Appendix C2

Economic evidence tables and economic methodology checklists

Child abuse and neglect

Research question 9 – early help

What is the impact of interventions aiming to provide early help to children and young people identified as at risk of child abuse and neglect?

Population: Expectant mothers at high risk of abuse and neglect.
Intervention model type: home visiting (family partnership model).

Barlow J, Davis H, McIntosh E, Jarrett P, Mockford, C & Sarah S-B (2007). Role of home visiting in improving parenting and health in families at risk of abuse and neglect: results of a multicentre randomised controlled trial and economic evaluation. Arch Dis Child, 92: 229–33

Country, study type and intervention details	**Study population, design and data sources**	**Costs, outcomes**	**Results: cost-effectiveness**	**Summary**
Country: UK **Internal & external validity:** +/++ **Date:** unclear **Follow-up period:** 18 months **Study type**: Incremental cost analysis/cost–consequence analysis **Intervention:** Health visitors trained in the Family Partnership Model, provide weekly home visiting from 6 months antenatally to 12 months	**Population**: Antenatal mothers identified as high risk of abuse and neglect <u>Use of screening or targeting</u>: Yes, community midwives used a range of demographic and socioeconomic criteria (e.g., mental health problems or housing problems) **Study design:** ITT, n=154 Intervention, n=67 Control, n=64 **Data sources:** RCT **Sources of effectiveness data:**	**Primary outcomes: description and values** <u>Risk factors for abuse and neglect</u> Parent–child interaction 1. Mother–infant interaction, 3-min video recording and coded for maternal sensitivity and infant cooperativeness using the CARE Index • Assessed at 12 months Mother psychopathology 2. General Health Questionnaire • Assessed at 6 & 12 months 3. Postnatal depression, Edinburgh Postnatal Depression Scale • Assessed at 8 weeks Parenting attitudes and competence 4. Adult-Adolescent Parenting Inventory, • Assessed at 6 & 12 months Parenting competence/confidence and experiences 5. Parenting Sense of Competence	**Findings on cost-effectiveness** Increased cost (£3,246) for improvements in two primary outcomes per infant over an 18-month period (mother's sensitivity, infant cooperativeness, social support). The incremental cost-effectiveness ratio is £3,034 per unit change in effect on measures of mother's sensitivity to their infant at 12 months (no statistically significant differences at 6 months) and an incremental cost-effectiveness ratio of £2,270 per unit change in effect for infant cooperativeness, both of which both of which were measured on the mother–child interaction CARE index. For all other outcomes, standard care is more cost-effective compared to the intervention. **Costs**	**Applicable:** Applicable **Quality**: There are some issues with reporting (only total costs are reported and service use was not disaggregated) but appropriate statistical analyses were conducted on costs (bootstrapping) to account for uncertainty. **Summary:** Overall, this paper is useful in informing recommendations about the short-term cost-effectiveness of the intervention. However, the long-term cost-effectiveness results is unclear.

postnatally Intended to promote parent–infant interaction **Control:** Standard services available to intervention & control groups, includes health visiting but less intensively (control group = mean 9.2 visits by health visitors)	RCT **Sources of resource use data:** Retrospective self-report **Sources of unit cost data**: National unit costs 2003/4	scale • Assessed at 12 months 6. What Being the Parent of a Baby is Like (WBPB) • Assessed at 12 months **Secondary outcomes,** Assessed at 6 months <u>Infant health and wellbeing</u> 7. Parents reported infant well-being at 6 months (feeding, immunisation, disability). Assessed at 6 & 12 months <u>Risk factors for abuse and neglect</u> 8. Social support, Social Support Questionnaire 9. Marital/partner discord, Rust Inventory of Marital State 10. Self-esteem, Self-Esteem Inventory 11. Perceived self-efficacy, Generalised Self-Efficacy Scale 12. Parenting stress, the Parenting Stress Inventory Assessed at 12 months <u>Risk factors for abuse and neglect</u> 13. Quality of the infant's home environment, HOME Inventory <u>Infant health and wellbeing outcomes</u> 14. Infant–toddler social and emotional adjustment, Brief Infant–Toddler Social and Emotional Assessment comprising two subscales: competence and problems. 15. Infant development, Bayley Scales of Infant Development	The mean costs per infant in the intervention and control arms were £7,120 vs £3,874, a statistically significant difference of £3,246 (bootstrapped 95% CI for the difference £1,645–4,803). The authors write that the incremental cost per child 'identified' as being ill-treated on the basis of child protection proceedings between 6 and 12 months was £54,370. However, these are based on non-significant differences (relative risk 2.02, 95% CI, 0.46 to 2.54). The total costs of the intervention arm were greater because of increased home visits, phone calls to home visitors, appointments with psychologists, psychiatrists, foster care, adoption and home visitor training costs. However, there were cost savings for clinic health visiting, hospital accident and emergency visits for infants and mothers, and alcohol and drug counselling.	

		16. Maternal assessment of the infant's temperament, Infant Temperament Scale (ITS) <u>Incidence of abuse and neglect</u> 17. Participating health visitors provided data relating to: case conferences, children on the protection register, children removed from the home and child deaths. **Resource use:** Authors do not report much information in this area. It is only reported that the perspective of the study was societal (i.e., health service, social services, legal and housing costs were included). **RESULTS** All outcomes were not statistically different with the exception of outcomes listed below (two outcomes). **Primary outcome** 1. **Mother's sensitivity** using the Parent-child interaction (CARE index) • No differences at 6 months. • At 12 months, women in the intervention arm were significantly more sensitive to their babies (p=0.04) Sample size: I (n=62), C (n=59), Mean scores at 12 months follow-up I=9.27 (SD=2.67), C=8.2 (S=3.26)		

		2. **Infant cooperativeness** using the Parent-child interaction (CARE index) • At 12 months, women in the intervention arm had better scores for infant cooperativeness (p=0.02) Sample size: I (n=62), C (n=59) Mean scores at 12 months follow-up I=9.35 (SD=3.08), C=7.92 (SD=3.7) **Secondary outcomes** 7. One significant group effect was identified for social support (p.0.004), indicating a greater fall-off in social support in the control group, possibly due to the low response to this question at follow-up. Sample size, I (n=12), C (n=17), Baseline, I=20.67 (SD=8.47), C=20.41 (SD=6.61) Follow-up, I=19.41 (SD=7.97), C=15 (SD=6.37)		

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: Barlow J, Davis H, McIntosh E, Jarrett P, Mockford C & Sarah S-B (2007). Role of home visiting in improving parenting and health in families at risk of abuse and neglect: results of a multicentre randomised controlled trial and economic evaluation. Arch Dis Child, 92: 229–33	
Guideline topic: Child abuse and neglect	
Economic priority area: Early help interventions	**RQ:** 9
Checklist: Section 1	
Yes/No/Partly/Not applicable	Detail
1.1 Is the study population appropriate for the review question?	
Yes	Antenatal mothers identified as high risk using a screen by community midwives using a range of demographic and socioeconomic criteria (e.g., mental health problems or housing problems).
1.2 Are the interventions appropriate for the review question?	
Yes	Health visitors trained in the Family Partnership Model to provide a weekly home visiting service from 6 months ante-natally to 12 months postnatally. Standard services included health visiting but less intensively (control group = mean 9.2 visits by health visitors).
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Unclear	Study was published in 2007 but it is unclear when the RCT was carried out. It is not clear whether comparator arms are similar in current context, as well as any other institutional changes.
1.4 Are the perspectives clearly stated and what are they?	
Yes	Societal (health service, social services, legal and housing costs were included). However, these are not presented in the report and nor are the costs presented by category. The authors report descriptively the main changes in resource use, which appear to be primarily NHS and social services. However, statistical significance figures were not provided.
1.5 Are all direct effects on individuals included?	
Yes	Included service level and individual outcomes. A range or outcomes were included, including incidence of abuse and neglect as measured by service-level outcomes (child protective services) in addition to risk factors using parent and home indicators and measured child health and wellbeing outcomes. See evidence tables for more detail.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	3.5% discount rate
1.7 How is the value of effects expressed?	
Resource use was not reported in natural units, rather, they were presented in monetary units (as total costs per infant in either intervention and control group arms).	
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	See section 1.4.

General conclusion
Overall, the study as an economic evaluation is applicable, however, there are issues in that resource use is reported as a total cost (including costs of the intervention) rather than being presented in disaggregate.

Section 2: Study limitations (the level of methodological quality)	
This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
NA	This is a cost–consequence analysis.
2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
Partly	The authors note that a longer follow-up period may be needed to detect 'sleeper effects'.
2.3 Are all important and relevant outcomes included?	
Yes	See section 1.5
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	RCT
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	RCT
2.6 Are all important and relevant costs included?	
Yes	Analysis takes a societal perspective but due to poor reporting we are only presented with total cost estimates (encompassing all categories and includes cost of the intervention) rather than being able to see changes across different cost categories.
2.7 Are the estimates of resource use from the best available source?	
Partly	Retrospective self report.
2.8 Are the unit costs of resources from the best available source?	
Yes	National unit costs using prices from 2003/4.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Partly	Authors provide incremental cost-effectiveness analysis on the basis of identifying a child being maltreated using measures of child protection proceedings. However it is not clear how this figure was calculated as there are multiple estimates of identification provided (e.g., reported outcomes include identification of child protection issues, 17% intervention, 15% control; or, placement on the child protection register or care proceedings, which was expressed as a relative risk rather than in natural units; and proportion of children being removed from the home, 6% intervention, 0% control. Furthermore, none of the outcomes were statistically significant).
2.10 Are all-important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Bootstrapping was conducted on estimation of costs in addition to multivariate analyses to control for covariates.
2.11 Is there any potential conflict of interest?	
No	Authors write there are no competing interests.

	Funding provided by Department of Health, Nuffield Foundation.
2.12 Overall assessment	
There are some issues with reporting (only total costs are reported and service use was not disaggregated) but appropriate statistical analyses were conducted on costs (bootstrapping) to account for uncertainty. Overall, this paper is useful in informing recommendations about the short-term cost-effectiveness of the intervention. However, the long-term cost-effectiveness results is still unclear.	

Population: Parents with infants aged less than 3 months.
Subgroups: (1) young, expectant, first-time mothers;
(2) mothers with history of child protective services involvement.

Intervention model type: home visiting (Healthy Families New York)

Dumont K, Kirkland KM-H, Ehrhard-Dietzel S, Rodriguez ML, Lee E, Layne C et al. (2011). A Randomized Trial of Healthy Families New York (HFNY): Does Home Visiting Prevent Child Maltreatment? New York State Office of Children and Family Services and University at Albany, State University of New York

Country, study type and intervention details.	**Study population, design and data sources.**	**Costs, outcomes**	**Results: cost-effectiveness**	**Summary**
Country: non-UK USA **Internal & External validity:** +/+ **Date:** 2000/7 **Follow-up period:** 7 years **Study type**: Cost-consequence analysis	**Population**: <u>Use of screening or targeting:</u> Yes, expectant parents and parents with an infant under 3 months deemed to be at risk for CA&N, and live in communities with high rates of teen pregnancy, infant mortality, welfare receipt, and late/no prenatal care, eligibility based on 25+ points on the Kempe Family Stress Checklist <u>Subgroups</u>:	**Outcomes: description and values** Overall aim is to promote protective factors and reduce risk factors associated with delinquency (p6) **PRIMARY OUTCOMES** <u>(1) Precursors to delinquency (Measured at year 7)</u> 1. Participate in gifted programs 2. Special education services 3. Remedial services for math and writing, 4. Repeating a grade 5. Skipping school or playing hooky 1+ 6. Receptive language skills, children were administered the Peabody Picture Vocabulary Test 4th Edition (PPVdT-IV) 7. Children's self-reported feelings of	**Findings on cost-effectiveness** The economic evaluation has limited applicability as it does not comprehensively capture all relevant health care costs (only hospital costs associated with infant birth are measured) and there are some potentially minor methodological issues with the calculation of social care services (unclear definition of preventative services but otherwise includes robust costs of child protective services). **<u>ALL SAMPLE</u>**: At 7-year follow-up, the intervention	**Applicability:** Limited applicability. **Quality**: Not all relevant health care costs included and some potentially minor issues in calculation of social care service costs in one domain. **Summary:** Overall, it is not

Intervention: Healthy Families New York (HFNY), Intensive home visitation 'The average length of enrollment in HFNY was 20.68 months (SD=18.47). Just over half (52%) of the participants remained enrolled in the program by one year post-enrollment' (p11). **Control:** Information on and referral to appropriate services other than home visiting.	Recurrence reduction opportunity (RRO) = 'women who were involved in a confirmed report (as a non-victim) within five years prior to random assignment (n=104)' (p55) High prevention opportunity (HPO) = 'first-time mothers, under the age of 19, who were randomly assigned to the program at a gestational age of 30 weeks or less (n=179)' (p55) General characteristics: 31% <19 years old, 47% below high school education; 55% first time mothers **Study design:** ITT 7-year, 3-site RCT 15% of sample are HPO Baseline, n=1173 I, N=579; C, N=594 Year 1: n=1060 (90%) I, n=524, C, n=536 Year 2: n=992 (85%) I, n=486, C, n=506d Year 7: n=942 n=800 children	loneliness and social dissatisfaction, particularly with peers at school (Loneliness and Social Dissatisfaction Questionnaire) 8. Anti social tendencies – Seattle Social Development Project and the Dominic-R measurement tools (stealing, cheating, and fighting, and relational aggression such as social exclusion and retaliation) 9. Delay of gratification tasks (2) Involvement with child protective services (CPS), preventive services, and foster care (Measured at year 7) • Administrative indicators • Mother self-report • Child self-report (See effectiveness evidence tables) **PRIMARY OUTCOMES, RESULTS** (Measured at year 7) **Overall sample** **Precursors to delinquency (N=897),** Intervention, n=452 Control, n=445 **Children interviews: N=800** (p10) All measures were not statistically different, with the exception of the following, which favoring the intervention group Participating in a gifted program C=1.99% vs. I=5.38%, AOR or effect size=2.80, p<0.01 Percentage receiving special education C=16.74 % vs. I=12.33%	is more cost-effective for child educational outcomes (higher percentage in a gifted program, lower percentage repeating a grade, and lower percentage of individuals with a receptive vocabulary below the average) but less clear in reducing incidence of abuse and neglect using measures of mother's self report data (rates of psychological aggression and frequency of serious physical abuse) as child's self-report data found no differences between groups. Using service-level outcomes of child protective services, standard care is more cost-effective, as there were no significant differences between groups (using administrative data on Child Protective Services (mother or target child confirmed subject or victim of a CPS report, initiation of child welfare services, or foster placements)). **SUBGROUP ANALYSIS: RPO** At 7-year follow-up the intervention is marginally more cost-effective in reducing incidence of abuse and neglect as measured by service-level outcomes (reductions in cumulative rates of confirmed child welfare reports for all types of abuse and neglect, reductions in reports where the mother was the confirmed subject, reductions in the cumulative rates of confirmed reports of	clear whether the intervention is cost-effective in the English context.

	Data sources: RCT **Sources of effectiveness data:** RCT, administrative databases & interviews to track child abuse and neglect reports Data from self-report and CPS records are likely to be understated in relation to abuse and neglect. CPS reports are also prone to surveillance bias (it is cautioned not to rely this measure as the single measure of child abuse and neglect). **Sources of resource use data:** RCT. Administrative sources for use of social care services provided by government (and use of healthcare (hospital) services at time of birth (using Medicaid, administrative databases). **Sources of unit cost data:** Charges data <u>Government social care resource use</u>: • <u>Child protective services</u> = average expenditures	AOR or effect size=0.70, p<0.01 <u>Skip school often or playing hooky</u> Conflicting evidence (self reported was lower in intervention group child response but mothers reports indicated no differences) C=6.47% vs. I=2.35% AOR or effect size = 0.35, p<0.10 **<u>HPO</u>** (Measured at year 7) **Precursors to delinquency** All measures were not statistically different, with the exception of the following, which favoring the intervention group <u>Participating in a gifted program</u> C= 0% vs. I=5.8%, AOR or effect size = none presented, p<0.10 <u>Percentage repeating a grade</u> C= 23.94% vs. I=12.4%, AOR or effect size = 0.45, p<0.10 <u>Receptive vocabulary, percentage below average</u> C= 77.6% vs. I=59.4% AOR or effect size = 0.43, p<0.05 **RESOURCE USE:** Perspective is that of government. **Measurement frequencies and method**:	physical abuse, and reductions in the mean numbers of confirmed reports of all types of abuse and neglect, and reduction in the initiation of child welfare services). However, there were no significant differences in rates of foster care placement. **<u>SUBGROUP ANALYSIS: HPO</u>** At 7-year follow-up the intervention is more cost-effective for child educational outcomes (higher percentage in a gifted program and a lower percentage receiving special education) and unclear reducing incidence of abuse and neglect using measures of mother's self report data (frequency and rates of non-violent discipline and frequency of serious physical abuse) as these were not the same outcomes as reported by children, although significant differences were found for other measures (prevalence of minor physical aggression). Using service-level outcomes of child protective services, standard care is more cost-effective, as there were no significant differences between groups (using administrative data on Child Protective Services (mother or target child confirmed subject or victim of a CPS report, initiation of child welfare services, or foster placements)).	

	per individual (p.94) • Preventative services = average expenditures (because no info was obtainable on types or intensity of service use) (p.93)	**(1) Government services:** Food stamps (p10) NYS Office of Temporary and Disability Assistance (OTDA) Time period: Random assignment through the target child's 7th birthday (pp25–6) Public assistance (payments) (p10) NYS Office of Temporary and Disability Assistance (OTDA) Time period: Random assignment through the target child's 7th birthday (pp25–6) Foster Care (p.9): NYS Child Care Review Service (CCRS) Time period: Random assignment through the target child's 7th birthday (pp25–6) Preventative services (p10) NYS Office of Temporary and Disability Assistance (OTDA). 'We were unable to determine the specific type of preventive service provided, or the length of time the preventive service was received, we chose to apply the average yearly cost per individual of receiving prevention and support services only to those children who were not also placed in foster care during that time period to avoid over counting services' (pp93–4). CPS investigation (p9): NYS Statewide Automated Child Welfare Information System and NYS Child Care Review Service (CCRS). Time period: Random assignment through the target child's 7th birthday (pp25–6)	**Program costs (average costs per family from random assignment to child's 7th birthday):** All sample: C=$518 v. I=$4,619 RPO: C=$484 v. I=$4,404 HPO: C=$509 v. I=$4,635 Price year: 2000 Discounting: 3% Accounted for inflation: yes	

		Medicaid and hospitalisations at time of birth (specifically, low birth weight – due to data protection, Medicaid expenditures up to age 7 could not be retrieved). Taken from the NYS Department of Health. **(2) Tax revenues and mother's earned income** Earned income (p9): Time period: Baseline survey (collected on one job). Survey years 1, 2, and 7 (collected for up to five jobs within the period of time since the last interview) (p23). **RESOURCE USE, RESULTS (p104)**: Whole sample: • Tax revenues o C=4,389.75 vs. I=$4,194.83, p=0.69 • Government programs: o C=$28,763, vs. I=$27,357, p=0.53 Government programs: o Food stamps ▪ C=$10,950 vs. I=$11,091, p=0.89 o Public assistance ▪ C=$10,971, vs. I= $10,474, p=0.74 o CPS investigations ▪ C=$846, vs. I=$859, p=0.96 o Preventative services ▪ C=$1,136, vs. I=$966, p=0.73 o Medicaid delivery and		

		hospitalisations ▪ C=$3,374 vs. I=$2,276, p=0.13 ▪ Due to lower rate of low birth-weight babies to those assigned HV prior to 30 weeks gestation <u>RRO subgroup:</u> • Tax revenues o C=$3,182 vs. I=$1,704, p=0.34 • **Government programs:** o **C=$56,952 vs. I=$48,817, p=0.12** <u>Government programs:</u> o Food stamps ▪ C=$17,763 vs. I=$15,818, p=0.54 o Public assistance ▪ C=$22,179 vs. I=$16,663, p=0.41 o CPS investigations ▪ C=$2,667 vs. I=$1,486, p=0.46 o Preventative services ▪ C=$3,188 vs. I=$2,654, p=0.84 o Medicaid delivery and hospitalizations ▪ C=$1,120 vs. I=$2,416, p=0.54 <u>HPO subgroup</u>: • Tax revenues o C=$3,753 vs. I=$3,705, p=0.96 • Government programs: o C=$31,391, vs. I=$33,107, p=0.66		

		<u>Government programmes:</u> ○ Food stamps ▪ C=$11,045 vs. I=$12,217, p=0.59 ○ Public assistance ▪ C=$11,327 vs. I=$12,902, p=0.70 ○ CPS investigations ▪ C=$581 vs. I=$388, p=0.67 ○ Preventative services ▪ C=$1,178 vs. I=$99, p=0.36 ○ Medicaid delivery and hospitalisations ▪ C=$6,711 vs. I=$5,649, p=0.58		

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: Dumont K, Kirkland KM-H, Ehrhard-Dietzel S, Rodriguez ML, Lee E, Layne C, et al. (2011). A Randomized Trial of Healthy Families New York (HFNY): Does Home Visiting Prevent Child Maltreatment? New York State Office of Children and Family Services and University at Albany, State University of New York	
Guideline topic: Child abuse and neglect	
Economic priority area: Early help interventions	**RQ:** 9
Checklist: Section 1	
Yes/No/Partly/Not applicable	Detail
1.1 Is the study population appropriate for the review question?	
Yes	Yes, expectant parents and parents with an infant under 3 months deemed to be at risk for CA&N, and live in communities with high rats of teen pregnancy, infant mortality, welfare receipt, and late/no prenatal care, eligibility based on 25+ points on the Kempe Family Stress Checklist. Subgroup analysis conducted on 1) recurrence prevention group and 2) primary prevention group.
1.2 Are the interventions appropriate for the review question?	
Yes	Healthy Families New York (HFNY), Intensive home visitation program.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Unclear	Study conducted in New York, USA, 3 sites. In terms of measuring changes in resource use – it is unclear whether thresholds and baseline use of services are similar or different (e.g., measured resource use included: food stamps, public assistance, preventative services, foster placements, and child protective service investigations).
1.4 Are the perspectives clearly stated and what are they?	
Yes	Government perspective (including transfer payments: food stamps and public assistance payments), tax revenues, hospitalisation costs at birth, social care services (preventative services and child protective services).
1.5 Are all direct effects on individuals included?	
Yes	Includes individual and service level outcomes. Includes incidence of child abuse and neglect via administrative databases and self-report from mothers and children. Child outcomes include those thought to be precursors to delinquency (educational and psychosocial outcomes – see evidence tables for more detail).
1.6 Are all future costs and outcomes discounted appropriately?	
Partly	Discounted at 3% and not at 3.5%.
1.7 How is the value of effects expressed?	
Monetary	Resource use is expressed in terms of monetary units.
1.8 Are costs & outcomes from other sectors (including unpaid care, where relevant) fully & appropriately measured & valued?	
Partly	See section 1.4
General conclusion	

As an economic evaluation, the study has limited applicability because not all relevant health care costs included and there are some potentially minor issues in calculation of social care service costs in one domain. Furthermore, results are based on US and not UK unit costs and there are issues of transferability of results due to potential differences in patterns of social care service use (i.e. child protection services).

Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Yes	Cost–consequence analysis.
2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
Partly	The study was followed up over a 7-year period, with the intervention duration a mean of 2 years.
2.3 Are all important and relevant outcomes included?	
Yes	See section 1.5
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	RCT via administrative databases or interviews
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	RCT via administrative databases or interviews. There were issues with missing data, but these were accounted for using statistical analysis to check whether missing data were missing at random or not.
2.6 Are all important and relevant costs included?	
Partially	See section 1.4
2.7 Are the estimates of resource use from the best available source?	
Partly	Administrative databases but some assumptions were required in calculation of costs for preventative services (no information was available on types and intensities of services accessed) and average cost information was applied to hospitalisation costs at birth.
2.8 Are the unit costs of resources from the best available source?	
No	Measured as charges data
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	Can be calculated from the data.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
N/A	
2.11 Is there any potential conflict of interest?	
Unclear	
2.12 Overall assessment	

The impact on resource use has limited applicability to the English context. Overall, it is not clear whether the intervention is cost-effective in the English context.

Population: Vulnerable pregnant women
Intervention model type: home visiting

Stamuli E, Richardson G, Duffy S, Robling M & Hood K (2015). Systematic review of the economic evidence on home visitation programmes for vulnerable pregnant women. 115: 19–44

**This review was identified in the update search

Country, study type and intervention details	**Study population, design and data sources**	**Costs: description and values** **Outcomes: description and values**	**Results: cost, effectiveness**	**Summary**
Countries: USA, England, Chile **Study design:** Systematic review of economic evaluations **Internal & external validity:** ++/++ **Date:** Mixed **Time horizon:** Mixed **Intervention:** Diverse types of home visiting interventions	**Population**: Inclusion criteria were home visitation programmes for pregnant women who are vulnerable, defined as young or of low socioeconomic status. Participant characteristics did vary even within this definition. **Data sources:** (1) Systematic review of economic evaluations. (2) Reviewers do not report what date was used as the cut-off point for inclusion/exclusion. Earliest included study is from 1993. **Sources of effectiveness data:** 12 studies based on RCT or meta-analysis of RCTs. 1 UK study. 1 Chilean	**Outcomes:** All studies found that the intervention improved outcomes relative to comparator. **Resource use:** Perspective of economic analysis varied. In US studies, perspective is that of government, and includes welfare and tax income (differences in employment rates). UK study took a societal perspective (including health, social services, legal, local authority housing costs, costs to families).	**Findings** <u>UK study</u> (1) UK cost-effectiveness analysis adopting societal perspective found £2,723 increased net costs per extra unit of maternal sensitivity and £2,033 increased net cost per extra unit of improvement on the infant cooperativeness scale on the Care Index (p34). For some outcomes, the intervention is more costly, but more effective. Time horizon is 18 months. <u>US studies</u> (2) NFP Elmira[22] found savings of $180 (1980 prices) to government at child's 4th birthday (2 years after program end) vs. usual care. Savings were due to reduced use of social welfare programmes. Analysis at child's 15th birthday[21] found savings of $18,611 per family (1996	**Applicability:** UK study is applicable. However US and Chilean studies are only partly applicable because their comparison services and contextual differences will affect the generalisability of findings to the UK. **Quality**: US and Chilean studies were of variable quality. UK study was of good economic quality. **Summary:** The systematic review identified only 1 UK study with good economic quality, taking a societal perspective. Findings illustrate increased net cost for improvements in the outcomes

Control arm: Diverse	study. 10 US studies. **Sources of resource use data & source of unit cost data:** The one UK study collected costs prospectively via a 'resource consumption' diary. This study reported source of unit costs. Almost all US studies collected costs retrospectively via participant interview and checking administrative records but it is not clear whether all relevant costs were included or just the ones that were available. One US study estimates costs from literature but the reporting methods are incomplete. Only 2 US studies provided an itemised list of costs included in the analysis and information on source for unit costs. In the Chilean study, approach was not clear and source of unit costs not reported.	Chilean study perspective was that of health services (local or national) (p31).	prices). This was supported by another analysis of the study.[28] NFP Elmira found that low-risk families do not generate enough cost-savings to offset intervention costs ($1,582 per person, 1980 prices). (The systematic review authors do not report whether this is for both time periods and do not report the changes in cost (whether it was cost neutral or cost increasing). (3) An analysis on NFP Denver found a savings of $1600 (2001 prices) to the government when nurses did home visiting. (It is unclear whether reported net costs are per person or for the entire group comparison). When para-professionals did home visiting then net costs to the government increased by $618. It is unclear what the time horizon is and for what aged children. A cost-effectiveness study at the 9th year found that benefit-cost-ratio was $3.05 based on a savings of $31,994 per nurse-visited mother compared to a programme cost of $10,503 (2005 prices) compared to the para-professional-visited mother, with a net benefit ratio of $2.33 per $1 spent (savings of $16,514 compared to program cost of $7,087). (4) An analysis of NFP Memphis found net cost savings of 25.7% when measured at the child's 4th birthday. Cost savings were generated from reductions in welfare payments (p33). A	of maternal sensitivity and infant cooperativeness (over an 18-month period). The results from this review are consistent with our findings, which we included in the main search. The Chilean study is a new addition to our review of economic literature. It is unclear whether the findings are applicable but this study did find improvement in some outcomes for an increased cost from the view of health services, as measured over a 15-month period. Likewise, the results of the economic analysis from the US studies have unclear generalisability to the UK. Their analysis takes a government perspective and most of the cost savings were accrued via reductions in welfare payments. Changes in health and social care services are less clear. However, one study did report reductions in substance misuse and reductions in reports of child abuse and neglect. Across all US studies, from the government perspective only, the home visiting programs led to improvements in outcomes and net savings of various

			cost analysis based on results at the child's 12th birthday showed total savings of $12,300 (discounted) over the entire time horizon of the programme vs. program cost of $11,511 (2006 values). Savings were due to reduction in welfare payments only and did not include government resources (pp33–4). (5) An economic analysis based on a meta-analysis of all NFP studies found a benefit of $2.88 for $1 spent. A total net present benefit of $17,180 per home visited family (2003 prices). A re-analysis resulted in a higher benefit, of $3.02 per $1 spent (2007 prices). And yet another re-analysis produced an even lower figure than the first, $2.37 per $1 spent (2013 prices). These benefits were driven by reduction in crime (mother and child), better high school graduation rates and test scores (child), reduction in child abuse and neglect, and a reduction in alcohol and drug usage. Reviewers say that results' time horizon are not reported (p33). <u>Chilean study</u> (6) The Chilean study, from health services perspective, found an increased net cost of $40 per home visited family over a 15-month period. This resulted in a cost-effectiveness ratio of $13.50USD per one unit improvement in Goldberg's Questionnaire for maternal mental health (p29).	magnitudes. The quality of the US and Chilean studies may have some potentially serious limitations due to the lack of reporting on unit costs and itemised list of included costs. This results in some questions about the reliability and completeness of the findings. The results of the US and Chilean studies provide some indication of the intervention's impact on costs, but their limited perspective means that we cannot be sure about the completeness of the findings. Further analyses would also be needed to translate unit costs into the UK context. Most studies did not have an adequate enough time horizon. The time horizon should be long enough to include the child's trajectory, if we assume there would be lagged effects. That most studies had a short time horizon, the results may not have captured all relevant future costs and benefits. In conclusion, the current studies do not provide the appropriate information to inform UK practice.

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: Stamuli E, Richardson G, Duffy S, Robling M & Hood K (2015). Systematic review of the economic evidence on home visitation programmes for vulnerable pregnant women, 115: 19–44	
Guideline topic: Child abuse and neglect	
Economic priority area: Early help interventions	**Q:** 9
Checklist: Section 1	
Yes/No/Partly/Not applicable	Detail
1.1 Is the study population appropriate for the review question?	
Yes	Vulnerable pregnant women.
1.2 Are the interventions appropriate for the review question?	
Yes	Home visiting.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Mixed	Systematic review of economic evaluation includes only 1 UK study, 1 Chilean study, and 10 US studies.
1.4 Are the perspectives clearly stated and what are they?	
Yes	Reviewers described the perspectives of the studies where it was reported.
1.5 Are all direct effects on individuals included?	
Mixed	Reviewers described outcomes measured where they were reported.
1.6 Are all future costs and outcomes discounted appropriately?	
Mixed	Reviewers reported on studies' approach to discounting where it was reported.
1.7 How is the value of effects expressed?	
Mixed	Reviewers report where studies provide this information.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Mixed.	
General conclusion	
UK study is applicable. However US and Chilean studies are only partly applicable due to differences in comparator services and contextual differences, which affect generalisability of findings to the UK.	

Section 2: Study limitations (the level of methodological quality)
This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?

Not a model. Systematic review.	
2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
Mixed.	
2.3 Are all important and relevant outcomes included?	
See section 1.4.	
2.4 Are the estimates of baseline outcomes from the best available source?	
Mixed.	
2.5 Are the estimates of relative intervention effects from the best available source?	
Mixed.	
2.6 Are all important and relevant costs included?	
Mixed.	
2.7 Are the estimates of resource use from the best available source?	
Mixed.	
2.8 Are the unit costs of resources from the best available source?	
Mixed.	
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Mixed.	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Mixed.	
2.11 Is there any potential conflict of interest?	
Not clear.	
2.12 Overall assessment	
• US and Chilean studies were of variable quality. UK study was of good economic quality. • The systematic review identified only 1 UK study with good economic quality, taking a societal perspective. Findings illustrate increased net cost for improvements in the outcomes of maternal sensitivity and infant cooperativeness (over an 18-month period). The results from this review are consistent with our findings, which we included in the main search. • The Chilean study is a new addition to our review of economic literature. It is unclear whether the findings are applicable but this study did find improvement in some outcomes for an increased cost from the view of health services, as measured over a 15-month period. • Results of the economic analysis from the US studies have unclear generalisability to the UK. Their analysis takes a government perspective and most of the cost savings were accrued via reductions in welfare payments. Changes in health and social care services are less clear. However, one study did report reductions in substance misuse and reductions in reports of child abuse and neglect. Across all US studies, from the government perspective only, the home visiting programs led to improvements in outcomes and net savings of various magnitudes.	

Population: Children of all ages
Intervention model type: Multi-component 'family connections'

DePanfilis D, Dubowitz H & Kunz J (2008). Assessing the cost-effectiveness of Family Connections. Child abuse and neglect, 32: 335–51

Country, study type and intervention details	**Study population, design and data sources**	**Costs, outcomes**	**Results: cost-effectiveness**	**Summary**
Country: non-UK, USA **Internal & External validity:** -/+ **Date:** Patient recruitment between 1997 and 2001 **Follow-up period:** between 9 to 15 months (prior to, at the end of, and 6-months post intervention) **Study type**: cost-effectiveness analysis ***Intervention:** Family connections, 9 months with or without group intervention **Components:**	**Population**: High-risk families (defined by SES) with children of all ages (mean 8, range newborn to 20 years old). Referrals came from schools (30%), community agencies (22%), health clinics (21%), self (16%), public social services (12%). <u>Use of screening or targeting:</u> Yes. Referrals based on criteria (indicators about home, child and family indicators). **Study design:** ITT analysis RCT (n=154) Uptake: 72% of original eligible (N=216) sample.	**Outcomes: description and values** **Primary outcome** **Parental indicators** **Risk factors** 1. Caregiver depressive symptoms (Center for Epidemiologic Studies–Depression Scale (CES-D)). 2. Parenting stress (Parenting Stress Index Short Form (PSI/SF)). 3. Everyday stress (Every Day Stressors Index (ESI)). **Protective factors** 4. Parenting attitudes (Adult- Adolescent Parenting Inventory (AAPI)). 5. Parenting sense of competence (Parenting Sense of Competence Scale (PSOC)). 6. Family functioning (36-item Self-Report Family Inventory (SFI)). 7. Social support (Social Provisions Scale (SPS)).	**Findings on cost-effectiveness** The analysis was conducted from the provider perspective (i.e. only including costs of the intervention). This RCT has limited applicability as an economic evaluation because it only captures the costs of the intervention and does not measure changes in health, social care, education, or criminal justice resource use. Of 10 outcomes measured, only 2 were statistically different favouring the intervention (child behaviuor as measured by caregiver report of externalising and internalising child behavior problems using the Child Behavior Checklist and parental depression as measured using the Center for Epidemiologic Studies–Depressed Mood Scale). The incremental cost-effectiveness ratio for the 9-month intervention is $242 per unit change in child behavior and $552	**Applicability:** Limited applicability **Quality**: Overall, there is good level of reporting and the authors fully state the limitations of the analysis. **Summary:** It is not clear whether this intervention is cost-effective in the English context.

community outreach, individualised assessment and care planning, outcome driven service plans (increase protective factors, decrease risk factors), family counselling, multi-family supportive recreational activities ***Control arm:** Family connections, 3 months with or without group intervention Authors report that poor sample compliance in the initial design of the intervention/control groups led to combining those who were assigned with or without group intervention	Remaining unwilling to commit to weekly contacts. **Data sources:** RCT **Sources of effectiveness data:** RCT **Sources of resource use data:** RCT **Sources of unit cost data:** Charges	**Child indicators** **Child safety** 8. Child safety was assessed by observation of physical and psychological care (Child Well Being Scales [CWBS] and Child protective services reports). 9. Child abuse or neglect was assessed by computerised searches of official child abuse and neglect reports. **Child behaviour** 10. Child behavior was measured by caregiver report of externalising and internalizing child behavior problems using the Child Behavior Checklist (CBCL). **Resource use:** Only costs of the intervention were collected. Changes in other resources were not measured. **RESULTS** Only two outcome measures were statistically significantly different. The caregiver depressive symptoms was significant at case closure but not at follow-up. Changes in child behaviour were still significant at follow-up 6 months later. No significant differences in any of the family risk and protective outcomes or in child safety.	per unit change in parental depression. For all other outcomes standard care is more cost-effective. **Costs: description and values** **Total costs**: Control group: $1,821 Intervention group: $4,194 Includes salary, capital costs and overheads, transport, services provided to families.	

		Caregiver depressive symptoms Baseline to case closure, intervention caregivers had fewer depressive symptoms than the control caregivers (F=3.185, p=.045), although this difference was not significant 6 months later. **Changes in child behaviour** <u>Baseline</u> Control, 43.5 (33.1) Intervention 45.7 (28.6) <u>Follow-up (6 months)</u> Control, 38.1 (29.2), Intervention 30.5 (24) <u>Change scores</u> Control *5.4,* p<.05 Intervention 15.2, p<.01		

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: DePanfilis D, Dubowitz H (2005). Family Connections: A Program for Preventing Child Neglect. Child Maltreatment, 10(2): 108–23 DePanfilis D, Dubowitz H, Kunz J (2008). Assessing the cost-effectiveness of Family Connections. Child abuse and neglect, 32: 335–51	
Guideline topic: Child abuse and neglect	
Economic priority area: Early help interventions	**RQ:** 9
Checklist: Section 1	
Yes/No/Partly/Not applicable	Detail
1.1 Is the study population appropriate for the review question?	
Yes	High-risk families (defined by SES) with children of all ages (mean 8, range newborn to 20 years old). Referrals came from schools (30%), community agencies (22%), health clinics (21%), self (16%), public social services (12%).
1.2 Are the interventions appropriate for the review question?	
Yes	Community outreach, individualised assessment and care planning, outcome driven service plans (increase protective factors, decrease risk factors), family counselling, multi-family supportive recreational activities.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Unclear	The study was conducted in Baltimore, Maryland, USA.
1.4 Are the perspectives clearly stated and what are they?	
Yes	Provider perspective (only the costs of the intervention are included).
1.5 Are all direct effects on individuals included?	
Yes	Service level and individual outcomes were included. Outcomes included incidence of abuse and neglect as measured by service level outcomes (#8, 9) in addition to risk factors of abuse and neglect via Parental indicators measuring risk and protective factors (#1-7 below) in addition to child wellbeing as measured by child safety and behavior (#8-10, below). 11. Caregiver depressive symptoms (Center for Epidemiologic Studies–Depression Scale (CES-D)). 12. Parenting stress (Parenting Stress Index Short Form (PSI/SF)). 13. Everyday stress (Every Day Stressors Index (ESI)). 14. Parenting attitudes (Adult- Adolescent Parenting Inventory (AAPI)). 15. Parenting sense of competence (Parenting Sense of Competence Scale (PSOC)). 16. Family functioning (36-item Self-Report Family Inventory (SFI)). 17. Social support (Social Provisions Scale (SPS)). 18. Child safety was assessed by observation of physical and psychological care (Child Well Being Scales [CWBS] and Child protective services reports). 19. Child abuse or neglect was assessed by computerized searches of official child abuse and neglect reports. 20. Child behavior was measured by caregiver report of externalizing and internalising child behavior problems using the Child Behavior Checklist (CBCL).

1.6 Are all future costs and outcomes discounted appropriately?	
NA	The analysis is conducted over a 1-year period so discounting is not necessary.
1.7 How is the value of effects expressed?	
Natural units	Resource use was not measured apart from costs of the intervention.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Analysis takes a provider perspective and does not include impacts on health, social care, education, criminal justice, or housing sectors.
General conclusion	
The RCT as an economic evaluation has very limited applicability due to the severely limited perspective of the analysis. Furthermore, results are based on US and not UK unit costs and there are issues of transferability of results due to potential differences in patterns of social care service use (i.e. child protection services).	

Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Yes	Cost-effectiveness analysis.
2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
No	Intervention might benefit from longer-time horizon to assess impact on final 'hard' outcomes such as schooling.
2.3 Are all important and relevant outcomes included?	
Yes	See section 1.5.
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	RCT.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	RCT.
2.6 Are all important and relevant costs included?	
No	See section 1.4 and 1.8.
2.7 Are the estimates of resource use from the best available source?	
Yes	RCT (cost of the intervention).
2.8 Are the unit costs of resources from the best available source?	
Partly	Costs are based on charges.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	

Yes	It can be calculated from the data.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
No	Costs of the intervention and control group are based on retrospective analysis using 1 months' worth of data and extrapolated over the intervention period. Authors state that costing methods are in line with standard practice, but they do take a simplified approach to estimating costs. Authors do not conduct sensitivity analyses on these results and no confidence intervals are provided. However, this may not be possible based on their methods.
2.11 Is there any potential conflict of interest?	
Unclear	
2.12 Overall assessment	
It is not clear whether this intervention is cost-effective in the English context.	

Population: Methadone-maintained parents at risk of child abuse
Intervention model type: 'Parents Under Pressure'

Dalziel, K, Dawe, S, Harnett, PH, Segal L (2015). Cost-effectiveness analysis of the Parents under Pressure programme for methadone-maintained parents. Child Abuse Review, 24: 317–31

**This study was identified in the update search

Country, study type and intervention details	**Study population, design and data sources**	**Costs: description and values** **Outcomes: description and values**	**Results: cost, effectiveness**	**Summary**
Country: Australia **Internal & external validity**: +/+ **Date:** Based on findings from 2007 RCT **Time horizon:** 20 week intervention (5m), outcomes measured at 6m + 'lifetime' modelling **Study type**: cost–benefit analysis using decision model **Intervention:** Parents Under Pressure programme	**Population**: substance misusing parents who are on methadone maintenance treatment and are at risk of child abuse. **Study design:** RCT (n=64) + decision model **Sources of effectiveness data:** RCT and additional literature used to determine thresholds at which parents were considered to be 'at high risk', 'moderate risk', 'no abuse risk' for child abuse. **Sources of resource use data**: intervention cost data were sourced from	**Outcomes: description and values** Change in predicted maltreatment between baseline and 6-month follow-up based on the CAPI instrument (Child Abuse Potential Inventory). Decision tree compares cost-effectiveness of intervention based on how many end up as 'high risk' of child abuse, defined as a score >215 on CAPI (resulting in 87% likelihood of abuse), scores between 166 and 215 (80% abuse likelihood), and scores of <166 (low risk, defined as no abuse risk). **Resource use**	**Findings on cost-effectiveness** Decision model indicates that intervention results in societal net cost savings of AU$31,100 per family (using the base case scenario). Findings are based on the major assumption that reductions in potential for abuse scores at 6 months are sustained over the child's life-course (i.e. none of the parents revert back to abuse). **Sensitivity analysis**: 1. Tested impact on results when using different imputation methods to account for participant dropout (base case scenario = last case carried forward vs. sensitivity analysis=multiple imputation and mean imputatio) 2. Tested impact on results when	**Applicability:** Very limited applicability **Quality**: Potentially very serious limitations **Summary:** This cost-effectiveness analysis makes the major assumption that the percentage of parents' who no longer abuse their child (CAP<166) continues to stay that way and that none of these parents go back to abusing their child. The analysis did not test the sensitivity of the results to this major structural assumption, especially as it is not supported by any data.

Control arm: combined 'Usual Care' and 'Brief Intervention' groups. Brief intervention was an active service where 2 parenting sessions were provided, and this is used in the estimation of differential programme costs	'budget documents, RCT protocol, clarified as required with interviews with project staff' (p322). Cost of child maltreatment based on estimates from literature (p323). **Sources of unit cost data:** Programme unit costs sourced from Australian Allied Health Professionals salary scales for social workers, which includes salary, oncosts, overheads, programme administration, training and supervision, and travel. Unit cost of maltreatment is unclear but is based on lifetime costs, composed of "healthcare costs (h'spitalisation for injuries and treatment of depression and anxiety), additional educational assistance, productivity losses, crime, government expenditure on out-of-home care and protection, deadweight losses (efficiency lost through	Societal costs of child maltreatment + Intervention costs (1) screening/enrollment (2) programme delivery. **RESULTS** **Outcomes** **Baseline rate, expected abuse** Intervention: 70.9%. Comparison: 73.3%. **6m follow-up**: Intervention: 54.1%. Comparison: 76.4%. Net difference: 19.9%. reduction in rate of expected abuse. **Costs** **Programme costs:** Intervention group: base case = US $8,777 minimum = AU$4,669 / family maximum = AU$28,712. Control group: base case = AUS $70 minimum = AU$0 / family maximum = AU $127. **Lifetime societal cost of child maltreatment**: base case = AU$200,000/child	excluding individuals scoring as 'faking good' (n=13, n=1 intervention, n=12 comparison) (base case analysis=assigning 'faking good' parents to the highest category of abuse potential, which makes the results conservative vs. sensitivity analysis = omitting 'faking good' scores from analysis). 3. Tested impact on results when using upper and lower estimates of the cost of child maltreatment. 4. Tested impact on results for varying caseload and kilometers travelled. 5. Probabilistic sensitivity analysis carried out on effect parameter (likelihood of abuse): >215 on CAPI (73% to 100%), scores between 166 and 215 (60% to 83%) using a uniform distribution as indicated from research. 6. Probabilistic sensitivity analysis carried out on programme costs using triangular distribution. Triangular distribution is used when there is limited information and is used as a 'best guess' based on information about minimum and maximum costs and guesses about modal cost.	This is a potentially very serious limitation and could dramatically alter the results. There are other limitations but these are relatively less serious. The lifetime societal cost of child maltreat is based on additional literature but the quality is unknown. However, it includes a wide range of costs and seems to be comprehensive but with very limited information about those methods, we cannot be sure about the quality. A separate issue is applicability of the findings. These results are based on Australian unit costs, which are not transferrable to the UK context. Similarly, differences in service patterns between countries will also affect the societal cost of maltreatment. The findings from this economic modelling study cannot be used to inform

	taxation), premature death and loss of quality of life (mostly associated with anxiety and depression)' (p.323).	minimum = AU$50,366, maximum = AU$318,760.		practice and policy decisions in the UK.

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: Dalziel K, Dawe, S, Harnett, PH, Segal L (2015). Cost-effectiveness analysis of the Parents under Pressure programme for methadone-maintained parents, Child Abuse Review, 24: 317–31	
Guideline topic: Child abuse and neglect	
Economic priority area: Early help interventions	**Q:** 9
Checklist: Section 1	
Yes/No/ Partly/NA	Detail
1.1 Is the study population appropriate for the review question?	
Yes	Substance misusing parents who are on methadone maintenance treatment and are at risk of child abuse.
1.2 Are the interventions appropriate for the review question?	
Yes	Parenting intervention.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Unclear	Australian study
1.4 Are the perspectives clearly stated and what are they?	
Yes	Societal perspective.
1.5 Are all direct effects on individuals included?	
Partly	This is a cost–benefit analysis based on a decision model to estimate the lifetime cost–benefit of preventing child maltreatment based on the results of a parenting intervention at 6 months follow-up. The costs and benefits are summarised into a single figure of 'societal cost' of child maltreatment, which is linked from reductions in the proportions of parents abusing their children, based on the Child Abuse Potential Inventory.
1.6 Are all future costs and outcomes discounted appropriately?	
Unclear	Not reported.
1.7 How is the value of effects expressed?	
Monetary, see section 1.5.	
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured	

and valued?	
Yes	Unit cost of maltreatment is unclear but is based on lifetime costs, composed of 'healthcare costs (hospitalisation for injuries and treatment of depression and anxiety), additional educational assistance, productivity losses, crime, government expenditure on out-of-home care and protection, deadweight losses (efficiency lost through taxation), premature death and loss of quality of life (mostly associated with anxiety and depression)'.
General conclusion	
Very limited applicability. These results are based on Australian unit costs, which are not transferrable to the UK context. Similarly, differences in service patterns between countries will also affect the societal cost of maltreatment.	

Section 2: Study limitations (the level of methodological quality)	
This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Partly	The model structure is overly simplistic. This analysis makes the major assumption that the percentage of parents' who no longer abuse their child (CAP<166) continues to stay that way and that none of these parents go back to abusing their child. The analysis did not test the sensitivity of the results to this major structural assumption, especially as it is not supported by any data. This is a potentially very serious limitation and could dramatically alter the results.
2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
No	See section 2.1.
2.3 Are all important and relevant outcomes included?	
Partly	See section 1.5.
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	RCT.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	RCT.
2.6 Are all important and relevant costs included?	
Yes	See sections 1.5 and 1.8.
2.7 Are the estimates of resource use from the best available source?	
Unclear	Due to poor reporting, unclear whether estimates are robust.
2.8 Are the unit costs of resources from the best available source?	
Unclear	Due to poor reporting, unclear whether unit costs are robust.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	

Yes	
2.11 Is there any potential conflict of interest?	
No	
2.12 Overall assessment	
Potentially very serious limitations. First, due to major structural assumptions of the model (as described in section 2.1). Second, the lifetime societal cost of child maltreat is based on additional literature but the quality is unknown. However, it includes a wide range of costs and seems to be comprehensive but with very limited information about those methods, we cannot be sure about the quality. The findings from this economic modelling study cannot be used to inform practice and policy decisions in the UK.	

Population: first-time teenage mothers, aged 19 years or younger
Intervention model type: nurse-led intensive home visitation
'Family Nurse Partnership'

Robling M et al. (2015). Effectiveness of a nurse-led intensive home-visitation programme for first-time teenage mothers (Building Blocks): a pragmatic randomised controlled trial. Lancet, 1–10

**This study was identified in the update search

Country, study type and intervention details	**Study population, design and data sources**	**Costs: description and values** **Outcomes: description and values**	**Results: cost, effectiveness**	**Summary**
Country: England Community midwifery settings at 18 partnerships between local authorities and primary and secondary care organisations **Internal & external validity:** +/+ **Date:** 2010 **Time horizon:** Early pregnancy (25 weeks or less) to 24 months **Study type**: cost-effectiveness analysis	**Population**: Nulliparous pregnant women aged 19 years or younger, and recruited at less than 25 weeks' gestation, consent and speak English. Also eligible were those, 'women expecting multiple births and those with a previous pregnancy ending in miscarriage, stillbirth, or termination were eligible' (p3). Not eligible are those women who 'plan to have their child adopted or move outside FNP catchment areas for longer than 3 months' (p3) **Study design:** Pragmatic, non-	**Outcomes** **Primary outcomes** 1. Biomarker-calibrated self-reported tobacco use by the mother at late pregnancy. 2. Birthweight of the baby. 3. Proportion of women with a second pregnancy within 24 months post-partum. 4. Emergency attendances and hospital admissions for the child within 24 months post-partum. **Secondary outcomes** Many secondary outcomes were measured. **Resource use** Perspective of health and social care services. Includes health-related	**Findings on cost-effectiveness** The perspective of the analysis is that of health and social care services. Family Nurse Partnership (FNP) is not cost-effective for primary outcomes. FNP costs more but does not lead to any improvements in primary outcomes. FNP is cost-effective for some secondary outcomes. FNP costs more but was able to	**Applicability:** Directly applicable. **Quality**: Some limitations due to unclear and limited reporting of resource use data and source for unit costs. **Summary:** In the short-term (24 months) the intervention is not cost-effective for primary outcomes, but it is cost-effective for some secondary outcomes. In the medium-to-long term, the cost-effectiveness of the intervention might change if we assume lagged intervention effects. For example, positive changes in secondary

Intervention: Family Nurse Partnership + usual care (publicly funded health and social care services) 64 structured home visits by specially recruited and trained family nurses **Control arm:** Usual care (publicly funded health and social care services, which includes universal 'Healthy Child Program')	blinded, randomised controlled, parallel-group trial Intervention, n=823 Comparison, n=822. **Sources of effectiveness data:** RCT - 'collected by field-based researchers from maternity units, - direct data download by a trial statistician from the Health and Social Care Information Centre (HSCIC), - field-based researchers or practice staff from primary care centres, from the Abortions Statistics Manager at the Department of Health for abortion statistics, - COVER (Coverage Of Vaccination Evaluated Rapidly) contacts directly from primary health-care authorities and used to obtain information about birthweight, emergency department attendances and admissions and second pregnancies, as well as for some secondary outcomes' (p3). - 'tobacco use was collected by self-report and from urine samples' (p3). **Sources of resource use data:** RCT	costs and intervention costs (p4). **RESULTS** **Primary outcomes** No significant differences between groups across all primary outcomes, even when undertaking sensitivity analysis on missing data (p5). **Secondary outcomes** Favours the intervention group, with small positive impacts on intention-to-breastfeed, maternally reported child cognitive development (24m only), language development using maternal self-report (12 and 18m) and using a standardised assessment (24m), levels of social support, partner-relationship quality, and general self-efficacy (p5). Higher rates of documentation for child safety concern in FNP group (p6) but this may be a result of surveillance bias (p8). For all other secondary outcomes, there were no differences (p6). **Adverse events** No differences in adverse events between groups. **Costs** <u>Multiple imputation for missing data</u>	generate improvements in secondary outcomes.	outcomes in the short-term (i.e. child's language development and mother's level of social support, self-efficacy, partner-relationship quality) may result in knock-on effects on other health or social-care related outcomes. At this point it is unclear but further research is needed to follow-up the child at an older age.

	– 'Emergency department attendance and admissions, and second pregnancies was collected by maternal report and COVER (Coverage Of Vaccination Evaluated Rapidly) contacts directly from primary health-care authorities' (p3). **Sources of unit cost data:** Not reported.	Incremental cost of the intervention relative to comparison group: £1,993 per participant (p6). <u>Complete case analysis in dealing with missing data</u> Incremental cost of the intervention relative to comparison group: £4,670 (95% CI, £3,322–£6,017) per participant (p6). Bulk of cost differential is due to intervention (FNP) (p6). Resource use across groups was similar (exact figures are not provided by authors) (p6).		

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: Robling M et al. (2015). 'Effectiveness of a nurse-led intensive home-visitation programme for first-time teenage mothers (Building Blocks): a pragmatic randomised controlled trial. Lancet: 1–10	
Guideline topic: Child abuse and neglect	
Economic priority area: Early help interventions	**Q:** 9
Checklist: Section 1	
Yes/No/Partly/ Not applicable	Detail
1.1 Is the study population appropriate for the review question?	
Yes	Nulliparous pregnant women aged 19 years or younger, recruited at less than 25 weeks' gestation.
1.2 Are the interventions appropriate for the review question?	
Yes	Nurse-led intensive home visitation, 'Family Nurse Partnership'.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	England, 2010, Community midwifery settings, 18 partnerships between local authorities, primary & secondary care.
1.4 Are the perspectives clearly stated and what are they?	
Yes	Perspective of health and social care services. Includes health-related costs and intervention costs.
1.5 Are all direct effects on individuals included?	
Yes	Primarily health related outcomes although various secondary outcomes recorded, including a range of 'adverse' events.
1.6 Are all future costs and outcomes discounted appropriately?	
Not necessary	24-month period.
1.7 How is the value of effects expressed?	
Natural units	
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Not applicable	
General conclusion	
The study is applicable.	

Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?
Not a model. This is an RCT alongside economic evaluation.

2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
Partly	24 month period
2.3 Are all important and relevant outcomes included?	
See section 1.5.	
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	From the study.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	From the study.
2.6 Are all important and relevant costs included?	
Yes	Health and social care perspective.
2.7 Are the estimates of resource use from the best available source?	
Yes	From the study.
2.8 Are the unit costs of resources from the best available source?	
Not reported	
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Not presented	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Not applicable	
2.11 Is there any potential conflict of interest?	
Unclear	
2.12 Overall assessment	
In the short-term (24 months) the intervention is not cost-effective for primary outcomes, but it is cost-effective for some secondary outcomes. In the medium-to-long term, the cost-effectiveness of the intervention might change if we assume lagged intervention effects. For example, positive changes in secondary outcomes in the short-term (i.e. child's language development and mother's level of social support, self-efficacy, partner-relationship quality) may result in knock-on effects on other health or social-care related outcomes. At this point it is unclear but further research is needed to follow-up the child at an older age.	

Research question 15

What social and psychological interventions are effective in responding to physical abuse, emotional abuse and neglect?

Population: children placed for non-relative adoption during the first 18 months of placement (late placed adoptions)

Intervention model type: manualised parenting interventions

Rushton A, Monck E, Leese M, McCrone P Sharac J (2010). Enhancing adoptive parenting: A randomized controlled trial. Clinical Child Psychology and Psychiatry, 15(4): 529–42

Country, study type and intervention details	**Study population, design and data sources**	**Costs, outcomes**	**Results: cost-effectiveness**	**Summary**

Country: UK
 	
Internal & External validity: -/++
 	
Date: 2004–2006
 	
Follow-up period: 6 months post-intervention
 	
Study type: Pragmatic RCT
 	
Intervention 1: Adapted cognitive behavioural approach, aimed to 'increase acceptable behaviour by using praise and rewards, to ignore unacceptable behaviour, by setting firm limits and
	Population:
	<u>Inclusion criteria</u>
	• Children placed for non-relative adoption during the first 18 months of placement
	  ○ Mean=12m
	• Between ages 3–8yrs
	  ○ Mean=5.5yrs
	• Screened to have serious behavioural problems: (>13) on either the parents' or (>11) on the social worker's SDQ
	• Only one child per family eligible for intervention (child with highest SDQ)
	<u>Exclusion criteria</u>
	• Children placed with relatives or with existing foster parents
	<u>Other characteristics</u>
	• At time of placement, children were not suffering from severe physical or learning difficulties
		Outcomes
		
		Primary outcomes
		Child-based measures
		1. Strengths and Difficulties Questionnaire.
		Parent-based measures
		2. Parenting Sense of Competence Scale (satisfaction with parenting role).
		
		Secondary outcomes
		Child-based measures
		3. Expression of Feelings Questionnaire.
		4. Post Placement Problems.
		5. Visual analogue scale to measure emotional distress, misbehavior, attachment (follow-up
			Findings on cost-effectiveness
			The combined intervention group were not cost-effective for the SDQ outcome. The usual care service was lower cost and provided better outcomes (although not statistically significantly so).
			
			The combined intervention groups were more cost-effective than the usual care service for the outcome of parent sense of competence scale, with an incremental cost of £731 per unit improvement in satisfaction when measured at 3m post-treatment and £337 per unit improvement when measured at 6 months follow-up post-treatment.
				Applicability: Applicable.
				
				Quality
				Minor limitations.
				
				Summary:
				This study does not provide clear information as to whether this intervention is cost-effective in the English context. The two intervention arms were combined into a single group as a result of small sample size. It is unclear whether it was appropriate, given the different nature of the interventions. This makes the interpretation of findings less than

by using "logical consequences" and problem-solving' (p532). Also includes 'greater emphasis on the need for adopters to conduct daily play sessions with their child and in helping them when their child rejects their praise and/or their rewards' (p531). **Intervention 2:** 'Educational' approach, aimed to help parents to understand the meaning and origins of the children's behaviour and to help parents anticipate events and increase ability to manage behaviour. **Usual care:** 'Received support, but it was far less intensive than the individualized parenting advice provided in the trial' (p532).	• Mean adversities pre-placement=7 • Mean number of placement changes=6 (SD=2 to 3) • Mean SDQ score, Intervention = 18 (SD=4), Control = 20 (SD=7) • Reason for first admission to care: o 89% neglect o 44-58%, physical abuse o 21-22% sexual abuse o 33-57% emotional abuse o 39-47% carer mental illness o 72-42% carer's addiction o 43-56% concern about siblings o 55-63% domestic violence <u>Use of screening or targeting:</u> 'samples representing the usual range of local authority adoptions rather than self-referrals to specialist adoption services' (p530). **Study design:** pragmatic RCT Intervention 1, n=10 Intervention 2, n=9 Control group, n=18 **Sources of effectiveness data:** 'Baseline, immediate post-intervention (3m) and 6-month follow-ups via questionnaires & interviews' (p529). **Sources of resource use data:** Client Service Receipt Inventory Retrospective reporting for the periods between placement and baseline and follow-up periods (p533).	measure only, not measured at baseline or end of intervention). Parent-based measures 6. Daily hassles. 7. Satisfaction with Parenting Advice Questionnaire (only measured post-intervention). **Resource use:** Health, social services, and educational services (p.533) **RESULTS (Intervention 1 and 2 combined vs. Control group)** Due to small samples and the need for statistical power to detect for differences, the two intervention groups (below) were combined in analysis of differences to control group. <u>Statistically significant differences</u> 2. Parenting sense of competence scales Intervention scores: T1=34, T2=37, T3=39 Control scores: T1=37, T2=36, T3=35 6 month follow-up (T3),	**Total costs** Perspective of health, social care, and education services: from the period prior to baseline (placement) until 3 months at post-treatment follow-up and 6m follow-up, costs for the intervention were higher but were not statistically significant. <u>Placement to 3m post-treatment</u>: £1,528 higher for intervention vs. control. <u>Placement to 6m follow-up (post-treatment)</u>: £1,652 higher for intervention vs. control. **Uncertainty**: Bootstrapping regression models used.	clear. Parents in the intervention group had greater satisfaction in parenting their child at 3m post-treatment and 6m follow-up but there were no changes in child behaviour (as measured by 4 outcomes). The authors hypothesise that such short-term changes are not likely to occur for children with high levels of need. The authors place their findings in context and compare to other evaluations of similar populations and interventions but find that one US-based study was able to change child behaviour but their intervention was more resource intensive (and would be more costly) (team-based care and additional services). The authors believe that the sample size is too small to come to definitive conclusions and may not be

	Sources of unit cost data: National average costs (p533).	p<0.007 95% CI = -8.4 to -1/4 Effect size (d=0.7) <u>No statistically significant differences</u> 1. Strengths and Difficulties Questionnaire. 3. Expression of Feelings Questionnaire. 4. Post Placement. 5. Visual Analogue Scale. 6. Daily Hassles. 7. Satisfaction with Parenting Advice Questionnaire (only measured post-intervention).		representative due to the low response level.

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: Rushton A, Monck E, Leese M, McCrone P, Sharac J (2010). Enhancing adoptive parenting: A randomized controlled trial. Clinical Child Psychology and Psychiatry, 15(4): 529–42	
Guideline topic: Child abuse and neglect	
Economic priority area: What social and psychological interventions are effective in responding to physical abuse, emotional abuse and neglect? (prevention of recurrence, prevention of impairment)	**Q:** 15
Checklist: Section 1	
Yes/No/Partly/Not applicable	Detail
1.1 Is the study population appropriate for the review question?	
Yes	Intervention is targeted at adoptive parents of children between ages 3–8 years old (mean 5.5 yrs) placed for non-relative adoption during the first 18 months of placement (mean 12 months). Children are screened to have serious behavioural problems: (>13) on either the parents' or (>11) on the social worker's SDQ. Only one child per family eligible for intervention (child with highest SDQ).
1.2 Are the interventions appropriate for the review question?	
Yes	**Intervention 1:** Adapted cognitive behavioural approach, aimed to 'increase acceptable behaviour by using praise and rewards, to ignore unacceptable behaviour, by setting firm limits and by using "logical consequences" and problem-solving' (p532). Also includes 'greater emphasis on the need for adopters to conduct daily play sessions with their child and in helping them when their child rejects their praise and/or their rewards' (p531). **Intervention 2:** 'Educational' approach, aimed to help parents to understand the meaning and origins of the children's behaviour and to help parents anticipate events and increase ability to manage behaviour.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	UK-based study, however, low response rate to participate in the study indicates that findings are not wholly generalisable. However, evaluation screened individuals from areas with higher levels of adoption activity, which adds strength to generalisability. The study was conducted between 2004 and 2006, which places findings in a different context; in particular, whether usual care services offered to participants are sufficiently similar to usual care services currently.
1.4 Are the perspectives clearly stated and what are they?	
Yes	The authors state that the resources measured included health, social services, and education, and were measured using a standard client services receipt inventory (CSRI), which is a standardized measure to collect information on resource use.
1.5 Are all direct effects on individuals included?	
Partially	The intervention measures child and parent outcomes. It is aimed at improving parent's understanding and ability to respond to difficult child behavior. It is also thought that child behavior might improve. Several outcomes aim to capture

	these hypothesised changes. From child outcomes: (1) Strengths and Difficulties Questionnaire, (2) Expression of Feelings Questionnaire, (3) Post Placement Problems, (4) Visual Analogue Scale to measure emotional distress, misbehaviour, attachment. From parent outcomes: (5) Parenting Sense of Competence Scale (satisfaction with parenting role) (6) Daily Hassles and (7) Satisfaction with Parenting Advice Questionnaire (only measured post-intervention).
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting is not necessary due to short time horizon of 9 months (3 months end of intervention plus an additional 6 months follow-up).
1.7 How is the value of effects expressed?	
Monetary & natural	Service use is not presented in natural units but as a total cost, inclusive of the intervention costs.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
NA	All relevant costs, such as education, was measured in this study.
General conclusion	
The study is applicable with respect to the population, intervention, perspectives, and effects. The social care context is, for the most part, sufficiently similar, as it was a UK-based study. However, it is unclear whether usual care services have changed over time and if they are not the same, has the potential to influence intervention effectiveness.	

Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
NA	Not a model.
2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
Unclear	The duration of the intervention of 3 months was followed up for an additional 6 months. The authors do not explicitly state whether the time horizon is sufficiently long enough. On the one hand, the intervention aims to improve the parent's ability to understand and cope with their adoptive child's difficult behaviour. The intervention did find changes in one parent measure, in relation to satisfaction with parenting of the child. The authors suggest that this may be sustained and positively impact future coping ability. However, in relation to child behaviour, none of the outcome measures were statistically different at the end of the follow-up period. The authors hypothesise that this is not surprising given the relatively short period of follow-up and the severity of the child's difficulties leading to adoption. The authors also place the results.
2.3 Are all important and relevant outcomes included?	
Yes	See section 1.5.
2.4 Are the estimates of baseline outcomes from the best available source?	

Yes	The RCT.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	The RCT.
2.6 Are all important and relevant costs included?	
Yes	The RCT uses the Client Services Receipt Inventory (CSRI) to capture health, social care, and education service use. However the authors do not provide a detailed breakdown of services measured, as they state the results of the cost-effectiveness paper should be published in a separate paper but we have not yet identified it.
2.7 Are the estimates of resource use from the best available source?	
Yes	RCT. Service use was self-reported retrospectively using CSRI.
2.8 Are the unit costs of resources from the best available source?	
Yes	National Unit costs.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	The authors present incremental analysis.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Bootstrapping was undertaken on cost-effectiveness results.
2.11 Is there any potential conflict of interest?	
None	
2.12 Overall assessment	
This study does not provide clear information as to whether this intervention is cost-effective in the English context. The two intervention arms were combined into a single group as a result of small sample size. It is unclear whether it was appropriate, given the different nature of the interventions. This makes the interpretation of findings less than clear. Another limitation is the lack of reporting: the authors do not provide a breakdown of service use according to sector (health, social care, or education) and the costs of the intervention are not presented. Rather, authors provide information as a total cost and the incremental cost-effectiveness ratio. While the authors did conduct bootstrapping, confidence intervals were not presented. This cost-effectiveness analysis provided an appropriate incremental analysis and sensitivity analyses using bootstrapping techniques. The estimates of resource use and effects are appropriate: they are collected over the appropriate time horizon (placement, baseline, post-intervention, and 6 months follow-up) and use a standardised method of collecting information (interviews and questionnaires for effectiveness and client service receipt inventory for resource use) and appropriate calculation of costs was carried out using national unit cost data. The time horizon seems to be sufficiently long.	

Population: low-to-moderate risk families referred to child protective services
Intervention model type: differential response

Winokur M, Ellis R, Drury I, Rogers J (2015). Answering the big questions about differential response in Colorado: Safety and cost outcomes from a randomised controlled trial. Child Abuse and Neglect, 39: 98–108.

Country, study type and intervention details	**Study population, design and data sources**	**Costs: description and values** **Outcomes: description and values**	**Results: cost, Effectiveness**	**Summary**
Country: USA 5 Colorado counties **Internal & External validity:** +/+ **Date:** 2010–2012 **Follow-up period:** '12 months after the initial involvement period ended' (p104) **Total time horizon:** 15 months **Study design:** RCT **Study type**: Cost & outcomes analysis **Study aims**: Are families assigned to FAR as safe or safer than children whose families are assigned	**Population**: Families referred to child protective services who are considered to be 'low-to-moderate risk'. <u>Low-to-moderate risk</u>= defined as families with '(1) mild to moderate general neglect, (2) educational neglect, (3) mild to moderate neglect from an injurious environment due to domestic violence, or (4) mild to moderate physical abuse.' <u>Exclusions:</u> 'Excluded families with allegations of serious harm, sexual abuse, suspicious child fatality' (p100). Families could	**Outcomes: description and values** **Primary outcomes:** Safety, defined as both (a) percentage of families and (b) time to event (survival analysis). 1) Referral within 365 days of initial referral. 2) Assessment within 365 days of initial referral. 3) High-risk assessment (HRA) within 365 days of initial referral. 4) Founded HRA within 365 days of initial referral. 5) Traditional child welfare (CW) case opened after initial involvement. 6) Out of home (OOH) placement after initial involvement. **Resource use:** Considers case-level costs only that are incurred to child welfare system (CWS), including (1) assessment and subsequent processes (of the caseworker only), and (2) any services provided to the family as a result of being involved with CWS.	**Findings on cost-effectiveness** In summary, this study aimed to evaluate whether the FAR intervention was as safe as the IR comparison approach to child welfare cases. This study found that there were no differences in safety outcomes and that overall costs were also not different. There are no differences in costs, at least in the 15-month period. However, the authors say that a longer time horizon is needed to investigate whether higher follow-up costs incurred by the comparison group are sustained in the longer-term, and if so, could indicate that FAR is less costly. This is important because the overall	**Applicability:** Partly applicable. **Quality**: Some limitations. **Summary:** Overall, we cannot say which approach is cost-effective in the UK context.

to IR? (see below) **Intervention:** 'Family assessment response" (FAR) = "comprehensive assessment of family needs & strengths instead of maltreatment determination' (p100) **Comparison:** 'Investigation response" (IR) = maltreatment determination with possible provision of services (after opening traditional child welfare case)' (p100) System-wide changes also include new organisational structure (p98): • enhanced screening • Review, Evaluate, & Direct (RED) teams • group supervision • facilitated family meetings • front-loaded services • support planning	also be ineligible for discretionary reasons: based on team decision after consideration of factors and history (p101). **Data sources:** Investigation response: n=1,963 Family assessment response: n=3,428 **Sources of effectiveness data:** RCT **Sources of resource use data:** RCT (administrative databases) **Sources of unit cost data:** Caseworker salary and benefits calculated to range from a low of $25.40 to a high of $33.60, dividing annual salary by hours worked per year (p.104). Costs based on local data.	***<u>Limitations</u>:** (1) Authors do not include costs of services provided outside of CWS funding (essentially government provided services) (not clear what these entail) but authors guess that these costs would not be different between groups (p104). (2) In estimating intervention costs authors only estimate caseworker time in providing the intervention and excludes any associated administration time. Estimate also excludes any administrative overheads relating to 'screeners, RED teams, supervisors, and administrators to manage teams' (p104). Only caseworker salary and benefits were included in cost estimates. (3) In conclusion, direct intervention costs are seriously underestimated. Costs also include government funded child welfare services. **RESULTS** **Outcomes**: Statistical Method: Stepwise regression **(a) No significant differences between groups for percentage of families across the 6 safety outcomes.** 1) Referral within 365 days of initial referral Intervention (FAR): 44% of families Comparison (IR): 45% of families. 2) Assessment within 365 days of initial referral Intervention (FAR): 26% of families Comparison (IR): 27% of families.	15-month costs were not different between groups, and longer follow-up may indicate different cost results. It is important to consider that there are some limitations in the cost analysis. Included are the costs of the intervention and the costs of using child welfare services. It is important to note that direct intervention costs are likely to be underestimated as it was not comprehensively estimated (it excluded indirect costs to the caseworker and indirect overheads like admin, screening, etc. see left column for more detail). <u>Further detail:</u> The intervention and comparison groups were not different on safety outcomes, which are measured in terms of service-oriented outcomes (referral, assessment, high-risk assessment, founded HRA, and traditional child welfare case opened) and in terms of child-oriented outcomes (albeit still a service outcome), measured as an 'out-of-home placement'.	

		3) HRA within 365 days of initial referral Intervention (FAR): 12% of families Comparison (IR): 13% of families. 4) Founded HRA, 365 days of initial referral Intervention (FAR): 4% of families Comparison (IR): 4% of families. 5) Traditional CW case opened Intervention (FAR): 7% of families Comparison (IR): 8% of families. 6) OOH placement after initial involvement Intervention (FAR): 6% of families Comparison (IR): 6% of families **(b) 'Time to event'** Statistical Method: Cox proportional hazards 3) HRA within 365 days of initial referral Intervention (FAR) 18% less likely to have HRA sooner than Comparison (IR), $p<0.01$. For all other safety outcomes, no significant differences for time to event. **Other process-outcomes:** Mean length of involvement (based on days to last family contact) Intervention (FAR): 60 days Comparison (IR): 35 days. **Resource use**:	However, the comparison IR group conducted high-risk assessments sooner than the FAR intervention. In terms of costs, there are serious limitations in the way that the intervention and comparison groups' costs are estimated (for more detail see section to the left). However, based on the costs of direct caseworker contacts with the family, the intervention and control groups were not different. In terms of the costs associated with child welfare services provided and out-of-home placement costs, these were also not different between groups. Taken together, the overall costs were not different between groups.	

		Authors report that the Intervention (FAR) group had higher proportion of outlier (high cost) cases in relation to OOH placement costs and service costs. To adjust for skewness, they present mean and median costs. Figures are rounded to nearest tenth. Authors do not present confidence intervals. **Overall costs** <u>Overall mean (median) costs</u>: Based on cost components 1–6 (below) Intervention (FAR): $1,212 ($199) Comparison (IR): $954 ($199) P value=0.611. *The authors test whether differences are statistically significant by logarithmically transforming costs (to account for outlier cases) and found that initial costs were NOT statistically different between groups (p=0.611). <u>Overall initial mean (median) costs</u>: *Based on cost components 1-3 (below)* FAR: $807 IR: $540 P value=0.144. *The authors test whether differences are statistically significant by logarithmically transforming costs (to account for outlier cases) and found that initial costs were NOT statistically different between groups (p=0.144). <u>Overall follow-up mean (median) costs</u>: Based on cost components 4-6 (below) FAR: $405 IR: $413 P value=0.001.		

		*The authors test whether differences are statistically significant by logarithmically transforming costs (to account for outlier cases) and found that initial costs WERE statistically different between groups (p=0.001). **Cost components** <u>(1A) Initial contact mean (median) costs</u> FAR: $310 ($167) IR: $284 ($165) <u>(1B) Mean weighted initial contacts per case</u> FAR: 19.7, 6.2 face-to-face, 13.5 phone IR: 17.4, 7.4 face-to-face, 9.7 phone. <u>(2) Initial service mean (median) costs</u> FAR: $237 (not reported) IR: $157 (not reported) FAR: 10.7%, n=341 received $2,219 in services IR: 5.3%, n=96 received $3,004 in services. <u>(3) Initial OOH placement mean (median) costs</u> FAR: $259 (not reported) IR: $99 (not reported) FAR: (1.6%, n=52 received OOH worth $15,780) IR: (0.9%, n=16 received OOH worth $12,089) **Authors note that OOH costs are 'driven by the level of care (residential being more expensive than foster or kinship care) and length of stay. Thus, the groups could have different OOH costs even if the rate of OOH placement was the same' (p105). <u>(4A) Follow-up contact mean (median) costs:</u> FAR: $172 ($0) IR: $189 ($0). <u>(4B) Follow-up mean weighted per case:</u>		

		FAR: 9.8; 3.4 face-to-face, 6.4 phone IR: 11.9; 4.1 face-to-face, 7.8 phone. <u>(5) Follow-up service mean (median) costs:</u> FAR: $107 (not reported) IR: $120 (not reported) FAR: 4.0%, n=127 received $2,651 in services IR: 4.1%, n=73 received $3,036 in services. <u>(6) Follow-up OOH mean (median) costs:</u> FAR: $127 (not reported) IR: $104 (not reported) FAR: 1.45%, n=44 received $9,088 in OOH IR: 0.9%, n=16 received $7,445 in OOH.		

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: Winokur M, Ellis R, Drury I, Rogers J (2015). Answering the big questions about differential response in Colorado: Safety and cost outcomes from a randomised controlled trial. Child Abuse and Neglect, 39: 98–108	
Guideline topic: Child abuse and neglect	
Economic priority area: What social and psychological interventions are effective in responding to physical abuse or neglect?	**Q:** 15
Checklist: Section 1	
Yes/No/Partly/Not applicable	Detail
1.1 Is the study population appropriate for the review question?	
Yes	Families referred to child protective services who are considered to be 'low-to-moderate risk'.
1.2 Are the interventions appropriate for the review question?	
Yes	Intervention and control groups test effectiveness (in relation to safety) of different approaches to the assessment of families referred to child welfare services for suspected abuse or neglect. See data extraction table for more detail on intervention and comparison group.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	US study.
1.4 Are the perspectives clearly stated and what are they?	
Yes	Costs from government payer perspective.
1.5 Are all direct effects on individuals included?	
Partly	The study aims to test effectiveness on safety. In this study, 5 of 6 safety outcomes are process-related. The one safety outcome that is a proxy for the child's individual outcome is 'out-of-home' placement.
1.6 Are all future costs and outcomes discounted appropriately?	
Parly	Fifteen-month follow-up period but no discounting. However, effects on analysis are likely to be very insignificant.
1.7 How is the value of effects expressed?	
Safety outcomes are presented in natural units. Resource use in relation to direct costs of the intervention do include natural units when presented as, 'mean caseworker contacts per family' and 'out-of-home' placements; but other use of services are presented as costs.	
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Costs to healthcare sector is not included.
General conclusion	
The study is partly applicable to the UK context.	

Section 2: Study limitations (the level of methodological quality)	
This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
This is not a model. This is a cost-consequence analysis.	
2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
Partly	The study time horizon is 15 months, which includes 12-month follow-up period. The authors indicate that there are no differences in costs, at least in the 15-month period. However, the authors say that a longer time horizon is needed to investigate whether higher follow-up costs incurred by the comparison group are sustained in the longer-term, and if so, could indicate that FAR is less costly. This is important because the overall 15-month costs were not different between groups, and longer follow-up may indicate different cost results.
2.3 Are all important and relevant outcomes included?	
Partly, see section 1.5.	
2.4 Are the estimates of baseline outcomes from the best available source?	
N/A	This study does not provide information about baseline outcomes because this study measures service process outcomes (referral, assessment, etc.).
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	From the RCT.
2.6 Are all important and relevant costs included?	
Partly	(1) Authors do not include costs of services provided outside of CWS funding (essentially government provided services) (not clear what these entail) but authors guess that these costs would not be different between groups (p104). (2) In estimating intervention costs authors only estimate caseworker time in providing the intervention and excludes any associated administration time. Estimate also excludes any administrative overheads relating to 'screeners, RED teams, supervisors, and administrators to manage' teams. (p104). Only caseworker salary and benefits were included in cost estimates. (3) In conclusion, direct intervention costs are seriously underestimated. Costs also include government funded child welfare services.
2.7 Are the estimates of resource use from the best available source?	
Yes	From the RCT.
2.8 Are the unit costs of resources from the best available source?	
Partly	Full-cost approach not adopted. Unit costs are based on local salary and benefits.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Not presented. Could be calculated.	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
N/A	

2.11 Is there any potential conflict of interest?
Not reported.
2.12 Overall assessment
This study is partly applicable to the UK context. The study has some limitations. Overall, we cannot say which approach is cost-effective in the UK context. UK research is necessary to understand economic implications.

Research question 16

What social and psychological interventions are effective in responding to sexual abuse?

Population: sexually abused girls
Intervention model type: individual vs. group psychotherapy

McCrone PR, Weeramanthri T, Martin R, Rushton A, Trowell J, Miles G et al. (2005). Cost-effectiveness of individual versus group psychotherapy for sexually abused girls. Child and adolescent mental health: 10(1)

Country, study type intervention details	**Study population, design and data sources**	**Costs, outcomes**	**Results: cost-effectiveness**	**Summary**
Country: UK **Internal, external validity:** This study reports on economics only, see separate report for effectiveness study design **Date:** Pre-2000 **Follow-up:** 2 years **Study type**: RCT + cost-minimization analysis **Intervention:** Individual therapy, maximum 30 sessions, focused psychoanalytical psychotherapy **Control arm:** Group therapy, up to 18 sessions, group size=5 girls of similar age.	**Population**: Sexually abused girls between ages of 6 and 14 years old. Mental health diagnoses at baseline: 73% PTSD, 57% major depressive disorder, 58% separation anxiety, 37% general anxiety. **Sample size:** I=38, C=36. **Effectiveness data:** RCT. **Sources of resource use data:** Retrospectively using case notes and therapists' files (an economic evaluation	**Outcomes** - Orvaschel's scales for PTSD symptoms. - Global functioning using a semi-structured interview schedule, the Kiddie-SADs (Schedule for Affective Disorders and Schizophrenia), the Kiddie-GAS (Global Assessment Scale). **Resource use** Costs of delivering the intervention only and does not consider changes in health and social care service use arising from receiving the intervention. Also includes supervision costs. **RESULTS** **Outcomes:** Individual therapy has better outcomes for PTSD for the subscales of re-experiencing and persistent avoidance, both at 12 and 24 months follow-up (as measured	**Findings on cost-effectiveness** The results show that the intervention has mixed cost-effectiveness. The incremental cost of the intervention is £1,246 more than the comparison group but results in better outcomes for PTSD for the subscales of re-experiencing and persistent avoidance, both at 12 and 24 months follow-up (as measured by Orvaschel instrument). For these outcomes, individual therapy is cost-effective. For the subscale of increased arousal, there were no differences between groups and so the individual therapy is not cost-effective. For the outcome of impairment, as measured by the using the Kiddie Global Assessment Scale, there were no differences between groups, so the intervention is not cost-effective.	**Applicability:** Partly applicable. **Quality**: Some limitations. **Summary:** Using only the perspective of intervention costs only, there are mixed results regarding the cost-effectiveness of individual vs. group psychotherapy. The authors point out that there may be logistical challenges in delivering individual vs. group interventions. In providing group

Carers in both intervention & control groups were provided with support from social workers. Purpose of support was to ensure girls' attendance at treatment, help carers' understand the girls' difficulties, and support carers' own needs. Carers received support in groups or individually, number of support sessions varied	had not been planned with the RCT). **Sources of unit cost data:** National unit cost estimates using full cost approach.	by Orvaschel instrument). For the subscale of increased arousal, there were no differences between groups and so the individual therapy is not cost-effective. For the outcome of impairment, as measured by the using the Kiddie Global Assessment Scale, there were no differences between groups, so the intervention is not cost-effective. **Costs**: Price year=1999. Mean cost Individual therapy=£3,195. Mean cost of group therapy=£1,949 Mean difference=individual therapy is 64% more costly (£1,246) than group therapy), p<0.001.		treatments, there may be a trade-off in delaying treatment until there are sufficient numbers of similar-aged children to create group sessions versus providing individual treatments sooner.

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: McCrone PR, Weeramanthri T, Martin R, Rushton A, Trowell J, Miles G et al. (2005). Cost-effectiveness of individual versus group psychotherapy for sexually abused girls. Child and adolescent mental health: 10(1)	
Guideline topic: Child abuse and neglect	
Economic priority area: What social and psychological interventions are effective in responding to sexual abuse?	**Q:** 16
Checklist: Section 1	
Yes/No/Partly/Not applicable	Detail
1.1 Is the study population appropriate for the review question?	
Yes	Sexually abused girls.
1.2 Are the interventions appropriate for the review question?	
Yes	Individual vs. group psychotherapy.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Unclear	Study was conducted pre 2002.
1.4 Are the perspectives clearly stated and what are they?	
Yes	Not explicitly stated but they include outcomes and costs from the NHS and personal services perspectives.
1.5 Are all direct effects on individuals included?	
Yes	– Psychiatric symptoms. – Symptoms of post-traumatic stress disorder. – Global functioning using a semi-structured interview scheduele, the Kiddie-SADs (Scheduele for Affective Disorders and Schizophrenia), the Kiddie-GAS (Global Assessment Scale). – Orvaschel's scales for PTSD.
1.6 Are all future costs and outcomes discounted appropriately?	
Unclear, but likely to be yes.	Not stated. However, intervention may have been provided within a 1-year time frame, so discounting may not have been necessary.
1.7 How is the value of effects expressed?	
Costs	This was a cost minimisation analysis given that outcomes were similar between groups.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Impact on carers not included.
General conclusion	

Study is partly applicable but is missing some important components. The population is relevant; focusing on sexually abused girls, and also provides components of support for their carers. The intervention is relevant, comparing individual vs. group psychotherapy. All relevant outcomes were included, which focused predominantly on clinical symptoms. The limitations include the date of research, conducted pre-2000. However, it seems unlikely that this would affect therapeutic effects. Another limitation is not measuring impact on carers. Health and social care service costs were not measured as this economic evaluation was conducted retrospectively. Therefore, the economic evaluation compares only treatment costs.

Section 2: Study limitations (the level of methodological quality)	
This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Yes	Cost-minimisation analysis was conducted given the similarity of outcomes with the main difference being costs of providing the intervention.
2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
Yes	2-year follow-up period.
2.3 Are all important and relevant outcomes included?	
Yes	See section 1.5.
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	RCT.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	RCT.
2.6 Are all important and relevant costs included?	
Partly	See section 1.4, 1.5, and 1.8.
2.7 Are the estimates of resource use from the best available source?	
Partly	Retrospectively collected using case notes and therapist files (an economic evaluation had not been planned with the RCT) however these were not used in the economic evaluation to estimate changes in health and social care costs.
2.8 Are the unit costs of resources from the best available source?	
Yes	National unit costs using full cost approach.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Not presented. Can be calculated using means and standard deviations provided.	
2.10 Are all-important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Total costs were bootstrapped to provide more robust estimates of total costs.
2.11 Is there any potential conflict of interest?	
No	Funded by the Department of Health and the Mental Health Foundation.

2.12 Overall assessment
The study has some limitations given that health and social care costs were not included in the evaluation. However, this may be a minor limitation given that both groups had improvements on different outcomes but it is unclear how this affects service use. The study was conducted over a sufficiently long-time horizon, over 2 years, which is longer than most studies (usually 6 months). The authors also appropriately cost the intervention using national unit cost estimates using a full cost approach. The authors appropriately use bootstrapping methods to account for uncertainty in total costs.

Population: sexually abused children
Intervention model type: psychodynamic therapy

Carpenter J, Jessiman T, Patsios D (2016). Letting the future in: a therapeutic intervention for children affected by sexual abuse and their carers. An evaluation of impact and implementation. NSPCC

Country, study type intervention details	**Study population, design and data sources**	**Costs, outcomes**	**Results: cost-effectiveness**	**Summary**
Country: UK **Internal, External validity:** +/++ **Date:** Unclear **Follow-up:** Assessed at six months and followed up at twelve months **Study type**: Cost-consequence analysis **Intervention:** 'largely psychodynamic' structured guide to therapeutic intervention 'grounded in an understanding of trauma, attachment	**Population**: Sexually abused children between ages 6–16 years. 75% female. 9% were of Black and Minority ethnic background, 17% had one or more disabilities and 12% were 'looked after'. '57% of older children and young people in the evaluation had a 'clinical' level score on at least one TSCC subscale at baseline, rising to 70% when children with one or more 'significant difficulties' were included' (p12). 'In the younger age group, parents/carers reported that 86% had clinical scores on at least	**Primary outcome** 'Change in the proportion of children with clinical levels of symptoms or significant difficulties between assessment on referral, and six-month research follow-up' (p11). - Trauma Symptoms Checklist or Trauma Symptoms Checklist for Young Children (TSCC/TSCYC). For those younger than 8 years old or who were unable to understand the self-report questionnaire, their carers provided proxy measure. **Secondary outcome** 'Change in the proportions of parents with clinical levels of parent/carer stress for safe carers' (p11). - Parenting Stress Index. **Resource use** Intervention costs only. **RESULTS** All results presented are for ITT analysis.	**Findings on cost-effectiveness** For the whole sample, the intervention has mixed cost-effectiveness over the short-term (6 months follow-up). For the outcome of clinical thresholds, the intervention was trending toward improvement but was not statistically significant. For the outcome of 'one or more significant difficulties' the intervention was cost-effective. For the sample comprising just young children, the intervention is not cost-effective in the short-term (6 months follow-up).	**Applicability** Partly Applicable **Quality** Limited due to the perspective of the analysis being limited to intervention costs only. A separate report is forthcoming which compares service use. **Summary** The study is applicable in relation to the findings for the short-term (6-month follow-up). However, follow-up at 12 months is only presented as a within-group comparison (intervention group) rather than a comparison between intervention and control. This is because

and resilience' Up to four therapeutic assessment sessions followed by up to 20 intervention sessions Carers also received individual counseling, awareness and management of feelings, and socio-educative work; but in reality only 40% of carers received this **Control:** Six-month waiting list control group	one TSCYC subscale, which rose to 92% when "significant difficulties" were included' (p12). **Effectiveness data:** Pragmatic ('real world') randomised control trial (RCT), N=242, results are presented for both ITT and 'completers'. ITT presents more conservative findings but overall results are consistent using both approaches (p.12) **Sources of resource use data:** Intervention costs estimated from RCT **Sources of unit cost data:** National average unit costs	**Primary outcomes** <u>Young and older children with clinical level scores</u> **Baseline** Intervention 51.2% Control 53.8% **6 months** Intervention 36.6% Control 51.3% *Change from baseline to 6-months NOT statistically different, p=0.065. **12-months** (Intervention within-group analysis only) Intervention, 43.9% (p=0.263) Non-statistically significant increase (p78). <u>Young and older children with one or more significant difficulties</u> **Baseline** Intervention 68.3% Control 62.5%. **6-months** Intervention 51.2% Control 62.5%. *Change from baseline to 6-months IS statistically different, p=0.016. **12-months** (Intervention within-group analysis only) Intervention: 56.1%, p=0.503 NON-statistically significant increase (p78). <u>Young children with combined 'difficulty/clinical significance' scores</u> **Baseline**	The intervention costs an additional £2,298 per child (price year not reported), for an average of 22 sessions. For the whole sample, the intervention led to an improvement in one primary outcome (significant difficulties). For the other outcome, the intervention cost more but did not result in any improvements (clinical thresholds). For young children, the intervention cost more but did not lead to any improvements for the combined outcome of significant difficulties and clinical thresholds.	the control was on a waiting list and had begun treatment at 6-months follow-up. Furthermore, the economic analysis is limited to considering the cost of the intervention only. It does not report on changes in other health and social care services as a result of using the intervention. Authors report that this will be provided in a separate report.

		Intervention 91.3% Control 85.3%. **6 months** Intervention 87% Control 88.2%. *Change from baseline to 6 months NOT statistically different (p73) **12 months** (Intervention within-group analysis only) Intervention, 22% *Statistical significance not provided and authors caution results may not be reliable because multiple imputation on small sample for ITT, n=46 (p79). **Secondary outcomes** Authors do not present ITT results, they only present results for 'analysis completers' for the parenting stress index. **Resource use – intervention costs** Cost per child = £2,298 Price year = unclear Based on a full-cost approach (includes administrative and capital overheads) and based on an average of 22 sessions lasting 2.75 hours and a unit cost of £36/hour (p93).		

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: Carpenter J, Jessiman T, Patsios D (2016). Letting the future in: a therapeutic intervention for children affected by sexual abuse and their carers. An evaluation of impact and implementation. NSPCC	
Guideline topic: Child abuse and neglect	
Economic priority area: What social and psychological interventions are effective in responding to sexual abuse?	**Q:** 16
Checklist: Section 1	
Yes/No/Partly/Not applicable	Detail
1.1 Is the study population appropriate for the review question?	
Yes	Sexually abused children.
1.2 Are the interventions appropriate for the review question?	
Yes	Psychodynamic therapy.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	English study
1.4 Are the perspectives clearly stated and what are they?	
Yes	This study only considers cost of the intervention from government-payer perspective. Although a separate report (not available currently) provides analysis with results of impact on wider service use from government perspective.
1.5 Are all direct effects on individuals included?	
Partially	Study measures the 'change in the proportion of children with clinical levels of symptoms or significant difficulties between assessment on referral, and six-month research follow-up' (p11). Study also measures impact on parenting stress.
1.6 Are all future costs and outcomes discounted appropriately?	
Not applicable	Less than 1 year period.
1.7 How is the value of effects expressed?	
Natural units.	
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No.	
General conclusion	
This study is applicable to UK context and to the review question.	

Section 2: Study limitations (the level of methodological quality)	
This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not a model. Cost-consequence analysis.	
2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
Partially	The study compares differences between groups for 6-month follow-up only. Authors explain that this was due to ethical issues. The authors do think that a longer time horizon is needed to understand whether effects are sustained.
2.3 Are all important and relevant outcomes included?	
See section 1.5.	
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes, RCT.	
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes, RCT.	
2.6 Are all important and relevant costs included?	
See section 1.4 and 1.8.	
2.7 Are the estimates of resource use from the best available source?	
Yes, RCT	Intervention costs only.
2.8 Are the unit costs of resources from the best available source?	
Yes	National average costs using full-cost approach.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Not presented.	
2.10 Are all-important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Not applicable.	
2.11 Is there any potential conflict of interest?	
Not clear.	
2.12 Overall assessment	
The study is applicable in relation to the findings for the short-term (6-month follow-up). However, follow-up at 12 months is only presented as a within-group comparison (intervention group) rather than a comparison between intervention and control. This is because the control was on a waiting list and had begun treatment at 6-months follow-up. The economic analysis is limited to considering the cost of the intervention only. It does not report on changes in other health and social care services as a result of using the intervention. Authors report that this will be provided in a separate report.	

Population: sexually abused children
Intervention model type: psychological and/or pharmaceutical

Gospodarevskaya E, Segal L (2012). Cost-utility analysis of different treatments for post-traumatic stress disorder in sexually abused children. Child and Adolescent Psychiatry and Mental Health, 6(15): 1–15

Country, study type and intervention details	**Study population, design and data sources**	**Costs: description and values** **Outcomes: description and values**	**Results: cost, effectiveness**	**Summary**
Country: non-UK, Australia **Follow-up period:** 12 months and 30 years (modelling) **Study type**: Cost-utility analysis, decision tree with Markov Model **Intervention:** 1. **'TF-CBT'** Individual TF-CBT with child alone or the variation 'Eye Movement Desensitization and Reprocessing treatment' 2. **'TF-CBT + SSRI'** Combined treatment involving TF-CBT with non-abusive	**Population**: Sexually abused children with PTSD (with or without depression at baseline) but selection criteria is based on the studies that conducted the RCTs [cited as sources 15,16,33 in the paper]. Baseline cohort: 10-year-old children. Includes children with delayed PTSD onset, as this is often how PTSD is presented. **Study design:** Decision model using indirect comparison of clinical evidence - uses 12-month decision model to examine short-term benefits (treatment response) and then uses those differences in	**Primary outcomes** The first part of the analysis is a decision tree which measures the proportion of children who had 'PTSD', 'PTSD + depression' and 'no PTSD, no depression' at 12-month follow-up. The second part of the analysis is a 30-year Markov model (when children are 41 years old) to illustrate the proportion of individuals in different health states: death from suicide due to PTSD + depression, death from suicide due to PTSD, having PTSD or PTSD + depression but dying from non-suicidal causes, death by suicide from depression, not having PTSD + depression but dying from suicide based on general population estimates; and being alive and having either: depression; PTSD; PTSD + depression; no PTSD + depression. **Resource use:** Included the direct costs of treatment but excludes wider impacts on health or social care services.	**Findings on cost-effectiveness** Using the 30-year modelling scenario, all three options are cost-effective compared to 'no treatment' (always less than A$7,000 per QALY). When comparing among active treatments, results are mixed, depending on estimates of treatment effects (optimistic or conservative) (see below). Price year: 2010/2011 Currency: Australian Dollars Discounting: 5% per year **Sensitivity analysis** – Base-case analysis suggests that NDSC is dominated by TF-CBT and TF-CBT + SSRI – However, when optimistic (upper limit) effectiveness rates are used in the NDSC,	**Applicability** Not applicable – model structure and inputs needs validation to ensure it is appropriate for UK setting. On the other hand, costs are not applicable due to differences in UK and Australian unit costs. **Quality** Economic evaluation has some limitations – takes the perspective of direct treatment costs only; does not consider impacts on wider health and social care services or impacts on employment/productivity. Model makes some

parent, child, & pharmacotherapy (SSRI) 3. **'NDSC'** Non-directive supportive counselling **Control arm:** 4. 'No treatment'	QALYs to extrapolate to long-term differences in costs and QALYs (up until 30 years later). The QALY gains in the long-term are based on associated reductions in suicide rates in the 10–20 years after PTSD treatment. **Data sources:** **Sources of effectiveness data:** Range of clinical evidence. **Sources of resource use data:** Obtained from the identified RCTs that provided clinical effectiveness estimates for the economic evaluation **Sources of unit cost data:** National Australian unit costs (Medicare benefits schedule) and includes full costing approach (assumed to cover patient contact time, patient-related indirect time and overheads in publicly-funded youth mental health facilities).	**RESULTS** <u>Dealing with uncertainty:</u> All model parameters other than unit costs and population utility norms were subjected to deterministic and probabilistic sensitivity analyses (p9). When parameters did not have estimates of variance, arbitrary sensitivity range selected (30%). Probabilistic sensitivity analysis assigned to parameters other than population based utility norms and suicide rates. Monte Carlo simulation was used to reflect uncertainty around model's results and calculate 95% CI around estimates of costs and QALYs. **Outcomes** <u>12 month decision tree</u> QALYs gained – No treatment = 0.87 QALYs – NDSC = 0.93 QALYs – TF-CBT only= 0.96 QALYs TF-CBT + SSRI = 0.97 QALYs. <u>30 year Markov model</u> QALYs gained – No treatment = 11.59 QALYs – NDSC = 12.61 QALYs – TF-CBT only = 12.86 QALYs – TF-CBT + SSRI = 12.92 QALYs. **Costs**	then it dominated both TF-CBT treatments. Likewise, when pessimistic values of effectiveness rates were used for both TF-CBT and TF-CBT + SSRI, they were dominated by NDSC. – However, when the TF-CBT treatments adopted optimistic effectiveness rates (upper limit of values) they dominated NDSC. <u>12 month decision tree</u> ICER compared to no treatment – NDSC = A$34,567 per QALY – TF-CBT only= A$22,790 per QALY – TF-CBT + SSRI = A$22,263 per QALY ICER comparing to non-dominated treatments: – TF-CBT vs. TF-CBT + SSRI = A$17,520 per QALY <u>30 year Markov model</u> ICER compared to no treatment – NDSC = A$2,081 per QALY – TF-CBT only= A$1,650 per QALY – TF-CBT + SSRI = A$1,706 per QALY ICER comparing to non-dominated treatments: – TF-CBT vs. TF-CBT + SSRI =	assumptions, for example, assumes differences in treatment effects during the 30-year Markov model is based on differences in health state as measured at 12-month follow-up. Model also assumes that there is no relapse in PTSD but relapse into depression is possible. **Summary** We cannot use these findings to inform decisions about cost-effectiveness for UK practice or policy.

		Total costs, 12 months: - No treatment = $0 - NDSC = $2,074 - TF-CBT = $2,051 - TF-CBT + SSRI = $2,226 **Total costs, 31 years (30 years + 12 months)**: - No treatment = $0 - NDSC = $2,123 - TF-CBT = $2,096 - TF-CBT + SSRI = $2,270. **Direct treatment costs** Includes: - Cost of therapists' time in providing 12 individual 45-minute TF-CBT or - Non-directive individual psychotherapy sessions per child in each of the active treatment arms. - The cost of SSRI therapy (sertraline) was added to TF-CBT + SSRI treatment arm.	A$2,901 per QALY <u>Note</u> - ICER is conservative estimate - Individuals with delayed PTSD onset were not counted as responders but trauma symptoms did improve <u>Robustness of results</u>: - Results were robust with respect to variation in most parameters of the model (e.g. rates of suicides, probability of spontaneous remission from PTSD, proportion of cohort with co-morbid depression, probability of delayed response to PTSD treatment, effectiveness of SSRI for treatment of depression and health state specific utility estimates).	

APPENDIX C: COMPLETED METHODOLOGY CHECKLISTS: ECONOMIC EVALUATIONS

Study identification: Gospodarevskaya E, Segal L (2012). Cost-utility analysis of different treatments for post-traumatic stress disorder in sexually abused children. Child and Adolescent Psychiatry and Mental Health, 6(15): 1–15	
Guideline topic: Child abuse and neglect	
Economic priority area: What social and psychological interventions are effective in responding to sexual abuse?	**Q:** 16
Checklist: Section 1	
Yes/No/Partly/Not applicable	Detail
1.1 Is the study population appropriate for the review question?	
Yes	Sexually abused children.
1.2 Are the interventions appropriate for the review question?	
Partially	This economic evaluation compares effectiveness and cost-effectiveness of trauma-focused CBT based on NICE clinical guideline on management of PTSD in adults and children compared to 'nondirective supportive counseling' and also includes trauma-focused CBT plus pharmaceuticals (SSRI) compared to non-directive supportive counseling. SSRIs were recommended in the Depression guideline in the treatment of children and adolescents. However, this recommendation differs from the PTSD guideline, which does not recommend this. These are all compared to 'no treatment'. It is unclear whether the choice of interventions would be considered appropriate and requires validation.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Unclear	Australian health care system.
1.4 Are the perspectives clearly stated and what are they?	
Yes	Treatment costs only.
1.5 Are all direct effects on individuals included	
Partially	Measures those with and without PTSD, PTSD + depression, and depression only, suicide and death, and links these health states to QALYs.
1.6 Are all future costs and outcomes discounted appropriately?	
No	Discounting at 5%.
1.7 How is the value of effects expressed?	
Natural and monetary units.	
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No.	

General conclusion
Not applicable. Model structure and inputs needs validation to ensure it is appropriate for UK setting. On the other hand, costs are not applicable due to differences in UK and Australian unit costs. We cannot use these findings to inform decisions about cost-effectiveness for UK practice or policy.

Section 2: Study limitations (the level of methodological quality)	
This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance [a].	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Partially	Unclear whether structure is appropriate for UK context.
2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?	
Yes	30 years Markov modelling.
2.3 Are all important and relevant outcomes included?	
See section 1.5	
2.4 Are the estimates of baseline outcomes from the best available source?	
Partially	High quality RCTs (meta-analysis would be preferable).
2.5 Are the estimates of relative intervention effects from the best available source?	
Partially	High quality RCTs (meta-analysis would be preferable).
2.6 Are all important and relevant costs included?	
See sections 1.4 and 1.8.	
2.7 Are the estimates of resource use from the best available source?	
Yes	RCTs used for direct treatment.
2.8 Are the unit costs of resources from the best available source?	
Yes	Australian national unit costs (government payer perspective).
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Results were robust with respect to variation in most parameters of the model (e.g. rates of suicides, probability of spontaneous remission from PTSD, proportion of cohort with co-morbid depression, probability of delayed response to PTSD treatment, effectiveness of SSRI for treatment of depression and health state specific utility estimates).
2.11 Is there any potential conflict of interest?	
No	
2.12 Overall assessment	
Economic evaluation has some limitations – takes the perspective of direct treatment costs only; does not consider impacts on wider health and	

social care services or impacts on employment/productivity. Model makes some assumptions, for example, assumes differences in treatment effects during the 30-year Markov model is based on differences in health state as measured at 12-month follow-up. Model also assumes that there is no relapse in PTSD but relapse into depression is possible. Not clear whether these are appropriate.