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

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

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

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

Evidence on the effectiveness of early years interventions

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

Pregnancy and health inequalities

Teenage pregnancy and early motherhood is strongly correlated with socio-economic disadvantage. Teenage pregnancy has been associated with pre-natal depression and anxiety, compromised antenatal health, lower educational attainment and poor longer-term opportunities[1]. This often results in long term benefit dependency, poverty and inter-generational health inequalities. Therefore, averting teen pregnancy can be useful in reducing health inequalities.

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

A separate study found evidence to support the success of a number of interventions to avert teen pregnancy such as school based sex education, education linked to contraceptive services, youth development programmes and family outreach[2]. Programmes offering education support to improve job prospects can also motivate young people to avoid pregnancy. While the qualitative evidence suggests that these programmes are effective there is currently no evidence from randomised controlled trials available.

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

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

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

Therefore improving the general nutritional intake and nutritional status of women of childbearing age in low-income areas could be a useful intervention. These interventions could include food fortification programmes; information, education and communication programmes; and nutritional advice at antenatal visits. One study found that calcium supplements can reduce pre-term birth and incidence of low birth weight, and that balanced dietary supplements consistently improve foetal growth[3]. Despite these health benefits, there are significant challenges in engaging young, low-income mothers-to-be[4]. Advice and information alone does not appear to change dietary behaviour, so more direct interventions such as vouchers or provision of food and supplements have a greater chance of success.

Evidence suggests that multi-faceted initiatives are more likely to be effective for substance use reduction, such as smoking[5]. The London Health Observatory (2007) found that smoking in pregnancy is the single biggest preventable contributor to the differences in infant mortality and life expectancy between socio-economic groups. Therefore a key factor for achieving lower levels of infant mortality in disadvantaged areas is to reduce the prevalence of smoking during pregnancy. Even a reduction in smoking during pregnancy can improve health outcomes[6]. Unfortunately there is a lack of robust evidence of what works to reduce smoking during pregnancy in London. Given the substantial benefits that could arise, it may be worth investigating smoking cessation interventions further in London. Routine contact with health professionals during the prenatal period may offer opportunities for these types of interventions.

Limited evidence suggests that antenatal classes can have positive effects in improving health outcomes, but a key issue is the degree to which parents living in disadvantaged areas are able to access the support that is available and whether they feel it meets their needs (Growing up in Scotland survey 2007[7]). PIPPIN is an example of an antenatal class programme in England. It targets both mainstream and hard-to-reach families However, only one small evaluation has been undertaken. The early findings of this evaluation suggest that participating parents are more confident, less anxious and better able to cope with parenthood than non-participants.

3. *Asthana, S and Halliday, J. 2006. 'What works in tackling health inequalities? Pathways, policies and practice throughout the lifecourse'.*
4. *Hallam, A. for Scottish Government. 2008. 'The Effectiveness of Interventions to address health inequalities in the early years: a review of relevant literature'.*
5. *Hallam, A. for Scottish Government. 2008. 'The Effectiveness of Interventions to address health inequalities in the early years: a review of relevant literature'.*
6. *Hallam, A. for Scottish Government. 2008. 'The Effectiveness of Interventions to address health inequalities in the early years: a review of relevant literature'.*
7. *Reported in Hallam, A. for Scottish Government. 2008. 'The Effectiveness of Interventions to address health inequalities in the early years: a review of relevant literature'*

Early childhood and health inequalities

Breastfeeding is beneficial to both the mother and baby, but the UK has one of the lowest rates of breastfeeding worldwide, especially amongst disadvantaged families[8]. Breastfeeding provides complete nutrition for the development of babies and helps to protect babies against a number of illnesses. Medical evidence to support increased breastfeeding is strong (hence Department of Health supports the UNICEF Baby Friendly Initiative including breastfeeding programme[9]), but there is a limited amount of evaluation evidence to show what is cost-effective. Multi-faceted interventions appear to be the most effective and should cover the ante and post-natal period with repeated contact with professionals or educators[10].

A number of studies undertaken by NICE[11] found evidence to support a mix of:

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

A healthy environment is important for young children. Supporting parents to achieve a smoke-free home environment has been found to be more successful than programmes to stop parents smoking[12]. Intensive counselling services about the risks of smoking were effective in increasing knowledge, but had little impact on changing attitudes and behaviours towards smoking. Home visiting programmes can reduce the rate of child injury in the home and basic modifications to the environment (eg playground design) can reduce the severity and frequency of accidents. Nutrition can be improved through broad measures to improve income in disadvantaged household and improving access to cheap, nutritious food. These are more likely to be effective than providing information and education about nutrition. As with the other health outcomes discussed above, these have not been robustly evaluated for cost-effectiveness.

Effective delivery techniques for early intervention (including parenting)

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

8. *Hallam, A. for Scottish Government. 2008. 'The Effectiveness of Interventions to address health inequalities in the early years: a review of relevant literature'*
9. *NICE guidance promotes the adoption and implementation of the WHO/UNICEF UK Baby Friendly Initiative (BFI) as the best evidence-based, worldwide vehicle to raise levels of breastfeeding prevalence. See also: http://www.babyfriendly.org.uk/items/item_detail.asp?item=620*
10. *Hallam, A. for Scottish Government. 2008. 'The Effectiveness of Interventions to address health inequalities in the early years: a review of relevant literature'*
11. *Hallam, A. for Scottish Government. 2008. 'The Effectiveness of Interventions to address health inequalities in the early years: a review of relevant literature'*
12. *Asthana, S and Halliday, J. 2006. 'What works in tackling health inequalities? Pathways, policies and practice throughout the lifecourse'.*

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

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

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

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

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

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

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

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

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

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

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

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