

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

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

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

The top ten programmes – UK and US cost benefit analysis

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

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

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

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

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

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

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

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

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

What are the implications for programmes in London?

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

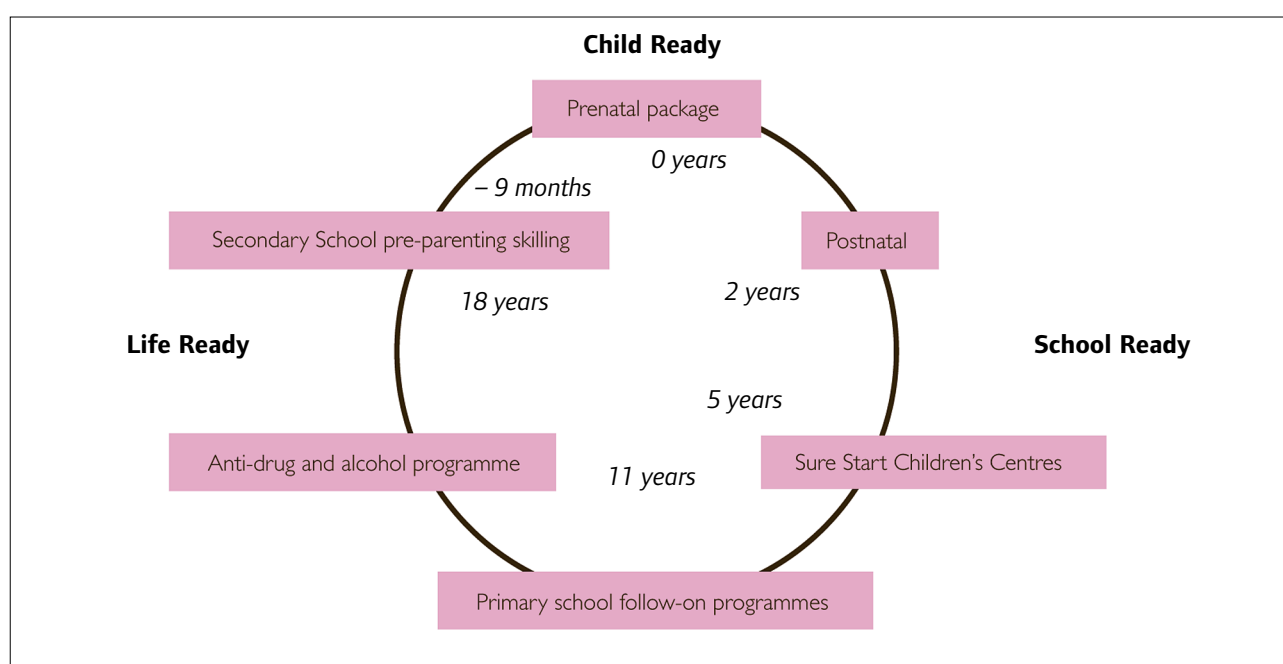
Since robust cost-benefit analysis relating to programmes to specifically reduce health inequalities is sparse, other literature and evaluation evidence was also considered. In particular, literature that identifies characteristics of effective programmes prior to birth in terms of avoiding teenage pregnancy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

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

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

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

Figure 6: Cycle of early intervention programmes



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

Prenatal programmes

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

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

Post-natal programmes

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

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

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

to have been very successful when implemented in the USA.

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

UK Intervention: Family Nurse Partnership

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

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

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

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

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

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

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

Pre-school programmes

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

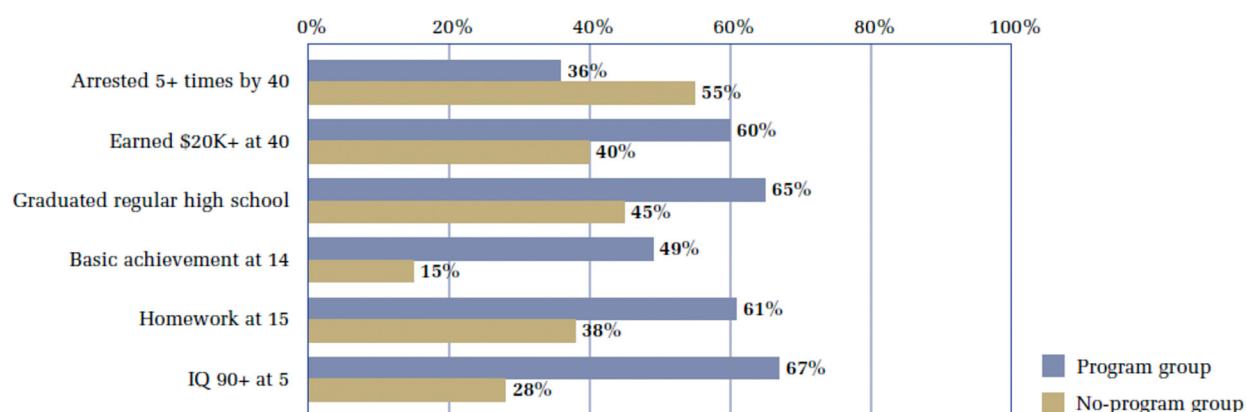
US Intervention: Perry Pre-school Program

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

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

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

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



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

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

Follow-on programmes

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

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

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

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

General characteristics of effective early years interventions

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

Characteristics of effective early years interventions

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

and refer them to more specialised services.

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

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

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

Targeted and universal services

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

targeted programmes are generally the most cost-effective.

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

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

General characteristics of ineffective early years interventions

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

Characteristics of ineffective early years interventions

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

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

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

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