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.

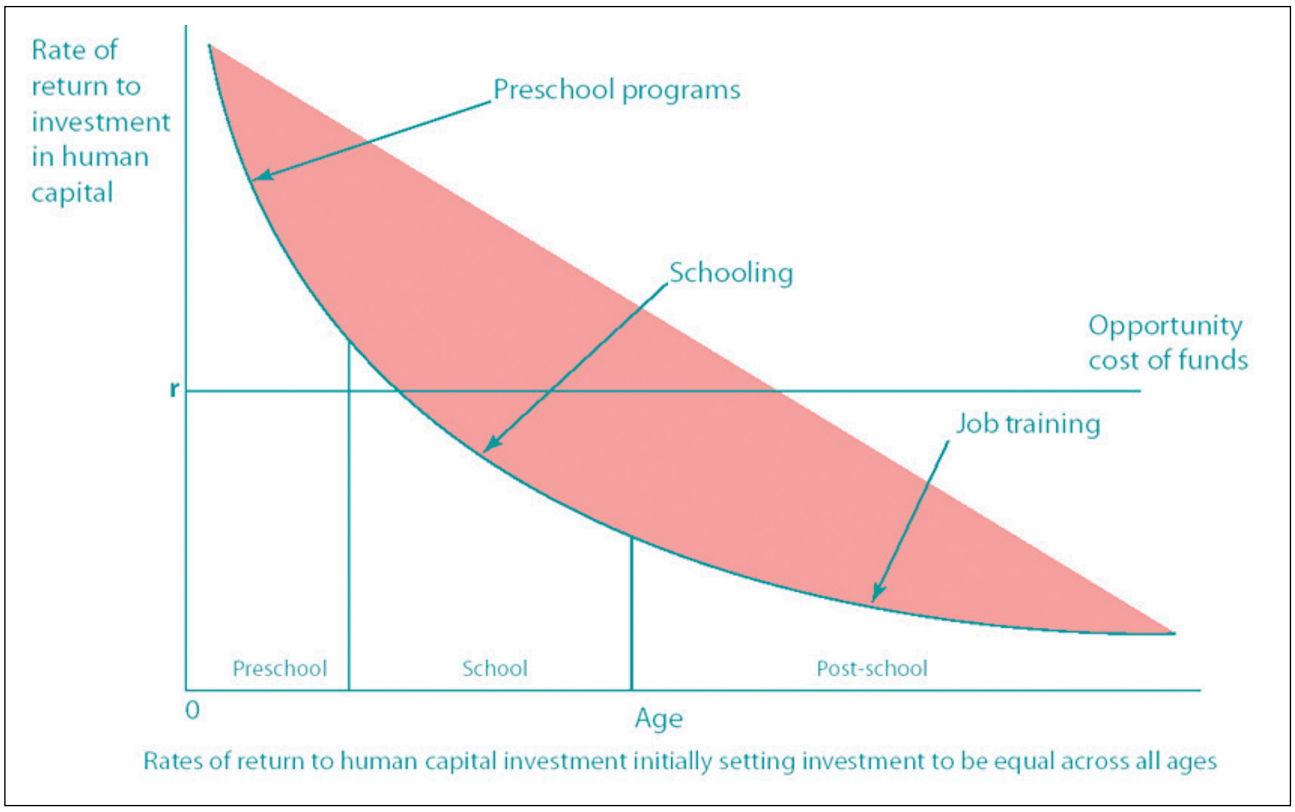
Whilst caution is required in simply reading across from the results of past evaluations (see Appendix D for more detail), such rates are high when placed next to other spending by governments made in the name of economic development, such as subsidies and preferential tax treatment for private businesses[41]. 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.

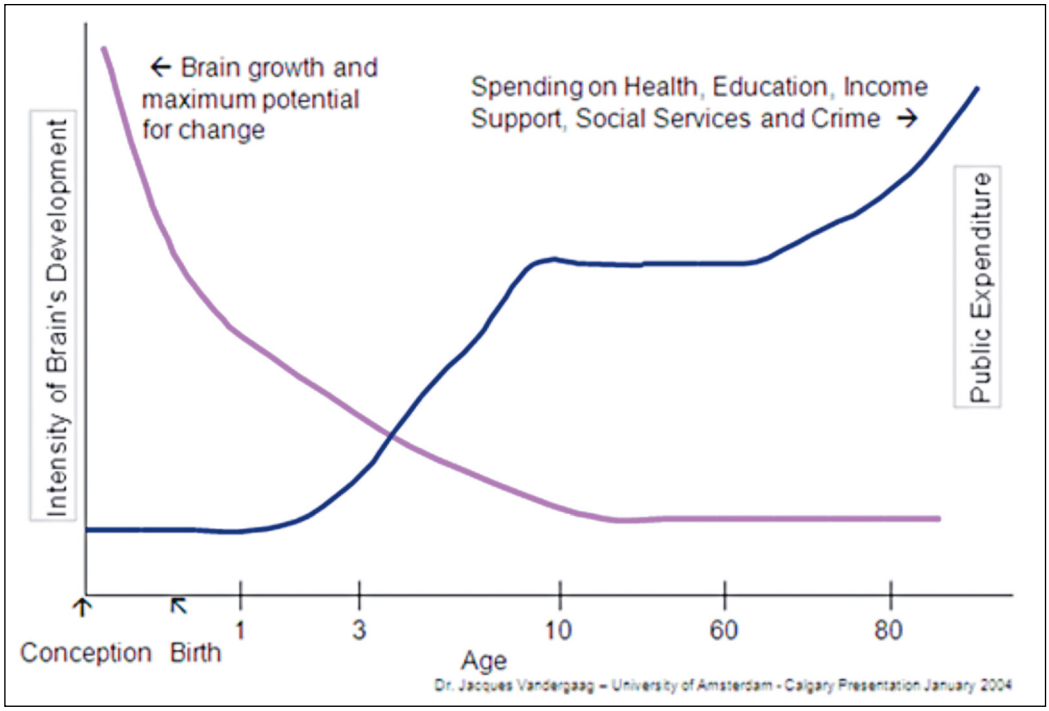
Heckman states, *'…an optimal investment strategy should focus investments in the early years as compared to the later years'*[46]. In addition, an important finding arising from the economic evaluations is that the economic returns from investing in early years intervention programmes are larger when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

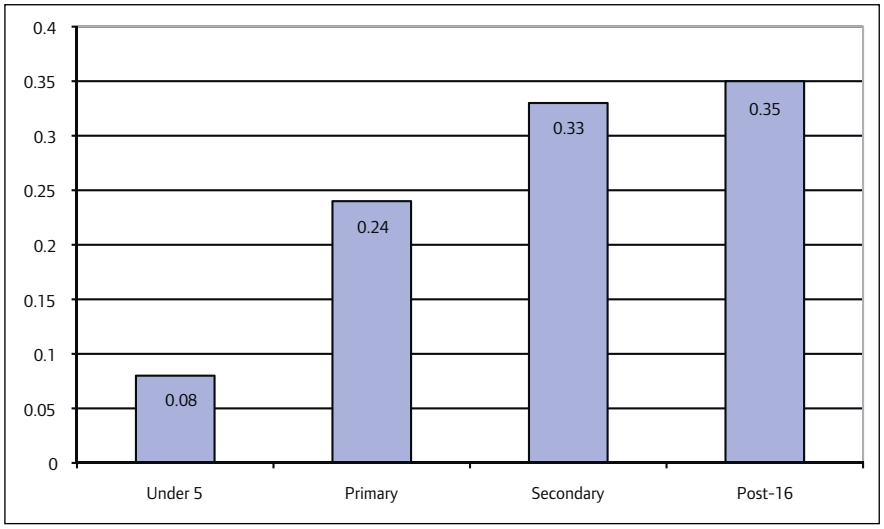
This general upward trend in public expenditure identified by van der Gaag is reflected in

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).