Appendix 15. Completed Methodology Checklists: Economic Evaluations

Study: Byford et al. The cost-effectiveness of a parent-mediated communication-focused therapy for pre-school children with autism: the Pre-school Autism Communication Trial (PACT). Unpublished manuscript		
Economic Question: Reciprocal-social communication added to standard care vs. standard care alone for pre-school children with autism		

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	
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	UK study
1.4	Are costs measured from the NHS and personal social services (PSS) perspective?	Partly	Hospital, community & school-based health and social services, plus societal
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 13 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 judgement: **Partially applicable**			
Other comments:			

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	Economic analysis alongside RCT
2.2	Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	No	13 months
2.3	Are all important and relevant health outcomes included?	Partly	% of children with clinically meaningful improvement in ADOS-G score (≥4)
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?	Yes	RCT
2.8	Are the unit costs of resources from the best available source?	Yes	National 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	
2.11	Is there no potential conflict of interest?	Yes	
2.12 Overall assessment: **Minor limitations**			
Other comments:			

Study: Marsh K, Bertranou E, Suominen H, Venkatachalam M. An economic evaluation of speech and language therapy. Matrix Evidence, 2010		
Economic Question: Parent-mediated communication-focused treatment (PACT) (stated as 'enhanced speech and language treatment') in addition to standard care vs. standard care (stated as 'local speech and language treatment')		

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 with core autism
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	UK study
1.4	Are costs measured from the NHS and personal social services (PSS) perspective?	No	Productivity losses of parents included
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	Analysis over lifetime
1.7	Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	NA	Cost analysis
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:		

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?	Partly	Verbal IQ & changes in accommodation type modelled
2.2	Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	Yes	Lifetime
2.3	Are all important and relevant health outcomes included?	Partly	Focused on verbal IQ, using parental synchrony as intermediate outcome
2.4	Are the estimates of baseline health outcomes from the best available source?	Yes	Naturalistic study
2.5	Are the estimates of relative treatment effects from the best available source?	Partly	RCT, but primary outcome ignored; instead, secondary outcome considered
2.6	Are all important and relevant costs included?	No	Only intervention & accommodation costs considered
2.7	Are the estimates of resource use from the best available source?	Partly	Published literature and assumptions
2.8	Are the unit costs of resources from the best available source?	Yes	National sources
2.9	Is an appropriate incremental analysis presented or can it be calculated from the data?	NA	Cost analysis
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: **Very serious limitations**		
Other comments: controversial methods used to link parent synchronisation and increase in verbal IQ; parent		

synchronisation was selected from the RCT although it was a secondary outcome; the primary outcome was ignored

Study: Guideline economic analysis			
Economic Question: Antipsychotics aimed at behavior that challenges in children and young people with autism			
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	
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%?	NA	Time horizon 32 weeks
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	
1.9	Is the valuation of changes in HRQoL (utilities) obtained from a representative sample of the general public?	Partly	SG, Canadian population
1.10 Overall judgement: **Partially applicable**			
Other comments:			
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?	Partly	32 weeks
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?	Partly	Guideline meta-analysis
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	Costs associated with behaviour that challenges not included
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 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	PSA
2.11	Is there no potential conflict of interest?	Yes	
2.12 Overall assessment: **potentially serious limitations**			
Other comments:			

Study: Chasson GS, Harris G, Harris GE. Cost comparison of early intensive behavioral intervention and special education for children with autism. Journal of Child and Family Studies 2007; 16(3): 401-413		

Economic Question: Early Intensive Behavioural Intervention (EIBI) versus standard educational service (special education) for children with autism		
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	
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?	No	US study
1.4	Are costs measured from the NHS and personal social services (PSS) perspective?	No	Public (state, local, federal) & private costs
1.5	Are non-direct health effects on individuals excluded?	NA	Cost analysis
1.6	Are both costs and health effects discounted at an annual rate of 3.5%?	No	Time horizon 18 years
1.7	Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	NA	
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:		
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?	Partly	Simple model including educational aspects only
2.2	Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	Yes	18 years
2.3	Are all important and relevant health outcomes included?	NA	Cost analysis
2.4	Are the estimates of baseline health outcomes from the best available source?	NA	
2.5	Are the estimates of relative treatment effects from the best available source?	No	Clinical parameters based on review & assumptions
2.6	Are all important and relevant costs included?	Partly	Only educational costs included
2.7	Are the estimates of resource use from the best available source?	No	Estimates following personal communication
2.8	Are the unit costs of resources from the best available source?	No	Local costs
2.9	Is an appropriate incremental analysis presented or can it be calculated from the data?	NA	
2.10	Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	No	
2.11	Is there no potential conflict of interest?	Yes	
2.12 Overall assessment: **Potentially serious limitations**		
Other comments:		

Study: Jacobson JW, Mulick JA, Green J. Cost-benefit estimates for early intensive behavioral intervention for young children with autism - General model and single state case. Behavioral Interventions 1998; 13(4): 201-226.		
Economic Question: Early Intensive Behavioural Intervention (EIBI) vs. no intervention		

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 with autism
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?	Partly	US
1.4	Are costs measured from the NHS and personal social services (PSS) perspective?	No	Societal perspective
1.5	Are non-direct health effects on individuals excluded?	NA	Cost analysis
1.6	Are both costs and health effects discounted at an annual rate of 3.5%?	Unclear	
1.7	Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	NA	Cost analysis
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:			

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	From 3 to 55 years of age
2.3	Are all important and relevant health outcomes included?	Yes	Cost analysis, but level of functioning considered
2.4	Are the estimates of baseline health outcomes from the best available source?	Partly	Literature review and assumptions
2.5	Are the estimates of relative treatment effects from the best available source?	Partly	Literature review and assumptions
2.6	Are all important and relevant costs included?	Yes	
2.7	Are the estimates of resource use from the best available source?	Partly	Published literature and further assumptions
2.8	Are the unit costs of resources from the best available source?	Yes	National sources (state)
2.9	Is an appropriate incremental analysis presented or can it be calculated from the data?	NA	Cost analysis
2.10	Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	No	Limited sensitivity analysis
2.11	Is there no potential conflict of interest?	Yes	
2.12	Overall assessment: **Very serious limitations**		
Other comments: intervention cost considered in both arms of the model; unrealistic assumptions implicitly made for outcomes of 'no intervention'			

Study: Motiwala SS, Gupta S, Lilly MB, Ungar WJ, Coyte PC. The Cost-Effectiveness of Expanding Intensive Behavioural Intervention to All Autistic Children in Ontario. Healthcare Policy 2006; 1(2):135-151.			
Economic Question: Early Intensive Behavioural Intervention (EIBI) vs. standard service (mixture of EIBI and no intervention) vs. no intervention			
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	Preschool children with autism
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?	Partly	Canada – primary care setting, public funded system
1.4	Are costs measured from the NHS and personal social services (PSS) perspective?	Partly	Direct healthcare and social care costs
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%?	Partly	3%
1.7	Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	No	Number of dependency-free years
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: no QALYs estimated but outcome measure considered relevant; conclusions based on dominance			
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	Up to 65 years of age
2.3	Are all important and relevant health outcomes included?	Yes	Level of dependency
2.4	Are the estimates of baseline health outcomes from the best available source?	Partly	Literature review & further assumptions
2.5	Are the estimates of relative treatment effects from the best available source?	Partly	Literature review & further assumptions
2.6	Are all important and relevant costs included?	Yes	
2.7	Are the estimates of resource use from the best available source?	Yes	Provincial government estimates
2.8	Are the unit costs of resources from the best available source?	Yes	Provincial government
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:			

Study: Peters-Scheffer N, Didden R, Korzilius H, Matson J. Cost comparison of early intensive behavioral intervention and treatment as usual for children with autism spectrum disorder in the Netherlands. Research in Developmental Disabilities 2012; 33(6): 1763-1772.		
Economic Question: Early Intensive Behavioural Intervention (EIBI) vs. treatment as usual		

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	Preschool children with autism (mean age 3 years)
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?	Partly	Netherlands – publicly funded system
1.4	Are costs measured from the NHS and personal social services (PSS) perspective?	No	Public sector costs
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%?	No	
1.7	Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	NA	Cost analysis
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:			

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	Up to 65 years of age
2.3	Are all important and relevant health outcomes included?	Yes	Level of dependency
2.4	Are the estimates of baseline health outcomes from the best available source?	Yes	Literature review & local data
2.5	Are the estimates of relative treatment effects from the best available source?	Partly	Review of meta-analyses & assumptions
2.6	Are all important and relevant costs included?	Yes	
2.7	Are the estimates of resource use from the best available source?	Partly	National data & assumptions
2.8	Are the unit costs of resources from the best available source?	Partly	National data & assumptions
2.9	Is an appropriate incremental analysis presented or can it be calculated from the data?	NA	Cost analysis
2.10	Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	Partly	
2.11	Is there no potential conflict of interest?	Yes	
2.12	Overall assessment: **Potentially serious limitations**		
Other comments: efficacy data selected based on their applicability to the Dutch setting / naïve addition of meta-analytic data across same treatment arms			

Study: Guideline economic analysis		
Economic Question: CBT for the management of co-existing anxiety in children and young people with autism		
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	
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%?	NA	Time horizon 38 weeks
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	
1.9 Is the valuation of changes in HRQoL (utilities) obtained from a representative sample of the general public?	Partly	SG, Canadian population
1.10 Overall judgement: **Partially applicable**		
Other comments:		
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?	Partly	38 weeks
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?	Partly	Guideline meta-analysis
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	Costs directly associated with anxiety not included
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 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	PSA
2.11 Is there no potential conflict of interest?	Yes	
2.12 Overall assessment: **potentially serious limitations**		
Other comments:		