Appendix Q and Appendix R

Abbreviations

CAMHS	Child and Adolescent Mental Health Services
CARE-Index	a dyadic procedure that assesses adult sensitivity in a dyadic context
CI	confidence interval
HRQoL	health-related quality of life
HUI2	Health Utilities Index Mark 2
ICER	incremental cost-effectiveness ratio
NA	not applicable
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
PSA	probabilistic sensitivity analysis
PSS	personal social services
QALY	quality-adjusted life year
RCT	randomised controlled trial
RFC	regular foster care
SC	standard care
SDQ	Strengths and Difficulties Questionnaire
WTP	willingness to pay

Appendix Q: Health economic evidence – completed health economics checklists

Q.1 Interventions to improve attachment difficulties and parental sensitivity in children and young people on the edge of care

Study: Barlow J, Davis H, McIntosh E, Jarrett P, Mockford C, Stewart-Brown S. 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. Archives of Disease Childhood. 2007;92:229–33.

AND

McIntosh E, Barlow J, Davis H, Stewart-Brown S. Economic evaluation of an intensive home visiting programme for vulnerable families: a cost-effectiveness analysis of a public health intervention. Journal of Public Health: Oxford Journal. 2009;31:423–33.

Economic Question: What is the cost effectiveness of home visiting (compared with standard care) to improve attachment difficulties and parental sensitivity in children and young people on the edge of care?

Section 1: Applicability (relevance to specific guideline review question and the NICE reference case)		**Yes/ Partly/ No/Unclear/ NA**	**Comments**
1.1	Is the study population appropriate for the guideline?	Yes	Children of vulnerable pregnant women
1.2	Are the interventions and services appropriate for the guideline?	Yes	Home visiting
1.3	Is the healthcare system in which the study was conducted sufficiently similar to the current UK NHS context?	Yes	UK study
1.4	Are costs measured from the NHS and personal social services (PSS) perspective?	Partly/yes in secondary analysis	Public sector plus informal care; reports secondary analysis using healthcare costs only
1.5	Are non-direct health effects on individuals excluded?	Yes	
1.6	Are both costs and health effects discounted at an annual rate of 3.5%?	Yes	Time horizon 18 months; 5 years
1.7	Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	No	
1.8	Are changes in health-related quality of life (HRQoL) reported directly from patients and/or carers?	NA	
1.9	Is the valuation of changes in HRQoL (utilities) obtained from a representative sample of the general public?	NA	
1.10 Overall judgement: Partially applicable			

Other comments: When the primary outcome was proportion of infants identified as being ill-treated costs were considered up to 5 years and were discounted at an annual rate of 3.5%; scope allows using wider perspective.			
Section 2: Study limitations (level of methodological quality)		**Yes/ Partly/ No/Unclear/ NA**	**Comments**
2.1	Does the model structure adequately reflect the nature of the health condition under evaluation?	NA	RCT
2.2	Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	Yes	18 months; 5 years
2.3	Are all important and relevant health outcomes included?	Partly	HRQoL not measured
2.4	Are the estimates of baseline health outcomes from the best available source?	Partly	RCT – control group
2.5	Are the estimates of relative treatment effects from the best available source?	Yes	RCT
2.6	Are all important and relevant costs included?	Yes	
2.7	Are the estimates of resource use from the best available source?	Partly	RCT; other published sources; assumptions
2.8	Are the unit costs of resources from the best available source?	Partly	Some unit costs based on local sources
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	Deterministic and PSA
2.11	Is there no potential conflict of interest?	Yes	
2.12 Overall assessment: Minor limitations			
Other comments:			

Study: Guideline economic analysis			
Economic Question: What is the cost effectiveness of video feedback, parental sensitivity and behaviour training, and home visiting and parent–child psychotherapy (compared with each other and standard care)?			
Section 1: Applicability (relevance to specific guideline review question and the NICE reference case)		**Yes/ Partly/ No/Unclear /NA**	**Comments**
1.1	Is the study population appropriate for the guideline?	Yes	Children on the edge of care
1.2	Are the interventions and services appropriate for the guideline?	Yes	
1.3	Is the healthcare system in which the study was conducted sufficiently similar to the current UK NHS context?	Yes	
1.4	Are costs measured from the NHS and personal social services (PSS) perspective?	Yes	
1.5	Are non-direct health effects on individuals excluded?	Yes	

1.6	Are both costs and health effects discounted at an annual rate of 3.5%?	Yes	Time horizon 11 years
1.7	Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	Yes	
1.8	Are changes in health-related quality of life (HRQoL) reported directly from patients and/or carers?	Yes	Foster carers
1.9	Is the valuation of changes in HRQoL (utilities) obtained from a representative sample of the general public?	Yes	Standard gamble, UK population
1.10 Overall judgement: Directly applicable			
Other comments: QALYs based on HUI2 (UK values) for children with emotional problems			
Section 2: Study limitations (level of methodological quality)		**Yes/ Partly/ No/Unclear /NA**	**Comments**
2.1	Does the model structure adequately reflect the nature of the health condition under evaluation?	Yes	
2.2	Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	Yes	11 years
2.3	Are all important and relevant health outcomes included?	Yes	
2.4	Are the estimates of baseline health outcomes from the best available source?	Yes	Guideline meta-analysis standard care arms
2.5	Are the estimates of relative treatment effects from the best available source?	Yes	Guideline meta-analysis
2.6	Are all important and relevant costs included?	Partly	Only intervention costs included
2.7	Are the estimates of resource use from the best available source?	Partly	RCT – reported data; Guideline Committee expert opinion
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	
2.10	Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	Yes	Deterministic and PSA
2.11	Is there no potential conflict of interest?	Yes	
2.12 Overall assessment: Potentially serious limitations			
Other comments:			

Q.2 Interventions for attachment difficulties for children and young people in care

Study: Lynch FL, Dickerson JF, Saldana L, Fisher PA. Incremental net benefit of early intervention for preschool-aged children with emotional and behavioural problems in foster care. Children and Youth Services Review. 2014;36:213–19.			
Economic Question: What is the cost effectiveness of Multidimensional Treatment Foster Care (compared with regular foster care)?			
Section 1: Applicability (relevance to specific guideline review question and the NICE reference case)		**Yes/ Partly/ No/Unclear /NA**	**Comments**
1.1	Is the study population appropriate for the guideline?	Yes	Children in foster care
1.2	Are the interventions and services appropriate for the guideline?	Yes	Multidimensional treatment foster care
1.3	Is the healthcare system in which the study was conducted sufficiently similar to the current UK NHS context?	Partly	US study
1.4	Are costs measured from the NHS and personal social services (PSS) perspective?	No	Public sector (health and social care, and education)
1.5	Are non-direct health effects on individuals excluded?	Yes	
1.6	Are both costs and health effects discounted at an annual rate of 3.5%?	NA	Time horizon 24 months
1.7	Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	No	
1.8	Are changes in health-related quality of life (HRQoL) reported directly from patients and/or carers?	NA	
1.9	Is the valuation of changes in HRQoL (utilities) obtained from a representative sample of the general public?	NA	
1.10	Overall judgment: Partially applicable		
Other comments: scope allows using wider perspective.			
Section 2: Study limitations (level of methodological quality)		**Yes/ Partly/ No/Unclear /NA**	**Comments**
2.1	Does the model structure adequately reflect the nature of the health condition under evaluation?	NA	RCT
2.2	Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	No	24 months
2.3	Are all important and relevant health outcomes included?	Partly	HRQoL not measured
2.4	Are the estimates of baseline health outcomes from the best available source?	Partly	RCT – control group
2.5	Are the estimates of relative treatment effects from the best available source?	Yes	RCT

2.6	Are all important and relevant costs included?	Yes	
2.7	Are the estimates of resource use from the best available source?	Partly	RCT – reported data
2.8	Are the unit costs of resources from the best available source?	Yes	National data
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 no potential conflict of interest?	Yes	
2.12 Overall assessment: Minor limitations			
Other comments:			

Q.3 Interventions to improve attachment difficulties and parental sensitivity for children and young people adopted from care

Study: Sharac J, McCrone P, Rushton A, Monck E. Enhancing Adoptive Parenting: A Cost-Effectiveness Analysis. Child and Adolescent Mental Health. 2011;16:110–15.			
Economic Question: What is the cost effectiveness of parent training and education programme (compared with standard care)?			
Section 1: Applicability (relevance to specific guideline review question and the NICE reference case)		**Yes/ Partly/ No/Unclear /NA**	**Comments**
1.1	Is the study population appropriate for the guideline?	Yes	Adopters and adopted children
1.2	Are the interventions and services appropriate for the guideline?	Yes	Parental education, training and support programme
1.3	Is the healthcare system in which the study was conducted sufficiently similar to the current UK NHS context?	Yes	UK study
1.4	Are costs measured from the NHS and personal social services (PSS) perspective?	No	Public sector (health and social care, and education)
1.5	Are non-direct health effects on individuals excluded?	Yes	
1.6	Are both costs and health effects discounted at an annual rate of 3.5%?	NA	Time horizon 6 months
1.7	Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	No	
1.8	Are changes in health-related quality of life (HRQoL) reported directly from patients and/or carers?	NA	
1.9	Is the valuation of changes in HRQoL (utilities) obtained from a representative sample of the general public?	NA	
1.10	Overall judgment: Partially applicable		

Other comments: SC dominant with SDQ score being used as an outcome, but not when using satisfaction with parenting scale. No QALYs (for one outcome it does not matter [SDQ, since the intervention is dominant using that outcome], but for the other one it does). Scope allows wider perspective.			
Section 2: Study limitations (level of methodological quality)		**Yes/ Partly/ No/Unclear /NA**	**Comments**
2.1	Does the model structure adequately reflect the nature of the health condition under evaluation?	NA	RCT
2.2	Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	No	6 months
2.3	Are all important and relevant health outcomes included?	Partly	SDQ questionnaire and parental satisfaction
2.4	Are the estimates of baseline health outcomes from the best available source?	Partly	RCT
2.5	Are the estimates of relative treatment effects from the best available source?	Yes	RCT
2.6	Are all important and relevant costs included?	Yes	
2.7	Are the estimates of resource use from the best available source?	Partly	RCT
2.8	Are the unit costs of resources from the best available source?	Yes	
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 no potential conflict of interest?	Yes	
2.12 Overall assessment: Potentially serious limitations			
Other comments: SDQ questionnaire includes emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and pro-social behaviour			

Appendix R: Health economic evidence – evidence tables

R.1 Interventions to improve attachment difficulties and parental sensitivity in children and young people on the edge of care

R.1.1 References to included study

Barlow J, Davis H, McIntosh E, Jarrett P, Mockford C, Stewart-Brown S. 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. Archives of Disease Childhood. 2007;92:229–33.

AND

McIntosh E, Barlow J, Davis H, Stewart-Brown S. Economic evaluation of an intensive home visiting programme for vulnerable families: a cost-effectiveness analysis of a public health intervention. Journal of Public Health: Oxford Journal. 2009;31:423–33.

R.1.2 Reference to excluded study

Niccols A. 'Right from the Start': randomized controlled trial comparing an attachment group intervention to supportive home visiting. Journal of Child Psychology and Psychiatry. 2008;49:754–64. – *Study population not 'on the edge of care'.*

Study Country Study type	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: Cost-effectiveness	Comments
Barlow and colleagues (2007), and McIntosh and colleagues (2009) UK Cost-effectiveness analysis	Home visiting starting 6 months antenatally to 12 months postnatally (18 months of weekly visits) Standard care (SC) defined as locally available services	Population: children born to vulnerable pregnant women meeting demographic and socioeconomic criteria (for example mental health or housing problems) Study design: RCT (Barlow 2007) Source of effectiveness data: RCT (n = 131) Source of resource use estimates: RCT (n = 131); other published sources Source of unit costs: local and national sources	Costs: general practitioner, home visitor, social worker, midwife, antenatal class, alcohol/drug support, paediatrician, obstetrician, audiologist, ophthalmologist, community psychiatric nurse, child and family team, accident and emergency department, psychologist, family centre, Sure Start, Home Start, Housing department, Women's aid, Legal Aid, Citizens Advice Bureau, psychologist, psychiatrist, foster care, adoption services, legal advice centre, court, social services, crèche, playgroup, private childcare, police, informal care Mean public sector and informal care costs at 18 months per mother–infant dyad: • Intervention £7,120 • SC £3,874 • Difference: £3,246 ($p < 0.05$) Mean health service costs at 18 months per mother–infant dyad: • Intervention £5,685 • SC £3,324 • Difference: £2,360 ($p < 0.05$) Primary outcomes: proportion of infants identified as being ill-treated	Cost effectiveness: ICER from a public sector and informal care perspective • £55,016 per extra infant identified as being ill-treated • £2,723 per extra unit of improvement on maternal sensitivity index • £2,033 per extra unit of improvement on infant cooperativeness index • £1,691 for a reduction in infant exposure to abuse and neglect by 1 month Probability that intervention is cost effective is 0.95 at WTP of £16,100 and £4,000 per unit of improvement on maternal sensitivity index and improvement on infant cooperativeness index, respectively At WTP of £1,400 for a reduction in infant exposure to abuse and neglect by one month, probability that the intervention is cost effective is 0.75; at WTP of £3,100 it is 0.95	Perspective: Public sector and informal care; and healthcare payer Currency: UK£ Cost year: 2003–04 Time horizon: 18 months; 5 years when time exposed to abuse and neglect outcome used Discounting: costs and health effects at 3.5% Applicability: Partially applicable Quality: Minor limitations

			between 6 and 12 months postnatally; improvement on maternal sensitivity and infant cooperativeness component of Care-Index; time exposed to abuse and neglect Proportion of infants identified as being ill-treated: • Intervention 0.059 • SC 0.000 • Difference: 0.059 (p = not significant) Care-Index score (maternal sensitivity): • Intervention 9.27 • SC 8.20 • Difference: 1.07 Care-Index score (infant cooperativeness): • Intervention 9.35 • SC 7.92 • Difference: 1.43	ICER from a healthcare payer perspective • £40,000 per extra infant identified as being ill-treated • £2,178 per extra unit of improvement on maternal sensitivity index • £1,621 per extra unit of improvement on infant cooperativeness index • £1,229 for a reduction in infant exposure to abuse and neglect by one month Probability that intervention is cost effective is 0.95 at WTP of £13,900 and £2,700 per unit improvement on maternal sensitivity scale and infant cooperativeness scale, respectively	

R.2 Interventions to improve attachment difficulties and parental sensitivity for children and young people adopted from care

R.2.1 References to included study

1. Sharac J, McCrone P, Rushton A, Monck E. Enhancing Adoptive Parenting: A Cost-Effectiveness Analysis. Child and Adolescent Mental Health. 2011;16:110–15.

Study **Country** **Study type**	**Intervention details**	**Study population** **Study design** **Data sources**	**Costs: description and values** **Outcomes: description and values**	**Results: Cost-effectiveness**	**Comments**
Sharac and colleagues (2011) UK Cost-effectiveness analysis	Parental education, training and support programme comprising 10 weekly home-based 1-hour sessions) based on cognitive behavioural therapy or educational approach Standard care (SC) defined as locally available services.	Population: adoptive parents of children aged 3–8 years Study design: RCT (Rushton 2010) Source of effectiveness data: RCT (n = 37) Source of resource use estimates: RCT (n = 36) Source of unit costs: national sources	Costs: educational psychologist, welfare officer, classroom assistant, accident and emergency department, outpatient, operation, school nurse, health visitor, dentist/optician, general practitioner, paediatrician, child development centre, CAMHS, speech/hearing therapist, therapist, home care worker, day care centre, after school club, other support, social worker Mean costs (standard deviation) at 6 months per adopter: • Intervention £5,043 (£3,309) • SC £3,378 (£5,285) • Difference: £1,652 (95% CI, -£1,709 to £4,268) Primary outcomes: the Strengths and Difficulties Questionnaire (SDQ); Parental Satisfaction Questionnaire	Cost effectiveness: SC dominant with SDQ score being used as an outcome ICER of £337 per unit of improvement on the satisfaction with parenting scale	Perspective: Public sector (health and social care, and education) Currency: UK£ Cost year: 2006–07 Time horizon: 6 months Discounting: Not needed Applicability: Partially applicable Quality: Potentially serious limitations

			SDQ scores at 6 months: • Difference: 0.79 (in favour of SC) (p = not significant) Parental Satisfaction Questionnaire scores at 6 months: • Difference: 4.90 (in favour of the intervention) (p < 0.007)		

R.3 Interventions for attachment difficulties for children and young people in care

R.3.1 References to included study

1. Lynch FL, Dickerson JF, Saldana L, Fisher PA. Incremental net benefit of early intervention for preschool-aged children with emotional and behavioural problems in foster care. Children and Youth Services Review. 2014;36:213–19.

Study Country Study type	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: Cost-effectiveness	Comments
Lynch and colleagues (2014) US Cost-effectiveness analysis	Multidimensional Treatment Foster Care. Foster parents completed 12 hours of training. After placement, the foster parents work with a consultant and receive support and supervision through daily telephone contacts, weekly	Population: Foster children aged 3–5 entering new foster placement (children new to foster care, children re-entering care, and children moving between placements) Study design: RCT (Fisher 2007)	Costs: Intervention, health and social services, foster care Mean public sector costs at 24 months per child and foster parent dyad Full sample: • Intervention $27,204 • RFC $30,090 • Difference: -$2,886 (p < 0.005)	Cost effectiveness: Intervention dominant Net monetary benefit (λ = $10,000): Full sample: $4,591 (95% CI: −$596 to $9,779)	Perspective: Public sector (health, social care and education) Currency: US$ Cost year: 2008 Time horizon: 24 months Discounting: Not needed Applicability: Partially applicable

	support group meetings, and the availability of 24-hour on-call staff. Children receive services from a behaviour specialist working in preschool/day care and home settings; they also attend weekly socialisation playgroup sessions. Regular foster care (RFC)	Source of effectiveness data: RCT (n = 117) Source of resource use estimates: RCT (n = 90) Source of unit costs: National sources	Placement instability sample (N = 52): • Intervention $29,595 • RFC $36,061 • Difference: -$6,466 (p < 0.05) Primary outcomes: percentage of children with permanent placement Full sample: • Intervention 36.84% • RFC 31.67% • Difference: 5.17% (p = 0.787) Placement instability sample: • Intervention 48.28% • RFC 13.04% • Difference: 35.24% (p = 0.002)	Placement instability sample: $8,087 (95% CI: $188 to $15,987) Net monetary benefit is positive for willingness-to-pay of > $10,000 per additional permanent placement achieved	Quality: Minor limitations