for, among others, service planners and commissioners in children's services, health, schools and other agencies.

Whilst London agencies will want to commission and/or deliver an appropriate portfolio of services based on local demography and needs analysis, the findings of this analysis can be used to confidently guide investment decisions to deliver improved outcomes and cashable benefits to London.

Definition:

- Early years refers to programmes and services that intervene and support early in a child's life (aged between 0 and 5 years of age, including prenatal care).
- Early years is a component of early interventions, which also encompasses intervention early in a child's life, early in the development of a potential problem and early, once a problem has been identified.

Current and future needs in London

London experiences significant inequalities in health and other life chances. This is, due to wide variations in the socio-economic circumstances of individuals and their families, lifestyle behaviours and access to effective healthcare and other support services.

Children raised in disadvantaged environments are, on average, less likely to succeed in school, in their future economic and social life and are much less likely to grow into healthy adults.

The case for early years investment is even greater in London as the child population (aged 0 to 4) is projected to increase by 11.6 per cent between 2008 and 2033, more than any other English region.

As well as highlighting a greater need for resources in London compared to the rest of the country, this supports, too, the rationale for intervening early where needed in order to improve the life chances of these children and protect the future economic growth of London.

London child health inequalities:

- London experiences high levels of income polarisation, worklessness and child poverty that contribute to inequalities in the health of Londoners.
- The case for improving health outcomes across the social gradient* is highlighted by data showing that a greater proportion of people in London live in deprived areas and the health of children is generally worse compared to the rest of England (NHS Health Profile 2009).
- The average life expectancy at birth varies significantly between areas in London, and infant mortality rates in deprived boroughs are more than double the rates experienced in more affluent areas.

** The social gradient of health shows that the lower a person's socio-economic position, the worse their health is likely to be.*

A clear evidence base

The early years of life are a critical time for a child's development and early childhood is increasingly recognised as the most crucial period of lifespan development. It is during this period that the foundations are laid for every individual's physical and mental capabilities.

Children at this age are particularly vulnerable to both negative and positive experiences, which can strongly influence their future outcomes across a range of areas including health, education and potential involvement in crime.

These cumulative effects mean that the early years provide a considerable opportunity to nurture and develop children in a way that will have positive impacts for the rest of their lives. Failure to address poor development in the early years will be increasingly difficult and costly to remedy later in life.

These poor outcomes are not inevitable. There is increasingly strong evidence that an effective way to address health inequalities is through effective early years interventions.

Interventions do not necessarily have to be health service specific in order to have a positive impact on health inequalities. The links between health inequalities and wider social inequalities are complex and both their causes and solutions are connected. Programmes that improve learning abilities, behaviour and parental relationships early in childhood can help to break the cycle of poverty and inequality and therefore reduce health inequalities. Similarly, ensuring families benefit from timely and effective health care in pregnancy and infancy will have a positive impact on the child's future attainment and wellbeing.

Making the case for investing in early years

Reviews of child and family interventions that incorporate similar cost-benefit evaluations show the potential for effective early years interventions to give returns to society that are far larger than the resources invested. Such rates are high when placed next to other spending by governments made in the name of economic development, such as subsidies and preferential tax treatment for private businesses.

Another way of thinking about the relative merits of early versus later interventions is to consider the cost to society of failing to prevent poor health outcomes. For example, a review conducted in 2007 of various economic evaluations of mental illness – such as emotional and behavioural disturbances, or antisocial behaviour – during childhood and adolescence found average costs to UK society ranging from €13,000 to €65,000 annually per child. Similarly, in a UK-based study, Scott et al. (2001) contrasted their estimated £70,000 per head direct costs to the public of children with severe conduct disorders, with a £600 per child cost of parent training programmes.

The cost of teenage pregnancy is estimated at approximately £231 million per annum and the cost of crime against individuals and households estimated at £36.2 billion in 2003/04. Whilst it is not reasonable to assume that all of these costs could be negated through investment in early years interventions, this does show the scale of remedial spend incurred in some areas. If further investment was directed towards the early years and 'getting it right first time' then some of the remedial costs later in life (for example, in relation to truancy, teenage pregnancy, anti-social behaviour or crime) could be alleviated.

The rationale for an early years focus:

- An individual's experience in early childhood has a significant and long-lasting impact on their future health and wellbeing.
- Early years interventions can be extremely cost-effective, generate long lasting, cumulative benefits and at the same time reduce the need for remedial spending later in life.
- Effective early years interventions will ensure that children are more responsive to follow-on interventions as they grow older.

Under-investment in the early years

There is arguably an established trend of under-investment in early years interventions in London and the UK when compared to other areas of expenditure.

In the main, public expenditure is directed towards addressing the consequences of poor development early in life, rather than on preventative programmes in the early years. This is unlikely to be the most efficient use of public sector resources, when the life-long returns to early years interventions are so high.

One of the main barriers to an effective level of early years spending is the fact that benefits accrue to many different stakeholders over a long time period. As a result no single agency (the borough, NHS, police or others) has the incentive or available funding to invest the upfront costs of early years interventions, when they will only receive part of the benefit in the short-term. Approaches such as Total Place, the new Early Intervention Grant and Community Budgets should make it easier to pool investment and work towards early intervention as a common goal.

Cost-benefit analysis to identify effective programmes

The evidence base for investment in young children is clear, but it is important that the investment is directed towards initiatives that are effective in providing positive outcomes.

Evaluation evidence in the main report shows that the returns to early years interventions can vary considerably. Robust evaluations are required to determine the programmes that are cost-effective (as well as those that are not) and ensure that programmes provide the best value for money.

The most robust evidence of costs and benefits of early years programmes is from the United States (US). This report considers the US evidence and makes some adjustments to make the US results more applicable to a London/UK context (these assumptions are set out in the main report and Appendix D).

A relative ranking between programmes is provided which might be useful in considering which programmes are likely to be most effective and provide best value in London. To ensure that undue weight is not placed on the US (or UK) analysis in isolation, recommendations on programmes are made where both the US and UK analysis suggest a significant, positive cost benefit from the intervention.

It is anticipated that further work by Dartington Social Research Unit with a number of English cities (including London) in 2011 will provide a sustainable and robust, UK-specific cost benefit model to enable the application of tried and tested US programmes to a UK context.

Recommendations for early years interventions in London

Key findings:

- Results of the analysis based on US studies show that some home visiting programmes and pre-school programmes are particularly effective, especially for disadvantaged groups.
- There are strong examples of effective home-visiting and pre-school programmes that address or negate early causes of inequalities and lead to improved child outcomes, which would likely benefit London if implemented more widely. These include:

Nurse Family Partnership (being established as Family Nurse Partnership in UK) provides intensive support during a woman's pregnancy and the first two years after birth. It aims to promote the child's development and develop the parent's parenting skills. The programme is designed to serve low income, 'at-risk', pregnant women bearing their first child.

Early childhood education for low-income 3 and 4 year olds covers a range of pre-school initiatives using various educational approaches to increase success. The emphasis on early childhood education is consistent with the existing and continuing universal entitlement of 15 hours free early education per week for all 3 and 4 year olds in the UK.

- Many early years interventions provide high returns on investment, particularly if they are targeted at disadvantaged groups.
- Yet these programmes alone will not completely address health inequalities in London and need to be closely linked with wider action to secure families' economic wellbeing more generally.
- All programmes commissioned should be part of a wider system that enables early identification of need and effective engagement with local families from pregnancy onwards.
- However, not all early years interventions are beneficial – those that lack intensity, are non-targeted and not delivered with high quality staff are ineffective. Interventions with these characteristics should therefore be avoided.
- In order to understand the costs and benefits of a programme, part of the budget for significant, early interventions should be allocated to evaluating performance and understanding which aspects are effective (ie large programmes with a budget over a certain limit such as £1m or with the potential to be rolled out more widely).

1. Introduction

Providing the policy context

The Mayor of London published the capital's first ever Health Inequalities Strategy in April 2010. The Greater London Authority Act 2007 requires that the Mayor sets out the health inequalities facing London, the priorities for reducing them and the role to be played by a defined list of key partners in order to deliver the strategy's objectives.

This report makes the case that interventions early in an individual's life can help to reduce health inequalities and other poor outcomes, including the detrimental impacts of child poverty, in an extremely cost effective way.

'Early years': definition

- Unless otherwise stated in this report, 'early years' refers to programmes and services that intervene and support early in a child's life (aged between 0 and 5 years of age, including prenatal care).
- 'Early years' is a component of early interventions, which also encompasses intervention early in a child's life, early in the development of a potential problem and early, once a problem has been identified. Early interventions would, for example, address problems at the transition period from primary to secondary school education.

This Mayoralty wants to ensure that investment by bodies working with children and young people across London is guided towards proven approaches and models and delivers cost effective, well-evaluated interventions that really work for children and young people.

Accordingly, this report provides recommendations on which evidence based programmes are likely to produce the best outcomes for reducing health inequalities and improving child outcomes in London.

Setting out the report

In what follows, **Section 2** briefly highlights the health inequalities that exist in London and looks at the factors that impact on health inequalities, particularly examining the relationship between health inequalities and poverty. The section illustrates that the high levels of child poverty and a growing child population in London increase the importance of ensuring effective interventions are delivered in London if child outcomes are to be improved in the longer term.

Section 3 looks at the need to invest in early years interventions. It considers the impact of the very early years on a child's development and the role that early years interventions can have in influencing that development. The section considers the general findings about the value of such interventions. The section also considers the balance of current funding of early years interventions.

Section 4 sets out the evidence (primarily in terms of cost benefit analysis) around the effectiveness of particular early interventions with a view to informing which type of interventions are likely to be the most effective for London.

A series of appendices provide more detailed analysis that supports each section and underpins the main report findings.

Appendix A provides more information on child poverty in London.

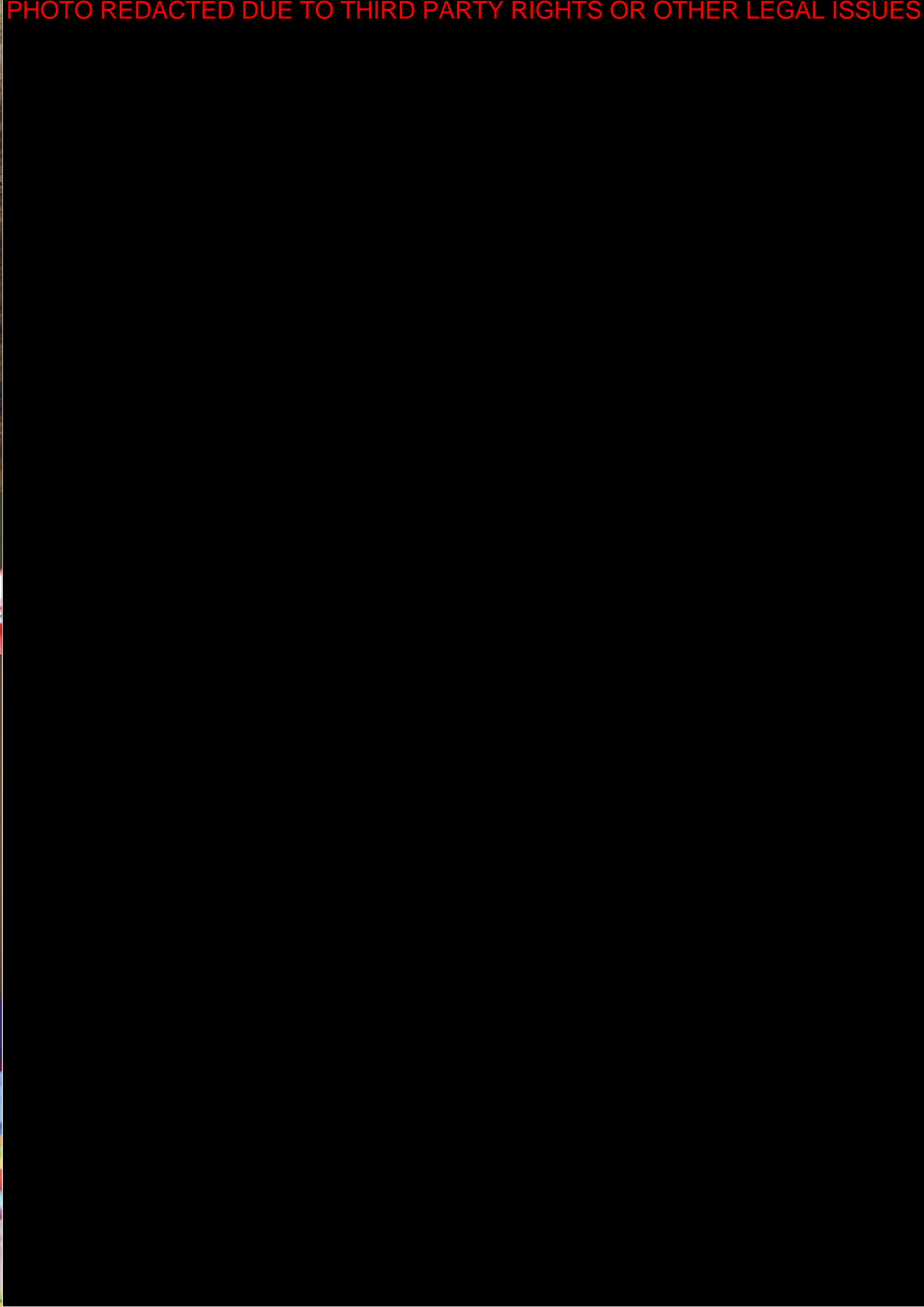
Appendix B attempts to give estimates of the expenditure on early years interventions in the UK and also looks at international comparisons of expenditure in this area.

Appendix C looks at the factors accounting for a potential under-investment in early years programmes.

Appendix D provides more detail on the evidence of the effectiveness of early years programmes in terms of cost benefit analysis. It highlights the analysis conducted to try to make

the results from international evidence more relevant to London.

Appendix E looks at some other literature and evaluation evidence – though not cost-benefit analysis evidence – that informs the effectiveness of early years interventions to reduce health inequalities. In particular, it considers literature that identifies characteristics of effective programmes in terms of avoiding teenage pregnancy, parenting programmes and programmes implemented in early childhood.



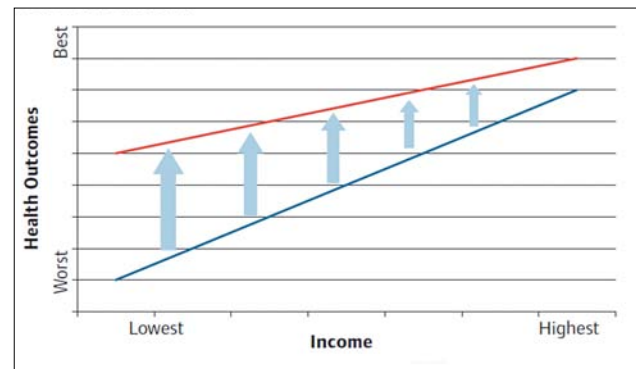
Health inequalities in London

Health inequality refers to the gap in the quality of health, in respect of life expectancy or the general state of health, across different groups of the population.

According to the House of Commons Health Committee¹ the health of all groups in England has improved over the last ten years. However the inequality in health between the social classes has widened with the gap increasing by four per cent amongst men and eleven per cent amongst women. This was found to be the case because the health of the wealthiest part of the population is improving more quickly than that of the less well off. This illustrates the need to improve the health outcomes across the social gradient, as depicted in Figure 1, with a particular focus on those on the lowest incomes.

Current evidence shows that a greater proportion of people in London live in deprived areas and the health of children is generally worse compared to the rest of England². Eleven per cent of children in reception years and 21 per cent of Year 6 students are classed as obese in London, higher than any other region³. In addition, according to the NHS, levels of physical activity and teenage pregnancy are also worse in London than the average for the rest of England. Levels of drug misuse, violent crime, and new cases of tuberculosis are also higher in the capital than the rest of the country⁴.

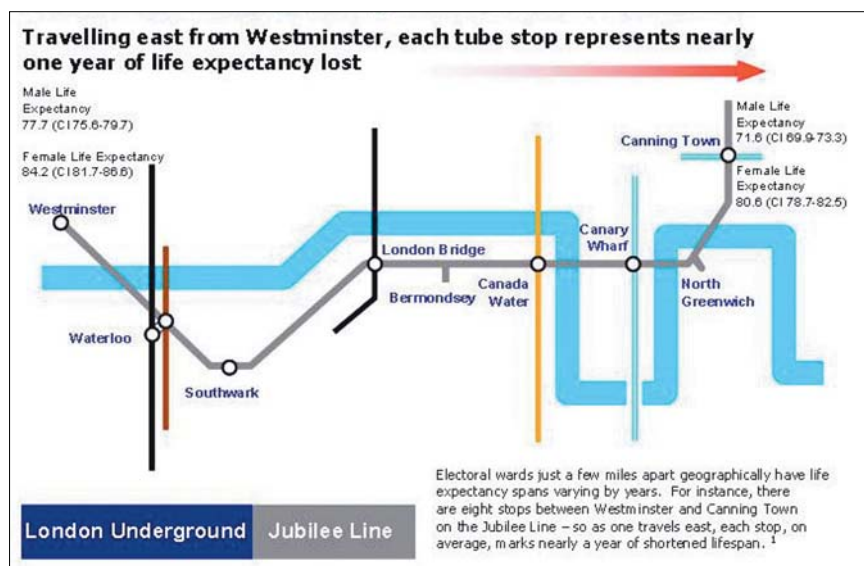
Figure 1: The Social Gradient of Health



Source: Mayor's Health Inequalities Strategy 2010

Average life expectancy is often considered to be a good indicator of the general health status of the population. While rates of average life expectancy at birth in London are slightly higher than the rest of the UK, there are significant disparities between boroughs and within boroughs across London. For example, a boy born today in Tottenham Green, Haringey can expect to live until the age of 71. This is seventeen years less than a counterpart born in Queen's gate, Kensington and Chelsea. Indeed, the London Health Observatory⁵ calculated differences in life expectancies within a small area of London. They found that when travelling east from Westminster, each tube stop represented nearly one year of life expectancy lost. As a result, a man living in Westminster has a greater life expectancy (77.7 years) compared to a male living further east in Canning Town (71.6 years life expectancy).

Figure 2: Differences in Life Expectancy within London



Source: Analysis by London Observatory using Office for National Statistics data.
Diagram produced by Department of Health

Other illustrations of the inequalities in health experienced within London include the fact that infant mortality rates vary significantly between different boroughs in London⁶. The highest rates (at over six per 1,000 live births) in deprived boroughs are more than double the rates experienced in more affluent areas. Evidence also shows a socio-economic gradient in the distribution of child asthma, the most common chronic childhood disease in London. The capital also has stark inequalities in oral health, with children in inner London having some of the worst levels of tooth decay in the country. The social gradient in mental health is particularly pronounced in childhood with a threefold variation in prevalence between the highest and lowest socioeconomic groups. Nearly one in five children living in a workless household suffers from mental health problems.⁷

Recent DH/London Health Observatory analysis modelled different evidence-based interventions. This was to show which approaches would most strongly narrow the gap of a higher prevalence of certain specific risk factors for infant mortality among the routine and manual (R&M) occupations group compared to the rest of the population. It was found that increasing breastfeeding rate by 16 per cent could have a four per cent reduction in the overall gap⁸.

Indeed, it is widely acknowledged that breastfeeding can provide many long-term health benefits, for example it is a key protective factor for childhood obesity. However, the UK has one of the lowest rates of breastfeeding in the world and rates are particularly poor in disadvantaged families. This is highlighted as a key, effective intervention in the new C4EO report on early intervention⁹.

Causes of health inequality

Health outcomes such as high rates of mortality, ill health and some disabilities can be caused by many factors. The Commission on Social Determinants of Health¹⁰ concluded that inequalities in health arise because of inequalities in the conditions of an individual's daily life and the fundamental drivers/factors that give rise to

them. Examples of these common factors that can cause health inequalities include the social economic environment of an individual (eg jobs, housing, education and transport), lifestyles/health behaviours (eg diet, smoking, social networks) and access to effective health/social care (eg services that result in health benefits). Inequalities may also be observed across different genders, geography, age, ethnicity, socio-economic groups, sexuality and disability¹¹.

The House of Commons Health Committee illustrate in their report¹² how health can not only be described in socio-economic terms but can also be viewed as an investment that produces a flow of healthy outcomes over time. In this instance, children are believed to inherit an initial stock (or amount) of health 'capital' when they are born that is affected by genes and prenatal factors (ie the mother's eating/drinking/smoking behaviours during pregnancy¹³). This initial 'stock' of health capital depreciates with age and can be increased with investment (ie healthy behaviours, education, medicine etc). The optimal stock of an individual's health can be considered to be when the marginal benefits (of health outcomes) are equal to the marginal costs (of health related investment). In a perfect world an individual will continue to invest in their health until the marginal benefits from investing are equal to the marginal cost¹⁴.

However, there are a number of reasons why such 'optimal' investment does not occur (particularly amongst those living in poverty) which leads to inequalities in health outcomes. The 'market failure' in this case is likely to be both because many individuals do not have sufficient information about the full benefits of health related investment (so don't invest as much as they should in their own health) and because there are extra benefits to society as a whole from an individual's investment in health. One such example is that an individual vaccinating themselves benefits themselves and also society as a whole by reducing the spread of disease. This issue is explored in more detail in Appendix C.

Inequalities in health can also be passed from one generation to the next. This is in terms of both genetic factors (ie predispositions in certain individuals to particular diseases or health problems) and the parents' health behaviours during pregnancy (ie smoking, diet, medical check ups), circumstances (ie socio economic environment) and behaviour (ie healthy eating habits and physical activity) as they raise their child¹⁵. As a result, inter-generational¹⁶ causes of health inequalities are significant.

As well as impacting on the individuals concerned, health inequalities have a significant financial cost. Marmot¹⁷ illustrates that, for England as a whole, inequality in illness accounts for productivity losses of £31-33 billion per year, lost taxes and higher welfare payments in the range of £20-32 billion per year and additional NHS healthcare costs associated with inequality were found to be in excess of £5.5 billion per year.

Relationship between poverty and health

Birth cohort studies highlight the impact of poverty on life chances across the life course and between generations. People who experienced poverty in childhood are more likely to have low incomes and worse employment prospects than those who did not have poor childhoods.

Children from poor backgrounds are, on average, less likely than other children to continue in school after age 16, or to attain educational qualifications. Meanwhile, women who experience poverty in childhood are more likely to become mothers at a young age and lone parents than those who did not. There is also a significant relationship between poverty, ill health and disability¹⁸.

After accounting for housing costs, London experiences a higher level of income poverty than the UK as a whole. Child poverty, in particular, is a very significant issue in London. During 2006-2009, nearly two out of every five children (39 per cent) in London lived under the poverty line after accounting for housing costs. This compares to less than one in three (31 per cent) for the UK as a whole. Rates of child

poverty are particularly high in Inner London, where 44 per cent of all children live in poverty.

According to population projections, the number of children living in London between the ages 0 and 4 will increase by 11.6 per cent from 2008 to 2033^{19 20}. This compares to the UK average increase of 6.9 per cent over the same period. London has the greatest projected increase in the number of children aged 0 to 4 years old of all the regions in England. As a result, London will have many more very young children increasing the importance of investing effectively in the early years.

Given that children raised in disadvantaged environments are less likely to succeed in school, in their future economic and social life and are much less likely to grow into healthy adults, the level of child poverty in London is an important factor in addressing London's health inequalities. Moreover, indicators of poor socio-economic outcomes (or human capital) in adulthood, such as lower educational attainment, are strongly linked to poorer self-reported health²¹, higher rates of mortality²², poorer mental health outcomes²³, and more harmful health-related behaviours such as smoking, alcohol consumption, and unhealthy diet²⁴.

Accordingly, it is a reasonable assumption that early years interventions which impact positively on an individual's future socio-economic outcomes – in terms of, for example, education, employment and earnings – will also impact positively on the individual's health.

Therefore, early years interventions do not necessarily have to be health related interventions to have a positive impact on reducing health inequalities.

Appendix A provides more detail on poverty, particularly child poverty, in London.

This section briefly examines the research evidence on the impact of an individual's early years on future life outcomes (particularly drawing heavily on the recent Marmot review²⁵).

It then goes on to illustrate that interventions aimed at improving outcomes from early childhood can have significant, long-lasting beneficial impacts on individuals. It also shows that these are one of the most effective public sector investments that can be made.

This section will also consider the amount of public expenditure on early years programmes compared with other expenditure.

Early years and its impact on future outcomes

Early childhood is increasingly being recognised as the most crucial period of lifespan development²⁶. It is during this period that the foundations are laid for every individual's physical and mental capacities. The science of early childhood development has revealed that virtually every aspect of early human development (physical, cognitive, socio-emotional) is highly sensitive to external influences in early childhood, starting in the uterus, and with lifelong effects²⁷. Parental environments play a crucial part in shaping the lives of children.

For instance, the early years is a period characterised by sensitivity to the effects of both positive and negative experiences. Negative experiences, such as exposure to alcohol and cocaine during the prenatal period or extreme neglect during childhood, have been shown to lead to poor developmental outcomes, some of which may be impossible to compensate for, even via later intervention²⁸. Positive experiences, such as frequent mother-child interactions and high quality nutrition, such as breastfeeding, have been shown to lead to improved developmental and cognitive outcomes²⁹.

Early years outcomes have been demonstrated by many studies to have lasting lifelong impacts. Outcomes such as physical and cognitive

development and growth during infancy and early childhood have been shown to have a striking long-term explanatory power over the life course. These are associated with (amongst others) income, educational attainment, physical performance and mental health in adulthood suggesting common developmental patterns for health and disease between the early years and adulthood.

Recent research has recognised the importance of an individual's early years on the formation of both cognitive and non-cognitive abilities. Such abilities have been found to explain success in a range of socio-economic outcomes in adulthood.³⁰ The gaps in cognitive and non-cognitive ability between children of different socio-economic groups have been shown to emerge early and persist throughout the life course³¹. Given the fact that individuals accumulate skills over their lifetime, early cognitive and non-cognitive skills are likely to influence future learning, the development of social abilities and other outcomes that are closely related to an individual's health³².

Additional evidence supporting this theory has been recently provided through the use of longitudinal datasets based on UK populations:

- The 1958 National Child Development Study was utilised to demonstrate how the home environment contributes to cognitive and non-cognitive skill formation and how those skills matter for schooling, teenage pregnancy, crime and labour market outcomes³³.
- More recently, data from the 1970 British Cohort Study explained how cognitive and non-cognitive skills may account for intergenerational income persistence³⁴.

These findings highlight how skills formed early in life can have long-lasting and substantial effects on various key outcomes and build up the evidence of early interventions being among the most effective policy instruments to combat early school leaving, unemployment, teenage pregnancy, criminal behaviour as well as many other behaviours and outcomes³⁵.

According to the London School of Economics (Investing in Children: What do we know? What should we do?), there is no better way of breaking the cycle of poverty and inequality than to invest early in children. In particular the paper highlights the potential impact on future generations stating, ‘... *the children of today are the parents of tomorrow. Effective investments in children of today will benefit the next generation of children, as tomorrow’s parents will be better positioned to support their development*’³⁶.

Therefore the evidence shows that early childhood is a critical period for the development of every individual and that inequality over an individual’s lifetime – both in terms of socioeconomic indicators and health – is largely determined by an individual’s early years. Individuals’ experience of early childhood has a significant and long-lasting impact on their future health and wellbeing.

The role of the public sector

Since research suggests that early childhood has a significant impact on outcomes later in life, one might expect parents to invest heavily in their children’s early years. However, there are a number of factors that mean that some parents are unlikely to invest an optimal amount in their child’s development from the point of view of society as a whole³⁷.

There is, therefore, a strong argument for the public sector to divert a more optimal level of investment to children’s early years over and above the argument to intervene for purely equity reasons (ie in order to overcome inequalities in society).

Indeed Heckman states that, ‘*investing in disadvantaged young children is a rare public policy with no equity-efficiency trade-off. It reduces the inequality associated with the accident of birth and at the same time raises the productivity of society at large*’³⁸.

However, there are a number of factors that mean there is arguably an under-investment in early years interventions in London and the UK.

One of these is that given the benefits from early years interventions accrue to many different stakeholders over a long time period, no single agency (the borough, NHS, police or others) has the incentive or available funding to invest the upfront costs of early years interventions, when they themselves will only receive part of the benefit in the short-term. However, approaches such as Total Place, the new Early Intervention Grant and Community Budgets should make it easier to pool investment and work towards early intervention as a common goal.

Appendix C looks at the potential for under-investment in early years interventions in more detail.

Value for money of public sector interventions

Since social and economic policy decisions are made under resource constraints, the value of public investments must be judged, at least in part, through economic efficiency, in terms of value for money. In deciding how funds should be allocated, one needs to know not only what is effective, but also which choice brings the greatest benefits (appropriately defined) for a given set of resources.

In the case of early years interventions, the long-term economic impact is determined by comparing the benefits to society to the costs accrued. Benefits to society include the benefits to the programme recipient and family as well as broader benefits to society.

Costs to society include the benefits foregone from not using the resources for some other use. Due to the large differences in the methodologies adopted by studies aiming to evaluate the economic impact of early years interventions, it is difficult to compare results across interventions. Nevertheless, the studies do provide indications regarding whether early years interventions generate benefits in the long term that outweigh the costs³⁹.

Reviews of child and family interventions that include, more or less, the same cost-benefit

evaluations of early years interventions have investigated the long-term economic impact of these programmes⁴⁰. The returns to society for each dollar invested vary considerably, from \$1.26 to \$17.07. Overall, however, they indicate the potential for efficient early years interventions to provide returns to society substantially larger than the resources invested in programme delivery.

Whilst caution is required in simply reading across from the results of past evaluations (see Appendix D for more detail), such rates are high when placed next to other spending by governments made in the name of economic development, such as subsidies and preferential tax treatment for private businesses⁴¹. With such high rates of return, it has been argued that early years interventions should also be portrayed as economic development initiatives.

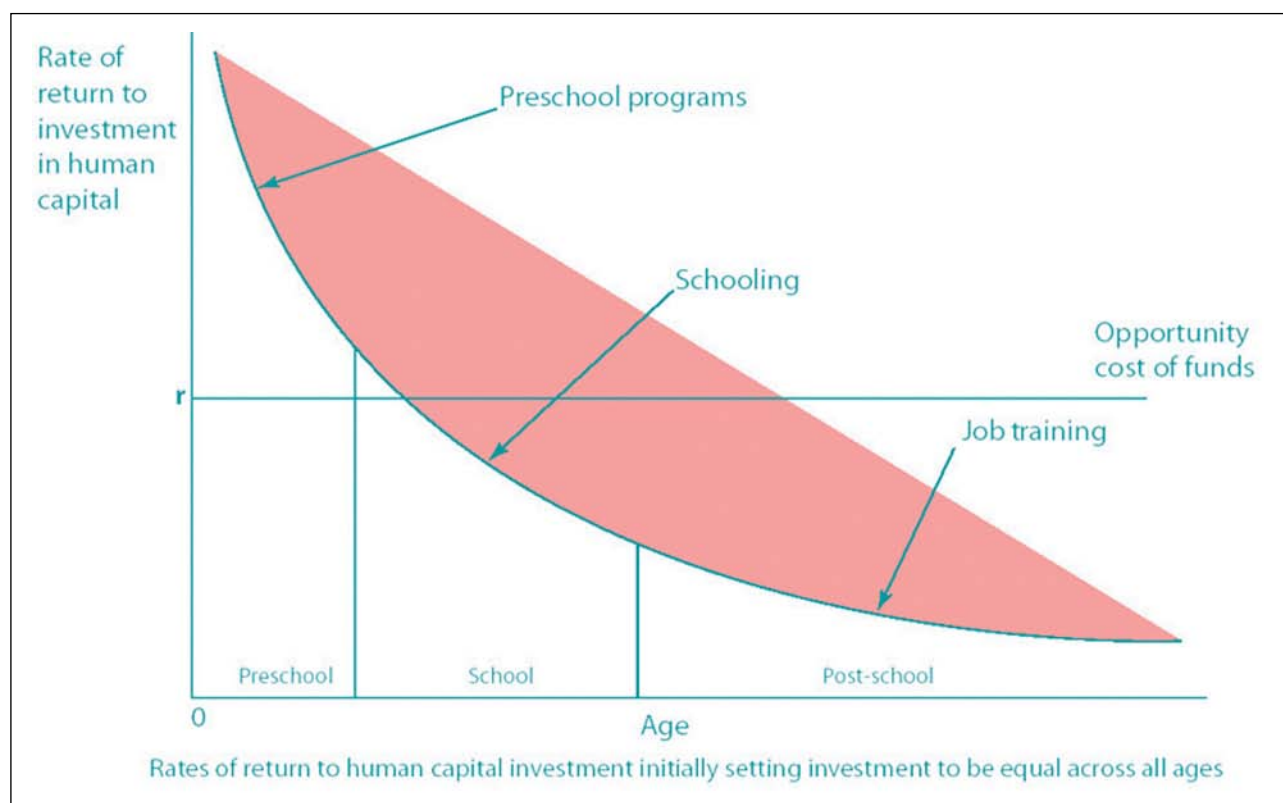
One way of considering this issue is with regards to skills formation. Research on skill formation and accumulation suggests that early skill

acquisition facilitates later skill acquisition⁴². As a result any early years intervention that improves the cognitive and non-cognitive abilities of children is likely to increase the productivity of later investment (that is by increasing children's early learning capacity, future investment is that much more productive). For instance, when talking about the performance of schools Heckman states, *'The best way to improve schools is to improve the early environments of the children sent to them.'*⁴³

Figure 3 summarises the findings of a large literature on this issue, illustrating that there is a higher rate of return at younger ages for a constant level of investment.

Another way of thinking about the relative merits of early versus later interventions is to consider the cost to society of failing to prevent poor health outcomes. The costs to society of not preventing or intervening early can be very high. For example, a review conducted in 2007 of various economic evaluations of mental illness – such as emotional

Figure 3: Rates of return to investment in human capital setting investment to be equal across all ages



Source: Cunha et al. (2006)

and behavioural disturbances, or antisocial behaviour – during childhood and adolescence found average costs to UK society ranging from €13,000 to €65,000 annually per child⁴⁴. These costs are disproportionately higher than the cost of early prevention/intervention.

In a UK-based study⁴⁵, the authors contrasted their estimated £70,000 per head direct costs to the public of children with severe conduct disorder, with a £600 per child cost of parent training programmes. Although such figures do not demonstrate cost-effectiveness, they highlight the very low costs of early years intervention compared to later expenditures once the problem is not addressed. Public expenditure on early years investment is discussed further in the next section.

Heckman states, ‘...an optimal investment strategy should focus investments in the early years as compared to the later years’⁴⁶. In addition, an important finding arising from the economic evaluations is that the economic returns from investing in early years intervention programmes are larger when the programmes follow a targeted approach (see also Section 5). This can be observed within early years interventions, as a US-based

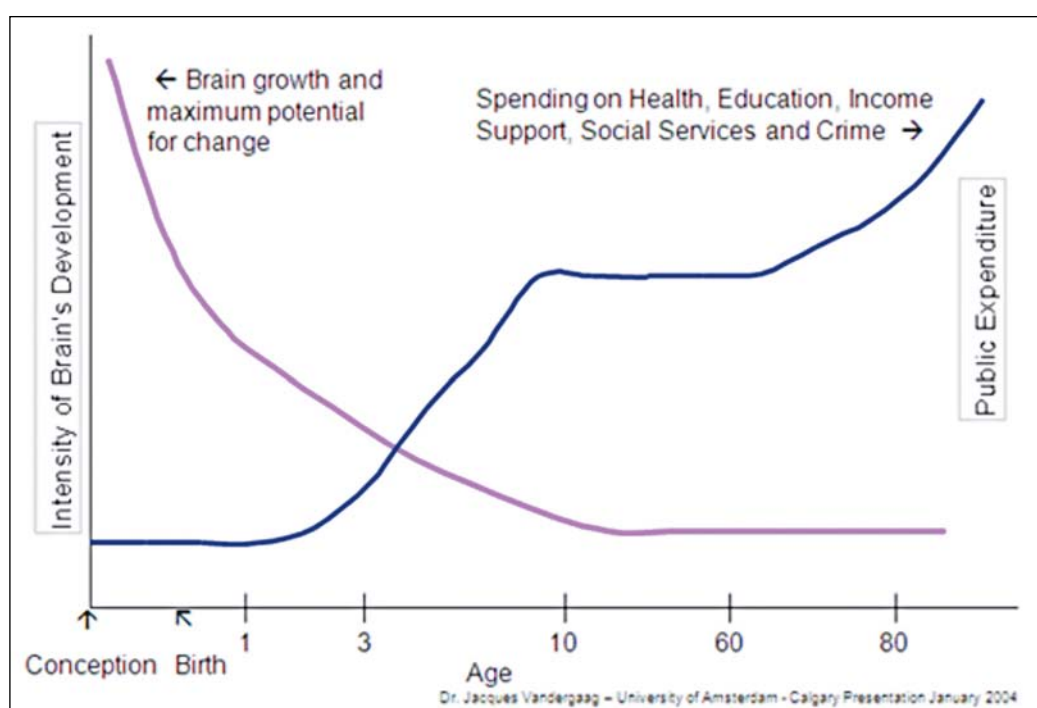
intervention showed that the returns for each dollar invested were five times higher for the high-risk population than for the lower-risk population⁴⁷. Analyses from other studies support this finding, suggesting that the returns from a universal pre-school programme, for instance, would be less than those from programmes that target a more disadvantaged population⁴⁸. Karoly et al⁴⁹ suggest that these findings indicate that it is not reasonable to expect the returns from a programme serving a specific disadvantaged population to apply when the same programme serves a different population.

Public expenditure in the early years

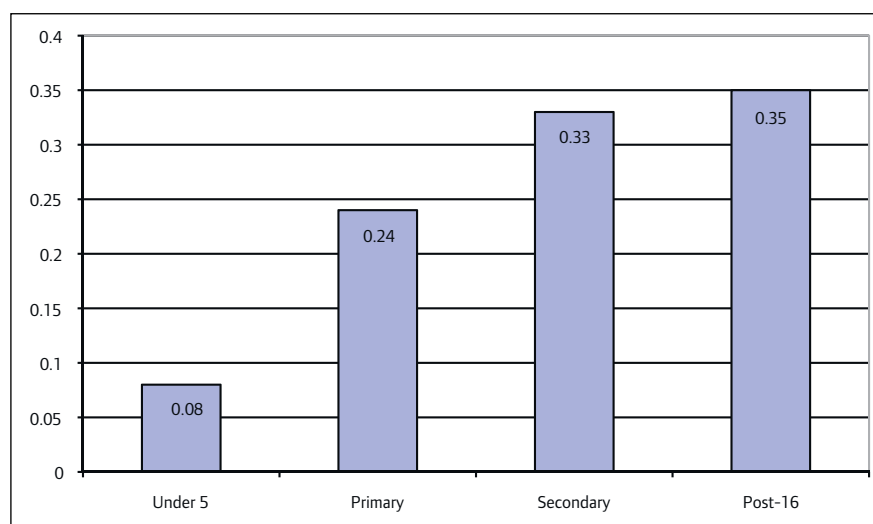
While the evidence above suggests that investment should be focused in the early years, Jacques van der Gaag⁵⁰ has shown that there is generally a mismatch between opportunity and investment when comparing the intensity of brain development and the amount of public expenditure. Figure 4 shows that public expenditure (blue line) is the lowest during the time when the brain is most malleable and responsive to change (pink line).

This general upward trend in public expenditure identified by van der Gaag is reflected in

Figure 4: Opportunity and investment in brain development



Source: van der Gaag, 2004. Presentation to support World Bank report, 'The Benefits of Early Child Development Programs: An Economic Analysis'

Figure 5: Proportion of Educational Expenditure by cohort in the UK

Source: Adapted from Marmot Review, Figure 4.1, page 97, 2009. Sourced from DSCF data

education expenditure in the UK. Figure 5 shows that expenditure on education increases with age group, and the UK spends significantly less on under fives than any other stage in the lifecycle.

While the returns on investment suggested in Figure 3 by Cunha et al.⁵¹ suggest that the highest returns are achieved in the early years, the current pattern of spending on education and training in the UK shows a strong gradient in the opposite direction, skewed towards older age groups. In 2003/04 over £6.5 billion⁵² was spent on providing education and training for low skilled youths and adults, whereas data from the former DCSF indicates that less than £4 billion⁵³ was spent on early years education⁵⁴ for the same period.

Cost implications of failure to invest in the early years

The cost of treating the consequences of adversity caused by poor development in the early years is huge.

It is very difficult to obtain an accurate estimate of these total costs, but some relevant examples are the cost of teenage pregnancy at approximately £231 million per annum and the cost of crime against individuals and households, estimated at £36.2 billion in 2003/04⁵⁵. It is not reasonable to assume that the entirety of these costs could be negated through investment in early years interventions, but this does give an indication of the scale of the investment in early

years programmes compared with remedial spend. If further investment was directed towards the early years and 'getting it right the first time' then at least some of the remedial costs later in life (for example, in relation to truancy, teenage pregnancy, anti-social behaviour or crime) could be alleviated⁵⁶.

In terms of education, Alakeson⁵⁷ argues that a failure to obtain skills and qualifications the first time around cannot be made up entirely in adulthood, even with significant investment. The costs of such remedial programmes per person can be more than double the cost per child spent on pre-school or compulsory school education and are not likely to be as effective. Alakeson states, '*Investment in older, low skilled workers can be justified on equity grounds but is hugely inefficient. Investing early to raise attainment and reduce the number of low skilled adults in the workforce is a more effective strategy for improving life chances than playing catch up in adulthood*'.

As can be seen in Table 1, in 2003/04 the UK government spent almost £7 billion on education and training for the low skilled. Whilst the information is a little out of date now, the table does provide a good indication of the range of programmes likely to be covered within this spend. If education outcomes can be improved in the early years, it is expected that at least part of these costs can be avoided in future years.

Table 1: Estimated government spending on education and training for low skilled youth and adults 2003/4, £ million*

Programme	Amount
Learning and Skills Council	
Further education 16-18 participation programme**	1,197.2
Work-based learning for young people	565.3
Life Skills Programme	206.3
Level 2 implementation	54.2
Further education participation for adults	2,088.1
Work-based training for Modern Apprenticeships	293.9
Adult and Community Learning Programme	172.1
Neighbourhood learning	26.9
Employer Training Pilots	32.7
Family literacy and numeracy	23.1
European Social Fund	224.5
Department for Education and Skills	
Prisoners' Learning and Skills	115
Department for Work and Pensions	
Working age employment programmes	1,541
New Deal***	244.8
TOTAL	6,785.1
* Excludes funding for information support and capacity building	
** Based on assumption that 54 percent of 16-18 year olds are studying for a level 2 qualification or below and that the costs of different qualifications are the same	
*** Based on the assumption that 32 per cent of New Deal participants opt for the education and training option and that the costs of different options are the same	

Source: Alakeson (2005)

This table only shows the expenditure on education and training for low skilled youth and adults, and does not include other remedial costs that could be avoided (at least to some extent). These include costs relating to obesity, crime, teenage pregnancy, substance misuse, welfare and productivity losses. As noted earlier, while interventions in the early years may not be able to negate all of these costs, the immense scale of these remedial costs (along with the clear whole-life benefit of early years interventions) provide a clear rationale for increased funding in effective early years programmes and an expectation that such an investment will make considerable future year savings.

International comparisons of public expenditure

Despite the apparent benefits of early year interventions, the UK is investing less than many other countries. In particular, the Nordic countries invest significantly more in the pre-school years than the UK.

Table 2: Spending on childcare and pre-primary education as a proportion of net national income 2005 (%)

Rank	Country	Childcare	Pre-Primary	Combined Spend
1	Iceland	0.78	0.60	1.38
2	Denmark	0.78	0.60	1.37
3	France	0.40	0.73	1.13
4	Sweden	0.67	0.45	1.12
5	Finland	0.86	0.24	1.10
	OECD Average	0.30	0.40	0.66
12	United Kingdom	0.41	0.23	0.64

Source: OECD, 2006

Whilst expenditure of itself does not provide an indication of provision or quality of services, it is clear that in terms of spending on pre-primary education as a proportion of net national income, the UK is below the OECD average and is well below countries such as Iceland, Denmark and France. Moreover, Eurostat indicators show that the provision of formal care for children under school age is also much lower than in other countries.

Table 3: Average number of hours per week of formal care for children under three years of age, 2008

Rank	Country	Hours of formal child care provided per week
1	Denmark	24.7
2	Iceland	14.5
3	Belgium	14.4
	European Union (EU-27) Average	8.4
18	United Kingdom	4.6

Source: Eurostat, 2008

Table 4: Average number of hours per week of formal care for children aged between 3 and compulsory school age, 2008

Rank	Country	Hours of formal child care provided per week
1	Iceland	35.4
2	Estonia	34.8
3	Denmark	32.7
	European Union (EU-27) Average	23.8
26	United Kingdom	15.6

Source: Eurostat, 2008

Tables 3 and 4 show that the provision of formal childcare is considerably less in the UK than in many other countries, and is below the European Union EU-27 average.

While this section has attempted to compare public expenditure on early years in the UK with spending on other areas and internationally, it is apparent that determining the amount of expenditure on early years is very complex. There is no single department or agency that is responsible for early years provision, and it is difficult to disaggregate the data that is available to determine the amount precisely. This makes determining the 'right amount' of expenditure for early years even more challenging, because the current amount of expenditure is not known (see Appendix B for more details).

This section reviews robust evaluation evidence to provide recommendations on which evidence based early years programmes are likely to produce the best returns in terms of reducing health inequalities and improving child outcomes in London.

There is very little robust evaluation evidence available for UK early years intervention programmes. As a result, this section largely draws on evidence from the USA and, in particular, a study by the Washington State Institute for Public Policy (WSIPP) because it conducted comparable robust cost benefit analyses of a large number of early years interventions.

In order to make the results from the WSIPP study more relevant to London, the cost benefit calculations have been reconstructed using UK estimates for the benefits from interventions. Full details of this analysis are set out in Appendix D.

The top ten programmes – UK and US cost benefit analysis

The table below shows the ten most effective programmes, in terms of net present value (ie the difference between the discounted lifetime costs and benefits of the programme), identified by both the original WSIPP study and the UK adjusted analysis. The programmes in the table are ranked according to the UK-adjusted analysis NPVs with the US values for NPV and cost per child or youth of the intervention highlighted in the table. The values shown are per child or youth. So for example, the table illustrates that the 'Early childhood education for low income 3 and 4 year olds' was the second highest-ranking intervention (on the UK-adjusted analysis) that also had a positive NPV from the US analysis.

The US analysis shows that the NPV for the early childhood education programme is of the order of \$9,901 – that is the total benefits for each youth from this intervention are \$9,901 more than the total costs, summed over the child's life. The US valuation for NPV (and costs) is used in the table as these have been developed with the specific purpose of understanding the exact value of different programmes. In contrast the UK-adjusted analysis has been primarily conducted to assess how the ranking of different programmes might change with UK (rather than US) values applied and does not purport to estimate the exact absolute values from different programmes accurately.

Cost per child or youth of each programme (in US\$) is also shown to provide an idea of the scalability of interventions that may be considered for London. The final column compares how programmes performed based on US and UK analysis with the aim of informing the interpretation of rankings (principally the relative confidence in rankings based on similarity or otherwise of results from US and UK adjusted analysis).

Table 5: Top 10 Programmes achieving a positive Net Present Value per youth from cost benefit analysis

Rank	Programme and description	US NPV \$	Type of Programme	Cost per youth \$	Performance on US and UK-adjusted analysis
1	Seattle Social Development Project A three-part intervention for teachers, parents and students in grades 1 and 5. The focus is on elementary schools in high crime urban areas. Teachers are trained to manage classrooms to promote students' bonding to the school, parents offered training to promote bonding to family and school, and training provided to children designed to affect attitudes towards school, behaviour in school and academic achievement.	9,837	Youth development	4,590	Top ranked US and UK Youth development programme
2	Early childhood education for low income 3 and 4 years olds These enhanced preschool experiences are designed for low- income 3 and 4 year- old children. Each programme uses different educational approaches in an attempt to increase student success.	9,901	Pre-kindergarten education	7,301	Top ranked US and UK Pre-kindergarten programme
3	Home visiting programmes for at-risk mothers and children Focus on mothers considered at risk for parenting problems, based on factors such as maternal age, marital status and education, low household income and lack of social support for instance.	6,077	Child welfare/ home visitation	4,892	Top ranked child welfare/ home visitation programme from UK analysis, 2nd ranked from US analysis
4	Nurse Family Partnership for low income women Provides intensive visitation by nurses during a woman's pregnancy and the first two years after birth. It aims to promote the child's development and provide support and instructive parenting skills to the parents. The programme is designed to serve low-income, at-risk pregnant women bearing their first child.	17,152	Child welfare/ home visitation	9,118	Top ranked US child welfare/ home visitation programme; second ranked from UK analysis
5	Parents as teachers A home visiting programme with a main goal of having healthy children ready to learn by the time they go to school. Each month parents are visited by parent educators that have a minimum of some college education. Visits typically begin during the mother's pregnancy and may continue until the child enters kindergarten.	800	Pre-kindergarten education	3,500	Similarly highly ranked pre-kindergarten programme from US and UK analysis

Rank	Programme and description	US NPV \$	Type of Programme	Cost per youth \$	Performance on US and UK-adjusted analysis
6	HIPPY (Home Instruction Programme for Preschool Youngsters) Designed for families with 3 year olds whose parents have a limited education. This programme uses home visits teaching parents how to teach their children and make their home more conducive to child learning. The programme continues until the child completes kindergarten.	1,476	Pre-kindergarten education	1,837	Similarly highly ranked pre-kindergarten programme from US and UK analysis
7	Teen outreach programme A school-based intervention to prevent teenage pregnancy and dropping out of school. The focus of this year-long programme is supervised community volunteering. The students must volunteer for a minimum of 20 hours.	181	Teen pregnancy prevention	620	Top ranked teen pregnancy prevention programme in US; high ranking in UK analysis.
8	Good Behaviour Game Classroom management strategy designed to improve aggressive/disruptive classroom behaviour and prevent later criminality	196	Youth development	8	Second ranked youth programme in UK analysis; lower ranking in US analysis
9	Family Matters Family-focussed programme to prevent tobacco and alcohol use among 12-14 year old youth. Programme is delivered through a series of booklets mailed to the home and follow up telephone calls from health educators	1,091	Youth substance abuse prevention	156	Top ranked youth substance abuse prevention programme from UK analysis; high rank from US analysis
10	Parent-Child Interaction Therapy Aims to restructure the parent-child relationship and provide the child with a secure attachment to the parent. Parents are treated with their children, skills are behaviourally defined, and all skills are directly coached and practiced in parent-child sessions. Therapists observe parent-child interactions through a one-way mirror and coach the parent using a radio earphone	3,428	Child welfare/home visitation	1,296	Similarly middle-ranking child welfare/home visitation programme from US and UK analysis

Note: These are the top ten programmes achieving a positive net present value per youth from both the UK-adjusted and original US cost-benefit analysis.

The table shows that pre-kindergarten education and child welfare/home visitation programmes perform particularly well and, being early years interventions, are likely to have significant benefits in reducing health inequalities.

The other programmes highlighted in the table tend to be interventions aimed at youth rather than early years. In the US analysis, juvenile offender programmes performed particularly well, but the case would appear less compelling in the UK because of the lower cost of crime in the UK, with the US having much higher incarceration rates. More detail on the findings from the original US analysis and the rough reconstruction of this work to UK values can be found in Appendix D.

What are the implications for programmes in London?

Many early years interventions for young children appear to have significant benefits across a range of outcomes such as educational achievement, improvements in the care of children and a reduction in undesirable behaviours later in life, such as crime and substance misuse.

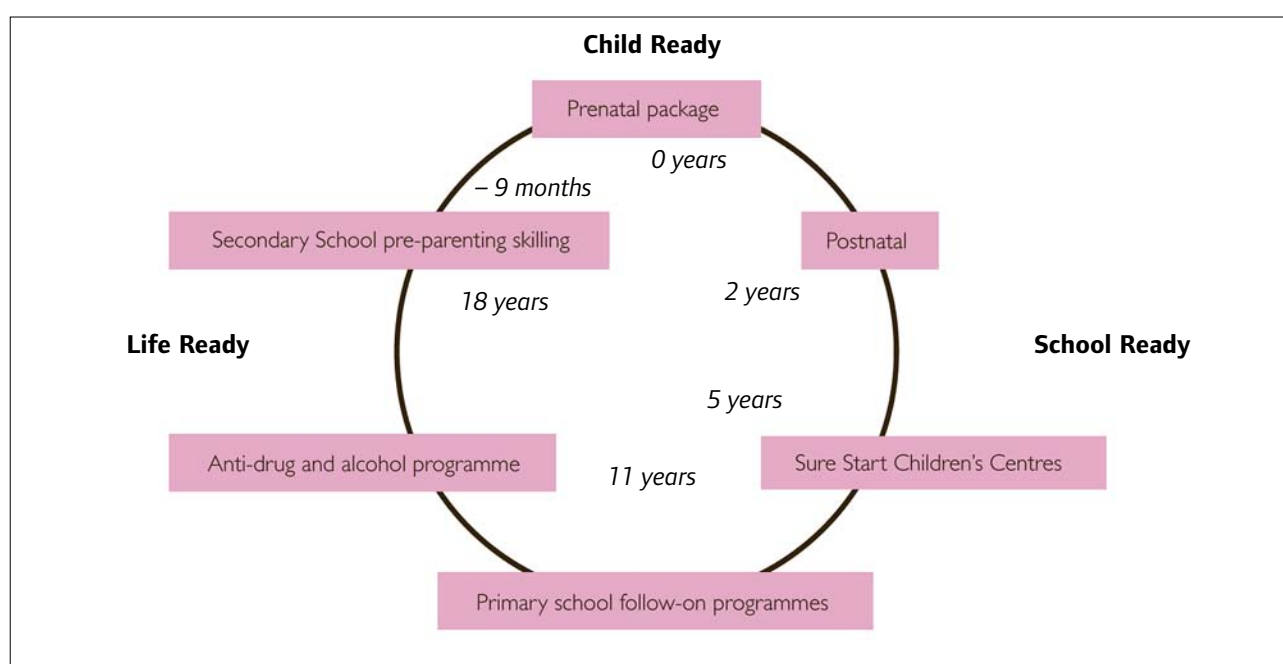
Since robust cost-benefit analysis relating to programmes to specifically reduce health inequalities is sparse, other literature and evaluation evidence was also considered. In particular, literature that identifies characteristics of effective programmes prior to birth in terms of avoiding teenage pregnancy and maternal care and programmes implemented in early childhood were investigated. Where possible, UK evidence

has been used so that it is more applicable to London than international evidence (see Appendix E for more detail).

On the basis of the evidence, a series of early years intervention and prevention programmes would seem to be merited at critical stages in the child's life. This series of interventions should include pre-natal, post-natal and pre-school programmes from conception through to age 5. As noted earlier, the earliest years of a child's life provide the opportunity for the greatest benefits to be achieved, with cumulative effects throughout the child's life. Therefore, children who have participated in early years interventions will also be more responsive to other programmes such as anti-drug and alcohol programmes as they get older (if such interventions are needed).

The Centre for Social Justice⁵⁸ has proposed a 'virtuous cycle' of early interventions for children aged 0-18, with an important focus on those in the early years. The cycle is based on interventions at various ages to ensure that mothers are 'child ready' during pregnancy, children are 'school ready' through early years interventions, and then that they are 'life ready' through primary and secondary school follow-on programmes.

Figure 6: Cycle of early intervention programmes



Source: Adapted from, Centre for Social Justice (2009) *Early Intervention: Good Parents, Great Kids, Better Citizens*. 2nd Edition

Prenatal programmes

Maternal mental and physical health and proper prenatal care are important during pregnancy. Poor nutrition and/or substance use can affect foetal growth and development, and these have been associated with poor outcomes after birth. Evidence⁵⁹ suggests that routine contact with health professionals during the prenatal period can offer opportunities for providing advice and directing mothers to other interventions if they are needed (for example, to assist the mother to quit smoking).

In the UK, the NHS provides universal services for all pregnant women. This consists of a series of appointments with a midwife or obstetrician to offer useful advice, for example on nutrition, and to check the health of the mother and baby. Through this general health service, antenatal classes are offered as well as breastfeeding workshops. However, disadvantaged or vulnerable mothers may not readily access or take up such services.

Post-natal programmes

The post-natal period is also critically important for the child's health and development. Medical evidence shows that breastfeeding the baby and providing a healthy, smoke-free environment are factors that show significant benefits (although such initiatives are usually subsumed within wider interventions for the purposes of cost-benefit analysis). A loving bond and caring stimulating interactions between parent and child also benefits the child's social, emotional and cognitive development. Severe and persistent parental depression during infancy can make it harder for parents to provide this for their infant and impact upon their child's long-term development.

Home visitation programmes appear to work particularly well in the post-natal period and these programmes are shown to be especially successful with young, first time mothers.

In the cost benefit analysis, home visiting programmes for at-risk mothers and children showed very positive results, as did Nurse Family Partnerships. These programmes appear

to have been very successful when implemented in the USA.

Named 'Family Nurse Partnerships', this adapted model has already been piloted in some areas of the UK with early indications of success. The benefits accrue in terms of an improvement in women's pre-natal health; reducing smoking in pregnancy; a reduction in child injuries; fewer subsequent pregnancies and greater intervals between births; increased paternal involvement; and an improvement in child school readiness. In the UK, it is a programme from pregnancy until the child is two years old, so could be used for both pre-natal and post-natal care.

UK Intervention: Family Nurse Partnership

Family Nurse Partnership is a programme that was introduced in the UK in April 2007 at ten pilot sites throughout England. It is based on the US Nurse Family Partnership programme that is designed to improve health, wellbeing and self-sufficiency of young, first-time parents and their children. It is a voluntary home-visitation service that starts in early pregnancy and continues until the child is 24 months old. It is a targeted service, specifically for young mothers with their first child.

No evaluation has yet been conducted in the UK that considers a counter-factual (ie what would have happened in the absence of the programme), but initial monitoring, and evidence from the US suggests that there is a strong economic case for implementing this programme. The main economic benefit appears to be as a result of breaking the cycle of disadvantage experienced by children of teenage mothers. This can come in the form of relatively poor school performance, higher incidences of committing crimes and a greater probability of becoming teenage parents themselves. One of the major challenges for this programme is that the benefits will be incurred in the future by other agencies, the families themselves and victims of crime but the costs will be incurred immediately by the NHS. If the NHS was to consider the cost

effectiveness of the programme from short-term costs and savings to the health service alone, the programme may appear to be costly and difficult to justify.

An important reason identified for the success of this programme is that it is targeted to a specific group that benefit most from the service. A less targeted programme was trialled in the US and it returned lower benefits.

For more information see: <http://www.iscfsi.bbk.ac.uk/projects/files/Year-1-report-Barnes-et-al.pdf>

PIPPIN is another UK based initiative that appears to be promising but only one small evaluation has been undertaken to date. Early findings suggest that participating parents are

more confident, less anxious and better able to cope with parenthood than non-participants⁶⁰.

Pre-school programmes

The evaluation evidence shows that high quality childcare in the first few years can produce significant cognitive, language and social development benefits for disadvantaged children⁶¹. Early childhood education programmes can also help to prepare children for school in future years. **Pre-school education programmes performed well in the cost benefit analysis, particularly early childhood education programmes for three and four year olds.** An example of a successful early childhood education programme is the US Perry Pre-School Program.

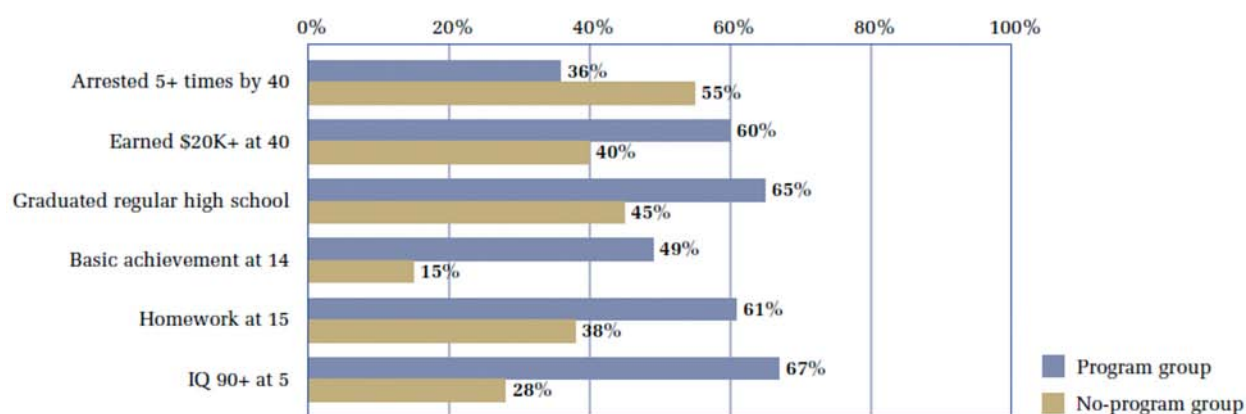
US Intervention: Perry Pre-school Program

The Perry Pre-school Program is a high-quality pre-school programme for three and four year olds. It has been implemented in the US for African American children who were born into poverty and had a high risk of failing school.

HighScope conducted a robust evaluation based on participants of the programme from 1962–1967. The children were randomly assigned to either participate in the programme or to a control group who received no pre-schooling. To assess the longer-term impact of the programme, the study's participants were interviewed at age 40, and data was collected from the subjects' school, social services, and arrest records.

The study found that those who had participated in the programme had higher earnings, were more likely to hold a job, had committed fewer crimes, and were more likely to have graduated from high school than adults who did not attend preschool. The chart below shows the difference between some outcomes for the programme group and non-programme group.

Figure 7: Major findings High/Scope Perry Preschool Study at 40



For more information see: <http://www.highscope.org/content.asp?contentid=219>

The Effective Provision of Pre-school Education (EPPE) study was conducted in the UK using similar pre-school programmes on three to four year olds, and showed a number of factors that made these programmes successful. Some of the key factors determining the success of these programmes are: the quality of the childcare provision; the quality and qualifications of the childcare staff; that pre-school programmes tend to benefit disadvantaged more than non-disadvantaged children; and that a **social mix tends to be important for disadvantaged children with more successful outcomes achieved in these groups than in pre-school programmes with only disadvantaged children** (see targeted and universal service section below).

Follow-on programmes

The time when a child makes the transition to school is a critical time in terms of his or her development. If school programmes follow on from the early years interventions (discussed above), children should be arriving at school with better behaviours, motivation and language skills⁶². Outcomes will start to improve from primary year one, and the child can develop literacy, numeracy, language and social skills more effectively.

The Seattle Social Development Project was a school based early intervention that returned very positive results in the cost benefit analysis. This programme was implemented for two cohorts of students, the first were in their first year of school (age 6) and the second were in grade 5 (age 11). The study found that the programme was significantly more effective when implemented in the first year of school. This is consistent with our findings that early years interventions return greater benefits than those implemented later. For example, Hallam notes that remedial work for young people from an impoverished environment becomes progressively more costly the later it is attempted. Research has found that the most effective programmes at this age are those that involve the family as well as the child. In this vein, the Seattle Social Development Project is a school-based

intervention that promotes a bond between the child, family and school.

Other interventions may be more appropriate to introduce when the child is slightly older – for example, teenage pregnancy prevention programmes or substance use and abuse prevention programmes. However, if children have developed positively during the early years they will be more responsive to such programmes and they are likely to achieve better outcomes (see evidence in Section 3). Therefore, it is **important that children develop well in the early years so that they are ‘school ready’ and ‘life ready’ and can maximise the returns from follow-on programmes in later years.**

General characteristics of effective early years interventions

From this analysis of identifying which programmes appear to work well, it is possible to identify some particular characteristics that are associated with successful programmes. The following box provides a summary of some of the lessons learned, and things that should be considered when implementing early years interventions.

Characteristics of effective early years interventions

- Programmes that are targeted at populations who are most likely to benefit from the interventions are likely to yield the greatest benefits.
- Quality of service provision is important, particularly for childcare.
- Programmes that involve parents, the community and direct interaction with the child appear to have the greatest success.
- Practitioners should be accessible, approachable and responsive; as well as culturally sensitive.
- Intensive, behavioural-based programmes appear to have good results.
- Universal services, particularly those linked to health services, are non-stigmatising and can be used to identify at-risk individuals

and refer them to more specialised services.

- Home visiting programmes have been identified as a potentially successful intervention, particularly for young, first-time mothers.
- Parenting education and support programmes can be effective, but some have had limited success with disadvantaged families.
- High quality childcare and early education programmes have been identified as potentially successful early years intervention for children from disadvantaged backgrounds.
- Robust evaluation is necessary to assess what is effective.

Several of these characteristics of early years interventions are echoed in a recent report from The Centre for Excellence and Outcomes in Children and Young People's Services (C4EO).⁶³ The report points to international research suggesting that successful programmes tend to share common characteristics of targeting specific populations, being intensive, focusing on behaviour and including both parents and children.

The C4EO report suggests effective local practice is characterised by clarity of purpose, interventions being informed by a comprehensive evidence base, clear analysis of local needs (including feedback from children, families and practitioners) and focus on additional outcomes above a measured baseline.

Targeted and universal services

Targeted interventions tend to achieve the greatest benefits because disadvantaged and/or vulnerable families have the most to gain, and are unlikely to avail themselves of similar services if they were not funded through public services. Some of the services provided are expensive and it would not be feasible to provide them universally, particularly if only small benefits were to be achieved by some groups. Therefore,

targeted programmes are generally the most cost-effective.

In programme delivery terms, it is often difficult to reach the people who need help the most. This may be due to imperfections in referral processes and inter-agency working, as well as demographic factors such as reaching disadvantaged families living within more prosperous areas.

Therefore, this may best be delivered through targeted and potentially intensive outreach, but following some process for assessing all parents and children 'at risk' and ideally based within a universal and non-stigmatising service such as a school or children's centre.

General characteristics of ineffective early years interventions

While this report has identified characteristics of programmes that have been effective and could be implemented in London, it is also helpful to consider programmes where there is little evidence of effectiveness (see Appendix D for more details). Based on the evidence, some characteristics associated with less effective interventions are set out in the following box.

Characteristics of ineffective early years interventions

- Insufficient quality of service provision. Poor programme performance has been seen in a number of cases where the staff and environment are not of sufficiently high quality.
- Duplication of other services currently available. Programmes will not achieve large benefits if there are many other similar interventions that could be undertaken. This is because the benefits may be achieved even if the programme is not implemented. Providers need to have a good understanding of other services available and the needs of their community to avoid duplication.
- Centre-based services appear to be less effective in achieving positive outcomes in

parenting, parent-child relationships and family support than home visitation services.

- Home visitation and early education services require a certain level of intensity to be effective
- Low participation and retention rates. It is necessary to engage participants by considering their motivations for attending and ensuring that interventions are culturally sensitive.

This section has analysed the effectiveness of various early years programmes and early interventions for youth. It has found that **pre-kindergarten and home visitation programmes are particularly effective, which is consistent with our earlier findings about the large benefits from intervention in the early years.**

There is a strong case for intervention in the early years to reduce health inequalities. The report recommendations are based on which evidence-based, early years programmes are likely to produce the best outcomes for reducing health inequalities in London.

The early years are the most critical time for all aspects of a child's development. However, due to the incentives to different stakeholders and the long timeframes over which benefits accrue there is an under-investment in early years by both individuals and government.

Evidence shows that many early intervention programmes can provide good returns on investment. However, there are some interventions where the costs outweigh the benefits. There is limited UK evaluation evidence available, so evidence from the US has had to be used; evidence which may not be directly applicable in the UK.

The US and the UK differ structurally in a number of respects and it is a significant assumption to assume that the size of the impact from different interventions would be the same in the two countries. Beyond the scope of the

WSIPP report, there may be other types of studies that are relevant for health inequalities in London for which robust evaluation evidence is not yet available.

This report is intended to give some indicative analysis as to the relative effectiveness of programmes rather than providing a robust London-specific cost benefit analysis. It is anticipated that further work by Dartington Social Research Unit with a number of English cities (including London through the GLA and ALDCS) in 2011 will provide a sustainable and robust, UK-specific cost benefit model to enable the application of tried and tested US programmes to a UK context.

By re-running the WSIPP work with London values a slightly different relative ranking between programmes is achieved which might be useful when considering what programmes are likely to be best value and most effective in London.

The summary box below identifies some of the key findings from this analysis (see also Appendix D).

Summary of lessons learned

- Programmes that are targeted at populations who are most likely to benefit from the interventions are likely to yield the greatest benefits.
- Quality of service provision is important, particularly for childcare.
- Programmes that involve parents, the community and direct interaction with the child appear to have the greatest success.
- Practitioners should be accessible, approachable and responsive; as well as culturally sensitive.
- Intensive, behavioural-based programmes appear to have good results.
- Universal services, particularly those linked to health services, are non-stigmatising and can be used to identify at-risk individuals and refer them to more specialised services.
- Robust evaluation is necessary to assess what is effective.

Suggested programmes for further implementation

On the balance of all of the evidence the following programmes are likely to be effective if implemented or extended further in the UK:

- Pre-natal and post-natal care programmes such as Nurse Family Partnerships.
- Pre-school programmes such as the Perry Preschool Programme.
- Follow-on programmes should supplement these interventions during primary and secondary school.

Evaluation evidence suggests that public sector interventions can be effective and provide very high returns to society as a whole. In particular, programmes implemented in the critical pre-natal, post-natal and pre-school periods can have very high returns. It is recommended that investment in these programmes be increased relative to other areas. To do this, it may be necessary to address obstacles to investment by changing the incentives or framework within which funding for early years interventions are provided.

On the balance of all of the evidence, the following programmes are likely to be effective if implemented, continued or extended further in London: home visiting programmes for at-risk mothers and children such as Nurse Family Partnerships and early childhood education targeted towards low income 3 and 4 year olds. The latter is consistent with the existing and continuing universal entitlement of 15 hours free early education per week for all 3 and 4 year olds⁶⁴

When implementing early years interventions, the quality of service provision is vitally important and benefits appear to be greatest when the programmes are targeted rather than universal. However, early years interventions are likely to need to be provided with a universal access point to enable early identification of potential developmental problems.

The scale of challenge and a growing child population in London emphasise the importance of improving child outcomes in London in the longer term. The relationship between early years and future economic and social outcomes requires the focus on early years to be maintained despite changes in structures if we are to maximise the benefits of public investment. This is critical not only for social and public policy outcomes but also for the economic success of London.

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37. There are at least three reasons why parents might not invest what might be considered an optimal amount in their children's early development. First, there could be an information problem – parents may simply not understand the scale of the benefits that arise from investing in a child's early years. Second, the benefits that accrue to parents (and the child) from early years' investment are less than the total benefits derived by society at large. In economic terms, there are 'positive externalities' (ie extra benefits over and above those derived by the parent and child) that accrue from the early years investment. Thirdly, there may well be credit constraints that inhibit the parent's ability to invest in their child's early development (ie they may simply not have the funds – or the ability to borrow – to invest in their child's early development). These 'market failures' arguably provide an 'efficiency' rationale for the public sector to intervene in the early years development of children
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39. Overall, evaluations with a longer-term follow-up are associated with the largest benefit-cost ratios, because they could include measurements at older ages of outcomes that more conveniently translated into monetary benefits, such as educational attainment, earnings, and criminal behaviour (Karoly et al., 2005). This finding indicates that the benefit-cost estimates from the various economic evaluations of ECD interventions are very likely to be underestimated, since not all benefits could be translated into monetary values
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54. There is also a potential equity issue here as large public subsidies for higher education can actually have a redistributive effect from low to high-income households. This is because children from disadvantaged backgrounds are significantly less likely to participate in higher education than those from higher socio-economic groups
55. These estimates are discussed in Appendix B to this main report
56. The Audit Commission report 'Against the Odds' also found significant cost savings from low cost early interventions that are targeted at reducing young people not in employment, education or training. For example, the study found that providing support to teenage parents resulted in a saving of £180,620 over a ten year period, and similarly supporting someone with learning difficulties could save £60,157, over ten years
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64. This will be extended to all disadvantaged two year old children from 2012-13

Appendices

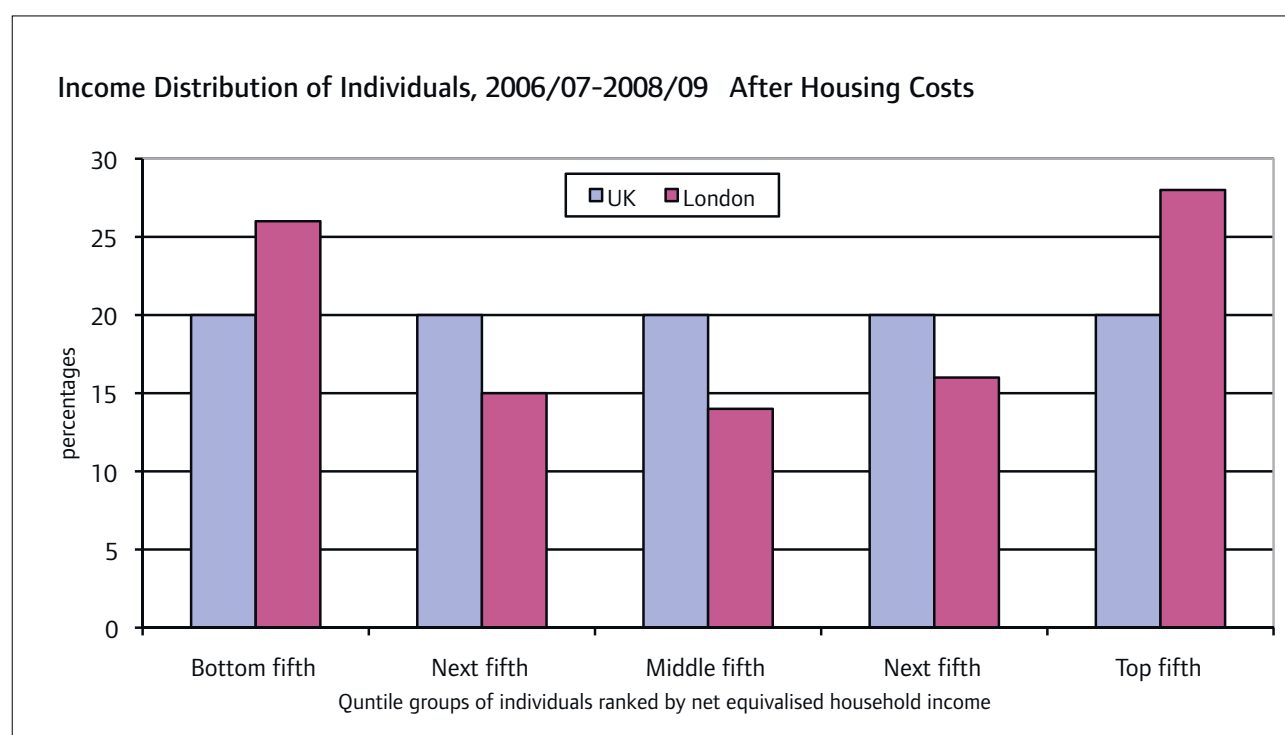
Appendix A: Child poverty in London

Children raised in disadvantaged environments are statistically less likely to succeed in school, in their future economic and social life and are much less likely to grow into healthy adults. This appendix looks at the issue of child poverty in London.

Income distribution in London

There is a significant link between income inequality and health inequality and London experiences significant income polarisation when compared to the rest of the UK.

Figure A.1: Income distribution of individuals in London, 2006/07 – 2008/09 after housing costs



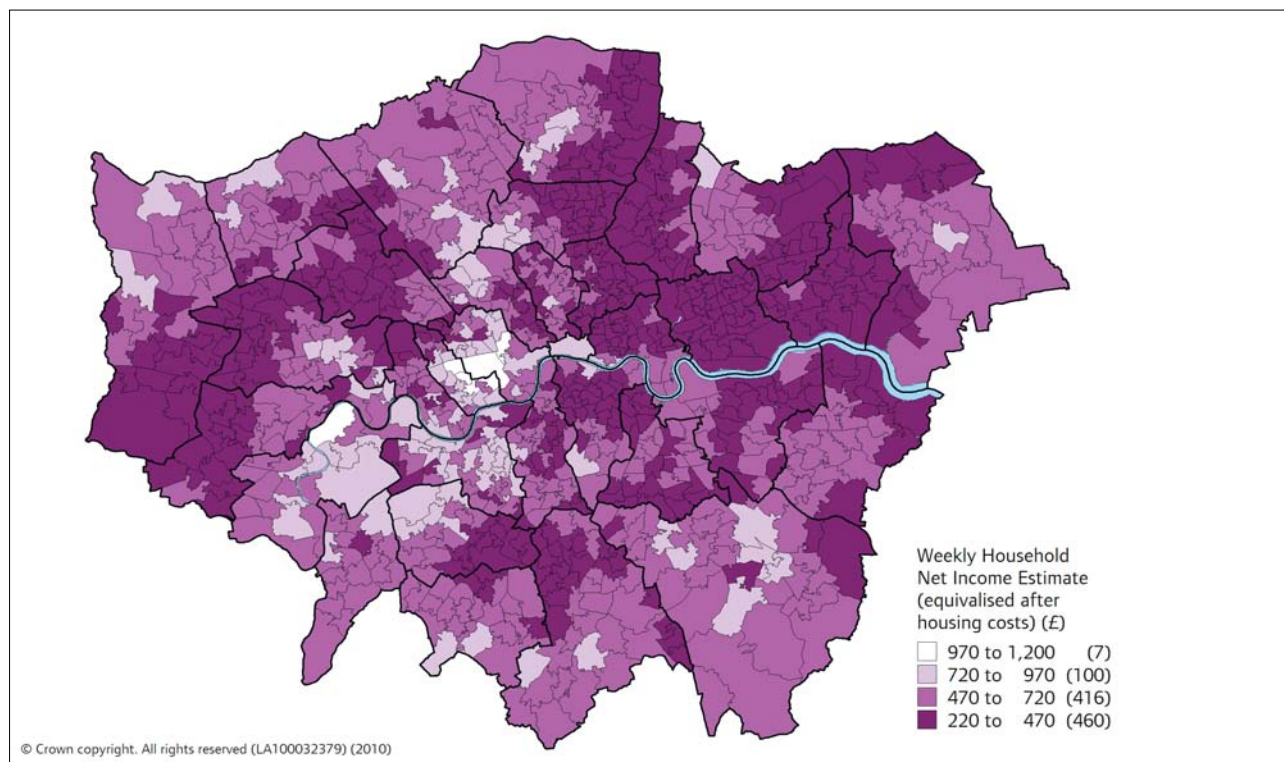
Source: DWP, *Households below Average Income* (UK figures are based on a single year, London figures are based on 3 year average)

Figure A.1 demonstrates that, after housing costs, 28 per cent of Londoners are ranked in the top quintile nationally, whilst 26 per cent are ranked in the bottom quintile. Much of London's population is skewed either towards the top or bottom of the UK's income distribution. Furthermore, this polarisation is even larger in inner London, with 29 per cent in the bottom quintile and 28 per cent in the top quintile after housing costs¹.

Figure A.2, below, demonstrates the spatial distribution of average income in London: households with the lowest net income tend to live in the north-east and west of the city, with the highest net incomes in central London.

1. DWP : *Households below average income 2008/09*.

Figure A.2: Map of average weekly household net income (equivalised and after housing costs) April 2007 – 2008



Source: Model-based income estimates at MSA level, 2007/8, ONS

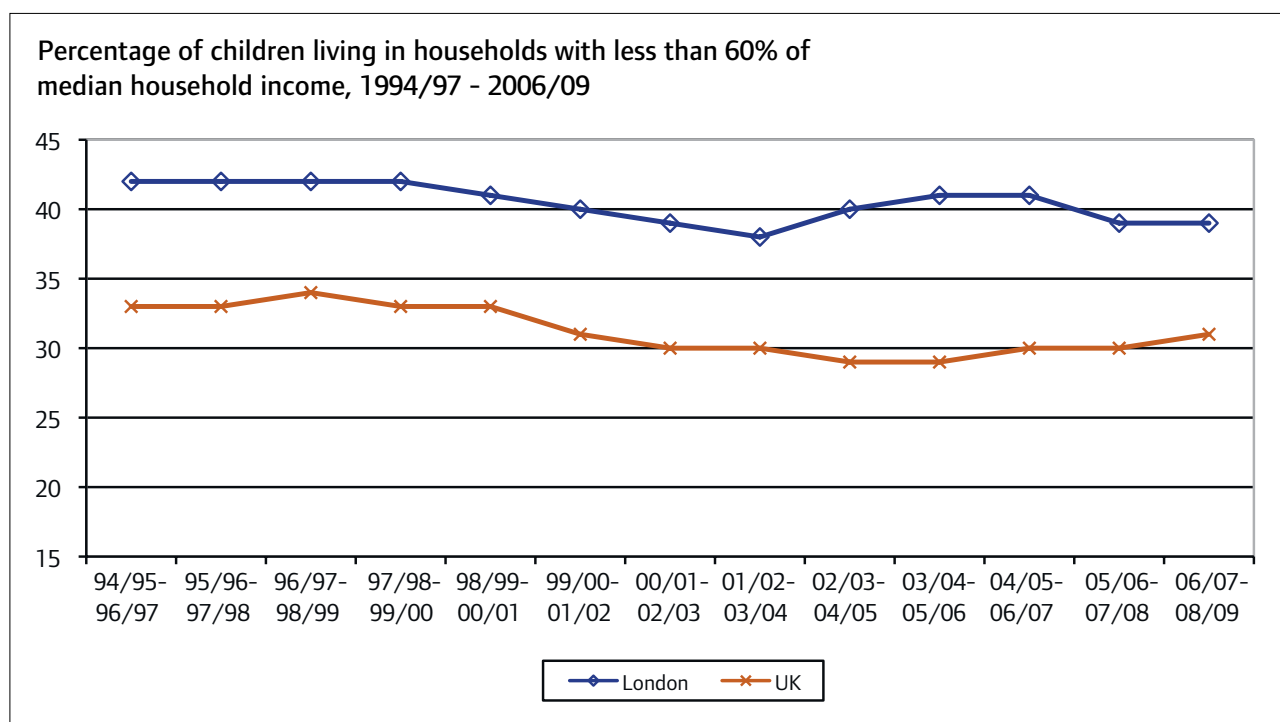
Due to a combination of factors including low pay, worklessness, and high housing costs, many Londoners find themselves living in poverty. This is a problem that is reflected by poorer health outcomes and other social issues that characterise many low-income areas of London.

Child poverty in London

Child poverty is a very significant issue in London, particularly in terms of intergenerational poverty, reducing children's life chances and its contribution to health inequalities. During 2006–2009, nearly two out of every five children (39 per cent) in London lived under the poverty line after accounting for housing costs. This compares to less than one in three (31 per cent) for the UK as a whole. Rates of child poverty are particularly high in inner London, where 44 per cent of all children live in poverty².

Furthermore, trend data over the last 12 years show that national improvements in child poverty rates have not in general been evident in London, where rates remain stubbornly high (see Figure A.3).

2. Poverty figures for London: 2008/09, GLA Intelligence Update, May 2010.

Figure A.3: Child poverty in London and the UK over time

Source: FRS 1994/95 – 2008/09

Over one-fifth (22 per cent) of all London's children live in workless households: that is households with no adults in work. London has the highest percentage of children living in workless households of all regions. Rates are exceptionally high in inner London where 29 per cent of all children live in workless households. While the rate is lower in outer London (18 per cent), it still remains well above the rate in the rest of the UK (16 per cent)³.

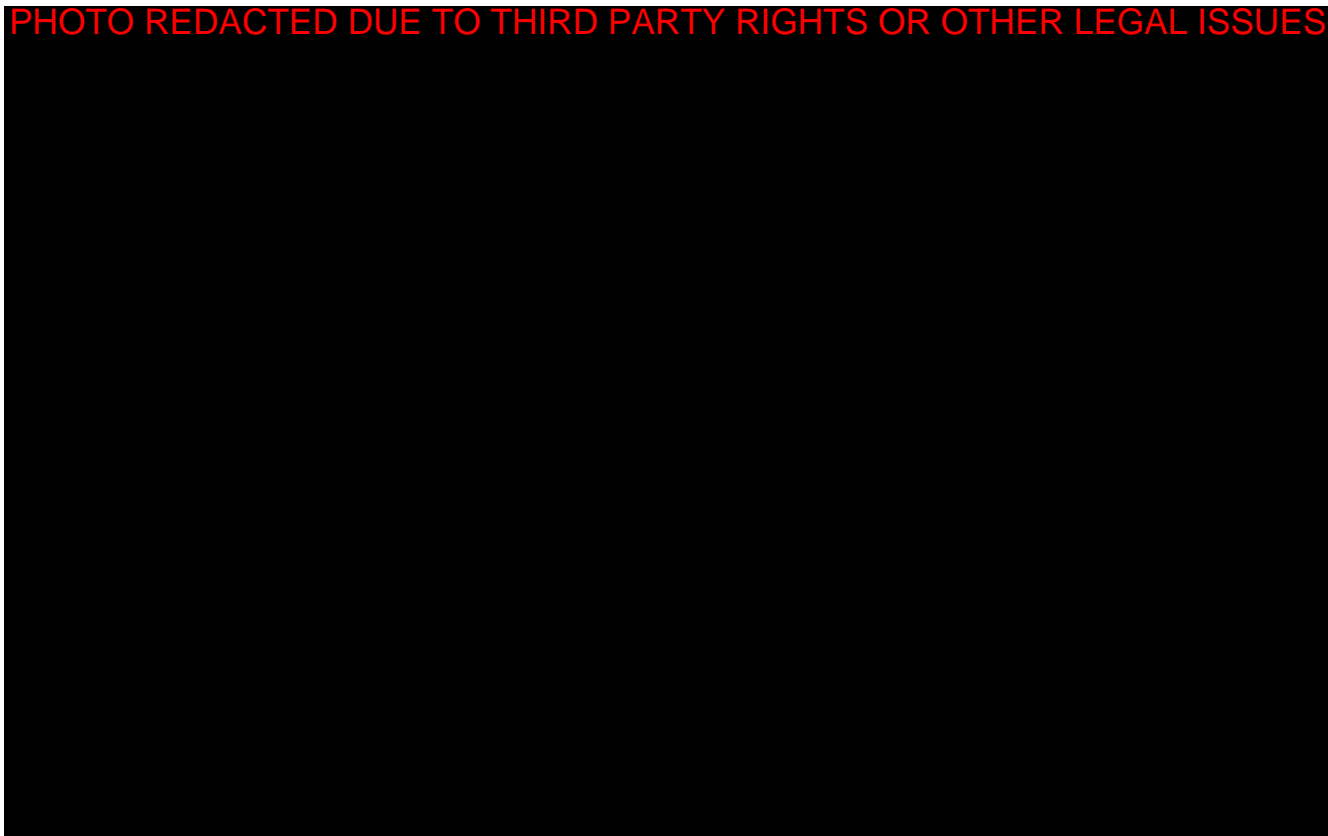
Therefore, child poverty in London is particularly high, with worklessness amongst parents a major contributing factor in many cases. However, it is not the case that all child poverty is due to parental worklessness. The New Policy Institute's, 'London's Poverty Profile'⁴ shows that the proportion of children in low-income households is higher in London than the rest of England for each category of family work status. The data shows that about ten per cent of children in 'all-working families' in inner and outer London are living in low-income households, compared to five per cent for the rest of England. For 'part-working' families, this rises to 40 per cent in London and for workless families the level is more than 70 per cent. So, while it is clear that worklessness is a key cause of child poverty, low pay amongst working parents is also significant for many children living in poverty.

Whether due to parental worklessness or low pay, it is clear that many children live in poverty in London and that they are concentrated geographically in particular areas. The map below shows the location of these areas – according to the National Indicator 116: The Number of Children in Poverty, published by HMRC⁵ – with a clear concentration towards the north and east of inner London.

3. *Worklessness in London*. GLA Intelligence Update, September 2010

4. MacInnes, T. and Kenway, P. 2009. "London's Poverty Profile". City Parochial Foundation and New Policy Institute. Accessible at: www.londonspovertyprofile.org.uk

5. HMRC National Indicator 116: *The Number of Children in Poverty*. Defined as the proportion of children in poverty in receipt of out of work benefits or tax credits, where their reported income is less than 60 per cent median income.

Figure A.4: Child Poverty, 2008, by Lower Super Output Area**PHOTO REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES**

Children who are living in poverty are more likely to be amongst the most vulnerable in society, some of which will also be children in care. Bebbington and Miles⁶ identified that five of the top six factors predating entry into care were either causes or consequences of poverty⁷. Analysis by Sefton⁸ supports these results and found that of the three per cent of families who had seen a social worker or welfare officer in the last year, around 40 per cent were in the bottom fifth of the income distribution scale, and only five per cent were in the top fifth. The costs of looking after children are significant, at around £150,000 per year for every child in residential care and £25,000 per year for foster care. Addressing some of the causes of child poverty could reduce the level of expenditure on these personal social services.

Educational attainment lessens the risk of poverty by improving employment opportunities and wage potential. However, birth cohort studies have observed that education often serves as a 'transmission mechanism' for disadvantage: childhood poverty is associated with lower educational attainment that, in turn, is associated with low income in adulthood⁹.

Figure A.5 illustrates this issue. It shows that educational attainment amongst children is strongly correlated to parental incomes. The size of the difference is larger when comparing pupil's GCSE results of high and low socio-economic status within the same ethnic group, than when comparing between ethnic groups.

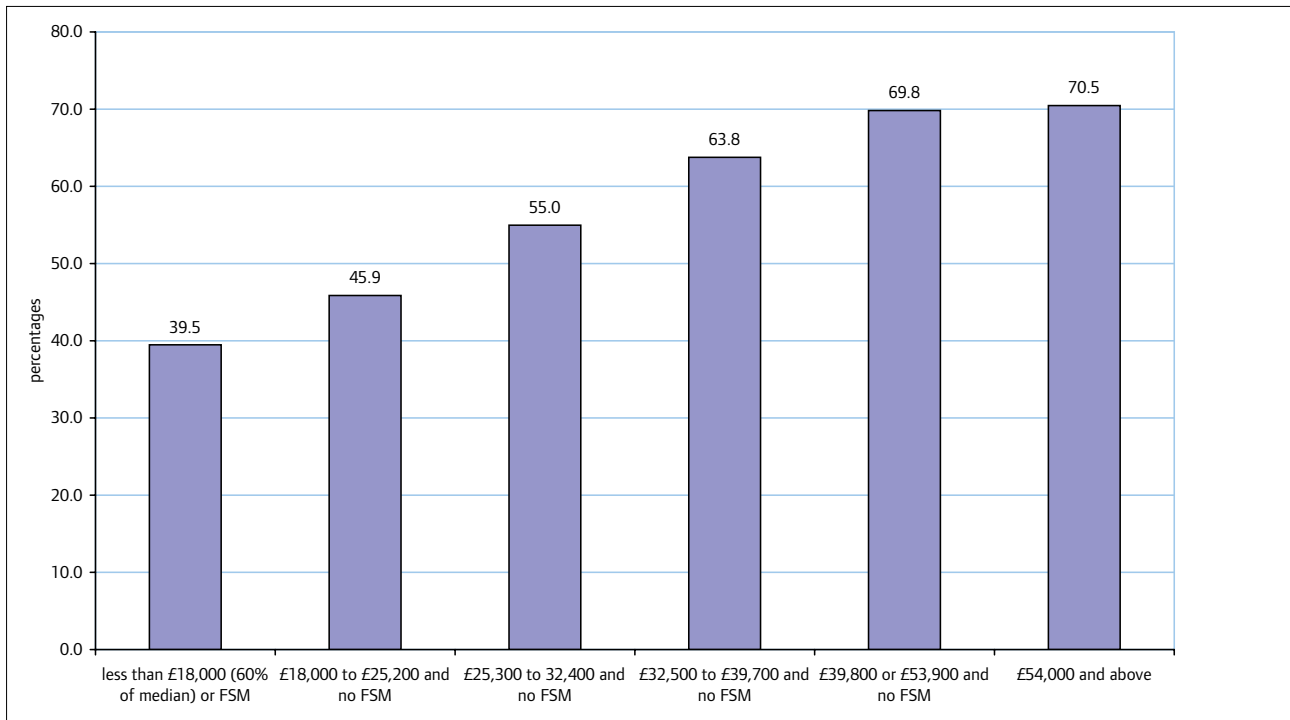
6. Bebbington, A. and Miles, J. 1989. 'The background of children who enter local authority care', *British Journal of Social Work*. 19:9

7. These factors are: living in a single-parent family; living in overcrowded accommodation; being in receipt of benefits; having a mother aged under 21; coming from a family of four or more; and residing in a deprived neighbourhood

8. Sefton, T. 2009. 'A Child's Portion: An analysis of public expenditure on children in the UK'. Centre for the Analysis of Social Exclusion, London School of Economics

9. Smith & Middleton (2007) – A review of Poverty Dynamics research in the UK

Figure A.5: Pupils (aged 15 in 2004) achieving five or more GCSE A*-C grades or equivalent by home income group and Free School Meals (FSM) entitlement



Source: DMAG using merged 2002 – 2005 LPD

Figure A.6 demonstrates that poor educational attainment is also concentrated in the north and north-east of the city with smaller pockets in west and south London.

Figure A.6: Spatial distribution of educational attainment in London (children gaining 5 A*-C grades at end of Key Stage 4 (KS4) %, 2009)

PHOTO REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

In addition to the economic costs of dealing with crime, poor health and other similar social problems, there is the additional economic impact created by the fact that, statistically speaking, children who grow up in poverty have low educational attainment. This means they are, as a consequence, more likely on average to be out of work or earning low wages as adults than those with a higher level of educational attainment. That 39 per cent of London's children are currently living in poverty is a major economic issue for the future. This suggests there are a large number of children in London at present that are likely in the future to struggle as adults to compete effectively for jobs in London's labour market.

Characteristics associated with young people 'not in education, employment, or training' (NEET) include poor educational attainment, persistent truancy, teenage pregnancy, use of drugs and alcohol, looked after children, disability, mental health issues and crime and anti social behaviour. There is a strong correlation between the percentage of young people NEET and the performance of the wider labour market. Those areas with the highest proportion of young people NEET also have relatively high unemployment and low employment and economic activity overall¹⁰. Young people in London are at particular risk in today's economy due to lower levels of recruitment and the fact that they will be competing with larger numbers of experienced workers for new vacancies.

Successful education of all children is vital for positive life chances of young and adult Londoners, as well as reducing future levels of poverty and promoting social mobility in London.

Leon Feinstein found that among the British Cohort Study of children born in 1970, gaps in child development by parental socioeconomic status emerged as early as 22 months. The gap appeared to increase slightly through 42 months and 60 months, and this also fed through to labour market performance age 26 years¹¹. He concluded that inequalities in very early outcomes are, in part, responsible for long-lasting differences in life chances associated with family background. In short, disadvantage in early childhood affects children's progression, with those from less advantaged backgrounds more likely to lose ground.

The new Millennium Cohort Study has found that gaps in vocabulary scores and behaviour by family background are substantial. Those from the most advantaged backgrounds perform, on average, over one year ahead in vocabulary compared to those from disadvantaged backgrounds at ages three and five. Persistent financial hardship is more likely to undermine cognitive as well as behavioural adjustment of young children at age five, which is a significant risk factor for development.¹²

Nevertheless, with regard to potential public sector interventions (such as reducing school disengagement, behaviour support and promoting literacy) any policies that can successfully raise the educational standards of children from disadvantaged backgrounds would appear to have huge potential benefits for London. This is in terms of both providing a better trained workforce to future London employers and in helping to address the social problems, deprivation and lack of social mobility that exist across much of London today.

10. Mayor of London, *What works in preventing and re-engaging young people NEET in London*, February 2007

11. Leon Feinstein, 'Inequality in the early cognitive development of British children in the 1970 cohort', *Economica*, vol 70, 2003.

12. Kirstine Hansen, Heather Joshi and Shirley Dex (eds.), *Children of the 21st century: The first five years*, Policy Press, 2010.

Importantly, the significant relationship between education and health means that better educated individuals are more likely to experience positive health outcomes¹³. Along with these benefits come considerable cost savings through a reduced need for remedial programmes to address social problems.

According to the Marmot Review¹⁴ inequalities in education outcomes affect physical and mental health as well as income, employment and quality of life. The review finds evidence that suggests it is families rather than schools that have the most influence on educational attainment. Parental involvement in their child's reading has been found to be the most important determinant of language and emergent literacy¹⁵. With high levels of skills and qualifications becoming increasingly important to succeed in the London job market, the fact that almost four out of every ten children live in poverty is a major problem.

The evidence is clear that, on average, children in low-income families significantly under-perform against their peers in educational attainment and their health outcomes are generally worse. Therefore, there is a risk that these children will themselves continue to live in poverty as adults, either workless or in low-wage jobs, in no small part due to their lack of qualifications. Thus the deprivation and health problems in many areas of London will continue.

London's future prospects

The high number of young children in London both now and the predicted growth in the future means that significant resources will need to be devoted to London.

According to population projections, the number of children living in London between the ages 0 and 4 will increase by 11.6 per cent from 2008 to 2033^{16 17}. This compares to the UK average increase of 6.9 per cent over the same period. London has the greatest projected increase in the number of children aged 0 to 4 years old of all the regions in England (highlighted by the graphs below which show the increase in the number of children in English regions). This implies a greater need for resources within London compared to the rest of the country for young people moving forward.

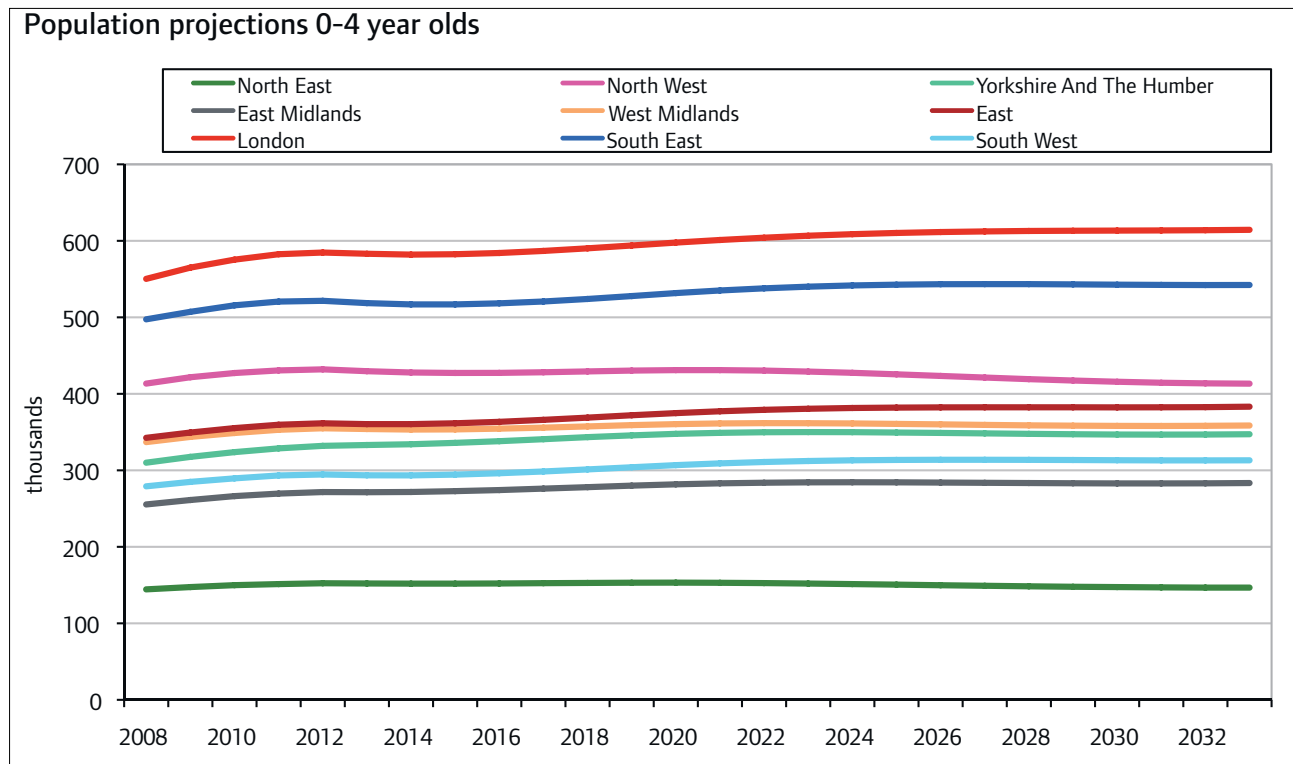
13. Cutler, D. and Lleras-Muney, A. 2006. "Education and Health: Evaluating Theories and Evidence". National Bureau of Economics Research Working Paper No 12352.

14. Marmot Review (February 2010). 'Fair Society, Healthy Lives.' Strategic Review of Health Inequalities in England post 2010

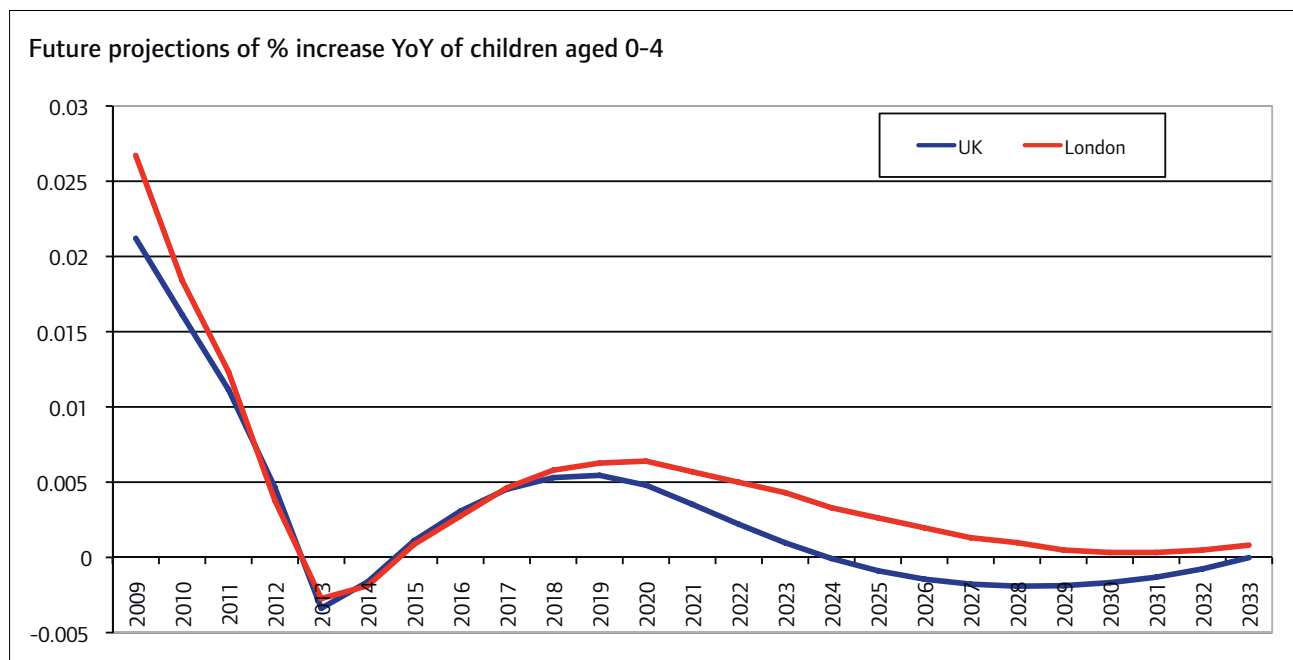
15. Strategic Review of Health Inequalities in England Post 2010 – the Marmot Review, 2010.

16. Subnational population projections (SNPP) are based on the assumption that recent trends in fertility, mortality and migration at local authority level will continue, they take no account of local development policy, economic factors or the capacity of areas to accommodate population. The SNPP are considered to be trend based projections.

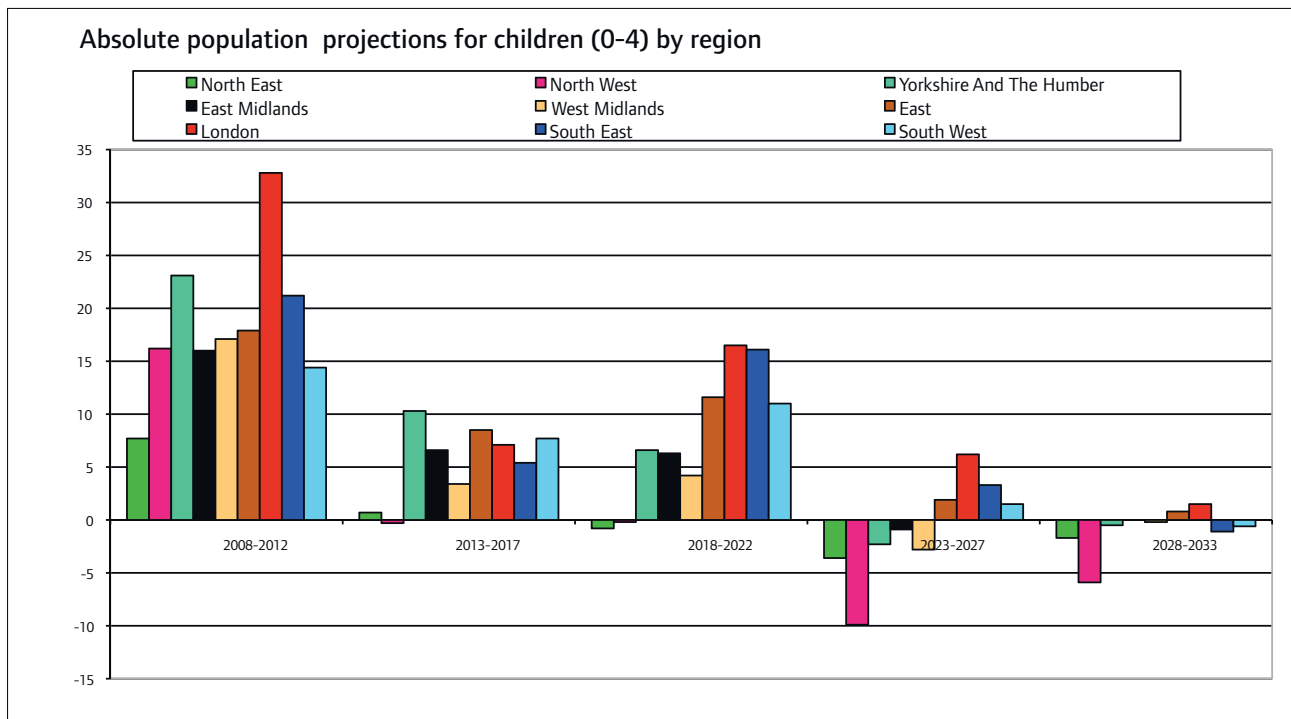
17. GLA, Data Management and Analysis Group (DMAG): ONS 2008 based sub national population projections

Figure A.7: Population Projections of 0 to 4 year olds in England

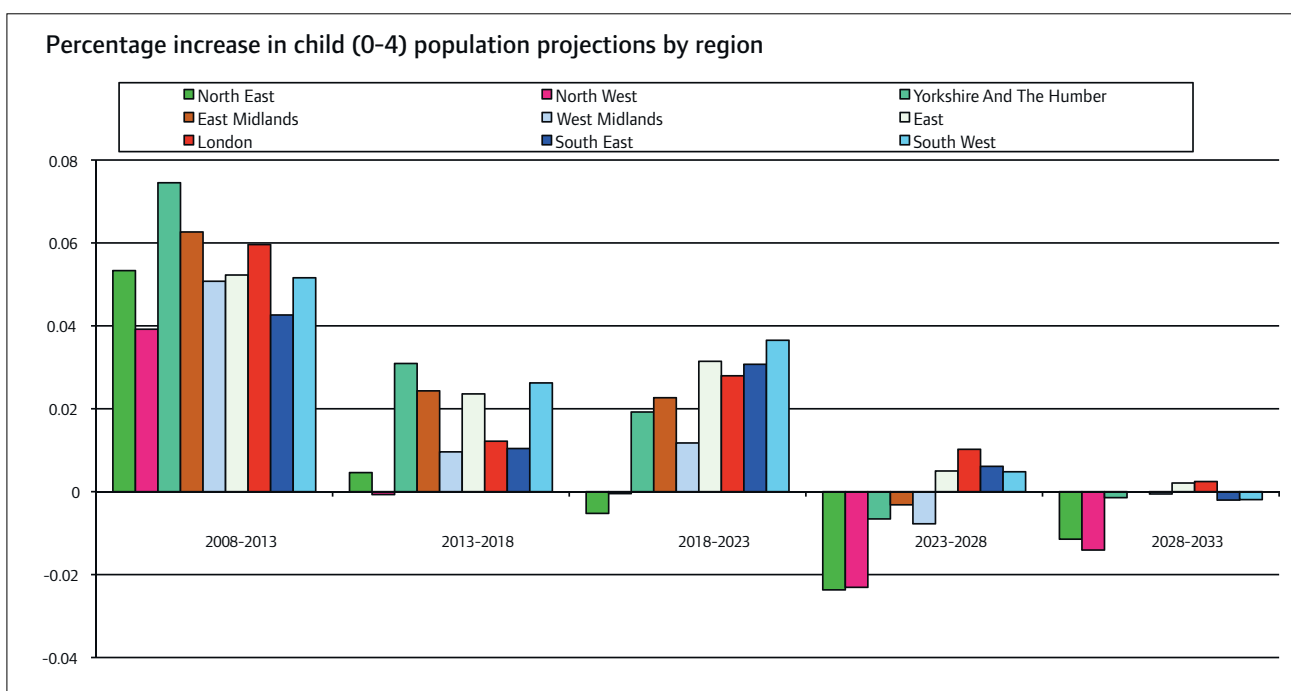
Source: Office of National Statistics, 2008 based Subnational population projections

Figure A.8: Projections of percentage increase of 0 to 4 year olds

Source: Office of National Statistics, 2008 based Subnational population projections

Figure A.9: Absolute population projections for children by region

Source: Office of National Statistics, 2008 based Subnational population projections

Figure A.10: Projected percentage increase of children by region

Source: Office of National Statistics, 2008 based Subnational population projections

One way of illustrating this future impact is through the impact on primary school reception classes. DMAG¹⁸ has estimated that London will need to provide approximately 11 per cent more reception class places by January 2014 and estimates in early 2010 by London Councils, and using GLA DMAG data, predicted a shortfall of 50,710 places over the next seven years¹⁹ Moreover, this increase in demand for child related services is not equally distributed through London.

In both Barking & Dagenham and Hillingdon the increase in required reception classes will be 21 per cent, while in Sutton it is 20 per cent. If an average reception class size is assumed to be 30 children, nine boroughs in London would need to provide at least 20 more classes, led by Ealing (27) and Wandsworth (26). These figures have been used to demonstrate the need for necessary resources to meet schooling requirements in London.

References

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DMAG: ONS 2008 based sub national population projections

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Smith & Middleton (2007) – A review of Poverty Dynamics research in the UK

18. DMAG update 11-2010 June 2010 ONS 2009 Provisional Births

19. Mayor of London, *Young Londoners – successful futures*, GLA, 2010.

Appendix B: Early years expenditure analysis

This appendix attempts to provide estimates of expenditure on early years interventions. There is limited information available on the total levels of expenditure in early years services, which makes it very difficult to calculate accurately. This is largely because there is no single department or body that controls early years policy. In addition to early years expenditure, this appendix estimates the level of spend in a number of other areas to allow comparisons to be made.

The areas of analysis are as follows:

1. Estimation of spend on early years interventions in London and the UK
2. International comparisons of expenditure on early years interventions
3. Estimation of education spend on other key age groups
4. Estimation of expenditure that might be considered as remedial

While many of the detailed estimates should be treated with some caution, it is possible to draw the following conclusions:

- It is very difficult to accurately estimate the amount of expenditure on early years services in London and the UK.
- The UK spends significantly less on early years services than some other countries, particularly the Nordic countries.
- Less is currently being spent on early years education services than in the later years.
- Estimated costs of remedial expenditure are substantial.

1. London and UK Estimates of Early Years Spend

It is very difficult to estimate the total level of spending on early years interventions in London and the UK from published sources. It was not possible, in this work, to calculate an accurate estimate of early years spend in London.

The London School of Economics (LSE) on behalf of Save the Children has made an attempt to analyse public expenditure on children in the UK and at a country level, so this has been the main source for this section. A key recommendation of this report was that the transparency and accountability of public expenditure on children should be improved. This could be achieved by establishing children's budgets at national and local levels, and implementing systems and mechanisms for collecting and publishing comprehensive data on expenditure (allocated and actual). This would provide very valuable information because the data available at the moment is sparse and of variable quality.

London School of Economics: A Child's Portion

The LSE estimated total current expenditure on the under-5s by analysing data from Public Expenditure Statistical Analyses (PESA) and other published sources based on three categories of spending. These are: early years education for under-fives, 'Total Sure Start' or equivalent programmes, and the childcare element of the Working Tax Credit.

Table B.1: Total current expenditure on under-5s in the UK, 2007/08

	England	Scotland	Wales	Northern Ireland
Total expenditure (£m)				
Under-5s education (PESA)	3,912	294	223	26
'Total Sure Start' (or equivalent in other countries)	1,762	105	45–58	9
Childcare element of Working Tax Credit	1,188	129	57	38
Total under-5s	6,862	528	325–338	73
Spend per child aged 0–4 (£)				
Under-5s education (PESA)	1,290	1,070	1,360	230
'Total Sure Start' (or equivalent in other countries)	580	380	270–350	80
Childcare element of Working Tax Credit	390	470	350	330
Total under-5s	2,260	1,920	1,990–2,070	630

Figures in the top panel are rounded to the nearest £1m and figures in the bottom panel are rounded to the nearest £10

Source: London School of Economics. 2009. "A Child's Portion: An analysis of public expenditure on children in the UK".

These figures represent a 'best estimate' of expenditure on under-5s. Under-5s education expenditure totals come from HM Treasury's PESA 2008 and excludes Sure Start funding which is included as a separate item. Total Sure Start spends for England comes from a DCSF departmental report, and spending on the equivalent programmes in other countries comes from the devolved administrations. Figures for the childcare element of the Working Tax Credit are from HMRC. However, not all of this was spent on children under the age of five because the childcare element of Working Tax Credit can be claimed for all children under the age of 16. The results should be treated with some caution due to difficulties apportioning spending where data is not available at a sufficiently detailed level.

The table shows that in 2007/08 around £7 billion was spent on the under-fives in England. This has grown significantly from around £2 billion in 1997/98. However, as shown in the first section of this appendix, as a percentage of GDP, expenditure in England is still well below levels in other countries such as Sweden and Denmark. The following table shows a comparison over time of the amount spent on early years and childcare provision, and how this has increased significantly in recent years.

Table B.2: Total public expenditure on early years and childcare provision in England 1997/98 to 2007/08

	£m in 2006/07 prices					
	1997/98	1999/00	2001/02	2003/04	2005/06	2007/08 (est.)
1 Local authority spend on under-5s education of which:	2,141	2,452	3,180	3,373	3,676	3,912
2 Nursery schools	—	301	485	345	357	329
3 Primary schools	—	2,024	2,323	2,447	2,626	2,664
4 Private/voluntary providers	—	126	369	580	692	919
5 Nursery vouchers	809	0	3	0	0	0
6 Total Sure Start of which:	5	260	550	800	1312	1762
7 Sure Start Local Programmes + Children's Centres	0	9	158	405	790	—
8 Childcare element of Working Tax Credit	35	117	300	568	755	1188
9 Total early years and childcare	2,181	2,829	4,030	4,741	5,743	6,862
as % of gross value added	0.29%	0.35%	0.47%	0.53%	0.61%	—

Source: London School of Economics. 2009. "A Child's Portion: An analysis of public expenditure on children in the UK".

As can be seen from the table, the most significant increases in expenditure have been on private/voluntary providers of education, the introduction of the Sure Start programme, and the childcare element of the Working Tax Credit.

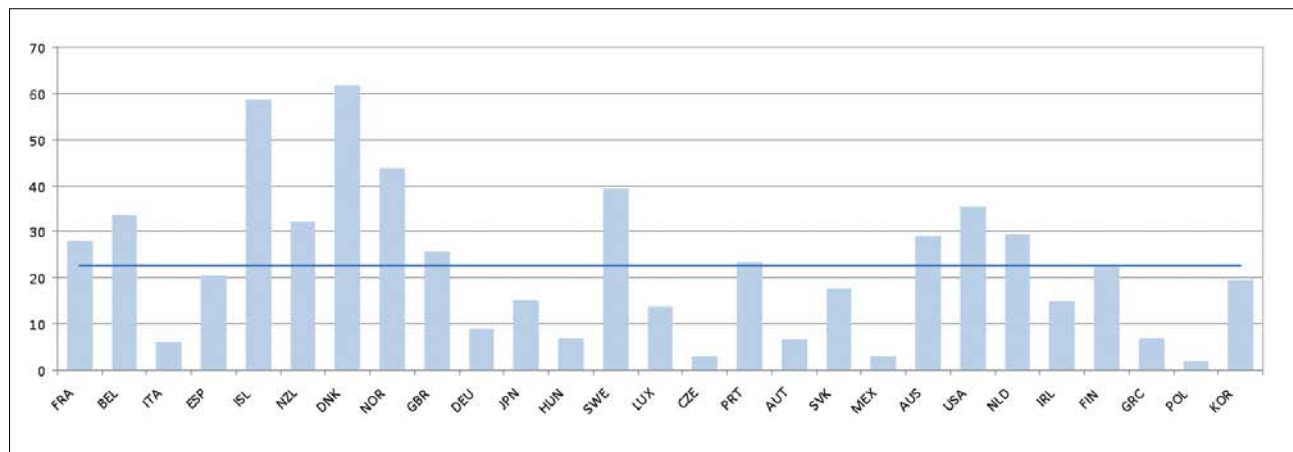
2. International comparisons of spend on early interventions

This section uses three sources: OECD, Eurostat and Unesco to compare the level of expenditure on early years intervention in the UK with other countries. The data shows that the UK spends considerably less on early years services than some other countries.

a) OECD Indicators – Starting Strong Report

The OECD conducted a review of early childhood education and care, resulting in the Starting Strong II report in 2006. In addition, indicators from the Society at a Glance 2009 report have also been included. Statistics considered include enrolment rates in formal childcare; spending on childcare and pre-primary education; and public expenditure on early years.

Figure B.1: Enrolment rates in formal childcare for children under three (2005 or nearest year)



Source: OECD.

The chart shows wide disparities between OECD nations in terms of enrolment rates in formal childcare for children under the age of three. There are very high enrolment rates amongst Nordic countries, but also some very low rates of enrolment elsewhere. The rate for the UK is above the OECD average. When the three to five age group is included there is little difference amongst major European countries and enrolment in the UK is amongst the highest in the OECD.

Table B.3: Spending on childcare and pre-primary education – % Net National Income (2005)

Rank	Country	Childcare	Pre-Primary	Combined Spend
1	Iceland	0.78	0.60	1.38
2	Denmark	0.78	0.60	1.37
3	France	0.40	0.73	1.13
4	Sweden	0.67	0.45	1.12
5	Finland	0.86	0.24	1.10
	OECD Average	0.30	0.40	0.66
12	United Kingdom	0.41	0.23	0.64

This indicator looks at how much is spent on childcare and pre-primary education as a percentage of net national income. Total UK expenditure is below the OECD average according to this indicator. However, spend on childcare is above the OECD average. This can be explained by the higher than average enrolment rates in formal childcare up to five years of age.

Public Expenditure on Early Years, PPP US\$ estimates (per child)

These indicators provide further context on expenditure levels between OECD nations

Table B.4: Pre-primary education

Rank	Country	Spend (US\$)
1	New Zealand	6,001
2	Netherlands	5,881
3	Australia	5,709
4	Belgium	4,698
5	France	4,679
	OECD-21 Average	3,667
8 of 24	United Kingdom	4,255

Table B.5: Childcare support

Rank	Country	Spend (US\$)
1	Finland	7,118
2	Norway	6,425
3	Denmark	6,376
4	Sweden	5,928
5	Iceland	5,733
	OECD-21 Average	2,549
6 of 21	United Kingdom	3,563

Table B.6: Total estimated public expenditure

Rank	Country	Spend (US\$)
1	Norway	10,553
2	Iceland	10,323
3	Denmark	10,119
4	Sweden	9,555
5	Finland	9,538
	OECD-21 Average	6,216
8 of 24	United Kingdom	7,818

The data shows that the UK spends more on average than the OECD as a whole for each category of expenditure. However, it is still considerably below that of the largest spenders. On a per GDP measure, the above results are largely replicated. This analysis does not provide any consideration of private expenditure on childcare and early years education.

Figure B.2: Public Expenditure of pre-primary and children as a percentage of GDP, 2005

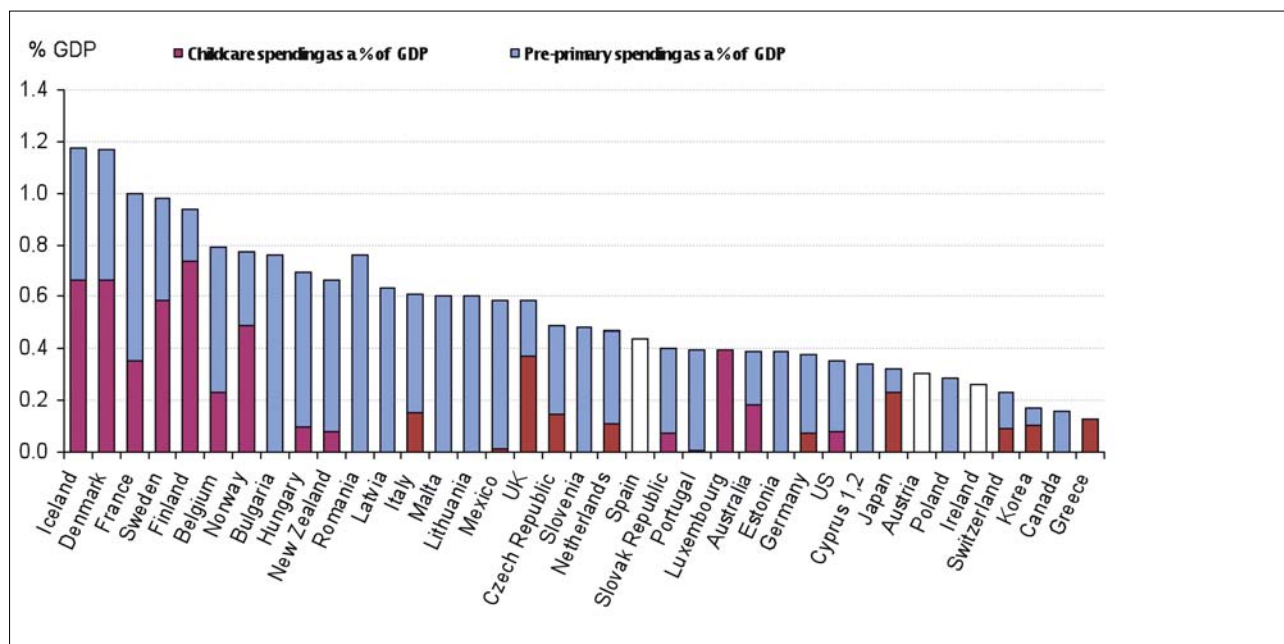
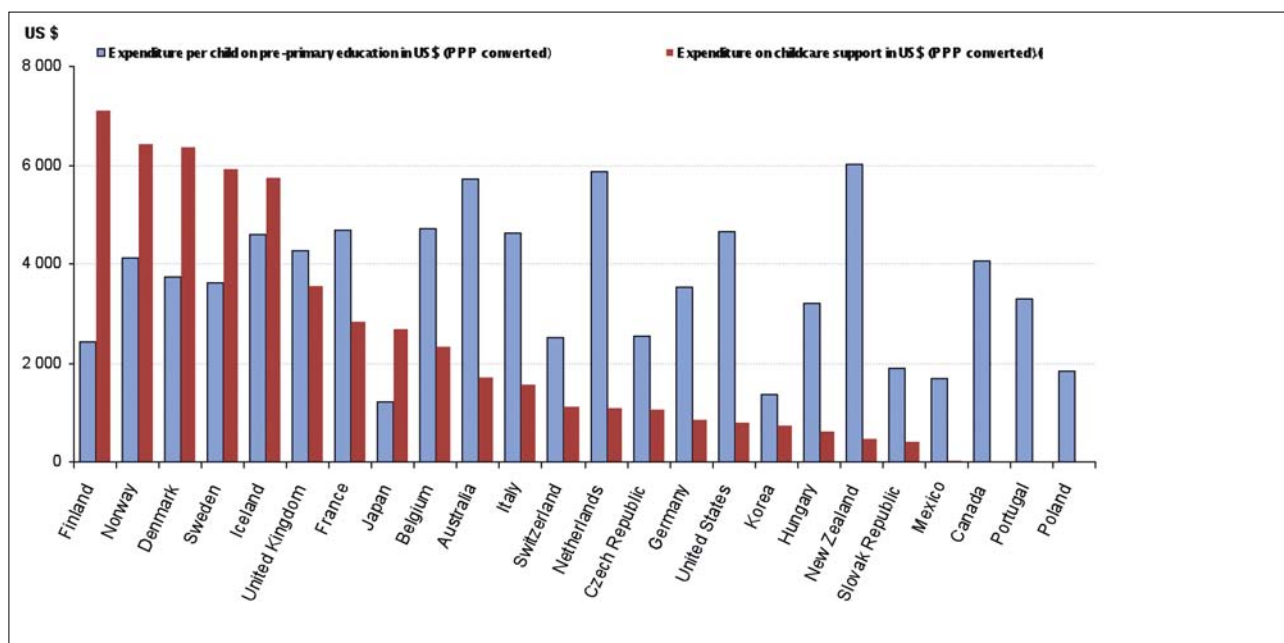


Figure B.3: Public Expenditure of childcare and pre-primary education per child, US\$ PPP, 2005



b) Eurostat indicators

The Eurostat indicators provide estimates of spending on early years and the quantity of service provision.

Table B.7: Total Expenditure – Family/Children, Percentage of GDP, 2007

Rank	Country	Expenditure as a percentage of GDP
1	Denmark	3.7
2	Luxembourg	3.2
3	Sweden	3.0
	European Union (EU-27) Average	2.0
19	United Kingdom	1.5

The percentage of GDP estimates clearly shows a much lower level than the highest spenders, and the European Union on average.

Table B.8: Total Expenditure – Family/Children, Euro per Inhabitant (constant 2000 prices), 2007

Rank	Country	Expenditure on Family/Children
(Euro per inhabitant)		
1	Luxembourg	2,139
2	Norway	1,518
3	Denmark	1,359
	European Union (EU-27) Average	439
13	United Kingdom	433

In terms of spend; the UK is lower than the EU average on the proportion spent on family and children.

In addition to this analysis of expenditure, the Eurostat database also provides estimates of childcare provision.

**Table B.9: Average number of hours/week of formal care, 2008
Between 3 years and compulsory school age**

Rank	Country	Hours per week
1	Iceland	35.4
2	Estonia	34.8
3	Denmark	32.7
	European Union (EU-27) Average	23.8
26	United Kingdom	15.6

Table B.10: Average number of hours/week of formal care, 2008
Under 3 years

Rank	Country	Hours per week
1	Denmark	24.7
2	Iceland	14.5
3	Belgium	14.4
	European Union (EU-27) Average	8.4
18	United Kingdom	4.6

The results clearly show that the amount of formal care in the UK compared with the rest of Europe is significantly less in both age groups.

Table B.11: Formal childcare for 30 hours or more, 2008
Between 3 years and compulsory school age

Rank	Country	Percentage of children
1	Iceland	88
2	Estonia	84
3	Denmark	83
	European Union (EU-27) Average	42
24	United Kingdom	20

Table B.12: Formal childcare for 30 hours or more, 2008
Under 3 years

Rank	Country	Percentage of children
1	Denmark	65
2	Iceland	36
3	Sweden	31
	European Union (EU-27) Average	13
22	United Kingdom	4

Similarly, the percentage of children receiving 30 hours or more of formal childcare in the UK is significantly below the European Union average, for both children aged between 0 and 3, and those between 3 and school age.

c) UNESCO Statistics

The data from the UN provides a sample of 24 countries, including countries from the European Union, North America and Asia. Figures listed are the latest data available (a mixture of 2006 and 2007 data).

Table B.13: Educational expenditure in pre-primary as a % of total education expenditure¹

Rank	Country	Percentage of education expenditure on pre-primary
1	Russia	14.0
2	Spain	13.6
3	France	11.3
	Sample Average	6.8
13 of 23	United Kingdom	6.6

Table B.14: Public expenditure on education as a % of total government expenditure

Rank	Country	Percentage of total government expenditure on education
1	New Zealand	19.7
2	Iceland	17.4
3	South Africa	16.9
	Sample Average	13.2
17 of 23	United Kingdom	11.7

Table B.15: Public expenditure on education as a % of GDP

Rank	Country	Expenditure on education as a percentage of GDP
1	Denmark	7.9
2	Iceland	7.5
3	Norway	6.8
	Sample Average	5.3
9 of 24	United Kingdom	5.6

These indicators show that expenditure in the UK is less than average as a percentage of total education expenditure and as a percentage of total government expenditure. Public expenditure on education as a percentage of GDP in the UK is similar to the average, but is well below some of the Nordic countries.

1. Where education spending covers pre-primary to tertiary spending on education.

3. Comparison of early years expenditure with other age groups

This section compares the amount of education expenditure in different age groups. Data from the Department for Education shows that total budgeted expenditure increases with age cohort.

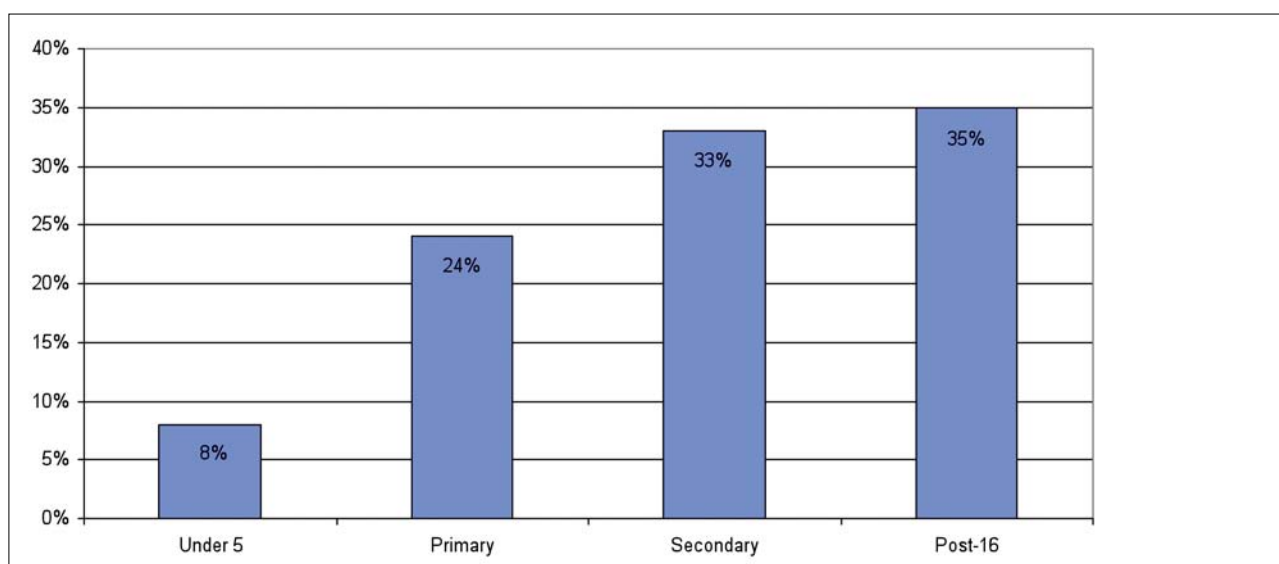
Table B.16: Total education expenditure by cohort, United Kingdom 2008-09:

Cohort	Total Revenue Expenditure (£m)	Spending per pupil
Under 5	4,692	£2,792
Primary	19,140	£3,580
Secondary	21,910	£4,620
Higher Education	19,046	£4,220

Sources: DCSF, *Education and Training Statistics for the United Kingdom, 2009*; also DCSF, *Funding per pupil time series*.

Note: Spending per pupil for under 5 are for England; DCSF Benchmarking

Figure B.4: Proportion of Educational Expenditure by cohort, using 2008-09 data, United Kingdom



Source: Adapted from Marmot Review, Figure 4.1, page 97, 2009. Sourced from DSCF data

When we look at expenditure up to the end of compulsory school age, the proportion spent on under-fives education comprised just 12 per cent. When higher and further education is taken into account, this figure falls to eight per cent. Despite there being a far smaller number of pupils in higher levels of education, average expenditure per pupil increases with age.

In 2003/04, over £6.5 billion was spent on providing education and training for low skilled youths and adults, whereas data from the former DCSF indicates that less than £4 billion was spent on early years education. Hence, the amount spent on remedial education exceeds the amount spent on education in the early years. Further examples of remedial expenditure are discussed in the next section.

4. Costs of remedial measures for London and the UK

This section attempts to estimate some of the costs of remedial measures for London and the UK from a variety of sources. This ‘remedial spending’ is on activities that may not be necessary to some extent if early intervention was undertaken. It is difficult to estimate the level of remedial spending currently incurred by the government as there is very limited detail available, and expenditure occurs across a wide range of departments and activities. However, the following sources help to give an indication of the magnitude of expenditure on remedial measures.

New Economics Foundation: Backing the Future

The NEF Backing the Future paper has estimated some of the remedial costs for the UK and other European Union countries. The paper looks to calculate the costs of social problems and then argues that if costs were shifted towards early years policies, then remedial costs could be reduced in the long run.

The NEF paper looks at the following areas:

- Productivity losses of 16–19 year olds not in employment, education or training (NEET)
- Costs of obesity
- Costs of crime to the state and wider economy
- Welfare and health costs of teenage pregnancy
- Welfare and health costs of substance misuse
- Costs of mental health problems to the state and wider economy
- Costs of family breakdown to the state
- Regeneration costs from attempts to offset spatial inequality
- Health service costs related to violence experienced by children.

These costs were assessed for the UK and then using international statistics were computed for other European countries using UK cost equivalents. This assumption simplifies the analysis, and creates a degree of uncertainty in the estimates. It assumes that the costs are equalised across Europe. However, it is likely that costs in individual countries may be higher or lower than the UK estimate.

The paper compares indicators across the selected categories and then compares with the UK. It found the annual cost of social problems to be £161.3 billion per annum (and asserts that in a do-nothing scenario, costs could total almost £4 trillion over the next 20 years). This was an estimate that was £40 billion higher than for any other country in the sample. This implies that across many social outcome indicators, the UK performs significantly worse than Europe on average.

Table B.17: Annual cost of social problems in European countries

Rank	Country	Costs per annum (£ billions)
1	Finland	44.6
2	Denmark	84.9
3	Sweden	88.5
	Sample Average	105.4
16 of 16	United Kingdom	161.3

Source: *Backing the Future*, NEF, 2009, adapted from Table 1

The indicators used to create this estimate were sourced from the OECD. However, it could be argued that some of the social problems outlined in this report could only be tenuously linked to a lack of early years intervention.

For example, regeneration costs or other factors that can only be partially attributed to a lack of intervention such as family breakdown. In this situation it is likely that there are a number of contributing factors, only some of which would be improved through early years interventions.

Estimating the social costs from other sources

Another paper, by RAND (2005), looks at potential spillover benefits and costs of improved outcomes from early childhood intervention problems. However, this paper does not make a monetary estimate of the impact. The benefits (of relevance to the UK) considered include:

- improved child care
- reduced child maltreatment, accidents and injuries
- reduced number of teenage pregnancies
- reduced use of special education
- increased labour force participation
- reduced use of welfare programmes
- reduced crime and contact with the criminal justice system
- reduced incidence of smoking and substance abuse.

If estimates of these areas can be robustly measured and monetised, then it is possible to assert that a proportion of the costs can be offset over time as a result of successful early years interventions. The following sections look to provide estimates of remedial spend in different areas. However, it would be unwise to add together all the following estimates and conclude this as the total remedial spend to society. This is because of the different sources used and the difficulties in disaggregating the spending data to a sufficiently meaningful level.

Crime and Youth Exclusion

The Home Office estimates that the total costs of crime against households and individuals stood at £36.2 billion in 2003/04. This figure includes impacts on the health service, productivity and costs to the criminal justice system.

The Prince's Trust in their paper 'The Cost of Exclusion' estimated that the total cost of youth crime was £1 billion in 2004, and that youth unemployment (16 – 24 years) costs approximately £20 million a week in jobseeker's allowance. The paper illustrates that there are many costs associated with youth exclusion and underachievement, including crime and unemployment.

Costs of teenage pregnancy

Teenage pregnancy imparts costs on many different areas. Teenage mothers are less likely to complete educational qualifications and as such are vulnerable to reduced job opportunities. The public sector often needs to provide additional benefits, such as child and housing benefits, and medical services for the mother and child. In a speech in 2006, the Labour government outlined that in the first five years of life, each birth to a teenage parent imparts an average public sector cost of £57,900.

Approximately 41,300 women under 18 became pregnant in 2008 according to the ONS, of which, 49 per cent had their pregnancies terminated. Assuming 20,000 births as a result, this indicates that costs of teenage pregnancy would be approximately £231 million per annum.

Substance abuse

Addaction, a drug and alcohol treatment charity, estimated that over the course of the ten years to 2008, the total costs of substance abuse towards the health service and the criminal justice system stood at £110 billion. This takes account of health and welfare costs such as income support, care, drug treatment services and victims of substance abuse related crime.

Obesity costs

In 2007, Foresight estimated that the total cost to the NHS of diseases related to an elevated body mass index in England to be £17.4 billion. Of this, £2.3 billion was directly attributable to obesity. The wider total costs, including indirect costs such as productivity losses were estimated at £15.8 billion per year. In addition, NEF has estimated the total UK costs of obesity as £39.5 billion.

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Appendix C: Potential under-investment in the early years

This appendix outlines the factors accounting for a potential under-investment in early years programmes. These include a time inconsistency between investment and payback, the lack of incentives to invest, and a lack of flexibility in budget allocation that makes it difficult to direct funding towards the early years.

Incentives for stakeholders to invest in early years are dependent on structures and accountabilities. The government is introducing major changes to these. The aim here is to evaluate incentives both under current arrangements and in light of planned changes to public service structures along with, for many stakeholders, reduced levels of funding.

A sample of key stakeholders in London were interviewed to assess how incentives to invest in early years work in practice and to gauge expectations of how incentives may change under new organisational and funding arrangements.¹ The interviews were also intended to gain a wider pragmatic understanding of all of the drivers of investments in early years including: levels and degrees of autonomy in funding, development and use of evidence to decide between projects, political influences, and current arrangements to coordinate funding amongst public sector agencies.

Main stakeholders

As noted in Section 2 of the main report there are a number of factors that mean at least some parents are unlikely to invest what, for society at large, is an optimal amount in their child's development. Therefore, there is a strong argument for the public sector to engage in early years interventions. This is to ensure that an optimal amount of investment is made in children's early years over and above the argument to intervene for purely equity reasons (in order to overcome inequalities in society).

Unlike many other areas of public sector provision, early years interventions are delivered by a number of public sector agencies/bodies covering areas such as education and social care and health services. Some of the main early years stakeholders from public, private and voluntary and community sectors include:

- Local authorities
- Children's centres
- Pre-school nurseries
- NHS strategic health authorities and primary care trusts
- General medical practitioners
- Community healthcare providers.

Local authorities (LAs) play a central role in relation to early years, both delivering interventions and commissioning other providers to deliver interventions (including private and non-profit organisations). Whilst LA roles in relation to schools are presently experiencing significant change, they are currently involved in the funding of some children and families' services and most maintained schools (where not Academies or similarly autonomous). Schools themselves have some autonomy over the proportion of resource devoted to early years, for example pre-school education.

1. Interviews were conducted in Summer 2010 with: Judith Pettersen, Director of Children's Services & Lifelong Learning, London Borough of Hounslow; Dr. Paul Plant, Deputy Regional Director of Public Health for London; Jonathan Rallings, Principal Policy and Project Officer, London Councils; Barbara Herts, Croydon Total Place Pilot, Croydon Council.

Children's centres, such as those in the Sure Start scheme, provide childcare and other services for families with young children. Sure Start children's centres are service hubs where children under five years of age and their families can receive integrated services and information.²

London hospitals – both NHS and Foundation Trusts – provide services from conception to delivery and post-natal care. Following the early months of a child's life, health services operate predominantly through general medical practitioners (GPs) and community healthcare providers (including at children's centres). Services provided by these stakeholders include immunisations, health visits and breastfeeding support³.

The new health White Paper describes significant structural changes to the NHS and will form the basis of the forthcoming Health Bill. Changes include primary care trusts (PCTs) being wholly abolished by 2013 with GPs taking over the commissioning responsibilities formerly held by PCTs. Local authorities will take on the public health aspect of PCT business and will jointly appoint the Director of Public Health with the national public health services. A ring fenced public health budget is proposed, including a health premium to promote action to reduce health inequalities.⁴

The 'time-inconsistency' problem

The principal problem affecting optimal investment in the early years is the nature of the payback of programmes. While some of the benefits of early years interventions are realised immediately, many accrue over a longer time period and are cumulative throughout the life of the child. A 'time-inconsistency' problem exists when political leaders and public sector managers are focused on short-term outcomes which militates against considering the full long term benefits.

Most early years interventions are concerned with improving children's future life chances and preventing future spend. As a result, the full impact of such interventions accrues over the long term only. It is therefore important that a full consideration of the lifetime benefits deriving from an intervention like pre-school education, rather than just its short term impacts, is made when considering how much resource to devote to the intervention. A full consideration will allow for future cost savings to be accounted for as well as any short-term impacts.

However, in many instances the system is simply not designed to incentivise local authorities (or others) to invest for the long-term – rather the incentives are often to focus on more short-term factors (for instance political election cycles). As a result, when considering early years interventions the long-term impacts are sometimes not sufficiently considered. This potentially reduces future costs like some social, economic, health and crime related services as well as education welfare (truancy) and specialist alternative education provision. A greater emphasis on early years interventions by national government (for instance, the Allen review on Early intervention delivery) may well help in providing for improved incentives to invest in the early years.

Distribution of benefits

In the private sector the market mechanism (through the market's provision of prices) provides clear signals to business of the benefits and costs (in financial terms) of different activities. The public

2. *Sure Start Children's centres provide integrated early education and childcare, support for parents (including advice on parenting and local childcare), child and family health services (ranging from health screening, health visitor services to breast-feeding support), helping parents into work (with links to the local Jobcentre Plus and training).*

3. *The Government has recently announced a national recruitment campaign to recruit around 4,200 new health visitors (see: http://www.dh.gov.uk/en/MediaCentre/Pressreleases/DH_120742)*

4. *Department of Health (July 2010) Equity and excellence: Liberating the NHS.*

sector has no such pricing mechanism and so, in contrast to the clear profit incentive for the private sector, the aims and objectives of the public sector tend to be set by accountable democratically elected politicians who spend their budgets in order to meet certain statutory obligations. Such obligations can be viewed as one form of incentive to invest.

Importantly, however, stakeholders also have incentives to improve their performance over and above any statutory obligations. This means that stakeholders also assess the benefits that they derive from undertaking interventions considering their own obligations or performance objectives.

However, the intervening stakeholder is not typically the sole beneficiary of early year interventions. Benefits accrue to a number of different stakeholders, so they are 'external' to those undertaking the investment. The existence of these 'external' benefits means that it is likely that there will be an under-investment in early years when considered from the point of view of society as a whole.

The problem occurs because while the costs of most public programmes that are focused on early years fall to a single budget holder, the benefits from such programmes spread across many stakeholders. Examples include hospitals with responsibility for post-natal care immediately after childbirth, and pre-schools responsible for early education. If rational, public sector stakeholders will only consider the benefits that are directly related to their programme objectives when making investment decisions. This behaviour reflects the reality that different public sector organisations are essentially in competition for funding. This means considering benefits that are 'external' would compromise some of the potential gains in terms of success against performance or funding measures. Therefore, stakeholders who are each paying separately for their own early years activities will only invest in early years interventions at levels reflecting their private benefits (rather than those that would be received by the public sector or society as a whole).

If overall benefits of an early years intervention (to all stakeholders) is not taken into account, then propositions (based on comparison of benefits and costs) may appear less attractive than for other projects that are on the table. As a result, stakeholders may select other activities over early years interventions even though investments in early years provide better value for money to society as a whole. This situation is essentially a type of government failure that prevents the public sector from providing quantities of early years interventions that might be considered socially optimal and financially durable over the longer term. So the public sector intervenes initially to help overcome a problem of sub-optimal allocation of early years activities (reflecting market failure) but may be unable to do so fully when funding streams are distinct.

Area-based budgeting

The inability of stakeholders to capture the gains from expenditure they make when funding streams are distinct is a problem that initiatives such as Total Place, the new Early Intervention Grant⁵ and Community Budgets⁶ are designed to overcome.⁷ Such schemes attempt, in part at least, to overcome the problem of lack of cooperation and collaboration between public sector organisations when they have separate performance and funding criteria.

5. *Government will end and rationalise a range of centrally directed programmes and instead streamline funding for the most vulnerable children and families in a new Early Intervention Grant to ensure local authorities have greater flexibility.*

6. *DCLG will set out plans to implement the first phase of Community Budgets in 16 areas from April 2011, by pooling departmental budgets at source for 16 places, 'to tackle families with complex needs', with the intention that all areas will be able to take this approach from 2013.*

7. *The Total Place approach considers all public sector money in a geographical area as one 'pot' and therefore should help to bring together, in one place, consideration of interventions and investment in them (including early years).*

Similarly, there can be improved coordination of primary health professionals, job advisors or community sector workers to better reach and support children and parents in universal settings, such as schools and children's centres. This may be aided, too, by more flexibility in the commissioning of services within and between local authorities across traditional boundaries of health, housing, economic development, employment and skills and childcare services.⁸

Public sector management literature highlights reasons why coordination and collaboration in the public sector is problematic. Flynn (2007) usefully summarises the source of problems, and benefits of and difficulties to encouraging joint working:

One of the negative consequences of trying to manage the public sector through a combination of markets and centralized management is fragmentation. Competitive units looking out for themselves are not likely to search out solutions that might involve loss of their own resources. Management systems that emphasize individual and organizational performance, defined by units of output and unit costs rather than overall results, concentrate the mind on the organization and its products and services rather than social results among the client group of wider population...

...In those cases there are several institutions involved in contributing to service delivery towards a policy objective, then some arrangement that encourages them to work together and be accountable jointly for effectiveness would be preferable to them working in isolation...

...Experience shows that it is not a simple matter to change people from being competitive and concerned with their own organization's success and resources into enthusiastic collaborators. Setting up collaborative structures and co-ordinating mechanisms does not in itself guarantee success.

Flynn, N. (2007) Public Sector Management. pp 185-186

To incentivise providers of early years interventions to invest at an optimal level is a significant challenge, especially when budgets are constrained or being reduced. Often providers only take a coordinated, long-term view when there is strong political direction or when there is seen to be a desperate need (for example when youth crime rates and teenage pregnancy are high). Croydon Council and its Total Place approach is an example that brought together different organisations in partnership with residents to improve youth outcomes. This Total Place project, co-led by NHS Croydon and Croydon Council involves all Local Strategic Partnership members including the police, the local hospital and the voluntary and community sector.

Stakeholder interviews also pointed to Children's Trusts in some London boroughs as a method for coordinating investment in early years. The trusts provide a platform for collaboration and investment towards the provision of children's services. However, the coverage and scale of activity that Trusts influence appears to be variable across areas. The government is now introducing more freedom and flexibility into these arrangements.⁹

8. Mayor of London, *Young Londoners – successful futures*, GLA, 2010.

9. <http://www.education.gov.uk/inthenews/inthenews/a0066362/more-freedom-and-flexibility-a-new-approach-for-childrens-trust-boards-children-and-young-peoples-plans-and-the-duty-to-cooperate>

Summary

To summarise, the key reasons for a potential under-investment in early years interventions include:

- the fact that the returns to early years interventions are long-term and so are at risk from more short-term priorities – especially when budget resources are tight/reducing
- the fact that many of the benefits are ‘external’ to the stakeholder undertaking the investment
- the distinct funding streams and diversity of organisations involved in the funding and delivery of early years interventions (making coordination much more problematic)
- the potential for different parts of the public sector to protect funding rather than divert some to early years interventions
- political/cultural barriers to decommissioning some services that cannot be evidenced as effective (although current public spending environment may act to counteract this barrier).

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Appendix D: The relative effectiveness of early years programmes (cost benefit analysis)

The main body of this report provides a compelling case for early interventions generally, based on an 'invest to save' rationale. There is some evidence to suggest that many early intervention programmes can produce very high returns. However, there is also evidence to suggest that some early intervention programmes have no positive impact.

This appendix aims to identify programmes that appear to be effective and specific characteristics that have been employed in successful programmes. In order to do this, we have reviewed robust evaluation evidence from a range of early intervention programmes.

Evidence on the effectiveness of early years interventions

To determine the effectiveness of different early years interventions, the evidence in this report has been drawn from cost benefit analysis. Cost benefit analysis is considered to be the most robust analysis of early interventions because, if undertaken carefully, it is able to capture the benefits and costs of the programme over a long time period. As set out in the main report and also in Appendix C, a problem with measuring the impact of early years intervention programmes is that the benefits can take a long time to accrue, and they accumulate to different stakeholders. This means the benefits may not always be apparent to individual stakeholders in the short-term. Cost benefit analysis allows the programme to be evaluated as a whole, considering the benefits to all members of society over a longer time period.

This type of analysis also takes the results further than many studies because rather than just seeing if the intervention has an effect on the outcome of interest, it can monetise these impacts to determine if the value is greater than the required investment¹.

Evaluation Design

In order to conduct a sound cost benefit analysis, it is necessary to carry out a robust evaluation of the outcomes of the interventions. Evaluations are important to enable policy developers and service commissioners to understand what works and what doesn't work so that they can allocate resources efficiently. By focusing efforts on interventions that are proven to be effective, programmes are able to provide greater benefits and, for instance, have a larger overall impact on reducing health inequalities.

Ideally evaluations should be systematic and comprehensive, using rigorous scientific controls. This would enable conclusions to be made with confidence that the results obtained are due only to the investment².

The best evaluation studies are based on randomised controlled trials. In a randomised controlled trial, the population is assigned to either the intervention or control group at random. This helps to ascertain what changes in the outcomes are caused directly by the intervention, and what outcomes

1. It should be noted that whilst cost-benefit analysis attempts to analyse the value of all benefits deriving from a programme/intervention against all costs incurred in that programme, some benefits are difficult to monetise. For instance, child happiness or wellbeing might be a desired outcome from an intervention but this is likely to be difficult to value or monetise and so will rarely be considered in a cost-benefit analysis.
2. Pillas, D. and Suhrcke, M. May 2009, Marmot Review: Assessing the potential or actual impact on health and health inequalities of policies aiming to improve Early Child Development (ECD) in England.

would have happened anyway in the absence of the intervention. Most evaluation studies using randomised controlled trials have been conducted in the United States (US). This means that some evaluations (including in the UK) adopt quasi-experimental designs where control for background factors is carried out by statistical adjustment. This method is not as good because there may be other background factors affecting the results that are not identified³.

As a result, when developing programmes, it is important to consider the evaluation design. Some key things to consider in evaluation design are the ways in which the comparison groups are formed, the initial and follow up sample sizes, attrition, and how to best assess the effects of the programme⁴. In addition, quantitative health outcomes should be included to show the impact on health inequalities more clearly.

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By focusing our attention on robust cost benefit analysis, the field of evidence is significantly narrower than if all evidence was reviewed. Some well-known programmes may not be included in this section because there is insufficient robust cost benefit analysis to determine their effectiveness in a comparable way. There is very little robust evaluation evidence available for UK early years intervention programmes, so this section largely draws on evidence from the US.

In particular, a study by the Washington State Institute for Public Policy (WSIPP) has been used to provide cost benefit analysis of a large number of interventions. WSIPP conducted a comprehensive review of early intervention programmes and constructed a cost-benefit model to compare their relative effectiveness on a consistent basis.

The study was interested in the effectiveness of early interventions on seven outcomes:

1. Reduce crime
2. Lower substance abuse
3. Improve educational outcomes such as test scores and graduation rates
4. Decrease teen pregnancy
5. Reduce teen suicide attempts
6. Lower child abuse and neglect
7. Reduce domestic violence.

As a result, some of the programme types used in the WSIPP study are less relevant to the early years interventions work for the Mayor's Health Inequalities Strategy. This is because the WSIPP study was tasked with looking at youth interventions (ie interventions for children outside the 0 - five year age range) and related to the above seven outcomes. This means that some of the programmes focus on older children or crime in particular⁵. The results of all programmes are shown in this appendix for completeness, but the pre-kindergarten education and child welfare/home visitation programmes are probably the most relevant programme types for the Mayor's Health Inequalities Strategy.

3. Melhuish, E. C. (2004). *A literature review of the impact of early years provision upon young children, with emphasis given to children from disadvantaged backgrounds: Report to the Comptroller and Auditor General*. London: National Audit Office.

4. Pillas, D. and Suhrcke, M. May 2009, *Marmot Review: Assessing the potential or actual impact on health and health inequalities of policies aiming to improve Early Child Development (ECD) in England*.

5. Moreover, the WSIPP review was not focused on health inequalities. Indeed, health outcomes are often neglected in early intervention evaluations that make it difficult to identify improved health or health behaviour. Pillas et al. (2009) suggests that health measures are often omitted from cost benefit analyses because they are more difficult to measure and monetise than other outcomes.

While the results from this study are very useful, it is potentially misleading to read the US results directly across to the UK. There are a number of reasons why the US results may not translate completely to the UK. These include factors such as differences in the values placed on outcomes (for instance the value of reducing crime is generally thought to be higher in the US when compared to the UK); differences in the effectiveness of interventions (for instance cultural or other factors may mean that some interventions are particularly effective in the US but not so in the UK); and, differences in the cost of implementing interventions for example.

For instance, it is not reasonable to assume that the returns from a programme serving a specific disadvantaged population will apply if the same programme is introduced to a different population. The interventions referred to in the WSIPP cost benefit analysis study have been applied in widely different contexts so it would be inappropriate to assume the same effects in the UK. For example, in the US evaluations the study participants are predominantly from African-American, urban, deprived populations. The base crime rate is high in these areas compared with the general population. Therefore the savings to be made via reduced crime would be much less for such an intervention applied to the general population. The cost benefit figures need to be considered within the context of the population to which the intervention is applied.

Indeed Heckman urges caution in simply reading across from the results of past evaluations to larger current programmes, stating, *'Extrapolating from old, small, and local programmes to large, national ones in the future is a precarious business – a fact often neglected in the early childhood literature.'* Nevertheless, he does go on to say that, *'The benefits of these interventions appear to be sufficiently large that the actual or potential programme may remain cost-effective even after a large reduction in its efficacy.'*⁶

The large benefits identified in some of the cost benefit analysis, therefore, allow a substantial margin of error for interventions to still be economically worthwhile. However, it does not mean that these same benefits will be achieved if applied to the general population. Negative outcomes such as crime, remedial education and unemployment are all more common in disadvantaged populations, so the scope for savings in the general population is significantly less⁷.

To account for all the factors that could lead to different results as between the US and the UK would be a significant piece of work and well beyond the scope of this analysis. However, the Social Research Unit at Dartington, Birmingham and Manchester City Councils and the Greater London Authority are collaborating to translate an economic model developed for government investment decisions in the US for use in the UK. The primary objective is to prepare software that can be used to assist local authorities to calculate the costs and benefits of competing investment options. Such work has the potential to significantly add to the understanding of the effectiveness of early intervention programmes in the UK.

Nevertheless, for the purposes of this work and in order to try and make the results from the WSIPP study more relevant to London, the cost-benefit calculations were very roughly reconstructed with UK values used to monetise the benefits from interventions (in place of US values). Therefore, rather than use US values of reducing crime in the analysis for example, UK values were substituted to

6. Heckman, J. and Masterov, D. 2007. *'The Productivity Argument for Investing in Young Children'*.

7. Melhuish, E. C. (2004). *A literature review of the impact of early years provision upon young children, with emphasis given to children from disadvantaged backgrounds: Report to the Comptroller and Auditor General.* London: National Audit Office.

analyse any possible impact on the US results. Whilst this is a simple attempt to make the analysis more applicable to the UK, it still relies on the assumption that the effect of the interventions on the different outcomes would be the same in the UK as it would in the US, which may well not be the case. It also relies on all other aspects of the interventions translating directly from the US to the UK (for example costs are assumed to be exactly the same). As a result, a significant degree of caution is required when interpreting the 'UK adjusted' results and these results should not be used in isolation. This work was conducted to try and assess which interventions from the WSIPP work were also likely to be effective in the UK – rather than to illustrate actual likely returns or likely impact from different interventions.

This appendix outlines the main findings from the original WSIPP study, an attempt to modify the cost benefit model to make it more appropriate for the UK and an analysis of what the model suggests are the most effective early years interventions.

The WSIPP Study

The WSIPP Study consisted of a literature review of programme evaluations conducted, generally in the US, since 1970. For the research studies selected, an average effect size was calculated for each of the seven outcomes of interest. A benefit-cost model was then constructed to assign monetary values to any observed changes in education, crime, substance abuse, child abuse and neglect, teen pregnancy, and public assistance outcomes⁸.

To be included, evaluations were required to have a scientifically valid research design. For studies that pass this initial test, the effect size was penalised for studies that used a less-than-randomised research approach as there is evidence that suggests that studies with weaker research designs tend to show more favourable results.

The study considered 87 evaluation studies, but only 57 were included in the cost benefit analysis. This was because of limitations in the data and information available to conduct the cost benefit analysis. The programmes are grouped into seven different categories depending on their purpose. The table below sets out the types of programmes and the number of programmes considered for each type.

Table D.1: Number of programmes by type

Type of programme	Number of programmes
Pre-kindergarten education programmes	6
Child welfare/home visitation programmes	8
Youth development programmes	6
Mentoring programmes	2
Youth substance abuse prevention programmes	12
Teen pregnancy prevention programmes	7
Juvenile offender programmes	16
Total	57

8. Public assistance outcomes refer to changes in the use of social welfare benefits. For the purposes of a cost benefit analysis they are treated as transfer payments because there is just redistribution between the cost to participants and the taxpayer. For example, if a programme intervention has a positive effect resulting in a family no longer requiring welfare benefits, there will be a benefit to the taxpayer but a loss of income to the family.

Findings of the WSIPP Study

The WSIPP analysis found that the programmes returning the highest net present value appeared to be juvenile offender programmes. This is because there are very significant incarceration costs in the US, so crime is assigned a high monetary value in the WSIPP cost benefit analysis. This means that interventions that resulted in a reduction in crime appeared to be the most effective interventions, yielding \$1,900 to \$31,200 of benefit per youth. As can be seen in Table D2 below, 7 of the top 10 programmes ranked by net present value (NPV) per youth were juvenile offender programmes. The net present value is the difference between the discounted lifetime benefits of the programme and the lifetime costs. A large positive net present value indicates that the programme returns more value to society, above what was invested into it.

Table D.2: Top 10 programmes ranked by NPV per youth

	Programme	US BCR	US NPV \$	Type of Programme
1	Dialectical behaviour therapy	38.05	31,244	Juvenile offender
2	Functional family therapy	13.25	26,216	Juvenile offender
3	Multidimensional treatment foster care	10.88	24,289	Juvenile offender
4	Adolescent diversion project	13.54	22,290	Juvenile offender
5	Nurse Family Partnership for Low Income Women	2.88	17,152	Child Welfare/Home Visitation
6	Aggression Replacement training	20.56	14,847	Juvenile Offender
7	Functional family therapy	7.69	14,315	Juvenile offender
8	Other Family-Based Therapy for Juvenile Offenders	8.68	12,441	Juvenile Offender
9	Early childhood education for low income 3 & 4 years olds	2.36	9,901	Pre-Kindergarten Education
10	Seattle social development project	3.14	9,837	Youth development

Across the range of programmes, youth development and youth substance abuse interventions generally appear to have high returns. Teen pregnancy prevention programmes appear to perform less well, with the majority returning a negative NPV. Only one intervention in this category, the teen outreach programme, returned a positive NPV and the returns were modest (BCR 1.29 and NPV \$181). Pre-kindergarten education programmes and child welfare/home visitation programmes are mixed, with no effect for some programmes but moderate returns for others.

The US evidence shows that some forms of home visiting programmes (as distinct from child welfare programmes) that target high-risk and/or low-income mothers and children are effective, returning from \$6,000 to \$17,200 per youth. Early childhood education for low income 3 and 4 year olds and some youth development programmes also provide very attractive returns on investment. While their net benefits are relatively low, many substance use prevention programmes for youth are cost effective because the programmes are relatively inexpensive.

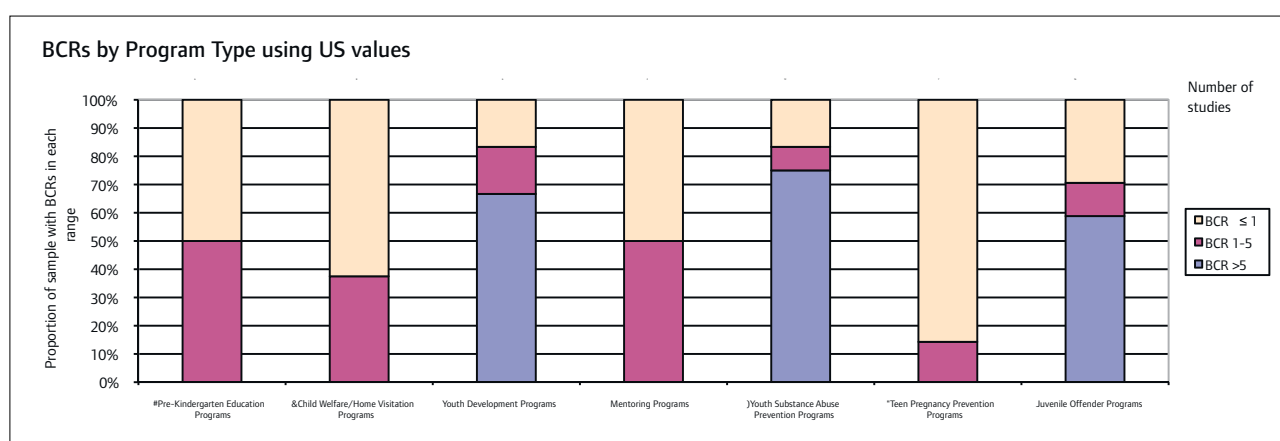
The most common studies considered were juvenile offender programmes, followed by youth substance abuse programmes. A number of child welfare programmes were identified but less of these could be quantified. Child welfare and juvenile offender programmes tended to have less significant results in terms of benefit cost ratio (BCR) because of the high level of costs. The interventions with very high BCRs tend to have particularly low costs as these programmes are implemented through schools and all of the necessary costs may not have been considered.

A number of the interventions received benefit cost ratios that are much higher than would normally be considered as reasonable. The analysis suggests that the benefits of these studies programmes far outweigh the costs. However, it is suggested that caution is used when referring to these very high BCR values for comparison outside of this particular piece of work (for example, they should not be implemented as a benchmark or target for projects as the scale is well above what would be expected). As we are using secondary data, it is not possible to fully assess the causes of these very high BCRs so it is difficult to adjust for them appropriately.

There were individual interventions that were not cost effective for all types of programmes examined. Some of the prevention and early intervention programmes assessed are very expensive and produce few benefits. However, the evidence of programmes that performed well and those that were ineffective should be used to inform future decisions about the design of early interventions.

The chart below helps to illustrate the proportion of programmes that provide high or low BCR's for each of the programme types. It can be seen that while there are a large number of juvenile offender programmes with very high BCR's, there are also a number of programmes that do not return net benefits. Therefore, it is necessary to look in more detail at the effectiveness of individual programmes to determine what are the most effective early interventions.

Figure D.1: Proportion of sample with high and low benefit cost ratios



In terms of benefit cost ratios, youth development programmes have a high proportion with very high BCR's and few with a BCR less than or equal to one. Teen pregnancy prevention programmes perform the least well, with more than 50 per cent returning no positive benefit. Mentoring programmes appear to perform adequately well, but the sample size is only two which may be misleading. Youth substance abuse prevention programmes have the largest proportion receiving a high BCR with 75 per cent of programmes evaluated achieving a BCR above five. Pre-kindergarten education, child welfare, teen pregnancy prevention and juvenile offender programmes all have a large proportion with BCR's ≤ 1 (that is the benefits from the programmes did not exceed the costs of implementing the programmes).

Adapting the WSIPP model for the UK

In order to try and make the results from the WSIPP study more relevant to London, the cost-benefit calculations were very roughly reconstructed with UK values used to monetise the benefits from interventions (in place of US values). While there are a number of caveats to this exercise, we believe that the re-calculated values for the different programmes are useful as a guide for London.

Therefore, rather than use US values of reducing crime in the analysis for example, UK values were substituted to analyse any possible impact on the US results. Whilst this is a simple attempt to make the analysis more applicable to the UK, it still relies on the assumption that the effect of the interventions on the different outcomes would be the same in the UK as it would in the US, which may well not be the case⁹. It also relies on all other aspects of the interventions translating directly from the US to the UK (for example costs are assumed to be exactly the same)¹⁰. As a result, a significant degree of caution is required when interpreting the 'UK adjusted' results and these results should not be used in isolation.

This work was conducted to try and assess which interventions from the WSIPP work were also likely to be effective in the UK – rather than to illustrate actual likely returns or likely impact from different interventions. The use of different values (ie UK rather than US values) to monetise the benefits results in a different relative ranking between programmes.

One of the key differences that emerged was that some programmes that were focussed on crime reduction and were very successful in the US would appear to be less compelling for the UK. The criminal justice system in the US is quite different from in the UK and other industrialised economies, particularly because of the very high level of incarceration rates (International Centre for Prison Studies, 2005 cited in Pillas 2009). If we were to draw our analysis from the US results, interventions that impact on crime would be overstated relative to the costs of crime in the UK. It was also noted earlier that the majority of interventions included in the WSIPP analysis were directed at reducing juvenile offenders. Penn et al. (2006, cited in Pillas et al 2009) explains that the apparent fixation in the US literature on early intervention as a means of crime reduction is partly a reflection of the very high costs of crime in the US.

In this analysis we have used an average value for the cost of crime taken from the UK as a whole. This is unlikely to include all the costs of crime (particularly the administrative costs) accounted for in the US study and so may well bias the results too much away from crime prevention/juvenile offender programmes covered by the WSIPP analysis. Moreover, data shows that London has a higher rate of those crimes that are considered to be more costly, so the benefit to London from a reduction in these crimes is likely to be higher than the value used in this analysis. Data limitations do not allow the calculation of the effect on different types of crime so it is not possible to analyse this on a more detailed level. In addition, because none of the juvenile offender (or related) programmes considered by the WSIPP analysis are early years interventions (ie interventions aimed at children aged 0-5) we have been relatively relaxed about any potential bias against crime reduction/juvenile offending programmes brought about by this adjusted analysis.

9. *Indeed some argue that the differences are so great that the US studies are likely to be of little use in policymaking outside of the US. (See: Early Years. What is known about the long-term economic impact of centre-based early childhood interventions? Early Years Review Group Report no.1404T March 2006)*

10. *The reason why US evaluations have been used is that the evaluation techniques undertaken are usually more robust. In the US many evaluations are conducted by randomly assigning participants to interventions or to a control group that is recognised as the most robust technique for assessing the impacts of an intervention. This type of evaluation is not frequently conducted in the UK so the same robust evidence is not available*

Assumptions

In order to conduct our London focussed analysis, it has been necessary to make a number of assumptions. The adjusted effect sizes for each programme are taken directly from the WSIPP analysis¹¹. To this, UK values have been applied such as the HM-Treasury discount rate of 3.5 per cent and a wage growth rate of 2.5 per cent. The programme costs have been converted from USD to GBP using the OECD PPP rate for 2009. The values used to monetise the benefits have been taken from UK studies. This is a developing area, but where possible the values proposed by HM-Treasury for appraisal and evaluation have been used; or values used for evaluations conducted by DWP. The assumptions are important because the use of different assumptions will produce different results. The values used and their sources have been set out in Table D11 at the end of this appendix.

Results using UK values

Having roughly reconstructed the WSIPP analysis using UK values to monetise the benefits from different outcomes, the results were compared with the US results. Using UK values for the benefits, the order of interventions in terms of effectiveness was different to that found in the US study. As noted earlier, the work to adjust the WSIPP analysis to UK values is rather rudimentary. To ensure that undue weight is not placed on the US or UK analysis alone, the UK results are considered alongside the more comprehensive and more robust US analysis.

The table below shows the ten most effective programmes, in terms of net present value (ie the difference between the discounted lifetime costs and benefits of the programme), identified by both the original WSIPP study and the UK adjusted analysis. The programmes in the table are ranked according to the UK-adjusted analysis NPVs with the US values for NPV and cost per youth of the intervention highlighted in the table. The values shown are per youth.

So for example, the table illustrates that the 'Early childhood education for low income 3 and 4 year olds' was the second highest-ranking intervention (on the UK-adjusted analysis) which also had a positive NPV from the US analysis. The US analysis shows that the NPV for this programme is of the order of \$9,901. That is the benefits for each youth from this intervention are \$9,901 more than the costs over the youth's lifetime. This table uses the US valuation for NPV (and costs) as these have been developed with the specific purpose of understanding the exact value of different programmes. In contrast the rudimentary UK-adjusted analysis has been primarily conducted to assess how the ranking of different programmes might change with UK (rather than US) values applied and does not purport to estimate the exact absolute values from different programmes accurately.

Cost per child/youth of each programme (in US\$) is also shown to provide an idea of the scalability of interventions that may be considered for London.

11. As noted in the text, this is a significant limitation because it assumes that the impact of the programme would be the same in a different country with different participants who have different cultures, values and incentives

Table D.3: Table 3: Top 10 programmes ranked by NPV per child/youth (based on adjusted UK values) that also produced a positive NPV from the original US analysis.

Rank	Programme	Type of Programme	Cost per child/youth \$	US NPV \$
1	Seattle Social Development Project	Youth development	4,590	9,837
2	Early childhood education for low income 3 and 4 years olds	Pre-kindergarten education	7,301	9,901
3	Home Visiting Programmes for at-risk mothers and children	Child welfare/home visitation	4,892	6,077
4	Nurse Family Partnership for Low Income Women	Child welfare/home visitation	9,118	17,152
5	Parents as teachers	Pre-kindergarten education	3,500	800
6	HIPPY (Home Instruction Programme for Preschool Youngsters)	Pre-kindergarten education	1,837	1,476
7	Teen Outreach Programme	Teen pregnancy prevention	620	181
8	Good Behaviour Game	Youth development	8	196
9	Family Matters	Youth substance abuse prevention	156	1,091
10	Parent-Child Interaction Therapy	Child welfare/home visitation	1,296	3,428

To assess the relative effectiveness of the interventions from the WSIPP study using UK values, the interventions have been grouped by programme type to see which type of programmes appear to be more effective and specifically within each group which programmes are more effective than others. In addition to the programmes analysed in the WSIPP report, some examples of interventions from the UK or successful programmes from the US have been used as case studies of interventions that are currently being undertaken. A full list of the programmes included in the WSIPP study is at Table D12 at the end of this appendix.

After analysing the effectiveness of the programmes in the WSIPP study, an attempt has been made to draw some conclusions about the effectiveness of interventions and factors that tend to help the success of projects. These factors are important when considering the design of new programmes.

Pre-kindergarten Programmes (rankings adjusted for UK values)

There were six pre-kindergarten programmes analysed in the WSIPP study, with half returning strong benefits and the other half returning no identifiable benefit and a negative net present value. The programmes are shown in the table below, ranked according to the UK adjusted analysis, together with their US NPV and BCR values.

Table D.4: Pre-Kindergarten Education Programmes

Pre-Kindergarten Education Programmes	BCR	NPV \$
Early childhood education for low income 3 and 4 years olds	2.36	9901
Parents as teachers	1.23	800
HIPPY (Home Instruction Programme for Preschool Youngsters)	1.80	1476
Early head start	0.00	-16203
Parent-Child Home Programme	0.00	-3890
Even start	0.00	-4863

The early childhood education for low-income three and four year olds proved to be the most effective pre-kindergarten education programme for both the US and the UK adjusted analysis. The results for this are made up from a number of enhanced preschool experience programmes using educational approaches to improve student success. The programmes include small-scale pilot studies and some more widespread programmes, including the Perry Preschool Program. The main benefits for this type of programme accrued to the programme participant directly through high school graduation, test scores, and a reduction in child abuse and neglect. The other effective programmes were home visitor programmes for parents and children. The same programmes proved to be effective in the US and the UK analysis. Three examples of pre-kindergarten education programmes have been described in more detail on the following pages.

UK Intervention: Early learning for 2 year olds

This programme was originally introduced in the UK as a pilot from 2006 to 2008, providing free early years education for disadvantaged two year olds. Local authorities were given the flexibility to define disadvantage in the way that they considered to be most appropriate for their area, so a number of different criteria were used. The aim of the project was to improve children's social and cognitive outcomes and positively influence parent-child relationships.

The pilot appeared to be successful in targeting children experiencing different types of disadvantage. However, there was a high level of deadweight with around half of the children in the control group receiving childcare by the end of the pilot. This indicates some scope for improving the way the programme is targeted, so that it is directed towards the most disadvantaged children who are the least likely to access good quality childcare. In particular, local authorities that use broad geographical and economic indicators to define and target potential beneficiaries could be improved.

Overall, the pilot showed positive impacts for children who attended a setting of high quality, but not for children who attended settings of lower quality. This suggests that only settings with an Ofsted score of at least 'good' should be used when implementing the programme in new areas.

In September 2009, the pilot was rolled out more widely with the extended offer providing 10-15 hours of free, high-quality childcare a week, family support and an effective partnership-working and outreach activity to engage families into childcare.

For more information see: <http://www.dcsf.gov.uk/everychildmatters/earlyyears/localauthorities/lappractice/pilots/twoyearoldsoffer/>

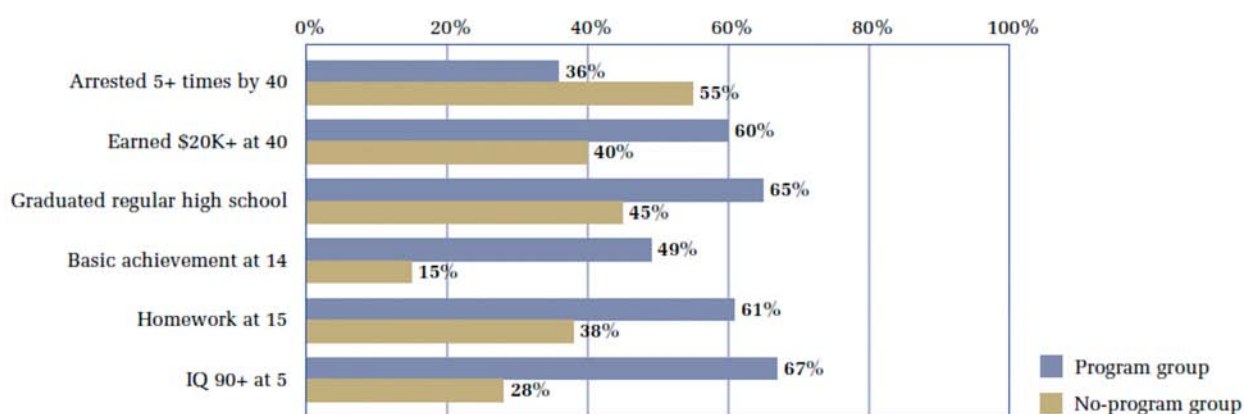
US Intervention: Perry Pre-school Programme

The Perry Pre-school Programme is a high-quality pre-school programme for 3 and 4 year olds. It has been implemented in the US for African American children who were born into poverty and have a high risk of failing school

HighScope conducted a robust evaluation based on participants to the programme from 1962–1967. The children were randomly assigned to either participate in the programme or to a control group who received no pre-schooling. To assess the longer-term impact of the programme, the study's participants were interviewed at age 40, and data was collected from the subjects' school, social services, and arrest records.

The study found that those who had participated in the programme had higher earnings, were more likely to hold a job, had committed fewer crimes, and were more likely to have graduated from high school than adults who did not attend preschool. The chart below shows the difference between some outcomes for the programme group and non-programme group.

Figure D.2: Major findings High/Scope Perry Preschool Study at 40



For more information see: <http://www.highscope.org/content.asp?contentid=219>

UK Evaluation: The Effective Provision of Pre-school Education (EPPE)

The Effective Provision of Pre-school Education (EPPE) study was conducted in the UK using similar pre-school programmes on 3–7 year olds. The study found a number of factors that made these programmes successful or otherwise. The findings of this study are consistent with those found in other evidence. Some of the key factors determining the success of these programmes are: the quality of the childcare provision; the quality and qualifications of the childcare staff; pre-school programmes tend to benefit disadvantaged more than non-disadvantaged children; and a social mix tend to be important for disadvantaged children with more successful outcomes achieved in these groups than in pre-school programmes with only disadvantaged children.

For more information see: <http://www.dcsf.gov.uk/rsgateway/DB/RRP/u013144/index.shtml>

While this section has identified characteristics of programmes that have been effective and could be implemented in London, it is also helpful to consider programmes where there is little evidence of effectiveness.

Early Head Start is a US programme for low-income pregnant women and families with infants and toddlers. The programme is delivered through a variety of approaches and is tailored to the specific needs of the community. It can be home-based, centre-based, a combination, or locally designed. The different delivery methods make the evaluation more complex because there are many different aspects to the programme that may be effective or ineffective.

Early Head Start did result in modest benefits, particularly for some specific sub-groups but it was quite costly (per child or youth) to implement so it did not result in a positive net present value overall (in either the US or UK-adjusted analysis). The evaluation evidence showed that results were better in areas where the programme was fully implemented, with fidelity, than in areas where it was only partially implemented. Centre-based services did not achieve strong impacts on parenting, parent-child relationships and family support, while home-visiting programmes required a certain level of intensity to be effective¹².

The Parent-Child Home Program (also known as the Mother-Child Home Program MCHP) is a home visitation programme to show mothers ways to interact more positively with their children and provide educational experiences for them. An evaluation conducted in Bermuda found that the programme had few demonstrable effects on the sample because nearly all the mothers worked, so their children have preschool experiences that are comparable to those provided by the intervention. This programme resulted in negative NPV results for both the original US analysis and the UK-adjusted analysis.

Even Start is a programme designed to improve child and parent literacy skills through early childhood education, parenting education, adult education, and parent-child joint literacy activities. The programme is targeted at a very disadvantaged population. While parents and children made progress in terms of literacy assessments and other measures, they did not improve by more than those in the control group. The reasons suggested for the limited effectiveness of this programme are insufficient intensity of the programme and the quality and content of services provided. Many of the participants also did not take full advantage of the programme. This programme resulted in negative NPV results for both the original US analysis and the UK-adjusted analysis.

Child welfare and home visitation programmes (rankings adjusted for UK values)

There were eight child welfare/home visitation Programmes included in the study, with less than half of these achieving an identifiable benefit from both the original US and UK adjusted analysis. However, three of the programmes showed very strong benefits on both analyses and proved to be amongst the most effective interventions overall.

Table D.5: Child welfare/home visitation programmes

Child welfare/home visitation programmes	BCR	NPV \$
Home visiting programmes for at-risk mothers and children	2.24	6077
Nurse Family Partnership for low income women	2.88	17180
Healthy Families America	0.00	-1263
Parent-Child Interaction Therapy	3.64	3427
System of care/Wraparound programs	0.00	-1914
Family Preservation Services (excluding Washington)	0.00	-2531
Comprehensive Child Development Program	0.00	-37397
Infant Health and Development Program	0.00	-49021

12. Love, J.M., E.E. Kisker, C.M. Ross, P.Z. Schochet, J. Brooks-Gunn, D. Paulsell, K. Boller, J. Constantine, C. Vogel, A.S. Fuligni, and C.Brady-Smith. (2002, June) *Making a difference in the lives of infants and toddlers and their families: The impacts of early Head Start:Executive summary*. Princeton, NJ: Mathematica Policy Research, Inc.

The most effective programmes were home visitor programmes by professionals or highly trained staff that involve coaching and learning for the parent and child. Home visiting programmes for at-risk mothers and children and Nurse Family Partnership for low income women have both proven to be very effective in the US analysis and UK adjusted analysis. The main benefits accrue through a reduction in child abuse and neglect, a reduction in crime and an improvement in test scores later in life.

Healthy Families America returned a negative net present value in the US analysis but because of the different values used it appears more effective in the UK analysis (hence its higher ranking in the table above). The reason for this is due to the difference in the value used for the child abuse and neglect outcome with the valuation used in the UK slightly higher than in the US. The value used for both cases derived from the cost of handling a child abuse or neglect case, in the UK this value is derived from the cost to the children's services department including administrative costs. However, because the programme returned a negative NPV from the US analysis its use has not been promulgated in this analysis.

The home visitation programme, Nurse Family Partnerships, is described in more detail below. As noted in the main report, Nurse Family Partnerships has already been piloted in some areas of the UK with early indications of success. The benefits accrue in terms of an improvement in women's pre-natal health; a reduction in child injuries; fewer subsequent pregnancies and greater intervals between births; increased father involvement; and an improvement in child school readiness. Nurse Family Partnerships is a programme from pregnancy until the child is two years old, so could be used for both pre-natal and post-natal care.

UK Intervention: Family Nurse Partnership

Family Nurse Partnership is a programme that was introduced in the UK in April 2007 at ten pilot sites throughout England. It is based on the US Nurse Family Partnership programme that is designed to improve health, wellbeing and self-sufficiency of young, first-time parents and their children. It is a voluntary home-visitation service that starts in early pregnancy and continues until the child is 24 months old. It is a targeted service, specifically for young mothers with their first child. There are now 50 sites and 4,000 families benefiting from the programme, with further expansion underway.

No evaluation has yet been conducted in the UK that considers a counter-factual, but initial monitoring and evidence from the US suggests that there is a strong economic case for implementing this programme. The main economic benefit appears to be as a result of breaking the cycle of disadvantage experienced by children of teenage mothers. This can come in the form of relatively poor school performance, higher incidences of committing crimes and a greater probability of becoming teenage parents themselves. One of the major challenges for this programme is that the benefits will be incurred in the future by other agencies, the families themselves and victims of crime but the costs will be incurred immediately by the NHS. If the NHS was to consider the cost effectiveness of the programme from short-term costs and savings to the health service alone, the programme may appear to be costly and difficult to justify. The cost is estimated at around £3,000 per client per year that is quite expensive when compared to some other intervention programmes.

An important reason identified for the success of this programme is that it is targeted to a specific group that benefit most from the service. A less targeted version of the programme was trialled in the US and it returned lower benefits.

For more information see: <http://www.iscfsi.bbk.ac.uk/projects/files/Year-1-report-Barnes-et-al.pdf>

The following programmes were shown in the US and UK adjusted cost benefit analysis to have poor outcomes in terms of the benefits derived for cost expended. It should be noted that the impacts from these programmes in the original WSIPP analysis were adjusted to account for a number of factors related to research design.

Systems of care/wraparound programmes are community-based programmes for children with serious emotional disturbances who are in foster care or referred by the child welfare system. The main reason identified for programmes not being successful is that they fail to take consideration of the specific or individualised needs of children and families.

Family preservation services are designed to support families in crisis in which children are either at imminent risk of placement or have been placed outside their homes. The programme aims to keep children safe and avoid unnecessary removal and/or long separations from family in out-of-home care. Evaluations have found that adhering to this model is very important in ensuring the effectiveness of the programme.

Comprehensive Child Development Program is a case management and early childhood education programme for low-income families. It did not show significant impacts on the economic self-sufficiency of participating mothers or on their parenting skills; nor did it show significant impacts on the cognitive and social-emotional development of children. Reasons suggested for the poor performance of the programme include: lack of time to start up the programme effectively, services of insufficiently high quality or too diluted to be effective, and that many families in the control group received similar services (ie many families would have received similar services without the intervention).

Infant Health and Development Program aims to reduce the developmental and health problems of low birth-weight premature infants and continues from birth until the age of three. The programme consists of a number of services including home visits, enrolment at a child development centre and parent group meetings. Infants and their families also received medical, developmental and social assessments and referrals for services such as health care. Evaluation of the IHDP found no significant differences between the intervention and control groups, and the few observed positive outcomes faded over time. Participants were more likely to achieve positive outcomes if they were 'heavier' low birth weight babies, and if they participated in the programme most fully. It was noted that for high-risk children, a programme with higher intensity and a longer duration might be necessary to achieve sustained impacts.

Youth development programmes (adjusted for UK values)

Six youth development programmes were considered in the review and all but one returned a positive net present value from both the US and UK adjusted analysis. These programmes are aimed at school-aged children and returned benefits in terms of reduced crime, improved high school graduation and a reduction in substance misuse.

Table D.6: Youth development programmes

Youth development programmes	BCR	NPV\$
Seattle Social Development Project	3.14	9837
Good Behaviour Game	25.92	196
Strengthening Families Programme for Parents and Youth 10-14	7.82	5805
Guiding Good Choices (formerly PDFY)	11.07	6918
Child Development Project	28.42	432
CASASTART (Striving Together to Achieve Rewarding Tomorrows)	0.89	-610

Many of the youth development programmes are implemented through schools or family based interventions. The Seattle Social Development Project is the best youth development programme for both the US and the UK adjusted analysis. In this programme there are benefits to all groups through high school graduation, reduced costs of crime and school repetition. The Seattle Social Development Project was implemented for two different age groups – pupils in their first year of school (age six) and students in fifth grade (age 11). The results of the programme were very significant for the first cohort of students but less so for the second group. It was found that this programme was far more successful when implemented in the earlier years.

Good Behaviour Game is a classroom management strategy designed to improve disruptive/aggressive classroom behaviour and prevent later criminality. This has a very high BCR largely due to the low cost of implementing it in schools¹³.

US Intervention: Seattle Social Development Project

The Seattle Social Development Project (SSDP) is a school-based intervention developed on the premise that youths who are provided with opportunities and skills for greater involvement with their schools and families, and for whom skilful participation is constantly reinforced, ultimately develop strong bonds with their families and schools setting children on a positive development trajectory.

SSDP has been an ongoing longitudinal study of youth and young adult development, testing strategies for reducing childhood risk factors for school failure, drug abuse and delinquency. It was first implemented in 1981, combining teacher, child and parent components. Teachers were trained in proactive classroom management, interactive teaching and cooperative learning. Students were taught interpersonal problem solving skills and refusal skills to avoid problem behaviours. Parents were offered courses in child behaviour management, academic support and skills to reduce their children's risk of drug use.

First graders from five schools were assigned to intervention or control classrooms. This was later expanded to include a cohort of fifth graders as well. Evaluations were conducted at various stages throughout the children's lives. The evaluation at age 21 showed that full-intervention students were more likely to have graduated from high school and were significantly less likely to have used alcohol, tobacco or illicit drugs in the past month or year, or have a court conviction than students in the control group. However, there were no significant differences for the late-intervention group in these areas. This suggests that the programme is more effective when implemented in the first grade rather than in the fifth grade.

While the outcomes of this programme appear to be promising, it is important to note that it has only been implemented in one particular urban area so the programme may not yield the same results if applied in other areas.

For more information see: <http://depts.washington.edu/ssdp/>

13. Note that the full costs of this programme may be understated because all of the costs have not been taken into account (eg the cost of teachers); if so this would result in an overstated BCR.

Mentoring programmes (adjusted for UK values)

Only two mentoring programmes were considered in this study and only one programme returned a positive NPV on both the US and UK adjusted analysis. The returns and benefit-cost ratios were relatively modest when compared to the other types of interventions.

Table D.7: Mentoring Programmes

Mentoring Programmes	BCR	NPV \$
Quantum Opportunities Project	0.42	-15022
Big Brothers/Big Sisters	1.01	48

The main benefits of these programmes are through educational improvements and a reduction in crime and substance misuse. The Quantum Opportunities Project is designed to serve disadvantaged high school students by providing education, service and development activities as well as financial incentives for youth's continuing participation.

Big Brothers/Big Sisters is a one-on-one mentoring system where trained community volunteers are matched with youth from single parent families and they spend time together two to four times each month to develop stable, supportive relationships between at-risk youth and caring adults.

US Intervention: Mentoring Programmes

Mentoring programmes are designed to serve disadvantaged youths by providing educational and development activities. The programmes involve mentors who are trained to befriend young adults who are at risk of social inclusion. Typically, the programmes are targeted at high school aged youths and appear to be most common in the US.

According to Wilder Research it was found that mentoring programmes can produce measurable direct benefits in areas such as improved school attendance, school performance, reduced truancy, improved health outcomes, reduced juvenile crime, reduce cost of adult crime and reduced need for social care. Fisher et al (2009) states that the potential benefits of youth mentoring programmes include gains of a diverse nature ranging from improvements in academic performance, decreased involvement in unhealthy or unsafe activities such as drug or alcohol use, early sexual initiation or risky behaviours, teenage pregnancies, antisocial behaviours and juvenile crime. Whilst it is reasonable to conclude that the benefits exceed the costs, the evaluation results should be considered indicative given both the lack of outcome data and the limited evidence of the value of its potential benefits. The main impacts of the mentoring programmes appear to be a reduction in crime, improved educational outcomes and a reduction in substance abuse.

For further information see: Wilder Research. 2007. Analysing the social return on investment in youth mentoring programs. A framework for Minnesota. Minnesota

Fisher, J. and Moodie, M. 2009. Are youth mentoring programs good value for money? An evaluation of the Big Brothers Big Sisters Melbourne Program. BMC Public Health

Youth substance abuse prevention programmes (adjusted for UK values)

Twelve youth substance abuse prevention programmes were included in the study and nearly all proved to be effective. The school-based programmes proved to be particularly cost effective, but family based programmes also showed high returns.

Table D.8: Youth substance abuse prevention programmes

Youth substance abuse prevention programmes	BCR	NPV \$
Family matters	8.02	1092
Project Northland	10.39	1423
Adolescent Transitions Program	5.02	1938
Minnesota Smoking Prevention Program	102.29	506
Life Skills Training (LST)	25.61	717
Project STAR (Students Taught Awareness and Resistance)	5.29	694
Other Social Influence/Skills Building Substance Prevention programmes	70.34	485
Project Towards No Tobacco (TNT)	55.84	274
All Stars	3.43	120
Project ALERT (Adolescent Learning Experience in Resistance Training)	18.02	54
STARS for families (Start Taking Alcohol Risks Seriously)	0.00	-18
D.A.R.E (Drug Abuse Resistance Education)	0.00	-99

Most of the youth substance abuse prevention programmes in the study were school-based interventions to prevent tobacco, alcohol and marijuana use which appear to be the most prevalent substances abused in the US. The National Treatment Agency for Substance Misuse (2009) has identified that young people's drug use in the UK is also generally limited to cannabis and alcohol, with few young people appearing to use Class A drugs. In the case of these drugs, the optimal time for preventative interventions is thought to be during childhood and pre-adolescence before problem behaviours start to develop.

Programmes that involved parents appear to be particularly effective. A number of the programmes were also based on understanding and resisting social pressures that influence substance use decisions. The youth substance abuse and prevention programmes identified in this study tend to be targeted towards slightly older children than those that are the focus of our work in this paper, but it shows the importance of continuing preventative interventions throughout the life of the child. Positive family relationships that are established at a young age can be particularly helpful in supporting the prevention of substance misuse.

US Intervention: Family Matters

Family Matters is a family focused intervention to prevent tobacco and alcohol use among 12-14 year olds. It is delivered by parents from a series of four booklets mailed to the home and follow up telephone calls from educators. The participants were identified by random digit dialling, and were randomly allocated to either receive the programme or serve as a control. The effectiveness of the programme was assessed through telephone interviews with parents and adolescents three months and one year after the programme. Evaluation findings imply that the Family Matters programme reduced the prevalence of both cigarette smoking and alcohol use at three months and one year after the programme. This was due to preventing initiation rather than decreasing the amount used by existing users.

For more information see: www.sph.unc.edu/familymatters/Programme_materials.htm

Teen pregnancy prevention programmes (adjusted for UK values)

In the US the teen pregnancy prevention programmes were generally less effective than the other interventions. Whilst the results were slightly more positive for the UK adjusted analysis, the majority of programmes were still found to be ineffective.

Table D.9: Teen pregnancy prevention programmes

Teen pregnancy prevention programmes	BCR	NPV \$
Children's Aid Society-Carrera Project	0.21	-9,093
Adolescent Sibling Pregnancy Prevention Progra	0.21	-2641
Teen Outreach Program	1.29	181
Reducing the Risk Program	0.00	-13
Teen Talk	0.00	-81
School-based clinics for pregnancy prevention	0.00	-805
Postponing Sexual Involvement Program	-5.07	-54

Many of the programmes in the US are focused on promoting abstinence and these have generally proven to be ineffective. Programmes involving lectures appear to be less effective than programmes that are broader, for example those providing activities, academic assistance and health care. The school-based clinics do not appear to provide value for money because they are quite costly yet yields no identifiable benefit. The Postponing Sexual Involvement Program also appears to be correlated with an increase in teen births; however it is not clear whether there is a direct causal relationship between the two.

UK Intervention: Healthy Child Programme

The Healthy Child Programme (HCP) is a universal service for all children and young people and their families, with additional services for those with specific needs and risks. The programme continues from pregnancy through to adulthood. The 0-5 programme is led by health visitors and is increasingly being delivered through integrated services that bring together Sure Start Children's Centre staff, GPs, midwives and community nurses. The 5-19 programme sets out the good practice framework for prevention and early intervention services for children and young people.

The HCP 0-5 programme is from pregnancy through to the first years of life. It provides a range of universal services and progressive services for higher-risk children. Universal services include: promotion of health and well-being, screening tests, immunisations, parental support, mental health needs assessment and referral to other information and services. Progressive services include support for behaviour change, higher intensity interventions, structured home visitation, referral to specialists and action to safeguard the child.

The programme suggests that focusing on early intervention and prevention, rather than treating a problem after it has developed is both socially and economically more effective in the long term. It covers the whole range of health priorities at each age. One of the priorities of the Healthy Child Programme for children aged 11-19 is a reduction in teenage pregnancy and improved sexual health. A universal service like this can also be useful for identifying the most at-risk and referring them on to more targeted services that are available. Through joint working, the programme has provided targeted support for young people most at risk of early sex and teenage pregnancy, such as young people in or leaving care and those with poor educational attainment. It has also identified links with other risky behaviour such as substance use, most notably alcohol consumption. While no formal economic evaluation is available, some areas where local authorities have fully implemented the strategy have seen teen conception rate reductions of over 30 per cent.

For more information see:

<http://www.dh.gov.uk/en/AdvanceSearchResult/index.htm?searchTerms=healthy+child+programme>

Juvenile Offender Programmes (adjusted for UK values)

The majority of the interventions considered in the original WSIPP analysis were juvenile offender programmes. Whilst such programmes are extremely effective according to the US analysis, they would appear to be much less effective when using UK values.

Table D.10: Juvenile offender programmes

Juvenile offender programmes	BCR	NPV
Adolescent Diversion Project	13.54	22290
Dialectical Behaviour Therapy (in Washington)	38.05	31243
Juvenile Offender Interagency Coordination Programmes	15.48	8100
Aggression Replacement training (excluding Washington)	20.56	14846
Diversion Programmes -with Services (vs. regular juvenile court processing)	5.58	1865
Aggression Replacement training (in Washington)	12.60	8805
Scared Straight	-203.51	-11056
Functional Family Therapy (excluding Washington)	13.25	26216
Other Family-Based Therapy Programmes for Juvenile Offenders	8.68	12441
Multidimensional Treatment Foster Care (vs. regular group care)	10.88	24290
Functional Family Therapy (in Washington)	7.69	14315
Juvenile Intensive Probation Supervision Programmes	0	-1482
Multi-systematic therapy (MST)	2.64	9316
Mentoring (in the juvenile justice system - in Washington)	1.78	5075
Juvenile Intensive Parole Supervision (excluding Washington)	0.00	-5992
Juvenile Boot Camps (excluding Washington)	0.00	-8474

The juvenile offender programmes appeared to be more effective in the US due to the very high costs of crime as a result of incarceration costs. Whilst crime is still costly in London, the value that we place on crime is slightly lower than in the US due to a lesser focus on incarceration.

UK Intervention: Safer School Partnerships Programme

The Safer School Partnerships Programme (SSP) aims to promote the safety of schools and the pupils attending them. In particular, the programme seeks to address key behavioural issues such as bullying, truancy and anti-social behaviour and offending. The programme gets police and support workers actively engaged with the schools and attempts to reduce the reliance on the use of pupil exclusion.

An evaluation undertaken by the Youth Justice Board attempts to assess the benefits of the programme in terms of reduction in absence and exclusion, improvement in exam results, and a reduction in crime, the fear of crime, problem behaviour and victimisation. Only a small number of schools were evaluated in this study, but it shows that benefits from interventions of this kind have the potential to be very high. Interventions that successfully target young people who are at a high risk of becoming offenders, truant or failing to achieve educational outcomes are most effective. The study suggests that programmes based on early intervention in the lives of children thought likely to be at risk of becoming offenders can reduce youth offending and offending later in life.

Since the initial pilot began in 2002, there are now over 450 Safer School Partnerships operating in England and Wales. While the initial focus was just on crime, broader benefits have been identified such as improved community cohesion, a stronger sense of citizenship among children, and an increased quality of life and opportunities for young people and their families and the wider community around the school.

For more information see: <http://www.yjb.gov.uk/en-gb/yjs/Prevention/SSP/>

Table D.11: Values used to determine monetary value of benefits

Benefit	Value (2010£)	Source
Crime	3,657	This is the average cost of a crime against individuals and households from the Home Office Report, 'the economic and social costs of crime against individuals and households 2003/04'. This value does not include crime against commercial or public sector violation, fraud or traffic offences. The value of one crime avoided is £2,975 in 2003/04, adjusted to £3,657 in 2010.
High School Graduation	286,537	This is the value of achieving 5 GCSE A*-C or equivalent compared with no qualification (level 2 compared with no qualification). The values are quoted are £288,151 for boys and £211,250 for girls in 2006. These estimates were taken from DfES using LFS data and were cited in the Full Service Extended Schools Evaluation. An average value for boys and girls was used, and then adjusted to £286,537 in 2010.
Test Scores	165,356	This is the value of achieving 5 GCSE A*-C or equivalent compared with 5 GCSE A*-G (level 2 compared with below level 2). The values quoted are £161,348 for boys and £126,847 for girls in 2006. These estimates are from DfES using LFS data, cited in the Full Service Extended Schools evaluation. An average value for boys and girls was used, and then adjusted to £165,356 in 2010.
K-12 Special Education	3,278	This value is derived from information on the actual costs of providing special education needs support in a sample of schools and local authorities. Costs averaged £2,187 per pupil for the total Key Stage 2 phase (4 years) and £3,526 per pupil for the total Key Stage 3 and 4 phases (5 years). A mid-point cost per pupil was used here. The value was cited in the KPMG Foundation report, "The long term costs of literacy difficulties" 2006. The value has been adjusted to be £3,278 in 2010.
Public Assistance	-	Public assistance is treated as a transfer payment in the WSIPP paper, except for instances where administration costs for the public assistance programmes can be identified. A public assistance values have been treated here as transfer payments or are considered to be negligible
Childcare	-	Childcare costs are treated as incidental offsets in the WSIPP paper so have been treated the same here.
Child Abuse and Neglect	7,462	Value from Curtis and Netten (2006). Estimate for child abuse neglect per child per week is £130 based on median cost. Total cost for a year (assuming one year of requirement) is £6760. This includes all costs falling to social services departments including placement costs and other regular payments, commissioned and directly provided services, social work and other fieldwork, group work and individual work in centres and teams, and miscellaneous costs, and one-off costs and payments. The value has been adjusted to 2010
Teen births (aged under 18)	62,714	This value is calculated by estimating the impact that a teen birth has on the other outcomes assessed in this study, such as high school graduation, crime, and child abuse and neglect.
Tobacco (regular use)	103,380	The estimated value of one person stopping smoking based on a number of sources including Godfrey (2004) and Mason et al (2006) is used to provide a value for tobacco use. Cited in the Full Service Extended Schools evaluation and adjusted to 2010.
Alcohol (disordered use)	8,577	The value of disordered alcohol use is based on the cost per problem drinker from Leontaridi (2003) for the Cabinet Office. This was cited in the Full Service Extended Schools evaluation and adjusted to 2010
Illicit drugs (disordered use)	50,756	The economic and social cost per problematic drug user is estimated by the Home Office as £44,231 per year in their report, 'Measuring different aspects of problem drug use: methodological developments'. The largest part of this value is crime so when there is an effect on both outcomes, just one should be counted. The value has been adjusted to 2010.

Table D12: Programmes included in WSIPP analysis

Programme	Type of Programme	Main beneficiaries	Project Description
Adolescent Diversion Project	Juvenile offender programmes	Taxpayers from cost of crime	Stems from research experiments conducted in 1970s and 1980s where youth were diverted from juvenile court to prevent them being labelled delinquent. Programme mentors work with youth in their environment to provide community resources and initiate behavioural change
Adolescent Sibling Pregnancy Prevention Programme	Teen pregnancy prevention programmes	Programme participants through high school graduation, also taxpayer and non-taxpayer benefits	Was founded to prevent pregnancy among adolescents with a pregnant or parenting sibling, a group identified at high risk of early pregnancy. Variety of activities delivered by non-profit social service agencies, school districts, and public health departments to youth aged 11 to 17.
Adolescent Transitions Programme	Youth substance abuse prevention programmes	Programme participants through tobacco and alcohol reduced probability of initiation. Also taxpayer benefits and slight non-taxpayer benefits	A middle and high school based programme that focuses on parenting skills and inform parents about risks associated with problem behaviour and substance use.
Aggression Replacement training (in Washington)	Juvenile offender programmes	Non-taxpayers and tax payers through costs of crime	A ten-week, 30-hour intervention administered to groups of eight to 12 juvenile offenders three times per week. The programme relies on repetitive learning techniques to teach participants to control impulsiveness and anger and use more appropriate behaviours. Group discussion is used to correct anti-social thinking
Aggression Replacement training (excluding Washington)	Juvenile offender programmes	Non-taxpayers closely followed by tax-payers for costs of crime	Same as above but conducted outside Washington State
All Stars	Youth substance abuse prevention programmes	Programme participants and to lesser extent taxpayers through tobacco reduced probability of initiation	School or community based programme to prevent risky behaviour in youth 11 to 15 years old. In 22-29 sessions held over two years, the programme attempts to foster positive personal characteristics of youth and reduce substance use, violence and premature sexual activity
Big Brothers/Big Sisters	Mentoring programmes	Programme participants through improved test scores, reduced probability of initiation of alcohol and illicit drugs. Also taxpayer and non-taxpayer benefits for crime reductions, improved test scores, alcohol and illicit drugs	Provides one-on-one mentoring for youth in single parent families. Trained community volunteers are matched with youth aged five to 18 and they spend time together two to four times each month for a year, on average. The goal of Big Brothers/Big Sisters is to develop stable and supportive relationships between at-risk youth and caring adults

Programme	Type of Programme	Main beneficiaries	Project Description
CASASTART (Striving Together to Achieve Rewarding Tomorrows)	Youth development programmes	Non-taxpayers and taxpayers through costs of crime. Also benefit to programme participants for reduced probability of initiation of illicit drugs, and to lesser extent taxpayers and non-taxpayers	Targets youth aged 11 to 13 in high-risk neighbourhoods. Using case management, after school activities and law enforcement the programme attempts to decrease individual, family and community risk factors while promoting positive behaviour such as school performance and social activities
Child Development Project	Youth development programmes	Programme participants through reduced probability of initiation of alcohol and illicit drugs. Also taxpayer and non-taxpayer benefits for same.	Designed to build students' academic skills and sense of school community through a reading and community building programme
Childhaven	Child welfare/Home visitation programmes	No data available	A day treatment programme for children that provides children with the environment and social conditions needed to overcome their abuse/neglect and thrive
Children's Aid Society-Carrera Project	Teen pregnancy prevention programmes	Programme participants for high school graduation and non-taxpayers and taxpayers. Slight adjustment to public assistance (disbenefit for participants but benefit to taxpayer). Also has benefit for secondary programme recipient through high school graduation, crime and child abuse and neglect	Provides afterschool activities five days a week for teens 13 and older. Programme activities include Job Club, academic assistance, classes in family life and sexuality, an arts component, individual sports one could continue throughout life. The programme provides mental health care, medical care and full dental care
CMCA (Communities Mobilizing for Change on Alcohol)	Youth substance abuse Pprevention programmes	No data available	Community organising effort to reduce teenagers access to alcohol
Comprehensive Child Development Programme	Child welfare/Home visitation programmes	Small public assistance benefit to programme participant and disbenefit to taxpayer	A national demonstration project for disadvantaged new parents. Home visitors provided case management and early childhood education starting before the child's first birthday and extending to the child's fifth birthday
D.A.R.E (Drug Abuse Resistance Education)	Youth substance abuse prevention programmes	No identifiable benefit	Trained, uniformed law enforcement officers taught fifth and sixth graders to resist pressure to use drugs and provided information on the consequences of drug use, decision-making skills, and alternatives to drug use.

Programme	Type of Programme	Main beneficiaries	Project Description
Dialectical Behaviour Therapy (in Washington)	Juvenile offender programmes	Non-taxpayers and tax-payers through costs of crime	A comprehensive cognitive-behavioural treatment for individuals with complex and difficult to treat mental disorders. The programme focuses on four functions: enhancing a youth's behavioural skills to handle difficult situations, motivating the youth to change dysfunctional behaviours, ensuring the new skills are used in daily life, and training and consultation to improve the counsellor's skills.
Diversion Programmes - Simple release without services	Juvenile offender programmes	No data available	
Diversion Programmes -with Services (vs. regular juvenile court processing)	Juvenile offender programmes	Non-taxpayer and taxpayer benefits through costs of crime	Programmes typically designed for low-risk, first time juvenile offenders who would otherwise have their cases handled formally in the juvenile court. These programmes typically have citizen accountability boards with counselling services provided by social service agencies
Diversion Programmes with Services (vs. simple release)	Juvenile offender programmes	No data available	
Early childhood education for low income 3 and 4 years olds	Pre-kindergarten education programmes	Programme participants with high school graduation, test scores and child care. Taxpayers and non-taxpayers with crime, high school graduation, test scores, and taxpayers with K-12 Special education, K-12 Grade repetition, and childcare. Secondary benefits in terms of crime, high school graduation, K-12 Grade repetition, child abuse and neglect	These enhanced preschool experiences are designed for low income three and four year old children. Each programme uses different educational approaches in an attempt to increase student success.
Early head start	Pre-kindergarten education programmes	Programme participants, non-taxpayers and taxpayers for test scores	Programme for low-income women who are pregnant or families with a child younger than 24 months. Families may receive services until the child is 3 years old.
Even start	Pre-kindergarten education programmes	No identifiable benefit	The programme aims to improve the literacy of children and their parents through early childhood education, parenting education, adult education, parent-child joint literacy activities.
Family group conferences	Child welfare/Home visitation programmes	No data available	Intervention emphasising the use of meetings among family members and professionals where family members develop their own plan to overcome identified problems and respond to concerns of child protection professionals.

Programme	Type of Programme	Main beneficiaries	Project Description
Family matters	Youth substance abuse prevention programmes	Programme participants, taxpayers and non-taxpayers for tobacco and illicit drugs probability of initiation	Family-focussed programme to prevent tobacco and alcohol use among 12-14 year old youth. Programme is delivered through a series of booklets mailed to the home and follow up telephone calls from health educators.
Family Preservation Services (excluding Washington)	Child welfare/Home visitation programmes	No identifiable benefit	Short-term, home based crisis intervention services that emphasise placement prevention. The programme emphasises contact with the family within 24 hours of the crisis, staff accessibility around the clock, small caseload sizes, service duration of 4-6 weeks, and provision of intensive, concrete services and counselling
Family to Family		No data available	
FAST (Families and Schools Together)		No data available	
Functional Family Therapy (excluding Washington)	Juvenile offender programmes	Taxpayer and non-taxpayer benefits through costs of crime	See below
Functional Family Therapy (in Washington)	Juvenile offender programmes	Non-taxpayer and taxpayer benefits through costs of crime	A structured, family based intervention that works to enhance protective factors and reduce risk factors in the family. The first phase is designed to motivate the family toward change, the second teaches the family how to change a specific critical problem identified in the first phase, and the final phase helps the family generalise their problem solving skills
Good Behaviour Game	Youth development programmes	Programme participants through tobacco probability of initiation	Classroom management strategy designed to improve aggressive/disruptive classroom behaviour and prevent later criminality.
Guiding Good Choices (formerly PDFY)	Youth development programmes	Non-taxpayer and taxpayer benefits through costs of crime, programme participant, taxpayer and non-taxpayer benefits through alcohol probability of initiation	A family focused programme designed to improve parenting skills. It is a 5 session programme for families with 6th graders to improve parenting techniques and family bonding and teaches children resistance skills
Healthy Families America	Child welfare/Home visitation programmes	Teen pregnancy prevention is measured in terms of the other outcomes so there is no direct identifiable benefit, but there are secondary benefits for child abuse and neglect, crime and high school graduation	A network of programmes that grew out of the Hawaii Healthy Start programme. At-risk mothers are identified and enrolled either during pregnancy or shortly after the birth of a child. The intervention involves home visits by trained paraprofessionals who provide information on parenting and child development, parenting classes and case management

Programme	Type of Programme	Main beneficiaries	Project Description
HIPPY (Home Instruction Programme for Preschool Youngsters)	Pre-kindergarten education programmes	Programme participant for test scores (also for non-taxpayers and taxpayers).	Designed for families with 3 year olds whose parents have a limited education. This programme teaches parents how to teach their children and make their home more conducive to child learning. At the bi-weekly home visits, parents receive books and toys, and the home visitor instructs parents in the use of educational materials. The programme continues until the child completes kindergarten
Home Visiting - Low Birthweight Infants	Child welfare/Home visitation programmes	No data available	Programmes are associated with clinics or hospitals and are designed to help parents learn parenting skills and ways to encourage development of their infants
Home visiting for parents with toddlers	Child welfare/Home visitation programmes	No data available	Use home visits to enhance the effectiveness of disadvantaged parents as teachers of their young children
Home visiting Pprogrammes for at-risk mothers and children	Child welfare/Home visitation programmes	Secondary benefits for the child in terms of test scores, high school graduation, crime and child abuse and neglect	Focus on mothers considered at risk for parenting problems, based on factors such as maternal age, marital status and education, low household income, lack of social support or in some programmes mothers testing positive for drugs at the child's birth.
Infant Health and Development Programme	Child welfare/Home visitation programmes	No identifiable benefit	Clinical trial of a comprehensive early intervention for premature, low birth weight infants. Provides paediatric care and follow up; home visits each week beginning at 12 months of age; and after infants were 12 months old, bimonthly parent group meetings
Iowa Family Development and Self Sufficiency Programme		No data available	
Juvenile Boot Camps (excluding Washington)	Juvenile offender programmes	No identifiable benefit	Intended to apply the discipline and structure of military style environment to offenders as a means of increasing rehabilitation.
Juvenile Intensive Parole Supervision (excluding Washington)	Juvenile offender programmes	No identifiable benefit	When serious juvenile offenders are released from a juvenile institution they are subject to intensive parole conditions that include services and extra supervision/monitoring
Juvenile Intensive Probation (as alternative to incarceration)	Juvenile offender programmes	No identifiable benefit	
Juvenile Intensive Probation Supervision Programmes	Juvenile offender programmes	No identifiable benefit	After sentencing or following a commitment to a juvenile institution, youth are often placed on probation. Numerous programmes aim to put the youth on the right track during this period through more intensive services and supervision than normally offered.
Juvenile Offender Interagency Coordination Programmes	Juvenile offender programmes	Non-taxpayer and taxpayer benefits through costs of crime	Where services in the community were coordinated among several agencies. The approach intended to allow more individualised services, as well as more efficient resource allocation
Juvenile Offender Sex Offender Treatment	Juvenile offender programmes	No data available	

Programme	Type of Programme	Main beneficiaries	Project Description
KYB (Know Your Body)	Youth development programmes	No data available	Comprehensive, skills based school health promotion programme for grades K-6. It is cross-curriculum to be integrated into a range of classes
LEARN (Local Efforts to Address and Reduce Neglect)	Child welfare/Home visitation programmes	No data available	
Life Skills Training (LST)	Youth substance abuse prevention programmes	Programme participant and taxpayer benefits for tobacco, alcohol and illicit drugs probability of initiation	A school-based classroom intervention to prevent and reduce the use of tobacco, alcohol and marijuana. Teachers deliver the programme to middle/junior high school students in 30 sessions over three years. Students in the programme are taught general self-management and social skills and skills related to avoiding drug use
Mentoring (general)	Youth development programmes	No data available	One-on-one or group mentoring for at-risk youth in a community or school setting. School staff, college students or community volunteers serve as mentor. Diversity of goals and objectives
Mentoring (in the juvenile justice system - in Washington)	Juvenile offender programmes	Non-taxpayer and taxpayer benefits through cost of crime	Uses community volunteers to serve as trusted adults who assist Seattle youths transitioning from a JRA facility back into the community.
Minnesota Smoking Prevention Programme	Youth substance abuse prevention programmes	Programme participant and taxpayer benefits from reduced probability of initiation of tobacco use	A school-based tobacco prevention curriculum designed for students in grades 4-8. The programme helps adolescents learn why people smoke, to resist peer pressure, and to develop their own reasons for avoiding tobacco use.
Multidimensional Treatment Foster Care (vs. regular group care)	Juvenile offender programmes	Non-taxpayer and taxpayer benefits through cost of crime	An alternative to group or residential treatment, incarceration, and hospitalisation for adolescents with chronic anti-social behaviour, emotional disturbance, and delinquency. Community families are recruited, trained, and closely supervised to provide MTFC placed adolescents with treatment and intensive supervision at home, in school and in the community.
Multi-systematic therapy (MST)	Juvenile offender programmes	Non-taxpayer and taxpayer benefits through cost of crime	Intervention for youth that focuses on improving the family's capacity to overcome the known causes of delinquency. It aims to promote parents' ability to monitor and discipline their children and replace deviant peer relationships with pro-social friendships.
Nurse Family Partnership for Low Income Women	Child welfare/Home visitation programmes	Non-taxpayer and taxpayer benefits through cost of crime. Secondary benefits for cost of crime, high school graduation, test scores, child abuse and neglect, alcohol and illicit drug disordered use	Provides intensive visitation by nurses during a woman's pregnancy and the first two years after birth. It aims to promote the child's development and provide support and instructive parenting skills to the parents. The programme is designed to serve low-income, at-risk pregnant women bearing their first child
Other Community and Mass Media Programmes to Prevent Substance Use	Youth substance abuse prevention programmes	No data available	Community level focussed programme which includes a variety of efforts to reduce the initiation or prevalence of youth substance use

Programme	Type of Programme	Main beneficiaries	Project Description
Other Comprehensive, Multi-level Programmes to Prevent Substance Abuse	Youth substance abuse prevention programmes	No data available	Programmes that combine a variety of approaches to reduce youth substance use or other detrimental behaviour
Other Family-Based Therapy Programmes for Juvenile Offenders	Juvenile offender programmes	Non-taxpayer and taxpayer benefits through cost of crime	Family based approaches to counselling.
Other Social Influence/Skills Building Substance Prevention Programmes	Youth substance abuse prevention programmes	Programme participant and taxpayers through reduced probability of initiation for tobacco and alcohol usage	Programmes designed to help youth understand the social pressures that influence substance use decisions; how to resist pressures to use tobacco, alcohol, and drugs; and how to improve their decision-making abilities. These are primarily school-based programmes that may also include information about the short and long term consequences of substance use and other health related information
Other Substance Use Prevention Programmes Targeting Youth Risk and Protective Factors	Youth substance abuse prevention programmes	No data available	Variety of programmes designed to change behavioural or environmental factors that may influence substance use, criminality, school achievement, or other outcomes.
Parent-Child Home Programme	Pre-kindergarten education programmes	No identifiable benefit	Targeted at children 24-30 months old whose parents have a limited education. The programme involves biweekly visits by a toy demonstrator over a period of two years. Each week, the visitor brings a new toy or book, and demonstrates ways the parents can engage the child with the toy or encourages the parent to read to the child
Parent-Child Interaction Therapy	Child welfare/Home visitation programmes	Secondary benefit for crime, high school graduation, child abuse and neglect, alcohol and illicit drug disordered use	Aims to restructure the parent-child relationship and provide the child with a secure attachment to the parent. Parents are treated with their children, skills are behaviourally defined, and all skills are directly coached and practiced in parent-child sessions. Therapists observe parent-child interactions through a one-way mirror and coach the parent using a radio earphone
Parents as teachers	Pre-kindergarten education programmes	Secondary benefit particularly for programme participants in terms of test scores	A home visiting programme for parents and children with a main goal of having healthy children ready to learn by the time they go to school. Parent educators with a minimum of some college education visit parents monthly. Visits typically begin during the mother's pregnancy and may continue until the child enters kindergarten.
PATHE (Positive Action Through Holistic Ed)		No data available	
Postponing Sexual Involvement Programme	Teen pregnancy prevention programmes	Disbenefits in terms of high school graduation and secondary disbenefits in terms of high school graduation, crime, child abuse and neglect	A two-stage programme for 8th grade students. The programme consists of five classes on human sexuality taught by teachers, followed by five classes on refusal skills training taught by trained peer educators

Programme	Type of Programme	Main beneficiaries	Project Description
Programmes for Teen Parents	Teen pregnancy prevention programmes	No data available	Designed to help young mothers avoid subsequent teenage births and to continue their educations.
Project 12 Ways/Safecare	Child Welfare/Home Visitation Programmes	No data available	Provides multi-faceted, in-home treatment to families designed to reduce repeated and recidivistic child abuse and neglect among clients. Services include parent-child training, stress reduction, self control, basic skill training, social support, home safety, health maintenance and nutrition
Project ALERT (Adolescent Learning Experience in Resistance Training)	Youth substance abuse prevention programmes	Programme participant and taxpayer benefits in terms of probability of initiation of illicit drugs	A middle/junior high school based programme to prevent tobacco, alcohol and marijuana use. Over 11 sessions, the programme helps students understand that most people do not use drugs and teaches them to identify and resist the internal and social pressures that encourage substance abuse
Project Northland	Youth substance abuse prevention programmes	Programme participant through tobacco, alcohol and illicit drug probability of initiation. Also taxpayer benefits and to lesser extent non-taxpayer benefit for alcohol initiation	A community-wide intervention designed to reduce adolescent alcohol use. The programme spans three years and is multi-level, involving individual students, parents, peers and community members, businesses and organisations
Project STAR (Students Taught Awareness and Resistance)	Youth substance abuse prevention programmes	Programme participant through tobacco, alcohol and illicit drug probability of initiation. Also taxpayer benefits and to lesser extent non-taxpayer benefit for alcohol and illicit drug initiation	A multi-component prevention programme with the goal of reducing adolescent tobacco, alcohol, and marijuana use. The programme consists of 6th and 7th grade intervention supported by parent, community and mass media components addressing the multiple influences of substance abuse
Project Taking Charge	Teen pregnancy prevention programmes	No data available	Pregnancy prevention programme used in junior high home economics classrooms. It promotes abstinence as the correct choice and provides no material on contraception
Project TND (Towards No Drug Use)	Youth substance abuse prevention programmes	No data available	Targeted drug abuse prevention programme with a focus on high school youth aged 14-19 at risk for drug abuse.
Project Towards No Tobacco (TNT)	Youth substance abuse prevention programmes	Programme participant for tobacco probability of initiation. Taxpayer benefit for same	A school-based classroom intervention to prevent and reduce tobacco use in youth from 10-15 years of age. The programme focuses on the multiple causes of tobacco use, develops skills to resist social pressure to use tobacco and provides information about its physical consequences

Programme	Type of Programme	Main beneficiaries	Project Description
Quantum Opportunities Project	Mentoring programmes	Programme participants and all others benefit from high school graduation and small benefit to non-taxpayers and taxpayers from costs of crime. Disbenefit to participant in terms of public assistance but benefit to taxpayers. Secondary benefit for all in terms of high school graduation, taxpayers and non-taxpayers for crime and non-programme participants for child abuse and neglect	Designed to serve disadvantaged high school students by providing education, service and development activities, as well as financial incentives for youth's continuing participation.
Reach for Health Community Youth Service	Youth substance abuse prevention programmes	No data available	Two-year curriculum designed for 7th and 8th graders. In addition to 40 hours of health curriculum each year, students spend three hours a week volunteering in local agencies such as preschools or nursing homes
Reducing the Risk Programme	Teen pregnancy prevention programmes	No identifiable benefit	A 16-session sex education curriculum emphasising information on abstinence and contraception.
Regular parole (vs. not having parole)	Juvenile offender programmes	Large disbenefit to non-programme participants in terms of cost of crime	A natural experiment regarding parole for juvenile offenders occurred following a 1997 law change allowing the comparison of similar groups of juveniles who did and did not receive parole after release
Safer choices	Teen pregnancy prevention programmes	No data available	
Scared Straight	Juvenile offender programmes	Non-taxpayer and taxpayer disbenefits in terms of cost of crime	Takes young juvenile offenders to an adult prison where adult offenders talk to them about how their lives will turn out if they do not change their ways.
School-Based Clinics for Pregnancy Prevention	Teen pregnancy prevention programmes	No identifiable benefit	Located in schools or immediately adjacent to schools in disadvantaged neighbourhoods. Clinics provide general health care in addition to pregnancy and STD counselling and reproductive health services. Depending on the community, the clinics provide contraceptives directly or via arrangement with local family planning clinics
Seattle Social Development Project	Youth development programmes	Programme participants and all others benefit from high school graduation, non-taxpayers and taxpayers benefit from cost of crime. Taxpayer benefit in terms of K-12 grade repetition	A three-part intervention for teachers, parents and students in grades 1 to 6. The focus is on elementary schools in high crime urban areas. The intervention trains teachers to manage classrooms to promote students' bonding to the school. The programme also offers training to parents to promote bonding to family and school. It provides training to children designed to affect attitudes towards school, behaviour in school and academic achievement

Programme	Type of Programme	Main beneficiaries	Project Description
STARS for families (Start Taking Alcohol Risks Seriously)	Youth substance abuse prevention programmes	No identifiable benefit	A health promotion intervention designed to postpone alcohol use among at-risk middle and junior high school youth. This two-year intervention includes a 20 minute nurse consultation, regular mailings to parents and take-home lessons for parents and children. The programme can be implemented in a variety of settings, including schools
Strengthening Families Programme for Parents and Youth 10-14	Youth development programmes	Programme participants in terms of tobacco, alcohol and illicit drugs probability of initiation. Non-programme participants in terms of costs of crime	Family based programme that attempts to reduce behaviour problems and substance use by enhancing parenting skills, parent-child relationships and family communication. The seven-week intervention is designed for 6th grade students and their families
System of Care/ Wraparound Programmes	Child welfare/home visitation programmes	No identifiable benefit	Providing individualised coordinated services among a variety of organisations and agencies that allows the child to remain in the community. It is flexible, culturally competent, neighbourhood based and tailored to individual circumstances
Teen Outreach Programme	Teen pregnancy prevention programmes	Programme participants and all others in terms of high school graduation. Secondary benefits in terms of crime, high school graduation and child abuse and neglect	A school-based intervention to prevent teenage pregnancy and dropping out of school. The focus of this year-long programme is supervised community volunteering. The students must volunteer for a minimum of 20 hours
Teen Talk	Teen pregnancy prevention programmes	No identifiable benefit	Aims to prevent teenage pregnancy for 13-19 year olds. The community- based programme consists of six sessions over a 2-3 week period for a total of 12-15 hours including group lectures on reproductive health, physiology and contraception.
Washington Basic Training Camp	Juvenile offender programmes	Crime benefits and programme costs are positive	Intended to apply the discipline and structure of military style environment to offenders as a means of increasing rehabilitation.
Washington State Department of Health/Client Centered Programmes	Teen pregnancy prevention programmes	No data available	A collection of community based programmes aimed at adolescents considered to be at risk of teenage pregnancy
Youth suicide prevention programmes - in hospitals	Other	No data available	Hospital based therapeutic programmes targeting youth who attempted suicide or are in psychiatric crisis
Youth suicide prevention programmes - in K-12	Other	No data available	School based curriculum programmes usually targeting high school students at risk for dropping out of school and suicide

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Appendix E: The effectiveness of early years interventions in reducing health inequalities (non cost-benefit analysis)

As noted earlier in this paper, robust cost-benefit analysis relating to early years programmes is relatively sparse. As a result, this appendix looks at some other literature and evaluation evidence (though not cost-benefit analysis evidence) that informs the effectiveness of early years interventions to reduce health inequalities.

In particular, literature is considered that identifies characteristics of effective programmes prior to birth in terms of avoiding teenage pregnancy and maternal care and programmes implemented in early childhood. Where possible, UK evidence has been used so that it is more applicable to London than international evidence.

Evidence on the effectiveness of early years interventions

As noted in the main report and Appendix D, cost benefit analysis is considered to be the most robust form of analysis of early interventions because, if undertaken correctly, it is able to capture the benefits and costs of the programme over a long time period. However, by focusing our attention on robust cost benefit analysis, the field of evidence is significantly narrower than if all evidence was reviewed. As a result, this appendix looks at some other literature and evaluation evidence (though not cost-benefit analysis evidence) that informs on the effectiveness of early years interventions to reduce health inequalities.

Pregnancy and health inequalities

Teenage pregnancy and early motherhood is strongly correlated with socio-economic disadvantage. Teenage pregnancy has been associated with pre-natal depression and anxiety, compromised antenatal health, lower educational attainment and poor longer-term opportunities¹. This often results in long term benefit dependency, poverty and inter-generational health inequalities. Therefore, averting teen pregnancy can be useful in reducing health inequalities.

The WSIPP analysis (set out in Appendix D) found that few programmes proved to be successful in the US, with results marginally improving with UK valuations. Programmes that involved lecturing young people or only promoting abstinence proved to be the least effective. Broader programmes that involved positive activities, health care and school based education had better results.

A separate study found evidence to support the success of a number of interventions to avert teen pregnancy such as school based sex education, education linked to contraceptive services, youth development programmes and family outreach². Programmes offering education support to improve job prospects can also motivate young people to avoid pregnancy. While the qualitative evidence suggests that these programmes are effective there is currently no evidence from randomised controlled trials available.

While not considered in the WSIPP study, maternal health is important for all mothers and babies at the time of conception and during pregnancy. Poor nutrition and/or substance use can affect foetal growth and development, and these have been associated with poor outcomes after birth. A review

1. Chevalier, A and Viitanen, TK. 2003. *The long-run labour market consequences of teenage motherhood in Britain. Journal of Population Economics*, vol 16, no 2, pp323-43 (quoted in Asthana and Halliday)
2. Asthana, S and Halliday, J. 2006. 'What works in tackling health inequalities? Pathways, policies and practice throughout the lifecourse'.

conducted by NHS Health Scotland in 2007 found strong evidence between taking the recommended levels of folate/folic acid during the peri-conceptual period and the first 12 weeks of pregnancy with reduced incidence of health difficulties such as neural tube defect pregnancies. The review also found evidence that improved maternal diet, particularly at the onset of pregnancy appears to improve the later health of offspring.

Therefore improving the general nutritional intake and nutritional status of women of childbearing age in low-income areas could be a useful intervention. These interventions could include food fortification programmes; information, education and communication programmes; and nutritional advice at antenatal visits. One study found that calcium supplements can reduce pre-term birth and incidence of low birth weight, and that balanced dietary supplements consistently improve foetal growth³. Despite these health benefits, there are significant challenges in engaging young, low-income mothers-to-be⁴. Advice and information alone does not appear to change dietary behaviour, so more direct interventions such as vouchers or provision of food and supplements have a greater chance of success.

Evidence suggests that multi-faceted initiatives are more likely to be effective for substance use reduction, such as smoking⁵. The London Health Observatory (2007) found that smoking in pregnancy is the single biggest preventable contributor to the differences in infant mortality and life expectancy between socio-economic groups. Therefore a key factor for achieving lower levels of infant mortality in disadvantaged areas is to reduce the prevalence of smoking during pregnancy. Even a reduction in smoking during pregnancy can improve health outcomes⁶. Unfortunately there is a lack of robust evidence of what works to reduce smoking during pregnancy in London. Given the substantial benefits that could arise, it may be worth investigating smoking cessation interventions further in London. Routine contact with health professionals during the prenatal period may offer opportunities for these types of interventions.

Limited evidence suggests that antenatal classes can have positive effects in improving health outcomes, but a key issue is the degree to which parents living in disadvantaged areas are able to access the support that is available and whether they feel it meets their needs (Growing up in Scotland survey 2007⁷). PIPPIN is an example of an antenatal class programme in England. It targets both mainstream and hard-to-reach families. However, only one small evaluation has been undertaken. The early findings of this evaluation suggest that participating parents are more confident, less anxious and better able to cope with parenthood than non-participants.

3. Asthana, S and Halliday, J. 2006. *'What works in tackling health inequalities? Pathways, policies and practice throughout the lifecourse'*.

4. Hallam, A. for Scottish Government. 2008. *'The Effectiveness of Interventions to address health inequalities in the early years: a review of relevant literature'*.

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Early childhood and health inequalities

Breastfeeding is beneficial to both the mother and baby, but the UK has one of the lowest rates of breastfeeding worldwide, especially amongst disadvantaged families⁸. Breastfeeding provides complete nutrition for the development of babies and helps to protect babies against a number of illnesses. Medical evidence to support increased breastfeeding is strong (hence Department of Health supports the UNICEF Baby Friendly Initiative including breastfeeding programme⁹), but there is a limited amount of evaluation evidence to show what is cost-effective. Multi-faceted interventions appear to be the most effective and should cover the ante and post-natal period with repeated contact with professionals or educators¹⁰.

A number of studies undertaken by NICE¹¹ found evidence to support a mix of:

- education and/or support programmes that are routinely delivered by health practitioners and peer supporters;
- clinical care to support mother-baby contact;
- breastfeeding education and support targeted at women on low income;
- one-to-one needs based education throughout the first year; and
- media programmes targeting teenagers to improve attitudes towards breastfeeding.

A healthy environment is important for young children. Supporting parents to achieve a smoke-free home environment has been found to be more successful than programmes to stop parents smoking¹². Intensive counselling services about the risks of smoking were effective in increasing knowledge, but had little impact on changing attitudes and behaviours towards smoking. Home visiting programmes can reduce the rate of child injury in the home and basic modifications to the environment (eg playground design) can reduce the severity and frequency of accidents. Nutrition can be improved through broad measures to improve income in disadvantaged household and improving access to cheap, nutritious food. These are more likely to be effective than providing information and education about nutrition. As with the other health outcomes discussed above, these have not been robustly evaluated for cost-effectiveness.

Effective delivery techniques for early intervention (including parenting)

From the analysis of the WSIPP work it appears that programmes that are intensive and focus on behaviour tend to be effective, as well as when parents are involved. The success of programmes is largely influenced by the willingness of families to engage with the programme and change their behaviour. While it is important to maintain the integrity of the programme, sometimes it can be useful to tailor the programme to the needs and interests of the participants to improve engagement and retention. DCSF (2010) found that children, young people and families who are in need of support are more likely to engage with practitioners who are accessible, approachable and responsive.

8. Hallam, A. for Scottish Government. 2008. 'The Effectiveness of Interventions to address health inequalities in the early years: a review of relevant literature'

9. NICE guidance promotes the adoption and implementation of the WHO/UNICEF UK Baby Friendly Initiative (BFI) as the best evidence-based, worldwide vehicle to raise levels of breastfeeding prevalence. See also: http://www.babyfriendly.org.uk/items/item_detail.asp?item=620

10. Hallam, A. for Scottish Government. 2008. 'The Effectiveness of Interventions to address health inequalities in the early years: a review of relevant literature'

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They are also more likely to participate if the services are culturally sensitive. This is particularly relevant in London because of the diversity of the population.

In addition, interventions are more likely to be taken up if they are non-stigmatising. Some services have a high level of acceptability because of their professional status and branding (for example, NHS, nurses, midwives and doctors) and also through being provided by the voluntary and community sector. Outreach has an important part to play in ensuring that the children who need help the most are accessing it.

At the pre and postnatal stages, intensive home visiting programmes appear to be effective in improving the health of both the mother and child, particularly for young first-time parents. Bull et al (2004) identified home visiting as an important intervention for tackling health inequalities from an inter-generational perspective. Olds et al (cited in Melhuish, 2004) found that home visitation provided by nurse-qualified staff has a larger benefit than those provided by para-professionals. Home visitation programmes have the potential to produce improvements in: parenting, child behavioural problems, cognitive development in high-risk groups, a reduction in accidents and injuries and improved detection and management of post-natal depression. However, there is a problem of non-use and as can be seen in the WSIPP analysis, not all evaluations show a positive result.

Parenting education and support is another type of programme that can provide positive outcomes for children, by giving parents the skills they need to care for their child in a way that best supports their wellbeing. This is particularly through good parent-child relationships (ie improved parenting skills and an improved parental understanding of child development). Two evidence-based parenting programmes are 'Triple P' and 'Incredible Years'¹³. Triple P takes a public health approach, while Incredible Years helps parents to cope with their children's behavioural problems and to increase social competence at home and at school.

Both of these programmes are not currently included in the WSIPP type analysis because, to date, the benefits derived from the programmes have not been monetised (to allow for a cost benefit analysis to be conducted). Nevertheless, evidence from randomised control trials of both programmes would suggest that they are effective parenting programmes (for instance in improving the behaviour and conduct of children).

The findings of DfE evaluation of the Parenting Early Intervention Programme (PEIP) on the impact of four evidence-based parenting programmes (Incredible Years, Triple, Strengthening Families Strengthening Communities and the Strengthening Families Programme 10 to 14) found that:

- Parent outcomes were significantly improved, such as parental mental well-being
- Most of the parents interviewed reported that they were introduced to strategies that enabled them to bring about positive change in their own and their children's behaviour.
- Parents interviewed three to six months after programme completion reported that these improvements had been maintained.

13. See for instance, *Parenting intervention in Sure Start services for children at risk of developing conduct disorder: pragmatic randomised controlled trial*, Hutchings et al, *BMJ* 2007; 334 and *Does the Triple P-Positive Parenting Program provide value for money?* May 2007, *Australian and New Zealand Journal of Psychiatry*

However, Hallam (2008) found that disadvantaged families are often the least likely to benefit from parenting programmes, either because of problems experienced by parents themselves, or because they are the least likely to become and remain engaged with the programme. Even when initiatives are specifically targeted at people at greatest disadvantage it can be difficult to engage the most in need. Hallam (2008) also found some evidence that group-based programmes appear to be more cost-effective than individual clinic based training and they have the added benefit of providing parents with peer support. Involving both mother and father and direct work with the child improves the efficacy of these interventions.

Evidence from Melhuish (2004) shows that high quality childcare in the first three years for disadvantaged children produces significant benefits for cognitive, language and social development. However, it also identifies that childcare for children who are not from disadvantaged backgrounds has no strong effects on these outcomes because less of the benefit is additional. Low quality childcare tends to produce no positive benefit for either group that highlights the importance of highly trained staff and quality settings. Melhuish also found that high quality childcare that was complemented by home visits appear to be the most effective package of services and that children benefit more in socially mixed groups rather than in homogeneously disadvantaged groups.

For slightly older children, schools appear to be a cost effective means of providing interventions. The most successful programmes are however also supported by families and the community. The largest benefits are derived from early years investment when it is sustained throughout the primary and later years.

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Chinese

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Vietnamese

Nếu bạn muốn có văn bản tài liệu này bằng ngôn ngữ của mình, hãy liên hệ theo số điện thoại hoặc địa chỉ dưới đây.

Greek

Αν θέλετε να αποκτήσετε αντίγραφο του παρόντος εγγράφου στη δική σας γλώσσα, παρακαλείστε να επικοινωνήσετε τηλεφωνικά στον αριθμό αυτό ή ταχυδρομικά στην παρακάτω διεύθυνση.

Turkish

Bu belgenin kendi dilinizde hazırlanmış bir nüshasını edinmek için, lütfen aşağıdaki telefon numarasını arayınız veya adrese başvurunuz.

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਦਸਤਾਵੇਜ਼ ਦੀ ਕਾਪੀ ਤੁਹਾਡੀ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੀਦੀ ਹੈ, ਤਾਂ ਹੇਠ ਲਿਖੇ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਹੇਠ ਲਿਖੇ ਪਤੇ 'ਤੇ ਰਾਬਤਾ ਕਰੋ:

Hindi

यदि आप इस दस्तावेज की प्रति अपनी भाषा में चाहते हैं, तो कृपया निम्नलिखित नंबर पर फोन करें अथवा नीचे दिये गये पते पर संपर्क करें

Bengali

আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি (কপি) চান, তা হলে নীচের ফোন নম্বরে বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

اگر آپ اس دستاویز کی نقل اپنی زبان میں چاہتے ہیں، تو براہ کرم نیچے دیے گئے نمبر پر فون کریں یا دیئے گئے پتے پر رابطہ کریں

Arabic

إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى الاتصال برقم الهاتف أو مراسلة العنوان أدناه

Gujarati

જો તમને આ દસ્તાવેજની નકલ તમારી ભાષામાં જોઈતી હોય તો, કૃપા કરી આપેલ નંબર ઉપર ફોન કરો અથવા નીચેના સરનામે સંપર્ક સાધો.

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