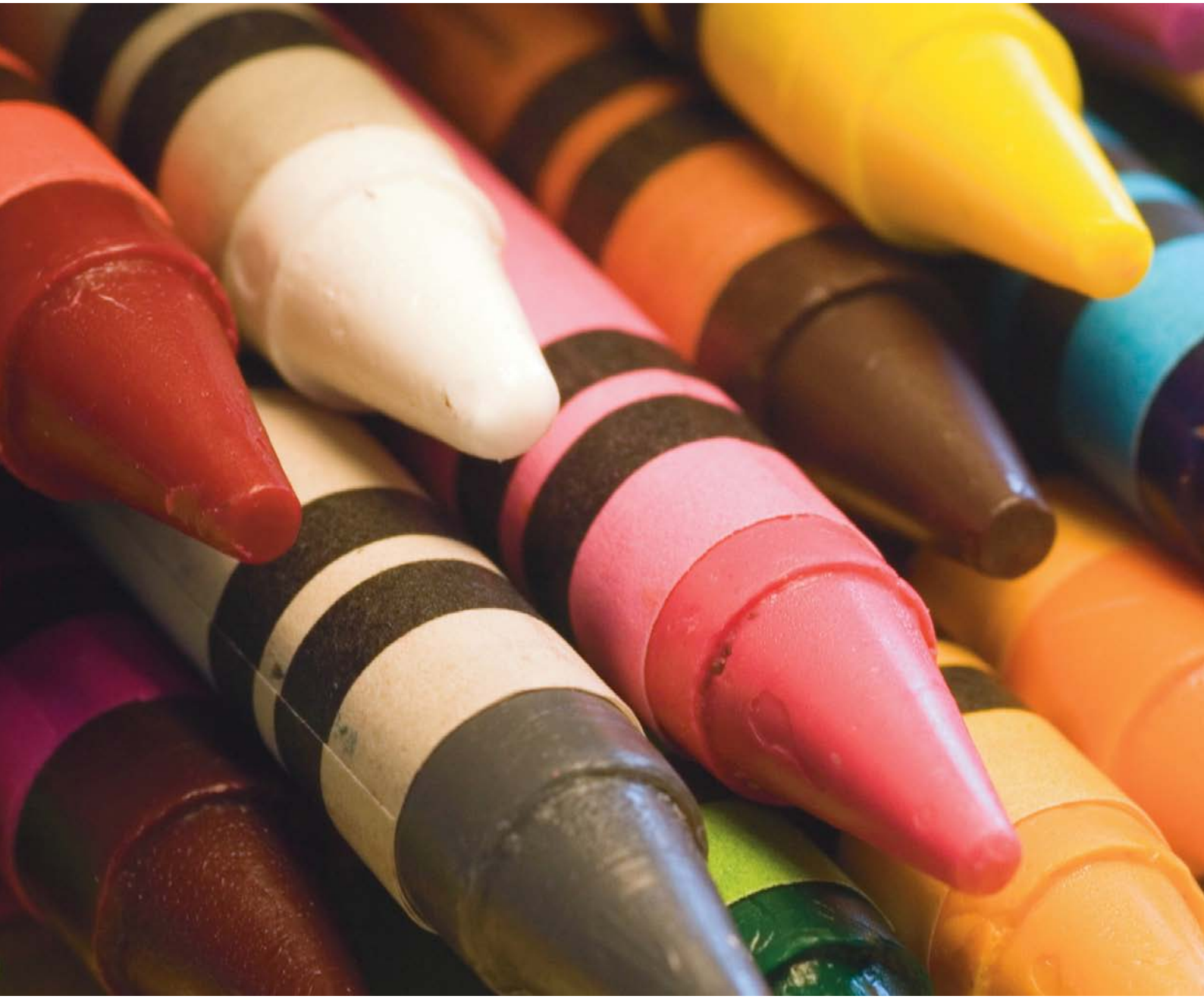
GLAECONOMICS

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.

2. Health inequalities and early years intervention

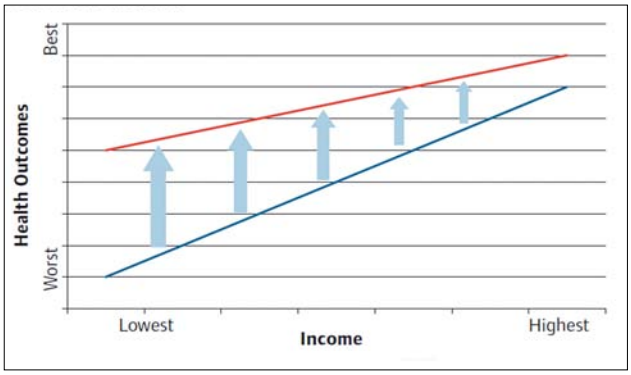
Health inequalities in London

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 Committee[1] 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 England[2]. 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 region[3]. 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 country[4].

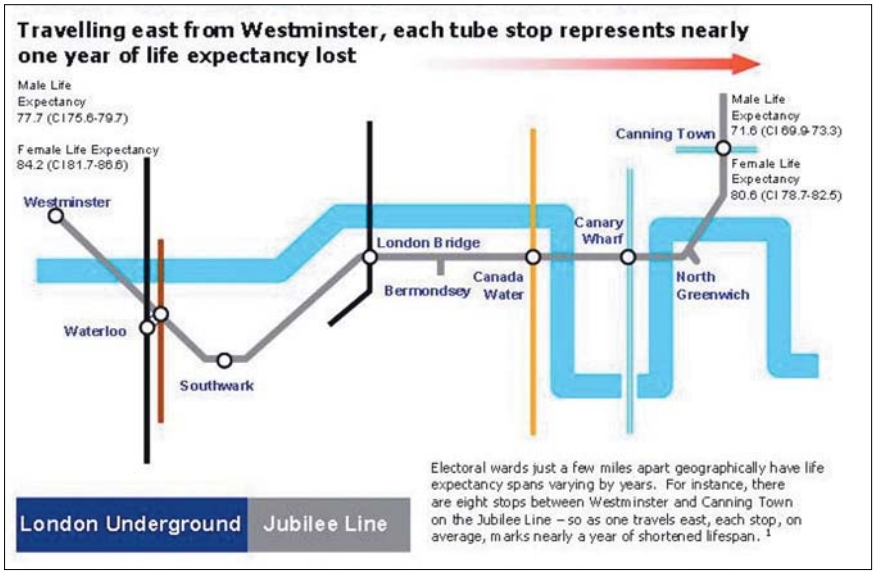
Figure 1: The Social Gradient of Health



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 Observatory[5] 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 London[6]. 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 gap[8].

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 intervention[9].

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 Health[10] 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 disability[11].

The House of Commons Health Committee illustrate in their report[12] 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 pregnancy[13]). 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 cost[14].

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 child[15]. As a result, inter-generational[16] causes of health inequalities are significant.

As well as impacting on the individuals concerned, health inequalities have a significant financial cost. Marmot[17] 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 disability[18].

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 health[21], higher rates of mortality[22], poorer mental health outcomes[23], and more harmful health-related behaviours such as smoking, alcohol consumption, and unhealthy diet[24].

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.

3. The need to invest in early years interventions 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 review[25]).

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 development[26]. 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 effects[27]. 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 intervention[28]. 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 outcomes[29].

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 course[31]. 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 health[32].

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 outcomes[33].
- More recently, data from the 1970 British Cohort Study explained how cognitive and non-cognitive skills may account for intergenerational income persistence[34].

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 outcomes[35].

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 whole[37].

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 costs[39].

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 programmes[40]. 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.

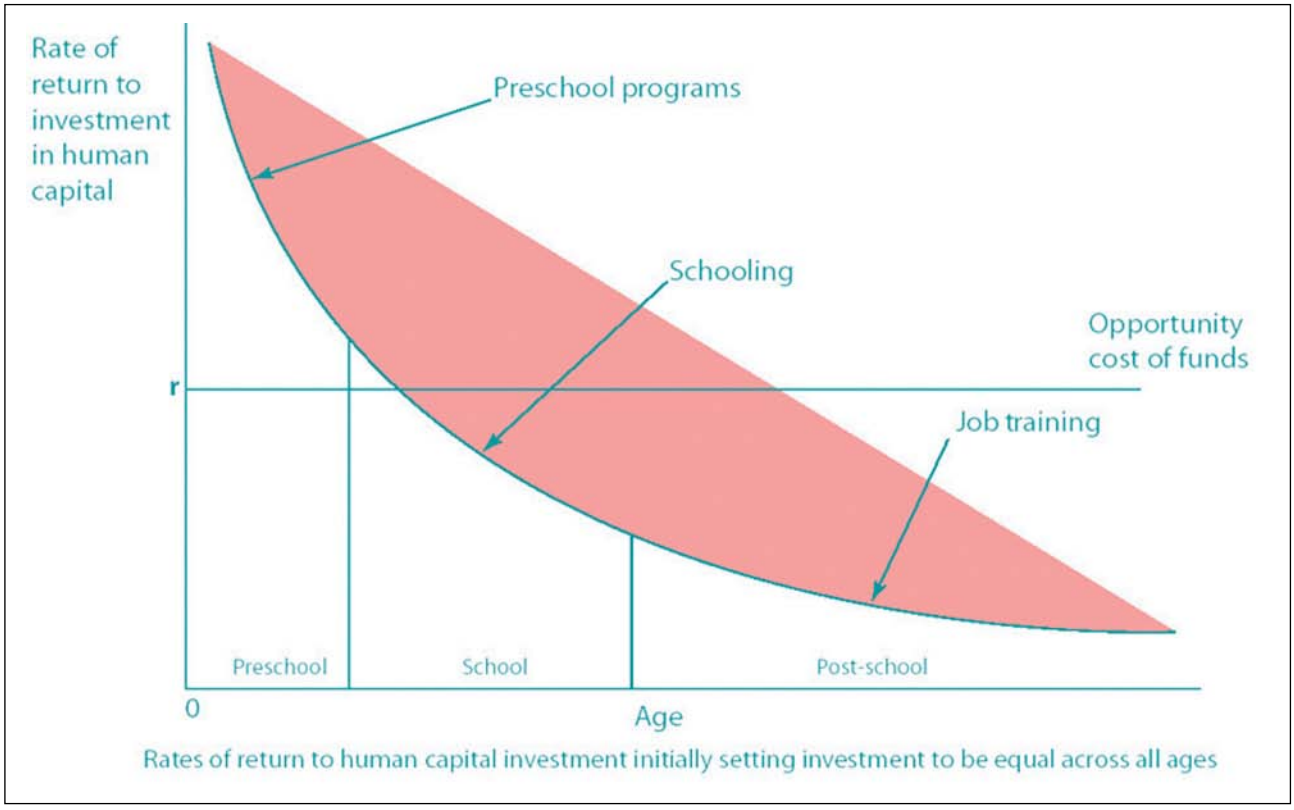
Whilst caution is required in simply reading across from the results of past evaluations (see Appendix D for more detail), such rates are high when placed next to other spending by governments made in the name of economic development, such as subsidies and preferential tax treatment for private businesses[41]. 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 acquisition[42]. 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 child[44]. These costs are disproportionally higher than the cost of early prevention/intervention.

In a UK-based study[45], 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.

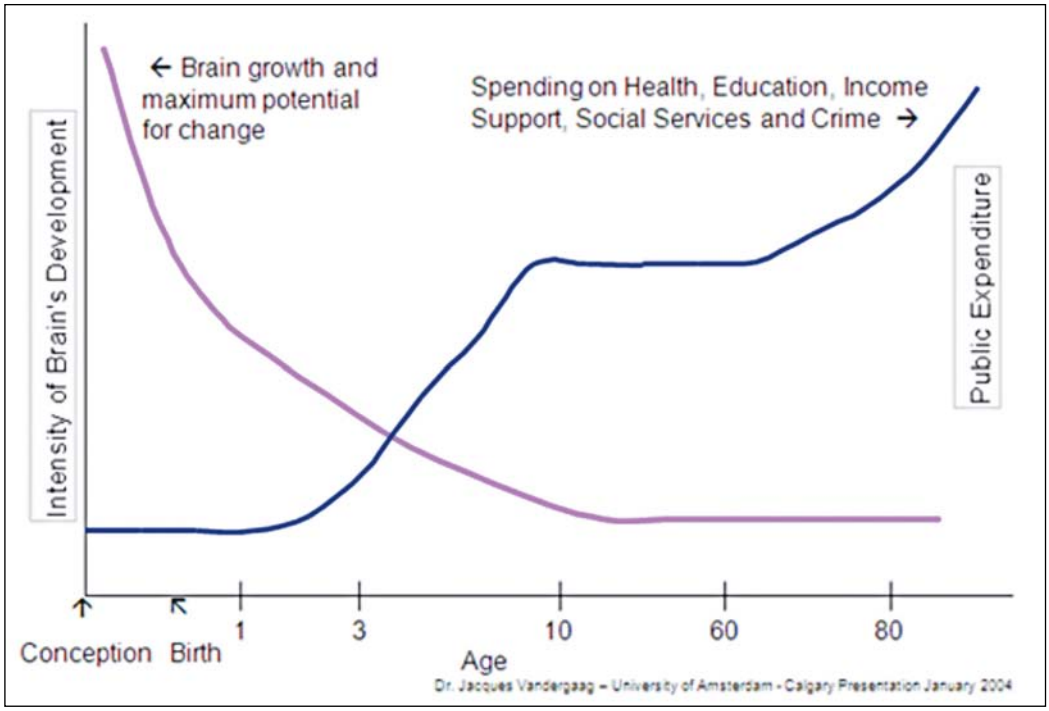
Heckman states, *'…an optimal investment strategy should focus investments in the early years as compared to the later years'*[46]. In addition, an important finding arising from the economic evaluations is that the economic returns from investing in early years intervention programmes are larger when 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 population[47]. 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 population[48]. Karoly et al[49] 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 Gaag[50] 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).

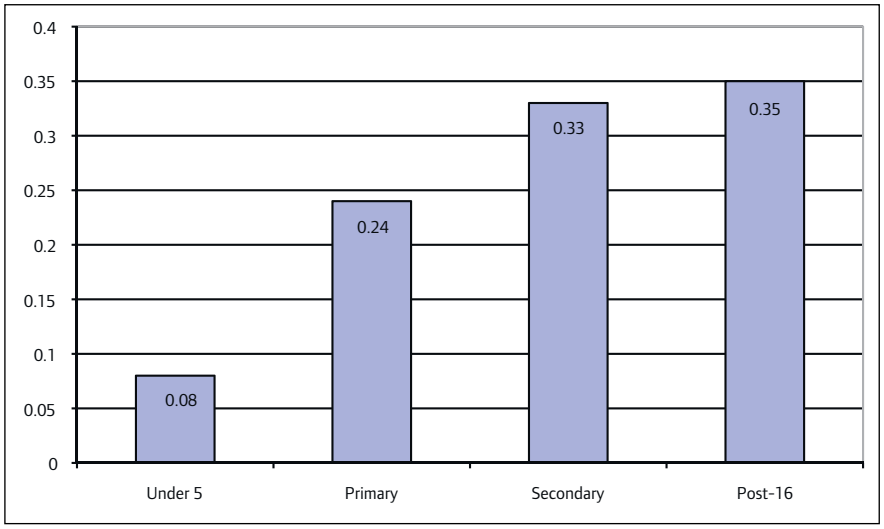
This general upward trend in public expenditure identified by van der Gaag is reflected in

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 billion[52] 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[53] was spent on early years education[54] 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 2003/04[55]. 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 alleviated[56].

In terms of education, Alakeson[57] 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).

4. The relative effectiveness of early years interventions

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?

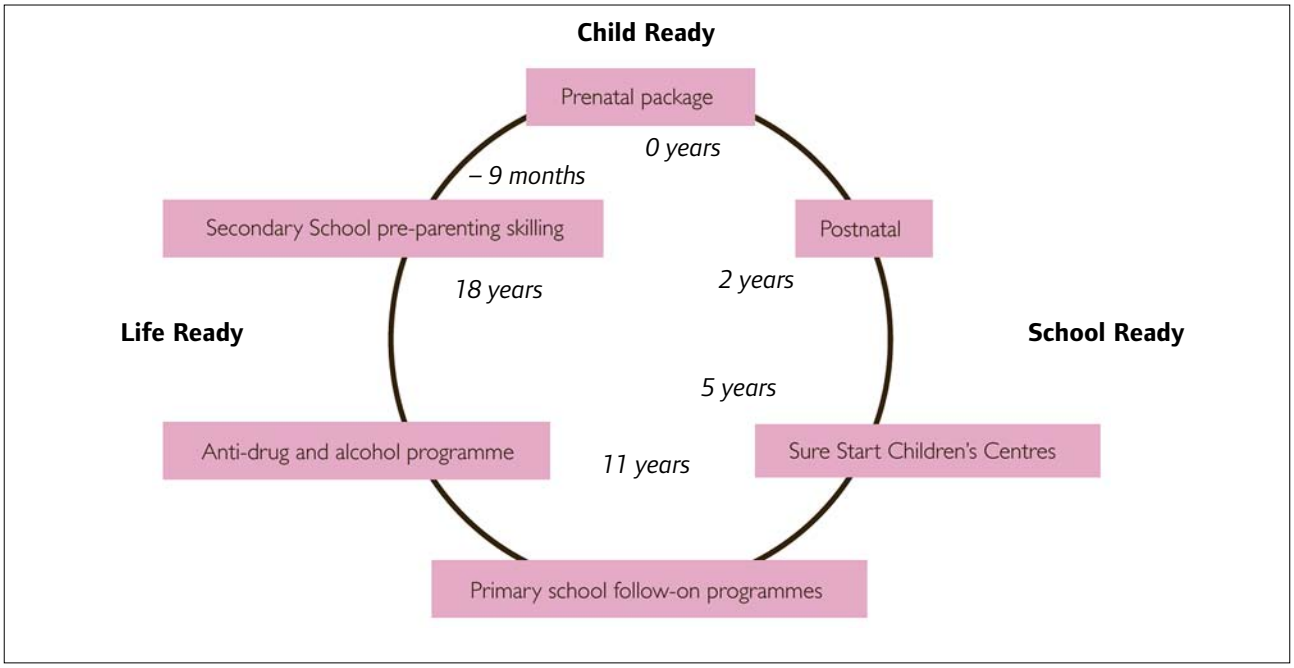
Many early years interventions for young children appear to have significant benefits across a range of outcomes such as educational achievement, improvements in the care of children and a reduction in undesirable behaviours later in life, such as crime and substance misuse.

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 Justice[58] 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. Evidence[59] 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-participants[60].

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 children[61]. 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.

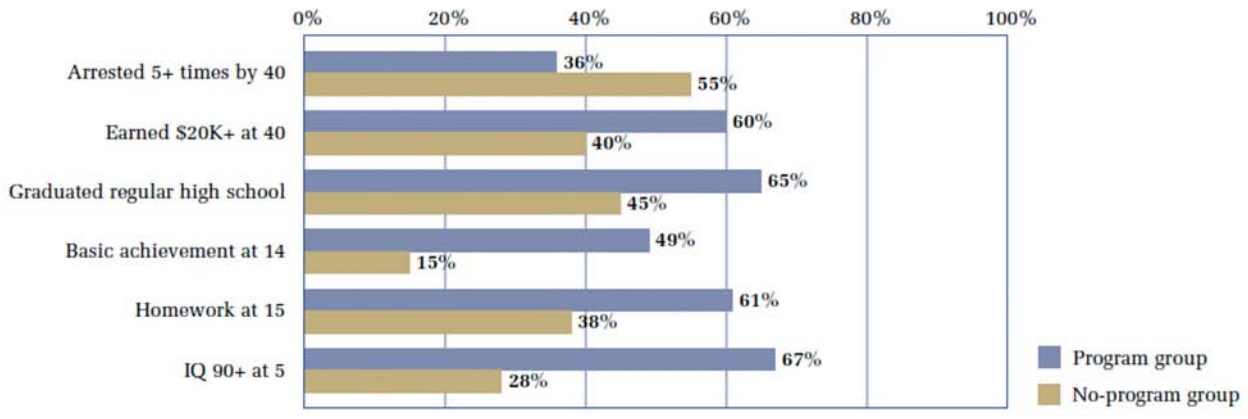
US Intervention: Perry Pre-school Program

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 skills[62]. 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.**

5. Conclusion

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 olds[64]

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

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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

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.

Bengali

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

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.

اگر آپ اِس دستاویز کی نقل اپنی زبان میں چاھتے ھیں، تو براہ کرم نیچے دئے گئے نمبر پر فون کریں یا دیئے گئے پتے پر رابطہ کریں

Turkish

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

Arabic

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

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:

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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