National Institute for Health and Care Excellence

Final

Looked-After Children and Young People

[E] Interventions and approaches to support practitioners in completing physical and mental health and wellbeing assessments (and act on findings during the care journey) for looked-after children and young people

NICE guideline NG205

Evidence reviews underpinning recommendations 1.5.4 to 1.5.9, 1.5.11 to 1.5.13, and 1.9.1 to 1.9.2

October 2021

Final

These evidence reviews were developed by NICE Guideline Updates Team

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Review question

3.1a: What is the effectiveness of interventions and approaches to support practitioners in completing physical and mental health and wellbeing assessments (and act on findings during the care journey) for looked-after children and young people?

3.1b: are interventions to support practitioners in completing physical and mental health and wellbeing assessments acceptable and accessible to looked-after children and young people and their care providers? What are the barriers to, and facilitators for completion of physical and mental health and wellbeing assessments and acting on their findings by practitioners?

Introduction

Looked-after children and young people have poorer outcomes in many areas, including mental and physical health. The rate of mental health disorders in the general population aged 5 to 15 is 10%. For those who are looked after it is 45%, and 72% for those in residential care. Looked-after children and young people are required to undertake regular health assessments. Health assessments are undertaken within the first month of a child becoming looked after. If a child remains in care, health assessments will take place every six months for children under 5 years, and every twelve months for children between 5 and 18 years. However, in some areas, non-attendance rates may be high for health assessments. Varying quality of health checks and follow up (for example, delays in referral) may also occur. Interventions that support practitioners in completing physical and mental health and wellbeing assessments in looked-after children could help to improve a wide range of outcomes including educational, relational, and physical, mental, and emotional health and wellbeing.

Local authorities may use a range of techniques to help support the assessment and follow up of looked after children and young people, however there is uncertainty about which specific interventions work. The (2010) NICE guideline for looked-after children and young people did not include recommendations on specific interventions to support these assessments.

Summary of protocol

PICO table

Table 1: PICO for review on interventions and approaches to support practitioners in completing physical and mental health and wellbeing assessments (and act on findings during the care journey) looked-after children and young people

Population	Health practitioners for looked after children and young people (wherever they are looked after) from birth until age 18, and, where relevant, their families and carers (including birth parents, connected carers and prospective adoptive parents) Including: • Health practitioners for children and young people who are looked after on a planned, temporary basis for short breaks or respite care purposes, only if the Children Act 1989 (section 20) applies and the child or young person is temporarily classed as looked after. • Health practitioners for children and young people living at home with birth parents but under a full or interim local authority care order and are subject to looked-after children and young people processes and statutory duties. • Health practitioners for children and young people in a prospective adoptive placement. • Health practitioners for children and young people preparing to leave care. • Health practitioners for looked-after children and young people on remand, detained in secure youth custody and those serving community orders.
Intervention	Health and social care interventions and approaches to support practitioners in: a) completing assessments, including: • Interventions to encourage uptake of health assessment checks (for example, efforts to inform/promote the benefits of attending health assessments; offering assessments in non-medical venues or "virtual assessments"; combining appointments; approaches that take into account school hours) • Use of a dedicated service for LACYP for completion of health assessments and their follow up • Approaches to make services more friendly and welcoming to LACYP • Interventions to improve quality of health assessments (for example, checklists, training programmes, questionnaires, and prompts for information gathering, and tailored health assessments in addition to the statutory standard) b) acting on adverse findings on health assessments, including:

	• Interventions and approaches to improve follow up and completion of actions identified in the health plan • Interventions and approaches to improve attendance of follow up appointments
Comparator	Comparator could include standard care or another approach to a) support practitioners in completing physical and mental health and wellbeing assessments and b) act on findings
Outcomes	For practitioners: • Uptake and completion of physical and mental health and wellbeing assessments in a timely manner, as defined by statutory guidance • Uptake and completion of actions from physical and mental health and wellbeing assessments in a timely manner For LACYP: • Mental wellbeing and emotional wellbeing • Health outcomes (e.g. improvements in sexual health, nutrition, dentition, improved health behaviours, or risk-taking behaviours) • Identification of need (quantitative attempts to triangulate or estimate unmet need)

SPIDER table

Table 2: SPIDER table for review on interventions to support care placement stability in looked-after children and young people

Sample	Health practitioners for looked after children and young people (wherever they are looked after) from birth until age 18, and, where relevant, their families and carers (including birth parents, connected carers and prospective adoptive parents)
Phenomenon of Interest	Health and social care interventions and approaches to support practitioners in: a) completing assessments b) acting on adverse findings on health assessments
Design	Including focus groups and interview-based studies (mixed-methods studies will also be included provided they contain relevant qualitative data).
Evaluation	For practitioners: • Experience of assessments and barriers and facilitators to improve uptake and completion of health and wellbeing assessments, and actions identified in health plan (including satisfaction and any unintended consequences) For LACYP: • Experience of assessments and barriers and facilitators to improve uptake and completion of health and wellbeing assessments, and actions identified in health plan (including overall satisfaction and any unintended consequences) • Identification of need (from the perspective of LACYP)
Research type	Qualitative and mixed methods
Search date	1990
Exclusion criteria	• Mixed-methods studies reporting qualitative data that cannot be distinguished from quantitative data. • Countries outside of the UK • Studies older than the year 2010 (unless not enough evidence, then progress to include studies between 1990 to current)

Methods and process

This evidence review was developed using the methods and process described in Developing NICE guidelines: the manual. For further details of the methods used see Appendix N. Methods specific to this review question are described in this section and in the review protocol in Appendix A.

The search strategies for this review (and across the entire guideline) are detailed in Appendix B.

Declarations of interest were recorded according to NICE's 2018 conflicts of interest policy.

Reviewed evidence

Included studies

The search for this review was part of a broader search for the whole guideline. After removing duplicates, a total of 36,866 studies were identified from the search. After screening these references based on their titles and abstracts, 42 studies were obtained and reviewed against the inclusion criteria as described in the review protocol for interventions to support practitioners in completing physical and mental health and wellbeing assessments (Appendix A). Overall, 8 original studies were included. 34 references were excluded because they did not meet the eligibility criteria.

The evidence consisted of four interrupted time series studies, two non-randomised controlled trials, and one uncontrolled before-and-after study, and one qualitative study. See the table below for a summary of included studies. For the full evidence tables, see Appendix D. The full references of included studies are given in the reference section of this chapter. These articles considered eight different interventions to support positive relationships in looked-after children.

Excluded studies

See Appendix J for a list of references for excluded studies, with reasons for exclusion.

Summary of studies included in the effectiveness evidence

Table 3: Summary of included quantitative studies

Study (country – study design)	LACYP population	Intervention	Comparator	Number of patients who completed study	Outcomes reported (follow up f/u)
Quantitative evidence					
Bruhn 2008 (USA - ITS)	Children entering foster care aged less than 3 years	Integrated (centralized) Assessment Programme	Pre-Integrated (centralized) Assessment Programme	Pre-: 1141 Post-: 432	Whether initial screening of the looked after child took place over 2 years
Eicher 2011 (UK – ITS)	looked after children in a local authority in London (age 0-18)	Change Project	CAU	Change: 113 CAU: 112	Referrals received among those due a health assessment at 3-month follow up Number of "did not attends" for hospital appointments at 3-month follow up
Hardy 2015 (UK – ITS)	Children in care aged under 5 years	Complete screening	Routine assessment	Complete: 63 Routine: 61	Percentage of children recommended an intervention at 12 months
Horwitz 2000 (USA – NRCT)	Children newly entering foster care age 11 - 74 months	Multidisciplinary initial health and mental health assessment	Usual Care	Multidisciplinary assessment: 62 Usual Care: 58	Type of problem identified by provider: medical; educational; developmental; Referral for problem by provider:

Study (country – study design)	LACYP population	Intervention	Comparator	Number of patients who completed study	Outcomes reported (follow up f/u)
					medical/educational/developmental/mental health Children with at least 1 service recommended at baseline Children with at least 1 service recommended at baseline who received services at 6-months/12-months follow
Hunter 2008 (UK – uncontrolled BA study)	Children in residential care (age not reported)	Specialist nursing service	NA	Specialist nursing service Pre: 162; Post: 152	Proportion of children with BAAF health record booklet Proportion with up-to-date and complete BAAF books Received a pre-admission medical With all age-appropriate immunisations At least one outstanding medical referral that had not been taken up

Study (country – study design)	LACYP population	Intervention	Comparator	Number of patients who completed study	Outcomes reported (follow up f/u)
					Registered with a dentist Section of BAAF book completed: Centile chart; Eyes (registered with an optician and received at least one eye test)
Jee 2010 (USA – ITS)	Children newly entering foster care (age 6 months to 5.5 years)	Screening questionnaires	Standard screening	Questionnaires: 77 Standard: 192	Rate of detection of social-emotional problems
Risley-Curtiss 2007 (USA NRCT)	Children and young people entering care (age 0-18)	Health Exam Pilot Project	Routine assessments	Pilot: 1060 Routine: 1447	Number with complete examination over 1 year follow up; Number with exam completed within 14 days; Number with exam completed 14-30 days Information sharing with out of home care providers/ medical providers
Qualitative evidence					

Study (country – study design)	LACYP population	Intervention	Comparator	Number of patients who completed study	Outcomes reported (follow up f/u)
Swanson 2016 (Canada – semi-structured interviews)	Foster parents	A family medicine clinic co-locating with the Children's Aid Society (CAS)	NA	Total: 19	Themes relating to the experience of, acceptability, and barriers and facilitators for the success of the clinic

See Appendix D for full evidence tables

Summary of the evidence findings

Quantitative evidence

Table 4: Summary GRADE table (pre vs post- integrated (centralised) assessment programme)

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
Association between being in the post vs pre-programme period for whether screening of the looked after child took place	2164	**Beta coefficient: 0.29 (0.06 to 0.51)**	Very Low	An association was observed in favour of the intervention group (unable to assess if effect size is important)

Table 5: Summary GRADE table (pre- vs post- Change Project to support statutory health assessments for looked after children)

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
Referrals received among those due a health assessment (likely assessed using review of electronic referral records)	225	**OR 583.20 [152.47, 2230.75]**	Very Low	Effect favours intervention group
Number of "did not attends" for hospital appointments (likely assessed using review of electronic referral records)	225	**OR 0.27 [0.09, 0.85]**	Very Low	Effect favours intervention group but may be less than the MID

Table 6: Summary GRADE table (Complete screening vs routine assessment)

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
Children who were identified as having difficulties after the screening over 12 months	124	**OR 18.33 [6.80, 49.45]**	Very Low	Effect favours intervention group

Table 7: Summary GRADE table (Multidisciplinary initial health and mental health assessment vs Usual Care)

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
Number with medical problem identified by provider	120	OR 0.72 [0.34, 1.54]	Very Low	Could not differentiate an effect
Number with educational problem identified by provider	120	OR 1.42 [0.63, 3.21]	Very Low	Could not differentiate an effect
Number with developmental problem identified by provider	120	**OR 13.74 [4.83, 39.08]**	Very Low	Effect favours intervention group
Number with mental health problem identified by provider	120	**OR 3.69 [1.49, 9.13]**	Very Low	Effect favours intervention group

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
Number referred with medical health problems by provider at baseline (of those with an identified problem)	120	OR 0.52 [0.14, 1.95]	Very Low	Could not differentiate an effect
Number referred with educational problems by provider at baseline (of those with an identified problem)	120	OR 3.47 [0.34, 35.06]	Very Low	Could not differentiate an effect
Number referred with developmental problems by provider at baseline (of those with an identified problem)	120	OR 8.32 [0.43, 162.00]	Very Low	Could not differentiate an effect
Number referred with mental health problems by provider at baseline (of those with an identified problem)	120	OR 1.28 [0.25, 6.69]	Very Low	Could not differentiate an effect
Children with at least one service recommended at baseline	120	**OR 3.23 [1.52, 6.87]**	Very Low	Effect favours intervention group
Children with at least one service recommended at baseline who received services at 6-months follow up	120	OR 2.73 [0.99, 7.51]	Very Low	Could not differentiate an effect
Children with at least one service recommended at baseline who received services at 12-months follow up	120	OR 2.27 [0.78, 6.58]	Very Low	Could not differentiate an effect
Association between being in the intervention group and receipt of services in children for whom services were recommended	120	OR 3.67 (0.99 to 13.64)	Very Low	Could not differentiate an effect

Table 8: Summary GRADE table (Specialist nursing service pre vs post)

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
Proportion of children with BAAF health record booklet: special nurse evaluated - number of children with carer-held records (BAAF books)	152	OR 0.64 [0.36, 1.12]	Very Low	Could not differentiate an effect

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
Proportion with up-to-date and complete BAAF books: specialist nurse evaluated - a BAAF book is considered complete and up to date if all verifiable health information relating to each specified procedure or practice has been entered.	152	**OR 104.97 [39.90, 276.10]**	Very Low	Effect favours intervention group
Received a pre-admission medical: specialist nurse evaluated - using BAAF book	152	OR 1.49 [0.95, 2.34]	Very Low	Could not differentiate an effect
With all age-appropriate immunisations: specialist nurse evaluated unclear source of information	152	**OR 22.04 [9.21, 52.76]**	Very Low	Effect favours intervention group
Registered with a dentist: specialist nurse evaluated unclear source of data	152	**OR 10.36 [5.97, 17.97]**	Very Low	Effect favours intervention group
With an up-to-date BAAF health assessment (comprehensive medical): specialist nurse evaluated - a BAAF book is considered complete and up to date if all verifiable health information relating to each specified procedure or practice has been entered.	152	**OR 6.95 [4.13, 11.69]**	Very Low	Effect favours intervention group
Section of BAAF book completed: centile charts	152	**OR 7.55 [4.31, 13.22]**	Very Low	Effect favours intervention group
Section of BAAF book completed: eyes (registered with an optician and received at least one eye test);	152	**OR 26.51 [13.58, 51.79]**	Very Low	Effect favours intervention group

Table 9: Summary GRADE table (Screening questionnaires used in assessment of children newly entering foster care vs Standard Screening)

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
Rate of detection of social-emotional problems: defined using clinical cut off	269	**OR 7.02 [2.90, 16.97]**	Very Low	Effect favours intervention group

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
on Ages and Stages Questionnaire scores (unclear in standard screening group)				
Rate of detection of social-emotional problems (infants): defined using clinical cut off on Ages and Stages Questionnaire scores (unclear in standard screening group)	139	**OR 20.89 [2.52, 173.00]**	Very Low	Effect favours intervention group
Rate of detection of social-emotional problems (toddlers): defined using clinical cut off on Ages and Stages Questionnaire scores (unclear in standard screening group)	65	**OR 4.58 [1.06, 19.77]**	Very Low	Effect favours intervention group but may be less than the MID
Rate of detection of social-emotional problems (preschool): defined using clinical cut off on Ages and Stages Questionnaire scores (unclear in standard screening group)	63	**OR 13.06 [2.18, 78.05]**	Very Low	Effect favours intervention group

Table 10: Summary GRADE table (Health Exam Pilot Project vs Routine assessments)

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
Number with complete health examination over 1 year follow up (rural): data from automated child welfare case management data system	2507	**OR 7.13 [3.40, 14.96]**	Very Low	Effect favours intervention group
Number with complete health examination within 14 days (rural): data from automated child welfare case management data system	2507	**OR 14.80 [6.20, 35.33]**	Very Low	Effect favours intervention group
Number with complete health examination between 14-30 days (rural):	2507	**OR 0.47 [0.25, 0.91]**	Very Low	Effect favours intervention group

Outcome	Sample size	Effect size (95% CI)	Quality	Interpretation of effect
data from automated child welfare case management data system				but may be less than the MID
Number with complete health examination over 1 year follow up (urban): data from automated child welfare case management data system	2507	**OR 22.13 [17.16, 28.54]**	Very Low	Effect favours intervention group
Number with complete health examination within 14 days (urban): data from automated child welfare case management data system	2507	**OR 8.92 [7.32, 10.86]**	Very Low	Effect favours intervention group
Number with complete health examination between 14-30 days (urban): data from automated child welfare case management data system	2507	**OR 1.96 [1.63, 2.36]**	Very Low	Effect favours intervention group
Information sharing with out of home care providers (rural)	2507	**OR 63.44 [3.82, 1052.53]**	Very Low	Effect favours intervention group
Information sharing with medical care providers (rural)	2507	**OR 0.05 [0.01, 0.38]**	Very Low	Effect favours control group
Information sharing with out of home care providers (urban)	2507	**OR 10.95 [7.54, 15.90]**	Very Low	Effect favours intervention group
Information sharing with medical care providers (urban)	2507	**OR 27.28 [8.50, 87.57]**	Very Low	Effect favours intervention group

(a) No meaningful difference: crosses line of no effect but not line of MID; Could not differentiate: crosses line of no effect and line of MID; May favour: confidence intervals do not cross line of no effect but cross MID; Favours: confidence intervals do not cross line of no effect or MID

Qualitative evidence findings

Table 11: Summary CERQual table (foster carers experience of co-location of a medical clinic and a non-profit agency)

Themes	illustrative quotes	Studies*	CERQual concerns	CERQual explanation

Access to a common location Access to a common location was a recurrent theme in the conversations with foster parents. Bringing children in care to one location for their medical care provided a forum for children to meet and get to know other children in similar circumstances. .	*"They cannot go to a normal doctor's office and sit with really lots of normal kids that don't have any of the mental problems that these kids all have .... They are all associated with each other. They all see each other at the visitor's [lounge], at the big waiting rooms, so a lot of the kids know each other. So it's like old home week. They feel normal there; every other person in there is in the same boat."*	**1** Swanson 2016	ML: Minor C: No concerns A: Serious concerns R: Serious concerns **Overall: Very Low Confidence**	Minor concerns about recruitment strategy. Serious concerns about adequacy of single study. Serious concerns about relevance of context in Canadian healthcare system.
Acceptance of children's behaviour Children's behavioural difficulties were acceptable at the clinic, which is less often the case in a family doctor's office setting.	*"[In] a waiting room in a mainstream medical clinic, I am usually there with special needs children, a child with fetal alcohol syndrome that is screaming and banging their head on the tile floor, and in the mainstream [medical clinic] the other people are looking at me as if I am a monster, looking at me as if I am a bad mother."*	**1** Swanson 2016	ML: Minor C: No concerns A: Serious concerns R: Serious concerns **Overall: Very Low Confidence**	Minor concerns about recruitment strategy. Serious concerns about adequacy of single study. Serious concerns about relevance of context in Canadian healthcare system.
Consistency Children in care are frequently moved; thus, access to the clinic provided a consistency not found in other areas of their lives.	*"It's the continuity. There are so many variables in this child's life that to have one thing that is continuous is wonderful."*	**1** Swanson 2016	ML: Minor C: No concerns A: Serious concerns R: Serious concerns **Overall: Very Low Confidence**	Minor concerns about recruitment strategy. Serious concerns about adequacy of single study. Serious concerns about relevance of context in Canadian healthcare system.
Support and care	*"When I go into the clinic, the other mothers are looking to me like, 'Oh my goodness, I had a baby like that last year. I'm probably going to have a baby like that this year. Let*	**1** Swanson 2016	ML: Minor C: No concerns	Minor concerns about recruitment strategy. Serious concerns about

Access at the clinic provided support and care for the foster parents.	*me offer some help here.'"*		A: Serious concerns R: Serious concerns **Overall: Very Low** **Confidence**	adequacy of single study. Serious concerns about relevance of context in Canadian healthcare system.
Accessible staff instills confidence in foster parents. The clinic staff were accessible to the foster parents and their support helped the foster parents develop confidence in the job they were doing.	*"[Without the clinic] I wouldn't have as much of a peaceful confident time in being a foster parent. Because I rely on them to help me out of situations .... It would help me being more confident in being a foster parent in knowing they're around. They know the kids better than we do as foster parents. I cannot foster properly without them. They give me peace to know I can talk so someone at the clinic and know they know what they're talking about. One parent's tensions were eased with the intervention of the clinic staff. "The [birth] parents were there early and found out who I am because they have mental issues as well .... They met me with the kids and kind of surprised me."*	**1** Swanson 2016	ML: Minor C: No concerns A: Serious concerns R: Serious concerns **Overall: Very Low** **Confidence**	Minor concerns about recruitment strategy. Serious concerns about adequacy of single study. Serious concerns about relevance of context in Canadian healthcare system.
Neutral space Access to the clinic was a neutral space where foster parents and birth parents could meet while maintaining the privacy of their own personal space.	*"I would not have invited the birth mother to my family doctor's [office]. Were the clinic not there she would not have been part of that initial first visit. It keeps it a bit more at arm's length from my personal life, the children in care, and my personal life. The doctors [at the clinic] are used to dealing with foster and [birth] parents, so they know how to treat us in a situation that could be tense."*	**1** Swanson 2016	ML: Minor C: No concerns A: Serious concerns R: Serious concerns **Overall: Very Low** **Confidence**	Minor concerns about recruitment strategy. Serious concerns about adequacy of single study. Serious concerns about relevance of context in Canadian healthcare system.

Enhancement of communication and care. The clinic co-locating with the CAS made it easy for social workers and child protection staff to meet with foster parents, birth parents, and the children during medical care visits. This in turn facilitated communication and record keeping, leading to a better understanding of the issues and planning and maintaining care.	*"It is best for everybody in the CAS family to be all here in the same place, the same doctors, all the files are together and the knowledge of the kinds of kids we get in care and the kinds of issues we deal with and that kind of thing. It's centralized. It is there for them [CAS staff] as opposed to them having to deal with umpteen different family doctors in different parts of the province I guess as I am [more than an hour away]. When I go to my family doctor's or the hospital or to a walk-in clinic I'm there on my own; when I go to the clinic the social worker is in the building and usually attends and a support person is there as well …. It's monumental. It's huge."*	**1** Swanson 2016	ML: Minor C: No concerns A: Serious concerns R: Serious concerns **Overall: Very Low** **Confidence**	Minor concerns about recruitment strategy. Serious concerns about adequacy of single study. Serious concerns about relevance of context in Canadian healthcare system.
Convenience Access to consultants and the sharing of information was also easier when the medical records were all in one place.	*"Psychiatric consult is different; knowledge they have of the child's files, an intimacy you can't get elsewhere. Workers come down and talk to the doctors separately from the child's appointment. When we had a very difficult child here who had mental health issues, the agency set up a consult with the [child psychiatrist] and they sat in a room at a table [of] 8 to 10 people. [The CAS doctor] was part of that. So that you would never get anywhere else. I was able to speak to the CAS doctor and because he already had interviewed the former foster mother he was able, with my knowledge, he was able to prescribe ... for ADHD [attention deficit hyperactivity disorder]."*	**1** Swanson 2016	ML: Minor C: No concerns A: Serious concerns R: Serious concerns **Overall: Very Low** **Confidence**	Minor concerns about recruitment strategy. Serious concerns about adequacy of single study. Serious concerns about relevance of context in Canadian healthcare system.
Opportunities for change. The foster parents expressed some opportunities for change in the future	*"The only thing the CAS does is the yearly physical; my family doctor does everything else. Regulations say any newborns or [others who] come into care, come in for a medical exam; doesn't happen in time*	**1** Swanson 2016	ML: Minor C: No concerns A: Serious concerns	Minor concerns about recruitment strategy. Serious concerns about adequacy of single

	allotted so go to family MD [medical doctor] and then have to go back to med[ical] clinic. My expectations are that there should be a doctor available during regular hours …. I would prefer that the clinic be open during regular 9 to 5 hours."		R: Serious concerns **Overall: Very Low** **Confidence**	study. Serious concerns about relevance of context in Canadian healthcare system.

See appendix F for full GRADE tables and CERQual tables.

Economic evidence

Included studies

A systematic review was conducted to cover all questions within this guideline update. The study selection diagram is available in Appendix G. The search returned 3,197 publications since 2000. Additionally, 29 publications were identified through reference tracking. All records were excluded on basis of title and abstract for this review question. An updated search was conducted in November 2020 to identify any newly published papers. The search returned 584 publications. After screening titles and abstracts five publications were considered for full text inspection but did not meet the inclusion criteria and were excluded from the evidence report. Reasons for exclusion are summarised in Appendix J.

Economic model

No economic modelling was undertaken for this review question.

The committee's discussion of the evidence

Interpreting the evidence

The outcomes that matter most

Outcomes reported to the committee in this evidence review included whether the initial health assessment took place, completion of routine health assessments, timely completion of health assessments, and quality of the completion of health records. Other outcomes referred to the follow up after completion of health records i.e. rate of detection of social-emotional or health problems, number recommended services who actually received them, and number referred to hospital services who did not attend. In addition, some qualitative evidence was presented regarding themes relating to the acceptability, barriers, and facilitators to the success of a medical clinic co-residing with an agency providing services to looked after children and young people. The committee were particularly interested in the outcomes regarding completion and follow up of assessments, and identification of need. However, it was noted that some studies were unclear in how they had defined these outcomes (e.g. Hardy 2015, Horwitz 2000, and Jee 2010). For example, Horwitz 2000 reported number of "problems" identified but it was unclear what measures and thresholds were used to define these. Another problematic example was a study by Jee et al. which compared rates of detection of social-emotional problems for children five and younger, however, it was unclear how detection of social-emotional problems was defined, and, indeed, the classification of these may have differed between comparison groups. The committee took this uncertainty into account when making recommendations.

As in previous reviews, the committee were primarily interested in objective findings, such as those derived from medical records and with clear definitions e.g. whether the screening of a looked after child took place, whether referrals for a health assessment had been received, number of "did not attends", number of referrals for a medical problem following assessment, number registered with a dentist, number with complete BAAF books, whether assessment took place within a set time period (14 days in one study). While the reported qualitative outcomes were considered helpful, these were highly time and context dependent for their relevance to the UK population of looked after children and young people.

The quality of the evidence

The committee considered the overall quality of the evidence presented. There was no randomised controlled trial evidence presented meaning that there may be important differences between comparison groups. Some studies used interrupted time series-type study designs or uncontrolled before and after studies, meaning comparison groups were not selected in a prospective design. Studies did not always fully report baseline characteristics, making it difficult to assess for this risk of bias. In addition, the amount of missing data was also commonly not reported. As described above, some studies were unclear in how they measured their outcomes. The committee noted that the control groups were also frequently poorly defined, this made interpretation difficult. To be able to assess the external validity of a study's findings, the committee needed to make a judgement call regarding whether the standard of care in the control arm was comparable to standard practice in the UK. In many studies this was unlikely to be the case, particularly when the study was based in a different social context such as the USA or Canada and particularly when the cohort was recruited many years ago. For example, care planning has developed and improved considerably in the UK since 2010.

As described above, context was particularly important in interpreting the findings of the qualitative study looking at the acceptability, barriers, and facilitators to the success of a medical clinic co-residing with an agency providing services to looked after children and young people (Swanson 2016). The committee noted that this study was based in Canada, and that it was unclear how comparable their social care context was. In addition, the strength of qualitative findings was hampered by the fact that there was only one study identified. The study authors recognised that their recruitment strategy may have been a limitation, as they did not actively seek out participants who may have more negative views of the clinic, and that participants agreeing to participate may have been those with more positive views, leading to possible selection bias.

Benefits and harms

Evidence from eight studies was presented to the committee, this included results from four interrupted time series, two non-randomised controlled studies, one uncontrolled before and after study, and one qualitative study.

The committee considered evidence from one interrupted time series from the USA showing that the introduction of a centralised screening programme (relying on screeners specifically employed and trained for this purpose who delivered an in-home assessment within 45 days of entry into care). This was compared to a previous system whereby caregivers were required to bring their children to specific locations for screening. The committee noted that this study was from 2008 and based in the USA. They also considered that the standard of care described was poorer than that currently received in the UK where a child receives a statutory initial health assessment within 20 working days from entry into care. This includes an assessment of the effect of the child's health history on his or her development, and screening for defects of hearing or vision (see Promoting the health and well-being of looked-after children Statutory guidance for local authorities, clinical commissioning groups and NHS England, 2015). Rather than being carried out by employed screeners, UK law requires that a registered medical practitioner carry out this initial assessment.

Next the committee considered evidence from a UK-based interrupted time series looking at the "change project". This was a project introduced to support statutory health assessments for LACYP. This study used a named nurse as a "change agent" to support multiagency working to improve statutory health assessments for LACYP. The activities of this named nurse included, identifying key stakeholders, attending social care team meetings, facilitating

the passage of information between stakeholders using an email system, and a three-monthly service review meeting in which information was shared between providers and any concerns about the children raised and solutions discussed. In addition, assessment paperwork was streamlined, clear guidelines developed, and a new system of prompts for helping social workers achieve more timely assessments was established. These changes resulted in improvements in number of referrals received among those due a health assessment, and a reduction in the number of “did not attends” for hospital appointments. However, the committee noted that the study was old and had occurred prior to care review and assessment reforms since 2010. The group did not want to be prescriptive with regard to making specific recommendations for email systems or prompts for social workers, since these may not be applicable or helpful in all cases. However, the principle of facilitated multiagency working was considered to be important, since this is the means by which systems can adapt to cope with local challenges. Particularly, the committee were interested in the use of regular meetings, or forums, for care providers to facilitate the exchange of information and to provide the opportunity to adapt care systems to meet the needs of looked after children. This was considered important not just for health assessments but for broader care issues such as the need to upskill in response to the needs of unaccompanied asylum seekers. Therefore, the committee recommended that local authorities consider establishing a forum to facilitate communication and bring together expertise from different agencies in the network of care providers for looked after children. Additionally, this research paper measured the success of the project using two 3-month audits, one before and one after the implementation of the Change Project. Likewise, the committee recommended that health care professionals responsible for the care of LACYP should audit the uptake of health action plans to ensure service provision (and any adaptions of service provision to meet the need of LACYP) improves the outcomes of children in their care. The committee noted that these audits should have multidisciplinary input, something that would be facilitated by the use of multiagency forums.

The committee considered a UK-based interrupted-time-series looking at the use of enhanced mental health screening for early intervention in looked-after children entering care before 5 years of age. This study introduced a more in-depth interview with foster carers (expanding on the use of the ages and stages questionnaire and social emotional growth chart). This extra information was discussed with the paediatrician after the initial health assessment (IHA), then all the information from the IHA (screening questionnaires, observations, developmental and health information) and background information was integrated into a summary compiled by a Child and Adolescent Mental Health Services (CAMHS) clinical specialist which included recommendations for a child’s social and emotional development. The committee noted that this service resulted in greater number of children identified as having difficulties (compared to the prior 12 months). This was a UK-based study which described a level of assessment greater than that currently used in practice (including involvement of CAMHS, for instance). The committee were in consensus that current initial health assessments were often insufficiently detailed to pick up mental health needs to allow for early mental health provision for looked after children entering care, and that effort should be made to ensure children entering care, who needed it, had had their mental and emotional health needs assessed in full. Recognising the reality that such an assessment can’t be squeezed into the initial health assessment, the committee recommended that after the initial health assessment for looked-after children and young people, practitioners should consider the need for an additional specialist mental and emotional health assessment, particularly for babies and children, once the looked-after person has begun to form a relationship with the primary caregiver. The committee noted that mental health problems are commonly overlooked in young children and babies in whom mental health symptoms may be less obvious.

This study also included a compilation and summarising of health records as a key component of the intervention. The committee discussed the importance of having health records that are neatly compiled, highlighting and summarising key events, and giving a sense of a timeline of care for the looked after person. It was noted that work to compile records is something that is done inconsistently across local authorities. Therefore, a recommendation was made to create a chronological summary and compilation of health records to give a clear sense of the looked after child's past, present, and future health needs. By consensus, the committee considered that this simple intervention had the potential to be transformative for the care of looked after children by facilitating the passage of information between agencies and preventing important needs and health plans from becoming lost.

By consensus the committee also considered the importance of gaining a full health record/health history from the birth parents to create a complete record of the looked-after child's health. However, it was noted that gaining consent for this may be a difficult or lengthy process. Therefore, the committee discussed the importance of attempting to gain this consent as soon as possible in the care process in order to prevent missing important health information that could be important for directing the plan of care. The committee recommended for all children and young people, on entry into care, to engage birth parents to gain consent to retrieve information about birth parent's health, and child's birth records for inclusion in health records.

Next the committee considered a non-randomised controlled trial from the USA which used a foster-care-specialist multidisciplinary clinic to provide complete medical examination, developmental assessment, psychological assessment, speech and language assessment, and motor evaluation compared to community providers administering the same tests. This study found that the specialist clinic identified more developmental and mental health problems and referred more children for follow up services. However, once again, the study was old (participants were recruited between 1992 and 1993) and from the USA, therefore the committee were unable to decipher how comparable the standard of care was in the control group to that of current UK practice.

Another qualitative study was presented which also considered the co-location of a multidisciplinary medical clinic sharing space with a non-profit agency to provide a more tailored experience for looked after children and young people. The committee noted that the study gained the opinions of foster carers only, rather than the looked after children themselves. Overall, the committee considered this to be a harmful intervention since it segregated looked after children from the rest of society. A lay member mentioned that there are already sufficient services to create a common space for looked after children and young people and that to do so for the purpose of medical examination is unnecessary and merely perpetuates the sense that children and youth in care are different from others. However, one of the themes drawn out from this study involved an appreciation of the continuity of medical professionals in the care of LACYP ("there are so many variables in this child's life that to have one thing that is continuous is wonderful"), the committee agreed with this, and considered the importance a medical professional who is familiar with the looked after child, and their medical and social history, to perform routine health assessments. This is important both to promote a trusting (and medically adherent) relationship between the child and the medical practitioner, but also to help the practitioner to spot important changes in the health needs of the child to support better care. Therefore, the committee recommended that continuity of medical professionals in completing routine health assessments for looked after children should be promoted.

Next the committee considered evidence from a USA non-randomised controlled study which considered the establishment of a work group composed of personnel from child welfare, medical, and dental services. The work group aimed to establish a service providing a complete health assessment within 14 days of entry into foster care including a standardised assessment using common checklists across the two treatment counties. The committee noted the positive outcomes from this older (2007) study, which included improvements in the completion of health records over a year and an increase in the speed of health assessments (more examined within 14 days). The committee considered that this USA study was setting up a service similar to that which exists in UK practice. The timescale employed in this study was considered aspirational but also comparable to the speed of health assessments in UK-practice (20 working days).

The committee then considered evidence from a UK-based study that considered the use of a specialist nursing service in residential care for promoting the completion of health assessments, for liaising with health professionals and social care providers to ensure the health needs of children were being met, and for ensuring standard health recommendations were being adhered to. The committee noted that this intervention resulted in improvements in the number of children with up to date and complete BAAF health record booklets, number with complete immunisations, and number registered with a dentist. However, the committee noted the age of the study was a problem, recruitment having occurred between 2006-2007. The committee considered that the improvements in statutory-level care review and assessments meant that it was unclear whether intervention described would still be as effective relative to standard care today. The intervention was also considered to have resource implications since not all residential care units could employ a full-time specialist nurse. In any case, the committee considered that one of the key components of this intervention was to improve communication between disciplines to facilitate multiagency working between health professionals, social care providers, and residential care home staff. And to ensure that statutory guidance was being adhered to. As such, the recommendation previously made regarding the use of multiagency forums and audits was applicable.

Finally, the committee also heard expert testimony evidence (see Appendix M) on the journey and care of unaccompanied asylum seekers by two experts: Alex Stringer (AS), a Service Manager for UASC in Kent and Ann Lorek, a Doctor for Child Protection in Lambeth. These testimonies touched on many aspects of the health needs of LACYP from arrival in the UK to leaving care, see Appendix M. Expert testimony highlighted specific and prevalent health needs of unaccompanied asylum seekers compared to the broader population of looked after children and young people in the UK. These include: nutritional deficiencies, including vitamin D deficiency, issues of adjusting to the UK diet, and gastrointestinal symptoms; oral health and dentition problems as a result of not having had access to UK routine dental care; infectious diseases such as TB, and blood borne infections such as HIV and hepatitis; sensory and developmental health problems as a result of lack of previous screening for example, hearing, vision, and mobility problems; mental health problems, particularly trauma; sexual health issues, including sexually transmitted diseases; problems relating to previous assault and abuse, and including abuse linked to faith and culture (for example, FGM and breast flattening); unaccompanied asylum seekers were frequently found to have problems acclimatising to a regular sleep schedule as a result of travelling long distances, often with continuously disturbed sleep; finally, the material needs of unaccompanied asylum seekers was found to be important since many unaccompanied asylum seekers may arrive with very few possessions. Accordingly, the committee recommended tailored initial health assessments which should address the additional risks posed to unaccompanied asylum seekers, listed above, as a result of their country of origin and journey to the UK. These assessments should also address difficulties in communication

due to language barriers with provision of an in-person translator – particularly for the initial health assessment.

Cost effectiveness and resource use

No economic evidence was presented to the committee for this review question. The committee made recommendations on the effectiveness evidence presented for this review question and, in the absence of economic evidence, used their expertise to inform discussion around the expected resource impact of these recommendations.

The committee highlighted that the initial health assessment is an important event for LACYP as it allows for the identification of existing needs and forms the basis for an individualised care plan. The initial health assessment should therefore include an accurate and comprehensive history of the health of a LACYP. As the initial health assessment is a statutory requirement there should not be any additional costs to the system. The majority of recommendations simply highlight best practice in delivery of initial health assessments and reinforce the importance of this statutory requirement. The committee also agreed that if an initial health assessment is not carried out in sufficient detail and/or inappropriately documented, the provision of care for a LACYP could be delayed, thereby resulting in additional costs and an overall negative experience for the LACYP. The committee noted that better communication between agencies providing care to LACYP could prevent duplication of care efforts, information loss and could improve continuity of care for LACYP.

The committee discussed that there may also be a need for a detailed mental and emotional health assessment, following the initial health assessment. The committee recommended that this should be considered once the LACYP has begun to form a relationship with the primary caregiver. The committee agreed that these assessments could be useful in identifying mental health needs to allow for early mental health provision for children entering care and avoid the substantial long-term costs and consequences incurred when these issues go unidentified. The committee also believed that identifying LACYP with these mental and emotional health issues as early as possible would allow them to receive interventions that may prevent them from requiring more substantial/intensive CAHMS treatment in the future. However, the committee did note that providers are currently struggling to meet current initial health assessment targets and it is likely to be both costly and challenging to implement and therefore were only able to recommend that an additional assessment is considered and not offered to all LACYP.

The committee recommended that an history of health records should be compiled to give a clear sense of the looked-after persons past, present and future physical and mental health needs. The committee noted that this is current practice in some local authorities but is done inconsistently across the country. However, as noted above, health assessments conducted with insufficient detail can lead to delays in the provision of care, resulting in additional costs and negative experiences for the LACYP. Therefore, it is expected that any costs associated with compiling these detailed health records would be offset by long-term savings and improved experiences for LACYP.

The committee also recommended that a full health record should be obtained from the birth parents of the LACYP and that gaining this consent should be done as early as possible in the care process to prevent missing important health information. Requesting this information and consent as early as possible in the care process is likely to be less resource intensive as such an approach would increase the chances of having direct contact with the birth parents and obtaining the required health information.

The committee agreed that healthcare professionals preforming the initial health assessment in unaccompanied asylum seekers should be aware of the specific physical and emotional needs of such children and should consider risk factors associated with specific countries of origin/route of travel and the context of the child's expatriation. The committee agreed that increased awareness of these considerations among healthcare professionals can be facilitated by additional training, through invited feedback from children that were once cared for in these circumstances and/or by requesting testimonies from specialist organisations in the voluntary sector. It was anticipated that such information could be provided as part of existing in-house training, ensuring that the delivery is tailored to different professional groups and their level of familiarity in providing care for unaccompanied asylum seekers. Funding for this additional training should already be available through general funds that support routine training and activities (e.g. team awareness days) for healthcare professionals.

References – included studies

Effectiveness

Bruhn, Christina M, Duval, Denise, Louderman, Richard et al. (2008) Centralized assessment of early developmental delays in children in foster care: A program that works. Children and Youth Services Review 30(5): 536-545

Eichler, Hannah (2011) Improving statutory health assessments for looked after children. Nursing children and young people 23(3): 20-3

Hardy, Carol, Hackett, Elizabeth, Murphy, Elizabeth et al. (2015) Mental health screening and early intervention: clinical research study for under 5-year-old children in care in an inner London borough. Clinical child psychology and psychiatry 20(2): 261-75

HUNTER Donna and et al (2008) Improving the health of looked after children in Scotland. 2. The views of residential care workers on the promotion of health and well-being of the children they care for. Adoption and Fostering 32(4): 57-63

HUNTER Donna and et al (2008) Improving the health of looked after children in Scotland. 1. Using a specialist nursing service to improve the health care of children in residential accommodation. Adoption and Fostering 32(4): 51-63

Jee, Sandra H, Conn, Anne-Marie, Szilagyi, Peter G et al. (2010) Identification of social-emotional problems among young children in foster care. Journal of child psychology and psychiatry, and allied disciplines 51(12): 1351-8

Risley-Curtiss, Christina and Stites, Belva (2007) Improving healthcare for children entering foster care. Child welfare 86(4): 123-44

Swanson, Graham, Mills, Michael, Davis, Amie et al. (2016) Voices in the wilderness: Co-location meeting the needs of children in protective care. Canadian family physician Medecin de famille canadien 62(11): e694-e698

Cost effectiveness

No cost-effectiveness evidence was identified for this review question.

Appendices

Appendix A – Review protocols

Review protocol for RQ3.1: Interventions and approaches to support practitioners in completing physical and mental health and wellbeing assessments (and act on findings during the care journey) for looked-after children and young people

ID	Field	Content
0.	PROSPERO registration number	
1.	Review title	Interventions and approaches to support practitioners in completing physical and mental health and wellbeing assessments for looked-after children and young people.
2.	Review question	3.1a: What is the effectiveness of interventions and approaches to support practitioners in completing physical and mental health and wellbeing assessments (and act on findings during the care journey) for looked-after children and young people? 3.1b: are interventions to support practitioners in completing physical and mental health and wellbeing assessments acceptable and accessible to looked-after children and young people and their care providers? What are the barriers to, and facilitators for completion of physical and mental health and wellbeing assessments and acting on their findings by practitioners?
3.	Objective	<u>Quantitative</u> a) To determine the harms and effectiveness of interventions and approaches to support practitioners in completing physical and mental health and wellbeing assessments for looked-after children and young people

		b) To determine the harms and effectiveness of interventions and approaches to support practitioners in acting on findings of physical and mental health and wellbeing assessments for looked-after children and young people <u>Qualitative</u> c) To determine if interventions to support practitioners in completing physical and mental health and wellbeing assessments for looked after children are acceptable and accessible. To determine other barriers and facilitators to completion of physical and mental health and wellbeing assessments (and acting on their findings).
4.	Searches	**Sources to be searched** • PsycINFO (Ovid) • Embase (Ovid) • MEDLINE (Ovid) • MEDLINE In-Process (Ovid) • MEDLINE Epubs Ahead of Print • PsycINFO (Ovid) • Social policy and practice (Ovid) • Cochrane Central Register of Controlled Trials (CENTRAL) • Cochrane Database of Systematic Reviews (CDSR) • Database of Abstracts of Reviews of Effect (DARE) • EconLit (Ovid) – economic searches only • NHSEED (CRD) - economic searches only **Supplementary search techniques** • Studies published from 1st January 1990 to present day.

		Limits • Studies reported in English • No study design filters will be applied • Animal studies will be excluded • Conference abstracts/proceedings will be excluded. • For economic searches, the Cost Utility, Economic Evaluations and Quality of Life filters will be applied. The full search strategies for MEDLINE database will be published in the final review. For each search the Information Services team at NICE will quality assure the principal database search strategy and peer review the strategies for the other databases using an adaptation of the PRESS 2015 Guideline Evidence-Based Checklist.
5.	Condition or domain being studied	This review is for part of an updated NICE guideline for looked-after children and young people and concerns interventions to support the completion and follow up of health assessments by practitioners for looked after children and young people.
6.	Population	Health practitioners for looked after children and young people (wherever they are looked after) from birth until age 18, and, where relevant, their families and carers (including birth parents, connected carers and prospective adoptive parents) Including: • Health practitioners for children and young people who are looked after on a planned, temporary basis for short breaks or respite care purposes, only if the Children Act 1989 (section 20) applies and the child or young person is temporarily classed as looked after.

		• Health practitioners for children and young people living at home with birth parents but under a full or interim local authority care order and are subject to looked-after children and young people processes and statutory duties. • Health practitioners for children and young people in a prospective adoptive placement. • Health practitioners for children and young people preparing to leave care. • Health practitioners for looked-after children and young people on remand, detained in secure youth custody and those serving community orders.
7.	Intervention	Health and social care interventions and approaches to support practitioners in: a) completing assessments, including: • Interventions to encourage uptake of health assessment checks (for example, efforts to inform/promote the benefits of attending health assessments; offering assessments in non-medical venues or "virtual assessments"; combining appointments; approaches that take into account school hours) • Use of a dedicated service for LACYP for completion of health assessments and their follow up • Approaches to make services more friendly and welcoming to LACYP • Interventions to improve quality of health assessments (for example, checklists, training programmes, questionnaires, and prompts for information gathering; and tailored health assessments in addition to the statutory standard)

		b) acting on adverse findings on health assessments, including: • Interventions and approaches to improve follow up and completion of actions identified in the health plan • Interventions and approaches to improve attendance of follow up appointments
8.	Comparator	<u>Quantitative evidence</u> Comparator could include standard care or another approach to a) support practitioners in completing physical and mental health and wellbeing assessments and b) act on findings <u>Qualitative evidence</u> Not applicable
9.	Types of study to be included	<u>Quantitative evidence</u> • Systematic reviews of included study designs • Randomised controlled trials If insufficient evidence, progress to non-randomised prospective controlled study designs If insufficient evidence, progress to non-randomised, non-prospective, controlled study designs (for example, retrospective cohort studies, case control studies, uncontrolled before and after studies, and interrupted time series) <u>For qualitative studies</u>

		• Including focus groups and interview-based studies (mixed-methods studies will also be included provided they contain relevant qualitative data). Evidence must be related to acceptability, accessibility of interventions or other barriers to and facilitators for their effectiveness to support practitioners in completing physical and mental health and wellbeing assessments and act on findings
10.	Other exclusion criteria	• Studies including mixed populations (i.e. looked after and non-looked after children) without reporting results separately for LACYP <u>For quantitative evidence only</u> • Countries outside of the UK (unless not enough evidence, then progress to OECD countries) • Strategies, policies, system structure and the delivery of care that is covered in statutory guidance about looked after children and young people • Studies older than the year 2000 (unless not enough evidence, then progress to include studies between 1990 to current) <u>For qualitative evidence only</u> • Studies older than the year 2010 (unless not enough evidence, then progress to include studies between 1990 to current) • Mixed-methods studies reporting qualitative data that cannot be distinguished from quantitative data. • Countries outside of the UK (unless evidence concerns an intervention which has been shown to be effective in reviewed quantitative evidence)

11.	Context	Looked-after children and young people have poorer outcomes in many areas, including mental and physical health. The rate of mental health disorders in the general population aged 5 to 15 is 10%. For those who are looked after it is 45%, and 72% for those in residential care. Looked-after children and young people are required to undertake regular health assessments. Health assessments are undertaken within the first month of a child becoming looked after. If a child remains in care, health assessments will take place every six months for children under 5 years, and every twelve months for children between 5 and 18 years. However, in some areas, non-attendance rates may be high for health assessments. Varying quality of health checks and follow up (for example, delays in referral) may also occur.
12.	Primary outcomes (critical outcomes)	<u>Quantitative outcomes</u> For practitioners: • Uptake and completion of physical and mental health and wellbeing assessments in a timely manner, as defined by statutory guidance • Uptake and completion of actions from physical and mental health and wellbeing assessments in a timely manner For LACYP: • Mental wellbeing and emotional wellbeing • Health outcomes (e.g. improvements in sexual health, nutrition, dentition, improved health behaviours, or risk-taking behaviours) • Identification of need (quantitative attempts to triangulate or estimate unmet need) <u>Qualitative outcomes</u> For practitioners:

		• Experience of assessments and barriers and facilitators to improve uptake and completion of health and wellbeing assessments, and actions identified in health plan (including satisfaction and any unintended consequences) For LACYP: • Experience of assessments and barriers and facilitators to improve uptake and completion of health and wellbeing assessments, and actions identified in health plan (including overall satisfaction and any unintended consequences) • Identification of need (from the perspective of LACYP)
13.	Secondary outcomes (important outcomes)	None
14.	Data extraction (selection and coding)	All references identified by the searches and from other sources will be uploaded into EPPI reviewer and de-duplicated. 10% of the abstracts will be reviewed by two reviewers, with any disagreements resolved by discussion or, if necessary, a third independent reviewer. The full text of potentially eligible studies will be retrieved and will be assessed in line with the criteria outlined above. A standardised form will be used to extract data from studies (see Developing NICE guidelines: the manual section 6.4). Study investigators may be contacted for missing data where time and resources allow.
15.	Risk of bias (quality) assessment	Risk of bias will be assessed using the appropriate checklist as described in

		Developing NICE guidelines: the manual. The risk of bias across all available evidence will be evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group http://www.gradeworkinggroup.org/ GRADE and GRADE CERQual will be used to assess confidence in the findings from quantitative and qualitative evidence synthesis respectively.
16.	Strategy for data synthesis	Quantitative data Meta-analyses of interventional data will be conducted with reference to the Cochrane Handbook for Systematic Reviews of Interventions (Higgins et al. 2011). Fixed- and random-effects models (der Simonian and Laird) will be fitted for all syntheses, with the presented analysis dependent on the degree of heterogeneity in the assembled evidence. Fixed-effects models will be the preferred choice to report, but in situations where the assumption of a shared mean for fixed-effects model is clearly not met, even after appropriate pre-specified subgroup analyses is conducted, random-effects results are presented. Fixed-effects models are deemed to be inappropriate if one or both of the following conditions was met: • Significant between study heterogeneity in methodology, population, intervention or comparator was identified by the reviewer in advance of data analysis.

		• The presence of significant statistical heterogeneity in the meta-analysis, defined as $I^2 \geq 50\%$. • Meta-analyses will be performed in Cochrane Review Manager V5.3 If the studies are found to be too heterogeneous to be pooled statistically, a simple recounting and description of findings (a narrative synthesis) will be conducted. <u>Qualitative data</u> Information from qualitative studies will be combined using a thematic synthesis. By examining the findings of each included study, descriptive themes will be independently identified and coded in NVivo v.11. The qualitative synthesis will interrogate these 'descriptive themes' to develop 'analytical themes', using the theoretical framework derived from overarching qualitative review questions. Themes will also be organised at the level of recipients of care and providers of care. <u>Evidence integration</u> A segregated and contingent approach will be undertaken, with sequential synthesis. Quantitative and qualitative data will be analysed and presented separately. For non-UK evidence, the data collection and analysis of qualitative data will occur after and be informed by the collection and analysis of quantitative effectiveness data. Following this, all qualitative and quantitative data will be integrated using tables and matrices. By intervention, qualitative analytical themes will be

		presented next to quantitative effectiveness data. Data will be compared for similarities and incongruence with supporting explanatory quotes where possible.
17.	Analysis of sub-groups	Results will be stratified by the following subgroups where possible. In addition, for quantitative synthesis where there is heterogeneity, subgroup analysis will be undertaken using the following subgroups. Age of LACYP: • LACYP in early years • LACYP in primary education • LACYP in secondary education and further education until age 18 Subgroups, of specific consideration, will include: • Looked-after children on remand • Looked-after children in secure settings • Looked-after children and young people with mental health and emotional wellbeing needs • Looked-after children and young people who are babies and young children • Looked-after children and young people who are unaccompanied children seeking asylum, or refugees • Looked-after children and young people who are at risk or victims of exploitation (including female genital mutilation) and trafficking • Looked-after children and young people who are teenage and young parents in care

		• Looked-after children and young people with disabilities; speech, language and communication needs; special education needs or behaviour that challenges. • Looked-after children and young people who are placed out of area • Looked-after children who are LGBTQ		
18.	Type and method of review	☐ Intervention ☐ Diagnostic ☐ Prognostic ☐ Qualitative ☐ Epidemiologic ☐ Service Delivery ☒ Other (please specify)		
19.	Language	English		
20.	Country	England		
21.	Anticipated or actual start date	June 2019		
22.	Anticipated completion date	September 2021		
23.	Stage of review at time of this submission	**Review stage**	**Started**	**Completed**
		Preliminary searches	☐	☐
		Piloting of the study selection process	☐	☐
		Formal screening of search results against eligibility criteria	☐	☐
		Data extraction	☐	☐

		Risk of bias (quality) assessment	☐	☐
		Data analysis	☐	☐
24.	Named contact	**5a. Named contact** Guideline Updates Team **5b Named contact e-mail** LACYPupdate@nice.org.uk **5c Organisational affiliation of the review** National Institute for Health and Care Excellence (NICE)		
25.	Review team members	From the Guideline Updates Team: • Caroline Mulvihill • Stephen Duffield • Bernadette Li • Rui Martins		
26.	Funding sources/sponsor	This systematic review is being completed by the Guideline Updates Team, which is part of NICE.		
27.	Conflicts of interest	All guideline committee members and anyone who has direct input into NICE guidelines (including the evidence review team and expert witnesses) must declare any potential conflicts of interest in line with NICE's code of practice for declaring and dealing with conflicts of interest. Any relevant interests, or changes to interests, will also be declared publicly at the start of each guideline committee meeting. Before each meeting, any potential conflicts of interest will be considered by the guideline committee Chair and a senior member of the development team. Any decisions to exclude a person from all or part of a meeting will be documented. Any changes to a member's declaration of interests will be recorded in the minutes of the meeting. Declarations of interests will be published with the final guideline.		

28.	Collaborators	Development of this systematic review will be overseen by an advisory committee who will use the review to inform the development of evidence-based recommendations in line with section 3 of Developing NICE guidelines: the manual. Members of the guideline committee are available on the NICE website: https://www.nice.org.uk/guidance/indevelopment/gid-ng10121
29.	Other registration details	N/ A
30.	Reference/URL for published protocol	
31.	Dissemination plans	NICE may use a range of different methods to raise awareness of the guideline. These include standard approaches such as: • notifying registered stakeholders of publication • publicising the guideline through NICE's newsletter and alerts • issuing a press release or briefing as appropriate, posting news articles on the NICE website, using social media channels, and publicising the guideline within NICE.
32.	Keywords	Looked after children, looked after young people, children in care, mixed-methods, health assessments, systematic review
33.	Details of existing review of same topic by same authors	N/ A
34.	Current review status	☐ Ongoing ☐ Completed but not published ☐ Completed and published ☐ Completed, published and being updated ☐ Discontinued

35..	Additional information	
36.	Details of final publication	www.nice.org.uk

Appendix B – Literature search strategies

Effectiveness searches

Bibliographic databases searched for the guideline:

- Cochrane Database of Systematic Reviews – CDSR (Wiley)
- Cochrane Central Register of Controlled Trials – CENTRAL (Wiley)
- Database of Abstracts of Reviews of Effects – DARE (CDSR)
- PsycINFO (Ovid)
- EMBASE (Ovid)
- MEDLINE (Ovid)
- MEDLINE Epub Ahead of Print (Ovid)
- MEDLINE In-Process (Ovid)
- Social policy and practice (Ovid)
- ERIC (ProQuest)

A NICE information specialist conducted the literature searches for the evidence review. The searches were originally run in June 2019 with an additional search of the ERIC database in October 2019.

Searches were run on population only and the results were sifted for each review question (RQ). The searches were rerun on all databases reported above in July 2020 and again in October 2020.

The principal search strategy was developed in MEDLINE (Ovid interface) and adapted, as appropriate, for use in the other sources listed in the protocol, taking into account their size, search functionality and subject coverage.

The MEDLINE strategy below was quality assured (QA) by trained NICE information specialist. All translated search strategies were peer reviewed to ensure their accuracy. Both procedures were adapted from the 2016 PRESS Checklist. The translated search strategies are available in the evidence reviews for the guideline.

The search results were managed in EPPI-Reviewer v5. Duplicates were removed in EPPI-R5 using a two-step process. First, automated deduplication is performed using a high-value algorithm. Second, manual deduplication is used to assess 'low-probability' matches. All decisions made for the review can be accessed via the deduplication history.

English language limits were applied in adherence to standard NICE practice and the review protocol.

A date limit of 1990 was applied to align with the approximate advent of the Children Act 1989.

The limit to remove animal studies in the searches was the standard NICE practice, which has been adapted from: Dickersin, K., Scherer, R., & Lefebvre, C. (1994). Systematic Reviews: Identifying relevant studies for systematic reviews. *BMJ*, 309(6964), 1286.

No study design filters were applied, in adherence to the review protocol.

Table 1: search strategy

Medline Strategy, searched 10th June 2019 **Database: Ovid MEDLINE(R) 1946 to June 10, 2019** **Search Strategy:**	
1	child, orphaned/ (659)
2	child, foster/ (71)
3	child, adopted/ (46)
4	adolescent, institutionalized/ (126)

Medline Strategy, searched 10th June 2019 **Database: Ovid MEDLINE(R) 1946 to June 10, 2019** **Search Strategy:**
5 ("looked after" adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (123)
6 ("care leaver*" or "leaving care").tw. (31)
7 (("in care" or "care experience*") adj1 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (236)
8 ((nonparent* or non-parent* or parentless* or parent-less) adj3 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (111)
9 ((relinquish* or estrange*) adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (74)
10 ((child* or infancy or adolescen* or juvenile* or toddler* or infant* or teen* or tween* or young* or baby or babies or twin* or sibling* or youth*) adj2 (orphan* or foster* or adopt* or abandon* or unwanted or unaccompanied or homeless or asylum* or refugee*)).ti. (2973)
11 "ward of court*".tw. (12)
12 or/1-11 (4225)
13 residential facilities/ (5286)

Medline Strategy, searched 10th June 2019 **Database: Ovid MEDLINE(R) 1946 to June 10, 2019** **Search Strategy:**
14 group homes/ (948)
15 halfway houses/ (1051)
16 (("out of home" or " out-of-home" or placement* or "semi independent" or "semi-independent") adj2 care*).tw. (1131)
17 ((residential or supported or remand* or secure or correctional) adj1 (accommodation* or institut* or care or lodging or home* or centre* or center* or facilit*)).tw. (6595)
18 or/13-17 (13612)
19 orphanages/ (435)
20 adoption/ (4727)
21 foster home care/ (3503)
22 (special adj1 guardian*).tw. (7)
23 ((placement* or foster*) adj2 (care* or family or families)).tw. (3144)
24 ((kinship or nonkinship or non kinship or connected or substitute*) adj1 care*).tw. (279)
25 or/19-24 (9589)

Medline Strategy, searched 10th June 2019 **Database: Ovid MEDLINE(R) 1946 to June 10, 2019** **Search Strategy:**
26 exp Infant/ or Infant Health/ or Infant Welfare/ (1098738)
27 (prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,jn. (811620)
28 exp Child/ or exp Child Behavior/ or Child Health/ or Child Welfare/ (1838706)
29 Minors/ (2505)
30 (child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,jn. (2212038)
31 exp pediatrics/ (55350)
32 (pediatric* or paediatric* or peadiatric*).ti,ab,in,jn. (768069)
33 Adolescent/ or Adolescent Behavior/ or Adolescent Health/ (1937435)
34 Puberty/ (12990)
35 (adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,jn. (393509)
36 Schools/ (35128)

Medline Strategy, searched 10th June 2019 **Database: Ovid MEDLINE(R) 1946 to June 10, 2019** **Search Strategy:**	
37	Child Day Care Centers/ or exp Nurseries/ or Schools, Nursery/ (8591)
38	(pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jn. (440583)
39	("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab. (3651)
40	or/26-39 (4935665)
41	18 and 40 (4519)
42	12 or 25 or 41 (15912)
43	animals/ not humans/ (4554892)
44	42 not 43 (15801)
45	limit 44 to english language (14199)
46	limit 45 to ed=19900101-20190606 (11059)

No study design filters were used for the search strategy

Cost-effectiveness searches

Sources searched:

- Econlit (Ovid)
- Embase (Ovid)
- MEDLINE (Ovid)
- MEDLINE In-Process (Ovid)
- PsycINFO (Ovid)
- NHS EED (Wiley)

Search filters to retrieve cost utility, economic evaluations and quality of life papers were appended to the MEDLINE, Embase and PsycINFO searches reported above. The searches were conducted in July 2019. The searches were re-run in October 2020.

Databases	Date searched	Version/files	No. retrieved with CU filter	No retrieved with Econ Eval and QoL filters	No. retrieved with Econ Eval and QoL filters and NOT out CU results
EconLit (Ovid)	09/07/2019	1886 to June 27, 2019	176 (no filter)	Not run again	Not run again
NHS Economic Evaluation Database (NHS EED) (legacy database)	09/07/2019	09/07/2019	105 (no filter)	Not run again	Not run again
Embase (Ovid)	09/07/2019 15/07/2019	1946 to July 08, 2019 1988 to 2019 Week 28	307	2228	1908
MEDLINE (Ovid)	09/07/2019 15/07/2019	1946 to July 08, 2019 1946 to July 12, 2019	269	1136	1135

MEDLINE In-Process (Ovid)	09/07/2019 15/07/2019	1946 to July 08, 2019 1946 to July 12, 2019	6	122	93
MEDLINE Epub Ahead of Print	09/07/2019 15/07/2019	July 08, 2019 July 12, 2019	12	38	29
PsycINFO (Ovid)	09/07/2019 15/07/2019	1987 to July Week 1 2019 1987 to July Week 2 2019	265	Not searched for econ eval and QoL results	Not searched for econ eval and QoL results

Search strategies: Cost Utility filter

Database: PsycINFO <1987 to July Week 1 2019>

Search Strategy:

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1 Foster children/ (1566)

2 Adopted children/ (1578)

3 ("looked after" adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (433)

4 ("care leaver*" or "leaving care").tw. (282)

5 (("in care" or "care experience*") adj1 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (772)

6 ((nonparent* or non-parent* or parentless* or parent-less) adj3 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (309)

7 ((relinquish* or estrange*) adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (142)

8 "ward of court*".tw. (0)

9 ((child* or infancy or adolescen* or juvenile* or toddler* or infant* or teen* or tween* or young* or baby or babies or twin* or sibling* or youth*) adj2 (abandon* or unwanted or unaccompanied or homeless or asylum* or refugee*)).ti. (1638)

10 or/1-9 (6348)

11 group homes/ (884)

12 halfway houses/ (114)

13 (("out of home" or " out-of-home" or placement* or "semi independent" or "semi-independent") adj2 care*).tw. (1917)

14 ((residential or supported or remand* or secure or correctional) adj1 (accommodation* or institut* or care or lodging or home* or centre* or center* or facilit*)).tw. (8380)

15 or/11-14 (10954)

16 orphanages/ (301)

17 adoption/ (2693)

18 foster home care/ (0)

19 (special adj1 guardian*).tw. (5)

20 ((placement* or foster*) adj2 (care* or family or families)).tw. (7275)

21 ((kinship or nonkinship or non kinship or connected or substitute*) adj1 care*).tw. (790)

22 or/16-21 (10189)

23 exp Infant/ or Infant Health/ or Infant Welfare/ (0)

24 (prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,jn. (119577)

25 exp Child/ or exp Child Behavior/ or Child Health/ or Child Welfare/ (8166)

26 Minors/ (0)

27 (child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,jn. (762095)

28 exp pediatrics/ (26284)

29 (pediatric* or paediatric* or peadiatric*).ti,ab,in,jn. (71640)

30 Adolescent/ or Adolescent Behavior/ or Adolescent Health/ (1874)

31 Puberty/ (2287)

32 (adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,jn. (291098)

33 Schools/ (25726)

34 Child Day Care Centers/ or exp Nurseries/ or Schools, Nursery/ (0)

35 (pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jn. (578348)

36 ("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab. (811)

37 or/23-36 (1281612)

38 15 and 37 (5647)

39 10 or 22 or 38 (18267)

40 animals/ not humans/ (4267)

41 39 not 40 (18266)

42 limit 41 to english language (17063)

43 (1990* or 1991* or 1992* or 1993* or 1994* 1995* or 1996* or 1997* or 1998* or 1999* or 2000* or 2001* or 2002* or 2003* or 2004* or 2005* or 2006* or 2007* or 2008* or 2009* or 2010* or 2011* or 2012* or 2013* or 2014* or 2015* or 2016* or 2017* or 2018* or 2019*).up. (3398945)

44 42 and 43 (16072)

45 Markov chains/ (1336)

46 ((qualit* adj2 adjust* adj2 life*) or qaly*).tw. (1638)

47 (EQ5D* or EQ-5D* or ((euroqol or euro-qol or euroquol or euro-quol or eurocol or euro-col) adj3 ("5" or five)) or (european* adj2 quality adj3 ("5" or five))).tw. (1711)

48 "Costs and Cost Analysis"/ (14750)

49 cost.ti. (7067)

50 (cost* adj2 utilit*).tw. (745)

51 (cost* adj2 (effective* or assess* or evaluat* or analys* or model* or benefit* or threshold* or quality or expens* or saving* or reduc*)).tw. (29345)

52 (economic* adj2 (evaluat* or assess* or analys* or model* or outcome* or benefit* or threshold* or expens* or saving* or reduc*)).tw. (7025)

53 ((incremental* adj2 cost*) or ICER).tw. (1058)

54 utilities.tw. (1742)

55 markov*.tw. (3797)

56 (dollar* or USD or cents or pound or pounds or GBP or sterling* or pence or euro or euros or yen or JPY).tw. (8371)

57 ((utility or effective*) adj2 analys*).tw. (2844)

58 (willing* adj2 pay*).tw. (2253)

59 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 (60767)

60 44 and 59 (265)

Database: Ovid MEDLINE(R) <1946 to July 08, 2019>

(line 65)

Search Strategy:

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1 child, orphaned/ (661)

2 child, foster/ (74)

3 child, adopted/ (48)

4 adolescent, institutionalized/ (126)

5 ("looked after" adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (123)

6 ("care leaver*" or "leaving care").tw. (32)

7 (("in care" or "care experience*") adj1 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (240)

8 ((nonparent* or non-parent* or parentless* or parent-less) adj3 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (111)

9 ((relinquish* or estrange*) adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (74)

10 ((child* or infancy or adolescen* or juvenile* or toddler* or infant* or teen* or tween* or young* or baby or babies or twin* or sibling* or youth*) adj2 (orphan* or foster* or adopt* or abandon* or unwanted or unaccompanied or homeless or asylum* or refugee*)).ti. (2986)

11 "ward of court*".tw. (12)

12 or/1-11 (4244)

13 residential facilities/ (5299)

14 group homes/ (950)

15 halfway houses/ (1052)

16 (("out of home" or " out-of-home" or placement* or "semi independent" or "semi-independent") adj2 care*).tw. (1136)

17 ((residential or supported or remand* or secure or correctional) adj1 (accommodation* or institut* or care or lodging or home* or centre* or center* or facilit*)).tw. (6631)

18 or/13-17 (13661)

19 orphanages/ (436)

20 adoption/ (4728)

21 foster home care/ (3508)

22 (special adj1 guardian*).tw. (7)

23 ((placement* or foster*) adj2 (care* or family or families)).tw. (3156)

24 ((kinship or nonkinship or non kinship or connected or substitute*) adj1 care*).tw. (282)

25 or/19-24 (9605)

26 exp Infant/ or Infant Health/ or Infant Welfare/ (1101046)

27 (prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,jn. (813997)

28 exp Child/ or exp Child Behavior/ or Child Health/ or Child Welfare/ (1843400)

29 Minors/ (2509)

30 (child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,jn. (2221342)

31 exp pediatrics/ (55492)

32 (pediatric* or paediatric* or peadiatric*).ti,ab,in,jn. (771944)

33 Adolescent/ or Adolescent Behavior/ or Adolescent Health/ (1942946)

34 Puberty/ (13005)

35 (adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,jn. (395382)

36 Schools/ (35299)

37 Child Day Care Centers/ or exp Nurseries/ or Schools, Nursery/ (8611)

38 (pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jn. (442260)

39 ("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab. (3665)

40 or/26-39 (4951548)

41 18 and 40 (4537)

42 12 or 25 or 41 (15959)

43 animals/ not humans/ (4563292)

44 42 not 43 (15848)

45 limit 44 to english language (14243)

46 limit 45 to ed=19900101-20190606 (11059)

47 limit 45 to dt=19900101-20190611 (10685)

48 Markov Chains/ (13500)

49 Quality-Adjusted Life Years/ or (qualit* adj2 adjust* adj2 life*).tw. or qaly*.tw. (15718)

50 (EQ5D* or EQ-5D* or ((euroqol or euro-qol or euroquol or euro-quol or eurocol or euro-col) adj3 ("5" or five)) or (european* adj2 quality adj3 ("5" or five))).tw. (6545)

51 Cost-Benefit Analysis/ (77012)

52 exp Models, Economic/ (14227)

53 cost.ti. (60952)

54 (cost* adj2 utilit*).tw. (4392)

55 (cost* adj2 (effective* or assess* or evaluat* or analys* or model* or benefit* or threshold* or quality or expens* or saving* or reduc*)).tw. (162969)

56 (economic* adj2 (evaluat* or assess* or analys* or model* or outcome* or benefit* or threshold* or expens* or saving* or reduc*)).tw. (26515)

57 ((incremental* adj2 cost*) or ICER).tw. (10100)

58 utilities.tw. (5428)

59 markov*.tw. (16739)

60 (dollar* or USD or cents or pound or pounds or GBP or sterling* or pence or euro or euros or yen or JPY).tw. (36613)

61 ((utility or effective*) adj2 analys*).tw. (14480)

62 (willing* adj2 pay*).tw. (4632)

63 or/48-62 (287270)

64 45 and 63 (311)

65 46 and 63 (269)

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <1946 to July 08, 2019>

(Line 66)

Search Strategy:

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1 child, orphaned/ (0)

2 child, foster/ (0)

3 child, adopted/ (0)

4 adolescent, institutionalized/ (0)

5 ("looked after" adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (17)

6 ("care leaver*" or "leaving care").tw. (6)

7 (("in care" or "care experience*") adj1 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (45)

8 ((nonparent* or non-parent* or parentless* or parent-less) adj3 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (18)

9 ((relinquish* or estrange*) adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (4)

10 ((child* or infancy or adolescen* or juvenile* or toddler* or infant* or teen* or tween* or young* or baby or babies or twin* or sibling* or youth*) adj2 (orphan* or foster* or adopt* or abandon* or unwanted or unaccompanied or homeless or asylum* or refugee*)).ti. (361)

11 "ward of court*".tw. (0)

12 or/1-11 (443)

13 residential facilities/ (0)

14 group homes/ (0)

15 halfway houses/ (0)

16 (("out of home" or " out-of-home" or placement* or "semi independent" or "semi-independent") adj2 care*).tw. (122)

17 ((residential or supported or remand* or secure or correctional) adj1 (accommodation* or institut* or care or lodging or home* or centre* or center* or facilit*)).tw. (785)

18 or/13-17 (897)

19 orphanages/ (0)

20 adoption/ (0)

21 foster home care/ (0)

22 (special adj1 guardian*).tw. (0)

23 ((placement* or foster*) adj2 (care* or family or families)).tw. (367)

24 ((kinship or nonkinship or non kinship or connected or substitute*) adj1 care*).tw. (31)

25 or/20-24 (391)

26 exp Infant/ or Infant Health/ or Infant Welfare/ (0)

27 (prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,jn. (71122)

28 exp Child/ or exp Child Behavior/ or Child Health/ or Child Welfare/ (0)

29 Minors/ (0)

30 (child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,jn. (282655)

31 exp pediatrics/ (0)

32 (pediatric* or paediatric* or peadiatric*).ti,ab,in,jn. (105594)

33 Adolescent/ or Adolescent Behavior/ or Adolescent Health/ (0)

34 Puberty/ (0)

35 (adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,jn. (52576)

36 Schools/ (0)

37 Child Day Care Centers/ or exp Nurseries/ or Schools, Nursery/ (0)

38 (pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jn. (61256)

39 ("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab. (516)

40 or/26-39 (410151)

41 18 and 40 (260)

42 12 or 25 or 41 (962)

43 animals/ not humans/ (0)

44 42 not 43 (962)

45 limit 44 to english language (945)

46 limit 45 to ed=19900101-20190606 (256)

47 limit 45 to dt=19900101-20190611 (916)

48 Markov Chains/ (0)

49 Quality-Adjusted Life Years/ or (qualit* adj2 adjust* adj2 life*).tw. or qaly*.tw. (1713)

50 (EQ5D* or EQ-5D* or ((euroqol or euro-qol or euroquol or euro-quol or eurocol or euro-col) adj3 ("5" or five)) or (european* adj2 quality adj3 ("5" or five))).tw. (1364)

51 Cost-Benefit Analysis/ (0)

52 exp Models, Economic/ (0)

53 cost.ti. (9867)

54 (cost* adj2 utilit*).tw. (767)

55 (cost* adj2 (effective* or assess* or evaluat* or analys* or model* or benefit* or threshold* or quality or expens* or saving* or reduc*)).tw. (29070)

56 (economic* adj2 (evaluat* or assess* or analys* or model* or outcome* or benefit* or threshold* or expens* or saving* or reduc*)).tw. (4431)

57 ((incremental* adj2 cost*) or ICER).tw. (1607)

58 utilities.tw. (947)

59 markov*.tw. (4984)

60 (dollar* or USD or cents or pound or pounds or GBP or sterling* or pence or euro or euros or yen or JPY).tw. (4280)

61 ((utility or effective*) adj2 analys*).tw. (2504)

62 (willing* adj2 pay*).tw. (911)

63 or/48-62 (45705)

64 45 and 63 (28)

65 46 and 63 (6)

66 47 and 63 (27)

Database: Ovid MEDLINE(R) Epub Ahead of Print <July 08, 2019>

(Line 64)

Search Strategy:

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1 child, orphaned/ (0)

2 child, foster/ (0)

3 child, adopted/ (0)

4 adolescent, institutionalized/ (0)

5 ("looked after" adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (8)

6 ("care leaver*" or "leaving care").tw. (5)

7 (("in care" or "care experience*") adj1 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (13)

8 ((nonparent* or non-parent* or parentless* or parent-less) adj3 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (8)

9 ((relinquish* or estrange*) adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (3)

10 ((child* or infancy or adolescen* or juvenile* or toddler* or infant* or teen* or tween* or young* or baby or babies or twin* or sibling* or youth*) adj2 (orphan* or foster* or adopt* or abandon* or unwanted or unaccompanied or homeless or asylum* or refugee*)).ti. (170)

11 "ward of court*".tw. (0)

12 or/1-11 (198)

13 residential facilities/ (0)

14 group homes/ (0)

15 halfway houses/ (0)

16 (("out of home" or " out-of-home" or placement* or "semi independent" or "semi-independent") adj2 care*).tw. (60)

17 ((residential or supported or remand* or secure or correctional) adj1 (accommodation* or institut* or care or lodging or home* or centre* or center* or facilit*)).tw. (232)

18 or/13-17 (288)

19 orphanages/ (0)

20 adoption/ (0)

21 foster home care/ (0)

22 (special adj1 guardian*).tw. (0)

23 ((placement* or foster*) adj2 (care* or family or families)).tw. (185)

24 ((kinship or nonkinship or non kinship or connected or substitute*) adj1 care*).tw. (11)

25 or/20-24 (191)

26 exp Infant/ or Infant Health/ or Infant Welfare/ (0)

27 (prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,jn. (14304)

28 exp Child/ or exp Child Behavior/ or Child Health/ or Child Welfare/ (0)

29 Minors/ (0)

30 (child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,jn. (49388)

31 exp pediatrics/ (0)

32 (pediatric* or paediatric* or peadiatric*).ti,ab,in,jn. (19442)

33 Adolescent/ or Adolescent Behavior/ or Adolescent Health/ (0)

34 Puberty/ (0)

35 (adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,jn. (12671)

36 Schools/ (0)

37 Child Day Care Centers/ or exp Nurseries/ or Schools, Nursery/ (0)

38 (pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jn. (11661)

39 ("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab. (95)

40 or/26-39 (72744)

41 18 and 40 (102)

42 12 or 25 or 41 (409)

43 animals/ not humans/ (0)

44 42 not 43 (409)

45 limit 44 to english language (407)

46 limit 45 to ed=19900101-20190606 (0)

47 limit 45 to dt=19900101-20190611 (382)

48 Markov Chains/ (0)

49 Quality-Adjusted Life Years/ or (qualit* adj2 adjust* adj2 life*).tw. or qaly*.tw. (419)

50 (EQ5D* or EQ-5D* or ((euroqol or euro-qol or euroquol or euro-quol or eurocol or euro-col) adj3 ("5" or five)) or (european* adj2 quality adj3 ("5" or five))).tw. (316)

51 Cost-Benefit Analysis/ (0)

52 exp Models, Economic/ (0)

53 cost.ti. (1350)

54 (cost* adj2 utilit*).tw. (162)

55 (cost* adj2 (effective* or assess* or evaluat* or analys* or model* or benefit* or threshold* or quality or expens* or saving* or reduc*)).tw. (4696)

56 (economic* adj2 (evaluat* or assess* or analys* or model* or outcome* or benefit* or threshold* or expens* or saving* or reduc*)).tw. (838)

57 ((incremental* adj2 cost*) or ICER).tw. (342)

58 utilities.tw. (155)

59 markov*.tw. (807)

60 (dollar* or USD or cents or pound or pounds or GBP or sterling* or pence or euro or euros or yen or JPY).tw. (712)

61 ((utility or effective*) adj2 analys*).tw. (482)

62 (willing* adj2 pay*).tw. (178)

63 or/48-62 (7346)

64 45 and 63 (12)

Database: Embase <1988 to 2019 Week 27>

Search Strategy:

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1 orphaned child/ (606)

2 foster child/ (72)

3 adopted child/ (507)

4 institutionalized adolescent/ (16)

5 ("looked after" adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (239)

6 ("care leaver*" or "leaving care").tw. (60)

7 (("in care" or "care experience*") adj1 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (328)

8 ((nonparent* or non-parent* or parentless* or parent-less) adj3 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (137)

9 ((relinquish* or estrange*) adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (66)

10 ((child* or infancy or adolescen* or juvenile* or toddler* or infant* or teen* or tween* or young* or baby or babies or twin* or sibling* or youth*) adj2 (orphan* or foster* or adopt* or abandon* or unwanted or unaccompanied or homeless or asylum* or refugee*)).ti. (3301)

11 "ward of court*".tw. (13)

12 or/1-11 (4918)

13 residential home/ (5797)

14 halfway house/ (616)

15 (("out of home" or " out-of-home" or placement* or "semi independent" or "semi-independent") adj2 care*).tw. (1546)

16 ((residential or supported or remand* or secure or correctional) adj1 (accommodation* or institut* or care or lodging or home* or centre* or center* or facilit*)).tw. (8776)

17 or/13-16 (15272)

18 orphanage/ (851)

19 foster care/ (3851)

20 (special adj1 guardian*).tw. (7)

21 ((placement* or foster*) adj2 (care* or family or families)).tw. (4024)

22 ((kinship or nonkinship or non kinship or connected or substitute*) adj1 care*).tw. (359)

23 *adoption/ (2710)

24 or/18-23 (6865)

25 exp juvenile/ or Child Behavior/ or Child Welfare/ or Child Health/ or infant welfare/ or "minor (person)"/ or elementary student/ (2784798)

26 (prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,ad,jw. (990094)

27 (child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,ad,jw. (3070275)

28 exp pediatrics/ (89360)

29 (pediatric* or paediatric* or peadiatric*).ti,ab,in,ad,jw. (1438284)

30 exp adolescence/ or exp adolescent behavior/ or adolescent health/ or high school student/ or middle school student/ (88098)

31 (adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,ad,jw. (568613)

32 school/ or high school/ or kindergarten/ or middle school/ or primary school/ or nursery school/ or day care/ (91653)

33 (pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jw. (588621)

34 ("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab. (6349)

35 or/25-34 (5334085)

36 17 and 35 (5115)

37 24 and 35 (5358)

38 12 or 24 or 36 or 37 (14911)

39 nonhuman/ not human/ (3937063)

40 38 not 39 (14760)

41 (letter or editorial).pt. (1540594)

42 (conference abstract or conference paper or conference proceeding or "conference review").pt. (4222564)

43 41 or 42 (5763158)

44 40 not 43 (12196)

45 limit 44 to dc=19900101-20190606 (11884)

46 limit 45 to english language (11023)

47 Markov chain/ (4090)

48 quality adjusted life year/ or (qualit* adj2 adjust* adj2 life*).tw. or qaly*.tw. (30409)

49 (EQ5D* or EQ-5D* or ((euroqol or euro-qol or euroquol or euro-quol or eurocol or euro-col) adj3 ("5" or five)) or (european* adj2 quality adj3 ("5" or five))).tw. (15875)

50 "cost benefit analysis"/ (76518)

51 exp economic model/ (1504)

52 cost.ti. (88995)

53 (cost* adj2 utilit*).tw. (8688)

54 (cost* adj2 (effective* or assess* or evaluat* or analys* or model* or benefit* or threshold* or quality or expens* or saving* or reduc*)).tw. (264435)

55 (economic* adj2 (evaluat* or assess* or analys* or model* or outcome* or benefit* or threshold* or expens* or saving* or reduc*)).tw. (44462)

56 ((incremental* adj2 cost*) or ICER).tw. (20797)

57 utilities.tw. (10291)

58 markov*.tw. (26990)

59 (dollar* or USD or cents or pound or pounds or GBP or sterling* or pence or euro or euros or yen or JPY).tw. (49359)

60 ((utility or effective*) adj2 analys*).tw. (25580)

61 (willing* adj2 pay*).tw. (8767)

62 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 (437018)

63 46 and 62 (307)

64 (conference abstract or conference paper or conference proceeding or "conference review" or letter or editorial).pt. (5763158)

65 63 not 64 (307)

Database: Econlit <1886 to June 27, 2019>

Search Strategy:

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1 [child, orphaned/] (0)

2 [child, foster/] (0)

3 [child, adopted/] (0)

4 [adolescent, institutionalized/] (0)

5 ("looked after" adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (3)

6 ("care leaver*" or "leaving care").tw. (2)

7 (("in care" or "care experience*") adj1 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (15)

8 ((nonparent* or non-parent* or parentless* or parent-less) adj3 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (34)

9 ((relinquish* or estrange*) adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (6)

10 ((child* or infancy or adolescen* or juvenile* or toddler* or infant* or teen* or tween* or young* or baby or babies or twin* or sibling* or youth*) adj2 (orphan* or foster* or adopt* or abandon* or unwanted or unaccompanied or homeless or asylum* or refugee*)).ti. (111)

11 "ward of court*".tw. (0)

12 or/1-11 (163)

13 [residential facilities/] (0)

14 [group homes/] (0)

15 [halfway houses/] (0)

16 (("out of home" or " out-of-home" or placement* or "semi independent" or "semi-independent") adj2 care*).tw. (42)

17 ((residential or supported or remand* or secure or correctional) adj1 (accommodation* or institut* or care or lodging or home* or centre* or center* or facilit*)).tw. (208)

18 or/13-17 (250)

19 [orphanages/] (0)

20 [adoption/] (0)

21 [foster home care/] (0)

22 (special adj1 guardian*).tw. (0)

23 ((placement* or foster*) adj2 (care* or family or families)).tw. (154)

24 ((kinship or nonkinship or non kinship or connected or substitute*) adj1 care*).tw. (23)

25 or/20-24 (172)

26 [exp Infant/ or Infant Health/ or Infant Welfare/] (0)

27 (prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,jn. (5404)

28 [exp Child/ or exp Child Behavior/ or Child Health/ or Child Welfare/] (0)

29 [Minors/] (0)

30 (child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,jn. (45263)

31 [exp pediatrics/] (0)

32 (pediatric* or paediatric* or peadiatric*).ti,ab,in,jn. (168)

33 [Adolescent/ or Adolescent Behavior/ or Adolescent Health/] (0)

34 [Puberty/] (0)

35 (adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,jn. (8812)

36 [Schools/] (0)

37 [Child Day Care Centers/ or exp Nurseries/ or Schools, Nursery/] (0)

38 (pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jn. (47608)

39 ("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab. (56)

40 or/26-39 (91121)

41 18 and 40 (71)

42 12 or 25 or 41 (359)

43 limit 42 to yr="2009 -Current" (176)

Database: NHSEED (CRD)

1 MeSH DESCRIPTOR Child, Orphaned EXPLODE ALL TREES IN NHSEED 0

2 MeSH DESCRIPTOR Adoption EXPLODE ALL TREES IN NHSEED 3

3 (("looked after" NEAR2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*))) IN NHSEED 0

4 ("care leaver*" or "leaving care") IN NHSEED 0

5 ("in care") IN NHSEED 40

6 ("care experience") IN NHSEED 1

7 (nonparent* or non-parent* or parentless* or parent-less) IN NHSEED 0

8 (relinquish* or estrange*) IN NHSEED 0

9 (orphan* or foster* or adopt* or abandon* or unwanted or unaccompanied or homeless or asylum* or refugee*):TI IN NHSEED 22

10 ("ward of court*") IN NHSEED 0

11 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 64

12 (((residential or supported or remand* or secure or correctional) NEAR1 (accommodation* or institut* or care or lodging or home* or centre* or center* or facilit*))) IN NHSEED 88

13 MeSH DESCRIPTOR orphanages EXPLODE ALL TREES IN NHSEED 0

14 (guardian) IN NHSEED 13

15 (((placement* or foster*) NEAR2 (care* or family or families))) IN NHSEED 7

16 (((kinship or nonkinship or non kinship or connected or substitute*) NEAR1 care*)) IN NHSEED 1

17 #13 OR #14 OR #15 OR #16 21

18 (infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler* or child* or minor or minors or boy* or girl* or kid or kids or young* or adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*) IN NHSEED 5275

19 #12 AND #18 23

20 #11 OR #17 OR #19 105

Search strategies: Economic Evaluation and Quality of Life filters

Database: Ovid MEDLINE(R) <1946 to July 12, 2019>

Search Strategy:

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1 child, orphaned/ (664)

2 child, foster/ (74)

3 child, adopted/ (48)

4 adolescent, institutionalized/ (126)

5 ("looked after" adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (123)

6 ("care leaver*" or "leaving care").tw. (32)

7 (("in care" or "care experience*") adj1 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (240)

8 ((nonparent* or non-parent* or parentless* or parent-less) adj3 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (111)

9 ((relinquish* or estrange*) adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (74)

10 ((child* or infancy or adolescen* or juvenile* or toddler* or infant* or teen* or tween* or young* or baby or babies or twin* or sibling* or youth*) adj2 (orphan* or foster* or adopt* or abandon* or unwanted or unaccompanied or homeless or asylum* or refugee*)).ti. (2989)

11 "ward of court*".tw. (12)

12 or/1-11 (4249)

13 residential facilities/ (5301)

14 group homes/ (951)

15 halfway houses/ (1052)

16 (("out of home" or " out-of-home" or placement* or "semi independent" or "semi-independent") adj2 care*).tw. (1136)

17 ((residential or supported or remand* or secure or correctional) adj1 (accommodation* or institut* or care or lodging or home* or centre* or center* or facilit*)).tw. (6640)

18 or/13-17 (13672)

19 orphanages/ (438)

20 adoption/ (4729)

21 foster home care/ (3508)

22 (special adj1 guardian*).tw. (7)

23 ((placement* or foster*) adj2 (care* or family or families)).tw. (3156)

24 ((kinship or nonkinship or non kinship or connected or substitute*) adj1 care*).tw. (282)

25 or/19-24 (9924)

26 exp Infant/ or Infant Health/ or Infant Welfare/ (1101512)

27 (prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,jn. (814530)

28 exp Child/ or exp Child Behavior/ or Child Health/ or Child Welfare/ (1844269)

29 Minors/ (2509)

30 (child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,jn. (2223285)

31 exp pediatrics/ (55515)

32 (pediatric* or paediatric* or peadiatric*).ti,ab,in,jn. (772838)

33 Adolescent/ or Adolescent Behavior/ or Adolescent Health/ (1944098)

34 Puberty/ (13005)

35 (adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,jn. (395763)

36 Schools/ (35334)

37 Child Day Care Centers/ or exp Nurseries/ or Schools, Nursery/ (8611)

38 (pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jn. (442578)

39 ("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab. (3674)

40 or/26-39 (4954893)

41 18 and 40 (4538)

42 12 or 25 or 41 (16193)

43 animals/ not humans/ (4565244)

44 42 not 43 (16082)

45 limit 44 to english language (14416)

46 limit 45 to ed=19900101-20190714 (11278)

47 limit 45 to dt=19900101-20190715 (10852)

48 Markov Chains/ (13507)

49 Quality-Adjusted Life Years/ or (qualit* adj2 adjust* adj2 life*).tw. or qaly*.tw. (15740)

50 (EQ5D* or EQ-5D* or ((euroqol or euro-qol or euroquol or euro-quol or eurocol or euro-col) adj3 ("5" or five)) or (european* adj2 quality adj3 ("5" or five))).tw. (6562)

51 Cost-Benefit Analysis/ (77068)

52	exp Models, Economic/ (14240)
53	cost.ti. (61003)
54	(cost* adj2 utilit*).tw. (4395)
55	(cost* adj2 (effective* or assess* or evaluat* or analys* or model* or benefit* or threshold* or quality or expens* or saving* or reduc*)).tw. (163128)
56	(economic* adj2 (evaluat* or assess* or analys* or model* or outcome* or benefit* or threshold* or expens* or saving* or reduc*)).tw. (26542)
57	((incremental* adj2 cost*) or ICER).tw. (10113)
58	utilities.tw. (5434)
59	markov*.tw. (16747)
60	(dollar* or USD or cents or pound or pounds or GBP or sterling* or pence or euro or euros or yen or JPY).tw. (36633)
61	((utility or effective*) adj2 analys*).tw. (14500)
62	(willing* adj2 pay*).tw. (4638)
63	or/48-62 (287514)
64	45 and 63 (314)
65	46 and 63 (272)
66	47 and 63 (267)
67	Economics/ (27059)
68	exp "Costs and Cost Analysis"/ (226218)
69	Economics, Dental/ (1906)
70	exp Economics, Hospital/ (23683)

71	exp Economics, Medical/ (14107)
72	Economics, Nursing/ (3986)
73	Economics, Pharmaceutical/ (2868)
74	Budgets/ (11138)
75	exp Models, Economic/ (14240)
76	Markov Chains/ (13507)
77	Monte Carlo Method/ (26889)
78	Decision Trees/ (10615)
79	econom$.tw. (220798)
80	cba.tw. (9569)
81	cea.tw. (19685)
82	cua.tw. (941)
83	markov$.tw. (16747)
84	(monte adj carlo).tw. (28270)
85	(decision adj3 (tree$ or analys$)).tw. (12136)
86	(cost or costs or costing$ or costly or costed).tw. (428019)
87	(price$ or pricing$).tw. (31251)
88	budget$.tw. (22462)
89	expenditure$.tw. (46305)

90 (value adj3 (money or monetary)).tw. (1946)

91 (pharmacoeconomic$ or (pharmaco adj economic$)).tw. (3350)

92 or/67-91 (869079)

93 "Quality of Life"/ (178315)

94 quality of life.tw. (210147)

95 "Value of Life"/ (5653)

96 Quality-Adjusted Life Years/ (11173)

97 quality adjusted life.tw. (9768)

98 (qaly$ or qald$ or qale$ or qtime$).tw. (8028)

99 disability adjusted life.tw. (2374)

100 daly$.tw. (2184)

101 Health Status Indicators/ (22927)

102 (sf36 or sf 36 or short form 36 or shortform 36 or sf thirtysix or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).tw. (21132)

103 (sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six).tw. (1258)

104 (sf12 or sf 12 or short form 12 or shortform 12 or sf twelve or sftwelve or shortform twelve or short form twelve).tw. (4470)

105 (sf16 or sf 16 or short form 16 or shortform 16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).tw. (28)

106 (sf20 or sf 20 or short form 20 or shortform 20 or sf twenty or sftwenty or shortform twenty or short form twenty).tw. (370)

107 (euroqol or euro qol or eq5d or eq 5d).tw. (7790)

108 (qol or hql or hqol or hrqol).tw. (39934)

109	(hye or hyes).tw. (58)
110	health$ year$ equivalent$.tw. (38)
111	utilit$.tw. (158839)
112	(hui or hui1 or hui2 or hui3).tw. (1208)
113	disutili$.tw. (351)
114	rosser.tw. (82)
115	quality of wellbeing.tw. (11)
116	quality of well-being.tw. (367)
117	qwb.tw. (186)
118	willingness to pay.tw. (3952)
119	standard gamble$.tw. (763)
120	time trade off.tw. (981)
121	time tradeoff.tw. (223)
122	tto.tw. (848)
123	or/93-122 (455927)
124	92 or 123 (1261859)
125	45 and 124 (1599)
126	46 and 124 (1395)
127	47 and 124 (1345)

128 125 not 64 (1300)

129 126 not 65 (1136)

130 127 not 66 (1090)

Database: Embase <1988 to 2019 Week 28>

Search Strategy:

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1 orphaned child/ (608)

2 foster child/ (73)

3 adopted child/ (510)

4 institutionalized adolescent/ (16)

5 ("looked after" adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (239)

6 ("care leaver*" or "leaving care").tw. (60)

7 (("in care" or "care experience*") adj1 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (328)

8 ((nonparent* or non-parent* or parentless* or parent-less) adj3 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (137)

9 ((relinquish* or estrange*) adj2 (juvenile* or child* or adolescen* or toddler* or infant* or infancy* or teen* or tween* or young* or baby* or babies* or twin* or sibling* or youth*)).tw. (66)

10 ((child* or infancy or adolescen* or juvenile* or toddler* or infant* or teen* or tween* or young* or baby or babies or twin* or sibling* or youth*) adj2 (orphan* or foster* or adopt* or abandon* or unwanted or unaccompanied or homeless or asylum* or refugee*)).ti. (3308)

11 "ward of court*".tw. (13)

12 or/1-11 (4928)

13 residential home/ (5806)

14 halfway house/ (618)

15 (("out of home" or " out-of-home" or placement* or "semi independent" or "semi-independent") adj2 care*).tw. (1548)

16 ((residential or supported or remand* or secure or correctional) adj1 (accommodation* or institut* or care or lodging or home* or centre* or center* or facilit*)).tw. (8794)

17 or/13-16 (15298)

18 orphanage/ (851)

19 foster care/ (3854)

20 (special adj1 guardian*).tw. (7)

21 ((placement* or foster*) adj2 (care* or family or families)).tw. (4029)

22 ((kinship or nonkinship or non kinship or connected or substitute*) adj1 care*).tw. (360)

23 *adoption/ (2704)

24 or/18-23 (9315)

25 exp juvenile/ or Child Behavior/ or Child Welfare/ or Child Health/ or infant welfare/ or "minor (person)"/ or elementary student/ (2788952)

26 (prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,ad,jw. (991635)

27 (child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,ad,jw. (3075545)

28 exp pediatrics/ (89475)

29 (pediatric* or paediatric* or peadiatric*).ti,ab,in,ad,jw. (1440596)

30 exp adolescence/ or exp adolescent behavior/ or adolescent health/ or high school student/ or middle school student/ (88253)

31 (adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,ad,jw. (569652)

32 school/ or high school/ or kindergarten/ or middle school/ or primary school/ or nursery school/ or day care/ (91782)

33 (pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jw. (589614)

34 ("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab. (6369)

35 or/25-34 (5342804)

36 17 and 35 (5123)

37 24 and 35 (6834)

38 12 or 24 or 36 or 37 (16935)

39 nonhuman/ not human/ (3943285)

40 38 not 39 (16745)

41 (letter or editorial).pt. (1542836)

42 (conference abstract or conference paper or conference proceeding or "conference review").pt. (4231963)

43 41 or 42 (5774799)

44 40 not 43 (13711)

45 limit 44 to dc=19900101-20190606 (13274)

46 limit 45 to english language (12254)

47 Markov chain/ (4122)

48 quality adjusted life year/ or (qualit* adj2 adjust* adj2 life*).tw. or qaly*.tw. (30497)

49 (EQ5D* or EQ-5D* or ((euroqol or euro-qol or euroquol or euro-quol or eurocol or euro-col) adj3 ("5" or five)) or (european* adj2 quality adj3 ("5" or five))).tw. (15926)

50 "cost benefit analysis"/ (76622)

51 exp economic model/ (1511)

52 cost.ti. (89185)

53 (cost* adj2 utilit*).tw. (8710)

54 (cost* adj2 (effective* or assess* or evaluat* or analys* or model* or benefit* or threshold* or quality or expens* or saving* or reduc*)).tw. (264961)

55 (economic* adj2 (evaluat* or assess* or analys* or model* or outcome* or benefit* or threshold* or expens* or saving* or reduc*)).tw. (44536)

56 ((incremental* adj2 cost*) or ICER).tw. (20854)

57 utilities.tw. (10311)

58 markov*.tw. (27064)

59 (dollar* or USD or cents or pound or pounds or GBP or sterling* or pence or euro or euros or yen or JPY).tw. (49454)

60 ((utility or effective*) adj2 analys*).tw. (25652)

61 (willing* adj2 pay*).tw. (8797)

62 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 (437885)

63 46 and 62 (336)

64 exp Health Economics/ (754904)

65 exp "Health Care Cost"/ (271264)

66	exp Pharmacoeconomics/ (183070)
67	Monte Carlo Method/ (36411)
68	Decision Tree/ (11234)
69	econom$.tw. (313756)
70	cba.tw. (8890)
71	cea.tw. (29221)
72	cua.tw. (1304)
73	markov$.tw. (27064)
74	(monte adj carlo).tw. (42778)
75	(decision adj3 (tree$ or analys$)).tw. (20246)
76	(cost or costs or costing$ or costly or costed).tw. (667335)
77	(price$ or pricing$).tw. (48966)
78	budget$.tw. (32761)
79	expenditure$.tw. (65082)
80	(value adj3 (money or monetary)).tw. (3103)
81	(pharmacoeconomic$ or (pharmaco adj economic$)).tw. (8274)
82	or/64-81 (1524839)
83	"Quality of Life"/ (429148)
84	Quality Adjusted Life Year/ (24150)

85 Quality of Life Index/ (2640)

86 Short Form 36/ (26202)

87 Health Status/ (117486)

88 quality of life.tw. (394895)

89 quality adjusted life.tw. (17693)

90 (qaly$ or qald$ or qale$ or qtime$).tw. (18129)

91 disability adjusted life.tw. (3574)

92 daly$.tw. (3505)

93 (sf36 or sf 36 or short form 36 or shortform 36 or sf thirtysix or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).tw. (38927)

94 (sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six).tw. (1902)

95 (sf12 or sf 12 or short form 12 or shortform 12 or sf twelve or sftwelve or shortform twelve or short form twelve).tw. (8636)

96 (sf16 or sf 16 or short form 16 or shortform 16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).tw. (51)

97 (sf20 or sf 20 or short form 20 or shortform 20 or sf twenty or sftwenty or shortform twenty or short form twenty).tw. (403)

98 (euroqol or euro qol or eq5d or eq 5d).tw. (18036)

99 (qol or hql or hqol or hrqol).tw. (87193)

100 (hye or hyes).tw. (123)

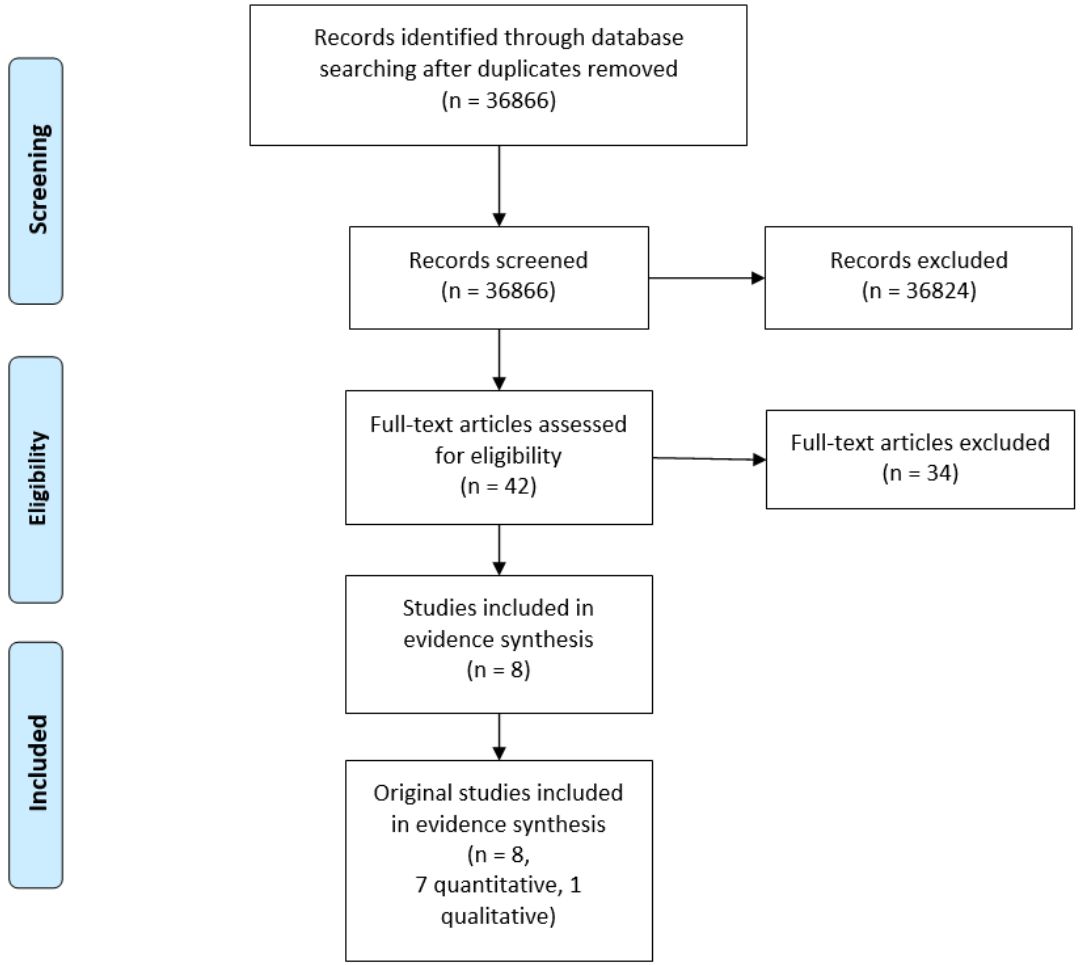
101 health$ year$ equivalent$.tw. (41)

102 utilit$.tw. (256882)

103 (hui or hui1 or hui2 or hui3).tw. (2074)

104	disutili$.tw. (837)
105	rosser.tw. (116)
106	quality of wellbeing.tw. (38)
107	quality of well-being.tw. (464)
108	qwb.tw. (234)
109	willingness to pay.tw. (7664)
110	standard gamble$.tw. (1054)
111	time trade off.tw. (1611)
112	time tradeoff.tw. (279)
113	tto.tw. (1529)
114	or/83-113 (891635)
115	82 or 114 (2273922)
116	46 and 115 (2228)
117	116 not 63 (1908)

Appendix C – Evidence study selection



Appendix D – Evidence tables

Quantitative studies

Bruhn 2008

Study type	Interrupted time series
Study location	USA
Study setting	Children entering foster care aged less than 3 years
Study dates	January 1, 2005 and February 15, 2006
Duration of follow-up	2 years
Sources of funding	not reported
Inclusion criteria	Case situation Having had a case opened in Cook County (Chicago) regions 6B, 6C, and 6D; Cases were also required to remain open for more than 30 days in order to be eligible. Age aged less than 3 years
Sample size	2164
Split between study groups	Group 1 — pre-IA but IA eligible = 432 Group 2 — pre-IA and not IA eligible = 212 Group 3 — IA eligible = 1141

	Group 4 — not IA eligible = 574
Loss to follow-up	not reported
% Female	91.5%
Mean age (SD)	not reported
Condition specific characteristics	non-white ethnicity 89.2%
Outcome measures	Health assessment outcome 1 Association between being an eligible child in the pre vs postprogramme period for whether screening of the looked after child took place: The case numbers for these children were matched to a DCFS database used for tracking screening dates and outcomes. Due to data quality concerns, case numbers of children for whom no screening information was located were forwarded to the DCFS Early Childhood Project to be checked by hand against their data and paper records. The corrected screening rate provided by the project is reported here. Records of children for whom the project indicated a screening had been conducted but for whom no screening date could be found were excluded from the analysis. This group was comprised of 49 children. In addition, cases of children who had been referred for formal early intervention system evaluation prior to the time when they were scheduled for DCFS Early Childhood Project screening (93 cases) and children who, despite having an open Cook County case, were placed outside of Cook County (17 cases) or who could not be screened due to extended hospitalization or other reasons (13 cases) were removed from the data set. The final data set employed for analysis contained 2164 cases. Screenings that occurred through April of 2007 were considered in the analysis. The indicator of whether or not the child had been screened was examined in bivariate and multivariate association with potential predictor variables including region, child's age at entry, time in care, sex, and race.
Study arms	**Integrated (centralized) Assessment Programme (N = 432)** A more comprehensive overall statewide assessment process, referred to as the Integrated Assessment (IA) program, was later developed by DCFS. This program became operational in early 2005. The program requires in-depth evaluation of eligible children of all ages upon entry into out-of-home care. In Cook County, eligible children through age six entering care receive initial, home-based, comprehensive developmental and social–emotional screening/ assessments within 45 days of entry into care. Children ages zero to three who are identified based on IA comprehensive assessments as having developmental delays are referred for early intervention services, and children who are not demonstrating delays are referred to the DCFS regional screening offices for ongoing monitoring. Early indicators concerning rates of identification of developmental delays based on these systems of assessment suggest that mandatory, centralized screening produces much higher rates of identification of developmental delays than do systems of assessment that rely on alternate assessment

	approaches, such as caseworkers conducting assessments themselves or proving referrals to community providers. The term "centralized," in this case, is used to refer to a system of screening that relies on screeners who are specifically employed and trained to carry out this purpose. % Female: not reported Mean age (SD): not reported Outcome measures: Health assessment outcome 1 Association between being an eligible child in the post vs pre-programme period for whether screening of the looked after child took place: beta coefficient 0.29 SE 0.11, adjusted for age at entry, race, and region.
	Pre-Integrated (centralized) Assessment Programme (N = 1141) The illinois Department of Children and Family Services, maintains a policy of assessment that could be defined as "comprehensive" in that it provides for assessment of development at entry into out-of-home care and on an on-going basis thereafter. Initial physical examinations within 24 hours of entry are conducted by primary care providers (physicians). More thorough examinations are conducted within 21 days. These examinations may involve a developmental screening component, but developmental screenings by physicians are not standardized. Periodic/routine assessment is provided by trained Child Development Specialists using specific instrumentation (the Ages and Stages Questionnaire, Ages and Stages Social/Emotional Questionnaire (Brookes Publishing), and the Denver II (Denver Developmental Materials, Inc., 1992) among others). Routine, ongoing assessments are conducted in DCFS regional screening offices. Assessments that produce findings of probable developmental delay trigger referral from the Early Childhood Project directly to the early intervention system. Early intervention providers contact caregivers to arrange for in-home, multidisciplinary evaluations. Early intervention services for children up to age three are most commonly provided in home. The system developed and implemented by DCFS is also characterized by use of an Early Childhood Service Coordinator, who serves as a liaison with the early intervention system and ensures that, when problems arise, such as difficulty scheduling follow up evaluations for children due to movement of children from placement to placement, lack of foster parent response, etc., they are addressed immediately.

	% Female	not reported
	Mean age (SD)	not reported
Risk of Bias	**Random sequence generation: Was the allocation sequence adequately generated?** No **Allocation concealment: Was the allocation adequately concealed?** Unclear **Baseline outcome measurements: Were baseline outcome measurements similar?** NA **Baseline characteristics: Were baseline characteristics similar?** Unclear **Incomplete outcome data: Were incomplete outcome data adequately addressed?** Yes **Knowledge of the allocated interventions: Was knowledge of the allocated interventions adequately prevented during the study?** Unclear **Protection against contamination: Was the study adequately protected against contamination?** Yes **Selective outcome reporting: Was the study free from selective outcome reporting?** Yes **Other risks of bias: Was the study free from other risks of bias?** Unclear **Overall judgements of risk of bias and directness: Overall risk of bias** High risk of bias (This was a non-randomised uncontrolled interrupted time series study. Reporting of characteristics was not sufficient to be sure that there were no important differences between comparison groups other than for the outcomes measured (although results were adjusted for age, region, and ethnicity). No blinding procedures described for analysis of outcomes.) **Overall directness:** Partially applicable (USA-based study)	

Eicher 2011

Study type	Interrupted time series
Study location	UK
Study setting	Children looked after in a London local authority
Study dates	2007 to 2008
Duration of follow-up	a 3 month initital audit (2007) was compared to 3 month results after a 9-month study period (2008)
Sources of funding	not reported
Inclusion criteria	Case situation cohort "due" an asssessment during the period under study Age 0-18 years Care situation looked after children in a local authority in London
Sample size	225
Split between study groups	Routine care period = 112 Change project = 113
Loss to follow-up	not reported

% Female	not reported
Mean age (SD)	not reported
Condition specific characteristics	unaccompanied asylum seekers 26.6% children looked after outside of local authority area 60%
Outcome measures	Health assessment outcome 1 Referrals received among those due a health assessment: unclear how this was measured (likely with a review of the referral system) Health assessment outcome 2 Number of "did not attends" for hospital appointments: unclear how this was measured, likely with a review of the referral system
Study arms	**Change Project to support statutory health assessments for looked after children (N = 113)** One of the named nurses (the author) agreed to address the issue in a practice-based module to complete a BSc in nursing, and identified herself as the change agent. The aim identified for the change project was to improve the service provision of statutory health assessments for LAC living in the local authority to better address their health needs. The objectives were to improve the existing referral system and ensure that a referral was received for each assessment. The change project was conducted over a nine-month period. The change agent used a transformational style of leadership to motivate and encourage team working and an overall approach based on Lewin's (1951) seminal model of approach to change, 'unfreezing-moving-refreezing'. This recognises that old behaviour has to be discarded before new behaviour can be adopted. The first part of the project involved gathering information from a variety of sources: a literature search, the compilation of audit results and a survey of ten other LAC nurses relating to their service provision. A force field analysis was undertaken, which provided a framework for looking at the factors that were influencing the situation. In this way, the barriers to the change could be identified, with a view to reducing them to further facilitate the change. A stakeholder analysis was also extremely useful, not only to identify the many people involved in the complex service structure, but also to separate the users from the providers. A responsibility chart was also found to be a useful tool. To involve the users, the change agent attended the social work team meetings (ten teams) to inform them and to seek their opinions. The providers of the service had specific and

	timely meetings to review and agree on the referral process as it developed. Challenges by the change agent included dealing with the 'them and us' culture that existed between the professionals, and the political complexities of multi-agency working. In the short term, negotiation was used to achieve agreement, facilitated by improved team work. Everyone identified in the stakeholder analysis was kept informed via emails or meetings. It was recognised that some long-term strategies needed to be put in place to ensure that the system remained effective beyond the end of the project. This has been provided by a three-monthly service review meeting involving the providers, with feedback included from social workers gained by the nurses continuing to attend their team meetings. The paperwork was streamlined, resulting in a revised referral form to complement the information required in the assessment forms used by the health professionals. Clear guidelines were developed. To support the already overworked social workers, it was decided that they would be prompted to do the referral at least six weeks before the due date to achieve more timely assessments. The referrals would then be allocated to the most appropriate health professional at a weekly meeting involving the consultant and at least one of the nurses. This meeting also allowed information to be shared and any concerns about the children to be raised and discussed. A period of transition allowed social workers to receive training sessions at their team meetings. Outcome measures: Health assessment outcome 1 Referrals received among those due a health assessment: 108/113 (96%) Health assessment outcome 2 Number of "did not attends" for hospital appointments: 5/42 (12%)* total number of participants calculated from reported percentages
	Routine care (N = 112) Describes a 3-month audit performed in the period before the change project (2007) Outcome measures: Health assessment outcome 1 Referrals received among those due a health assessment: 4/112 (3%) Health assessment outcome 2 Number of "did not attends" for hospital appointments: 13/39 (33%). total study participants calculated from reported percentages.
Risk of Bias	**Random sequence generation: Was the allocation sequence adequately generated?** No

	Allocation concealment: Was the allocation adequately concealed? No **Baseline outcome measurements: Were baseline outcome measurements similar?** Unclear **Baseline characteristics: Were baseline characteristics similar?** Unclear **Incomplete outcome data: Were incomplete outcome data adequately addressed?** Unclear **Knowledge of the allocated interventions: Was knowledge of the allocated interventions adequately prevented during the study?** Yes **Protection against contamination: Was the study adequately protected against contamination?** Yes **Selective outcome reporting: Was the study free from selective outcome reporting?** Unclear **Other risks of bias: Was the study free from other risks of bias?** No (possible measurement error since outcomes were poorly defined) **Overall judgements of risk of bias and directness: Overall risk of bias** High risk of bias (Not a randomised study and no baseline characteristics were reported between study comparison groups; possible measurement error since it is unclear how outcomes were measured. Study was very poorly reported and it is unclear how audits were conducted and whether missing data was a problem) **Overall directness:** Directly applicable (UK-based study)

Hardy 2015

Study type	Interrupted time series
Study location	UK

Study setting	A screening service that would provide earlier identification of the social and emotional difficulties of children in care aged under 5 years
Study dates	September 2010 to August 2011.
Duration of follow-up	12 months
Sources of funding	Guy's and St Thomas' Charity
Inclusion criteria	Age under 60 months of age when entered care
Exclusion criteria	Health assessment Children who returned home before an Initial Health Assessment (IHA) with a paediatrician was arranged were not included.
Sample size	61 = pre-study period 63 = study period 124 = complete screening
Split between study groups	NA
Loss to follow-up	not reported (retrospective)
% Female	not reported for total sample

Mean age (SD)	not reported for the total sample
Outcome measures	Health assessment outcome 1 percentage of children recommended an intervention: Paediatrician records were used to assess how many social-emotional difficulties and concerns had been identified at routine health assessments in under-fives CiC in the previous year. A concern was considered to have been identified when the paediatrician recorded an action point relating to an emotional or behavioural concern. The Ages and Stages Questionnaire: Social and Emotional (ASQ-SE) (Squires, Bricker & Twombly, 2003) assesses the social and emotional behaviour of children aged from 3–65 months. Seven behavioural areas of self-regulation, compliance, communication, adaptive, autonomy, affective functioning, and interaction with people are addressed in separate questionnaires for children at 6, 12, 18, 24, 30, 36, 48, and 60 months of age. The number of questions ranges from 21 at 6 months to 30 at 24–65 months, each taking about 10–15 minutes to complete. The carer is asked to rate how often the child shows a specific response or behaviour to items listed on the questionnaire. The three choices are: 'Most of the time', 'Sometimes', or 'Rarely or never', scoring 10, 5, and 0 points, respectively. The total score is calculated and may then be compared with the standardised clinical cut-off score for each age band. The ASQ-SE was used to assess for the presence of difficulties during the screening period. For full screening, this study also tracked the number who were identified as having difficulties after the complete screening.
Study arms	**Complete Screening (N = 63)** The full screening procedure included the clinical analysis of all the information collected for the child, rather than the Ages and Stages Questionnaire: Social and Emotional (ASQ-SE) or Social Emotional Growth Chart questionnaire scores alone, and this informed the decisions about the need for interventions. The overall aim of the project was to introduce a screening service that would provide earlier identification of the social and emotional difficulties of CiC aged under 5 years in a 12-month period and to gain a greater understanding of the level and type of needs among this population. The screening would assess the children's mental health and social-emotional functioning and provide a profile of their needs for further intervention and long-term planning, be that for adoption planning or returning home to birth parents. By providing timely and effective intervention, authors aimed to reduce the impact of these difficulties for the child, and maximise healthy development and positive attachments with key caregivers. Authors wanted to improve access to CAMHS for children who had more significant mental health and social-emotional difficulties and refer children and families to appropriate community resources where they would be returning home to their birth family. The project aimed to improve collaboration among professionals across health and social care in a position to positively influence the social and emotional development and mental health of children in care aged under five. The local authority provided a list of children newly received into care each week and who were due to have an initial heath assessment (IHA) with a community paediatrician. Once an IHA was scheduled, an information sheet was sent out to the birth parent, foster carer, child's social worker and supervising social worker, letting them know that we could be joining the IHA to start the screening process, unless the birth parents exercised their right to opt out of the study. The carer and/or birth parent was asked to complete the SEGC or ASQ-SE. Questionnaires

	were administered with foster carers as a semi-structured interview. This gave the opportunity for the carer to expand on specific questions, giving examples of the child's responses in different situations. Information about the child's health and development was discussed with the paediatrician after the IHA. A home visit was arranged after the IHA to complete the PCIS. The information from the IHA, screening questionnaires, observations, developmental and health information from the paediatricians, and background information were integrated into a summary compiled by a CAMHS Clinical Specialist, which included a formulation and recommendations for the child's social and emotional development. The summary was distributed to the child's social worker, foster carer, paediatrician and independent reviewing officer (IRO), if possible in time for the next Looked-after Child Review meeting (LAC Review), in order that the information could be incorporated in the consideration and discussion of the child's needs. (LAC reviews take place at 1 and 4 months following a child entering care, thereafter every 6 months, and are key decision-making forums focussing on the specific needs and well-being of the child.) Where authors considered that an intervention or advice to the foster carer or network was indicated from the screening findings for a child or their carer, we had a follow-up discussion with the child's social worker, the fostering social worker and foster carer for the child to agree an intervention plan. The intervention package typically included one or more of the following: liaison with professionals; network meeting including foster carer to discuss screening assessment; advice on social emotional needs of child to foster carer; direct guidance and support to foster carer; advice to network professionals; and direct carer–child work. The guiding principles underpinning all interventions were twofold: that the individual child's social-emotional needs along with the quality of carer–child interaction would be the primary focus for informing the intensity and type of the intervention; and that the caregiver–child relationship is the main agent for change and that all interventions would focus on maximising this relationship in order to best meet the child's needs. We hoped the intervention would provide more in-depth information to the network of professionals, especially the child's social worker, of the nature of the child's needs and developmental change over time in order to help inform care planning. After 6 months, children who remained in care received a review health assessment (RHA) by the paediatrician. Where possible a repeat of the initial screening was completed at the RHA, including observation of the child during the assessment and completion of the ASQ-SE with the foster carer.
Study setting	A screening service that would provide earlier identification of the social and emotional difficulties of children in care aged under 5 years

	Study dates	September 2010 to August 2011.
	Duration of follow-up	12 months
	Sources of funding	Guy's and St Thomas' Charity
	Sample size	61 = pre-study period 63 = study period 124 = complete screening
	Split between study groups	NA
	Loss to follow-up	not reported (retrospective)
	% Female	41.3%
	Mean age (SD)	19.6 SD 19.43 months
	Condition specific characteristics	time in care time with carer: mean 8.13 weeks type of care 70% with Social Services foster carers; 14% in kinship placements; 10% in mother/baby assessment centres; 3% with independent agency foster carers; and 3% in mother/baby foster placements.

		non-white ethnicity Two-thirds of the sample was from Black and Minority Ethnic groups and one-third were White British.
	Outcome measures	Health assessment outcome 1 percentage of children recommended an intervention: 33%: 0-2 months: 22%; 3-18 months: 72%; 19-36 months: 86%: 37-65 months: 100%. In the study period a significantly greater proportion of children were identified who were above or approaching the ASQ-SE clinical cut-off point ($\chi 2(1, N=63)=8.451$, $p=0.003$) or who were identified as having difficulties after the complete screening ($\chi 2(1, N=124)=38.23$, $p<0.001$).
	Routine assessment (N = 61) Paediatrician records were used to assess how many social-emotional difficulties and concerns had been identified at routine health assessments in under-fives children in care in the previous year.	
	% Female	not reported for this arm
	Mean age (SD)	not reported for this arm
	Outcome measures	Health assessment outcome 1 percentage of children recommended an intervention: 10%. 0-2 months: 9%; 3-18 months: 0.5%; 19-36 months: 0%; 37 - 65 months: 75%. In the 12 months before the screening began paediatricians identified concerns in six out of the 61 children seen.
Risk of Bias	**Random sequence generation: Was the allocation sequence adequately generated?** No **Allocation concealment: Was the allocation adequately concealed?** No **Baseline outcome measurements: Were baseline outcome measurements similar?** Unclear **Baseline characteristics: Were baseline characteristics similar?** Unclear **Incomplete outcome data: Were incomplete outcome data adequately addressed?** Unclear **Knowledge of the allocated interventions: Was knowledge of the allocated interventions adequately prevented during the study?** No	

	Protection against contamination: Was the study adequately protected against contamination? Yes **Selective outcome reporting: Was the study free from selective outcome reporting?** Partly **Other risks of bias: Was the study free from other risks of bias?** No (likely measurement error: no clear definition of the outcome of interest. E.g. study measured the percentage of children recommended an intervention, however no clear definition of "recommended an intervention" was provided.) **Overall judgements of risk of bias and directness: Overall risk of bias** **High risk of bias** (no-randomisation or allocation concealment; study inadequately reported baseline characteristics between comparison groups; unclear how groups differed for missing data; likely measurement error: no clear definition of the outcome of interest. E.g. study measured the percentage of children recommended an intervention, however no clear definition of "recommended an intervention" was provided.) **Overall directness** **Directly applicable**

Horwitz 2000

Study type	Non-randomised controlled trial
Study location	USA
Study setting	health services received by children newly entering foster care
Study dates	February 1, 1992 through July 31, 1993
Duration of follow-up	6-, and 12-month assessments
Sources of funding	National Institute of Mental Health

Inclusion criteria	Age 11 - 74 months Care situation entering foster care
Sample size	120
Split between study groups	multidisciplinary health and mental health assessment = 62 Usual assessments = 58
Loss to follow-up	57 of the intervention (92%) and 53 of the comparison children (95%) followed up at 6 months, and 56 of the intervention children (90%) and 54 of the comparison children (93%) followed up at 12 months.
% Female	49.2%
Mean age (SD)	not reported for the total sample
Outcome measures	Health assessment outcome 1 Type of problem identified by provider: medical; educational; developmental (OT/PT/speech)/Mental health at baseline: children were assessed using the following sources- child's mental health: child behaviour check list (foster parents); functional status: hildren's Global Assessment Scale (foster parent interview); a physical health assessment using the intervention form or from a private practitioner in the control group; developmental assessment and fine and gross motor assessments using the Early Screening Profile;; Language assessment using the Peabody Picture Vocabulary Test; adaptive functioning using the Vineland Adaptive Behavior Scales (foster parent interview); and use of mental health, physical health, and other services (assessed using foster parent interview and follow-up medical contacts.. Health assessment outcome 2 Referral for problem by provider: medical/educational/developmental/mental health: assessed as above Health assessment outcome 3 Children with at least 1 service recommended at baseline: assessed as above Health assessment outcome 4 Children with at least 1 service recommended at baseline who received services at 6-months/12-months follow up: assessed as above

	Health assessment outcome 5 Association between being in the intervention group and receipt of services in children for whom services were recommended, adjusted for age, number of previous foster homes, medical problem assessed by provider, mental health of the child assessed by foster mother: assessed as above
Study arms	**Multidisciplinary initial health and mental health assessment (N = 62)** One half of these children received care in a comprehensive foster care clinic staffed by a set of providers from 5 independent community agencies who were familiar with the special needs of children in foster care. A specialized set of services designed to provide a baseline, multidisciplinary health and mental health assessment as well as ongoing monitoring for young children entering foster care in 1 Connecticut town. The Foster Care Clinic (FCC) is a community-based multidisciplinary clinic started in 1985 by 1 of the authors (M.D.S.). At the time of the evaluation, the clinic provided comprehensive baseline evaluations to young children entering out-of-home care and, through biannual reevaluations, monitored the health and mental health status of these children and facilitated their entry into appropriate services. The coordinated efforts of several independent community agencies, the public school system, and the State Department of Social Services created a de facto system of care for this group of children. The FCC visit consisted of an interview with the foster parent, usually the foster mother, as well as a complete medical examination, developmental assessment, psychological assessment, speech and language assessment, and motor evaluation. The examinations were completed by providers from community agencies and referrals for services were made back to these agencies. The payment for this comprehensive evaluation was generated through Medicaid.

% Female	58.1%
Mean age (SD)	11-36 months: 50% 37 - 76 months: 50%
Condition specific characteristics	non-white ethnicity 62.9% Reason for placement neglect: 50%; physical abuse: 19.4%; sexual abuse: 1.6%; at risk: 35.5%

	number of previous placements 0- 80.7%; 1- 16.1%; 2 or more - 3.2% Mental health Global rating of child's mental health by foster mother: fair/poor: 21.0% Physical health Global rating of child's health by foster mother: fair/poor 16.1% educational or developmental health Any health care, development, educational service since living in foster home: yes 38.7%

Usual Care (N = 58)

The other half received the customary medical services available in the community in which their foster families lived. During the same 18-month period, all young children (11–74 months of age) placed into substitute care in the same region but through the Danbury/Torrington office of the Department of Children and Families served as the comparison group. The foster parents of these children received the same interview within their homes administered by trained interviewers rather than at the FCC, and children were assessed for the same developmental, psychological, speech/language, and motor skills using the same battery of instruments used in the FCC. One hundred percent of the comparison families and children were evaluated using the FCC instruments within 30 days of placement. The results of these assessments were not provided to either the children's social services workers or their medical providers.

Study type	Non-randomised controlled trial
Study location	USA
Study setting	health services received by children newly entering foster care
Study dates	February 1, 1992 through July 31, 1993

Duration of follow-up	6-, and 12-month assessments
Sources of funding	National Institute of Mental Health
Inclusion criteria	Age 11 - 74 months Care situation entering foster care
Sample size	120
Split between study groups	multidisciplinary health and mental health assessment = 62 Usual assessments = 58
Loss to follow-up	57 of the intervention (92%) and 53 of the comparison children (95%) followed up at 6 months, and 56 of the intervention children (90%) and 54 of the comparison children (93%) followed up at 12 months.
% Female	63.1%
Mean age (SD)	11-36 months: 37.9% 37-76 months: 62.1%
Condition specific characteristics	non-white ethnicity 39.7% Reason for placement neglect 36.2%; physical abuse 8.6%; sexual abuse 1.7%; at risk 62.1%

		number of previous placements 0 - 81.0%; 1 - 10.3%; 2 or more - 8.6% Mental health Global rating of child's mental health by foster mother: fair or poor - 38.6% Physical health Global rating of child's health by foster mother: fair or poor - 16.1% educational or developmental health Any health care, development, educational service since living in foster home: yes 3.5%
	Outcome measures	Health assessment outcome 1 Type of problem identified by provider: medical; educational; developmental (OT/PT/speech)/Mental health at baseline: children were assessed using the following sources- child's mental health: child behaviour check list (foster parents); functional status: hildren's Global Assessment Scale (foster parent interview); a physical health assessment using the intervention form or from a private practitioner in the control group; developmental assessment and fine and gross motor assessments using the Early Screening Profile;; Language assessment using the Peabody Picture Vocabulary Test; adaptive functioning using the Vineland Adaptive Behavior Scales (foster parent interview); and use of mental health, physical health, and other services (assessed using foster parent interview and follow-up medical contacts.. Health assessment outcome 2 Referral for problem by provider: medical/educational/developmental/mental health: assessed as above Health assessment outcome 3 Children with at least 1 service recommended at baseline: assessed as above Health assessment outcome 4 Children with at least 1 service recommended at baseline who received services at 6-months/12-months follow up: assessed as above Health assessment outcome 5 Association between being in the intervention group and receipt of services in children for whom services were recommended, adjusted for age, number of previous foster homes, medical problem assessed by provider, mental health of the child assessed by foster mother: assessed as above
Risk of Bias	**1. Bias due to confounding** Moderate (there were several significant differences between comparison groups at baseline, not all were adequately adjusted for in analysis)	

	2. Bias in selection of participants into the study Low **3. Bias in classification of interventions** Moderate (The intervention group was poorly defined, as such it is difficult to determine exactly what is the difference between groups that might be effecting differences in outcomes.) **4. Bias due to deviations from intended interventions** Serious (The control group was poorly defined, and as such, it is unclear whether many co-interventions were employed to support health care assessments in other regions.) **5. Bias due to missing data Risk of bias judgement for missing data** Low **6. Bias in measurement of outcomes Risk of bias judgement for measurement of outcomes** Serious (It is difficult to judge whether there could be bias resulting from differences in how outcomes were measured since while the study reports its sources of information, it is unclear how these sources were used to define "types of problems" e.g. medical, educational, developmental, mental health. Many measures are used and cut-offs are not reported. Without knowing these it is difficult to judge whether the same criteria were used between comparison groups.) **7. Bias in selection of the reported result Risk of bias judgement for selection of the reported result** Serious (multiple measurements were used, these were not reported separately and it is unclear how these measurements were used to define "type of problem" medical, educational, developmental, or mental health.)

	Overall bias Critical **Directness** Partially Applicable (USA-based study)

Hunter 2008

Study type	Before-and-after studies
Study location	UK
Study setting	Residential care
Study dates	August 2006 to March 2007
Duration of follow-up	eight months following baseline
Sources of funding	not reported
Inclusion criteria	Care situation in residential care in three areas in Scotland: Renfrewshire, West Dunbartonshire, and Argyll and Bute
Sample size	162 reduced to 152 children at second data collection. It was estimated that 90% of children were the same by follow up.
Split between study groups	Not applicable

Loss to follow-up	unclear (at least 10)
% Female	"No patient identifiable data were collected"
Mean age (SD)	"No patient identifiable data were collected"
Outcome measures	Health assessment outcome 1 Proportion of children with BAAF health record booklet: special nurse evaluated - number of children with carer-held records (BAAF books) Health assessment outcome 2 Proportion with up-to-date and complete BAAF books: specialist nurse evaluated - a BAAF book is considered complete and up to date if all verifiable health information relating to each specified procedure or practice has been entered. Health assessment outcome 3 Received a pre-admission medical: specialist nurse evaluated - using BAAF book Health assessment outcome 4 With all age-appropriate immunisations: specialist nurse evaluated unclear source of information Health assessment outcome 5 At least one outstanding medical referral that had not been taken up: specialist nurse evaluation unclear source of information Health assessment outcome 6 Registered with a dentist: specialist nurse evaluated unclear source of data Health assessment outcome 7 With an up-to-date BAAF health assessment (comprehensive medical): specialist nurse evaluated - a BAAF book is considered complete and up to date if all verifiable health information relating to each specified procedure or practice has been entered. Health assessment outcome 8 Section of BAAF book completed: consent for medical treatment; Personal details; Background report tear-off slip; Centile chart; Eyes (registered with an optician and receieved at least one eye test); Hearing (standard hearing tests conducted as part of comprehensive medical): specialist nurse evaluated - a BAAF book is considered complete and up to date if all verifiable health information relating to each specified procedure or practice has been entered.
Study arms	Specialist nursing service (N = 152)

	Introduction of a specialist nursing service into all residential child care units in three areas in Scotland. The specialist nursing service comprised a research project manager, three whole-time-equivalent G-grade nurses and a clerical support officer. An existing specialist nurse who already worked within Renfrewshire in the residential care units worked alongside the project staff. Each nurse was responsible for: 1) promoting the existence of the service within their designated locality; 2) mapping existing service provision for children in residential care; 3) responding to health-related requests from service users within their locality; 3) responding to health-related requests from service users within their locality; 4) providing health promotion advice and activities for children in residential care, foster carers, and residential care home staff; 5) liaising with health professionals and social care providers to ensure the health needs of children were being met; 6) highlighting locality-specific issues relating to health care needs; 7) ensuring that the standard health recommendations were adhered to and that relevant documentation was complete; 8) gathering evaluation data before and after the introduction of the service. There were 162 children prior to establishing the nursing service. Note study states that approximately 90% of participants were in both comparison groups.
	Random sequence generation: Was the allocation sequence adequately generated? NA **Allocation concealment: Was the allocation adequately concealed?** NA **Baseline outcome measurements: Were baseline outcome measurements similar?** NA **Baseline characteristics: Were baseline characteristics similar?** Unclear **Incomplete outcome data: Were incomplete outcome data adequately addressed?** Unclear **Knowledge of the allocated interventions: Was knowledge of the allocated interventions adequately prevented during the study?** Unclear **Protection against contamination: Was the study adequately protected against contamination?** NA **Selective outcome reporting: Was the study free from selective outcome reporting?** Partly **Other risks of bias: Was the study free from other risks of bias?** No (possible measurement error since outcomes were poorly defined and specialist nurse (the participant comprising the intervention) was also the person who was collecting evaluation outcomes) **Overall judgements of risk of bias and directness: Overall risk of bias** High risk of bias

	(Study non-randomised, uncontrolled before and after study. Study was not clear about the number of participants who were the same (remained in the study) at before and after comparisons (study estimates approximately 90%). Study did not report baseline characteristics and so it was not possible to tell how groups varied for important characteristics. Study nurse (the intervention) was also the same person performing the evaluation (no blinding procedures apparent). Outcomes were poorly defined and may have been very subjective. Unclear source of data for many outcomes.) **Overall directness: Directly applicable** (UK-based)

Jee 2010

Study type	Interrupted time series
Study location	USA
Study setting	All participants were from a medical home practice for children in foster care.
Study dates	etween January 1, 2005 and December 31, 2006 (baseline cohort) and between January 1, 2007 and August 30, 2008 (screening cohort).
Duration of follow-up	retrospective chart review
Sources of funding	sponsored by the Robert Wood Johnson Physician Faculty Scholars program and the Halcyon Hill Foundation.
Inclusion criteria	Case situation newly entering foster care (in care < 3 months) Age ages 6 months to 5.5 years:

	Care situation children in foster care
Sample size	269
Split between study groups	192 children in the baseline cohort 77 children in the screening cohort
Loss to follow-up	none reported (retrospective chart review)
% Female	not reported for the total sample
Mean age (SD)	not reported for the total sample
Outcome measures	Health assessment outcome 1 Rate of detection of social-emotional problems: medical chart review to evaluate young children who were newly entering foster care. Unclear how detection of social-emotional problems was defined in the pre-screeening cohort. In the post screening cohort it was defined using clinical cut off on the ASQ scores.
Study arms	**Screening questionnaires used in assessment of children newly entering foster care (N = 77)** In January 2007, Starlight Pediatrics began routinely to ask foster parents to complete an Ages and Stages Questionnaire (ASQ) or an Ages and Stages Questionnaire: Social Emotional (ASQ-SE) before each well-child visit for children aged 4 months to 5.5 years. Administration of the ASQ at the first visit was alternated with that of the ASQ-SE at the next well-child visit. Authors did not administer both questionnaires simultaneously to reduce burden on the parents, and to facilitate timely review in our busy clinical office. For children under 3 years, the time gap for scheduled visits between first and second visits was 3 months; after 3 years of age, routine foster care visits were generally every 6 months, consistent with national foster care standards (American Academy of Pediatrics, 2005). Potential problems were noted on the well-child form and in the problem section of the medical chart. Health care providers could still rely on their clinical judgment and

	make referrals, even for children whose screening scores did not fall below the threshold cut-off for clinical concern. However, for this study, authors used questionnaire score cut-offs to determine rates of problem identification.

Study location	USA
Study setting	All participants were from a medical home practice for children in foster care.
Study dates	etween January 1, 2005 and December 31, 2006 (baseline cohort) and between January 1, 2007 and August 30, 2008 (screening cohort).
Duration of follow-up	retrospective chart review
Sources of funding	sponsored by the Robert Wood Johnson Physician Faculty Scholars program and the Halcyon Hill Foundation.
Inclusion criteria	Case situation newly entering foster care (in care < 3 months) Age ages 6 months to 5.5 years: Care situation children in foster care
Sample size	269
Split between study groups	192 children in the baseline cohort

		77 children in the screening cohort
	Loss to follow-up	none reported (retrospective chart review)
	% Female	48%
	Mean age (SD)	infant: 59%; toddler: 21%; preschool: 19%
	Condition specific characteristics	non-white ethnicity 71%
	Outcome measures	Health assessment outcome 1 Rate of detection of social-emotional problems: n=18 (24%) *number of participants calculated from reported percentages. infant: 19%; toddler: 31%; preschool: 33%
Study arms	**Standard screening (N = 192)** Standardized screening. During the baseline and screening periods, the practice used age- and foster care- specific standardized forms for well-child visits scheduled at intervals recommended by the American Academy of Pediatrics, with additional visits at 21, 42, and 54 months, as indicated by national foster care guidelines (AAP, 2005). In the baseline period (pre-January 2007), no standardized social-emotional screening forms were used. Instead, providers relied on 'provider surveillance,' meaning that they noted social-emotional concerns on the well-child form, based on parental concerns and their own skilled observations of the children (Dworkin, 1993). Children identified as having potential problems were referred to the on-site social worker, who, if available, would meet with families in the clinic, or would make telephone contact soon after the visit.	
	Study location	USA
	Study setting	All participants were from a medical home practice for children in foster care.

	Study dates	between January 1, 2005 and December 31, 2006 (baseline cohort) and between January 1, 2007 and August 30, 2008 (screening cohort).
	Duration of follow-up	retrospective chart review
	Sources of funding	sponsored by the Robert Wood Johnson Physician Faculty Scholars program and the Halcyon Hill Foundation.
	Inclusion criteria	Case situation newly entering foster care (in care < 3 months) Age ages 6 months to 5.5 years: Care situation children in foster care
	Sample size	269
	Split between study groups	192 children in the baseline cohort 77 children in the screening cohort
	Loss to follow-up	none reported (retrospective chart review)
	% Female	48%
	Mean age (SD)	infant: 50%; toddler: 25%; preschool: 26%

	Condition specific characteristics	non-white ethnicity 83%
	Outcome measures	Health assessment outcome 1 Rate of detection of social-emotional problems: n=8 (4%)* number of participants calculated from reported percentages: infants: 1%; toddlers 8%; preschool: 4%
Risk of bias	**Random sequence generation: Was the allocation sequence adequately generated?** No **Allocation concealment: Was the allocation adequately concealed?** No **Baseline outcome measurements: Were baseline outcome measurements similar?** Unclear **Baseline characteristics: Were baseline characteristics similar?** Partly **Incomplete outcome data: Were incomplete outcome data adequately addressed?** Unclear **Knowledge of the allocated interventions: Was knowledge of the allocated interventions adequately prevented during the study?** Yes **Protection against contamination: Was the study adequately protected against contamination?** Yes **Selective outcome reporting: Was the study free from selective outcome reporting?** Unclear **Other risks of bias: Was the study free from other risks of bias?** No (Serious likelihood of measurement error) **Overall judgements of risk of bias and directness: Overall risk of bias** High risk of bias (This was a non-randomised study that compared rates of detection of social-emotional problems in children 5 and younger. However, it is unclear how detection was defined, and this is likely to have differed between comparison groups. Some baseline characteristics were reported and their was no statistical differences reported for child age, sex, and ethnicity. This suggests comparison groups may have been similar. Unclear how much missing data and how this varied between comparison groups.) **Overall directness :** Partially applicable	

	(USA-based study)

Risley-Curtiss 2007

Study type	Non-randomised controlled trial
Study location	USA
Study setting	four counties serving children entering foster care
Study dates	2001 to 2002
Duration of follow-up	14 days. 30 days, and 1 year
Sources of funding	not reported
Inclusion criteria	Age age 0-18 Care situation entering care in the study period
Sample size	2507
Split between study groups	pilot group = 1060 control group = 1447

	pilot group (rural) = 106 control group (rural) = 62 pilot group (urban) = 954 control group (urban) = 1385
Loss to follow-up	not reported
% Female	not reported for total sample
Mean age (SD)	not reported for total sample
Outcome measures	Health assessment outcome 1 Number with complete examination over follow up; number with exam completed within 14 days; number with exam completed after 14 days; mean number of days until exam was completed: Data were collected using information from the automated child welfare case management data system. Data from the computerized system were accessed 3-4 months after the cutoff deadline to give workers and the system time to process all the necessary information (for example, time for workers to input data). The primary dependent variable was defined as "exam completed within 14 days," but the authors also looked at whether the exam was completed within the year time frame ("exam completed") and within 30 days, which was the old policy standard. These data were calculated using number of days from entry until exam completion, and the variables were coded dichotomously as "yes" or "no." Health assessment outcome 2 Information sharing with out of home care providers/medical providers/other providers/licensing providers: crude indicator of onward referral (action) : Data on whether or not information about the child was shared with out-ofhome providers, medical providers, licensing providers, and others as relevant (yes/no) also were collected using the computer system.
	Health Exam Pilot Project (N = 1060) The public child welfare agency was required to establish the pilot project in two counties (one urban and one rural) for children entering foster care beginning in January 2001. The law required that children entering foster care in the pilot counties receive a complete health examination within 14 days of the filing of a dependency petition or the acceptance of a child into voluntary placement. The examination was to include behavioral and developmental screenings and to be

consistent with the early periodic screening, diagnosis, and treatment (EPSDT) requirements of federal law. In the pilot counties, all of the child's reasonably available medical records were to be provided to the medical provider at the time of or prior to the examination. The results of the examinations were to be communicated to people who needed to know, given their work with the child at the time of the child's placement. In addition, follow-up referral services were to be provided, as determined and recommended through the health examination, and judicial oversight was requested. A project work group was formed in the spring of 2000 to develop, implement, and evaluate the Health Exam Pilot Project (Project). The agency is a state-administered child welfare program that, in addition to child protective services (CPS), foster care, and adoptions, includes providing physical healthcare services for children in out-of-home care. Medical and dental care are administered from within the agency, which contracts with providers statewide and serves as a managed care health plan of the state's Medicaid agency. The work group included personnel from the state office child welfare program and fiscal management departments, the medical and dental unit, the computer program unit, local program management from the pilot treatment counties, and two outside consultants—one who coordinated the start-up project management phase, and the other (one of the authors) who consulted for the program evaluation. The initial activities of the work group included establishing the mission and goals, reviewing current policy, and establishing policy in relation to the details of the law. The work group also implemented training for the two treatment counties and worked with the computer system personnel to make changes to the data management system for the project. The work group planned the implementation and evaluation, meeting monthly to identify and address results, issues, problems, and questions from the pilot counties. Just before the start date of January 1, 2001, CPS case managers, supervisors, and support staff participated in policy and procedures training on the project. Foster parents, group care providers, and medical providers also were invited to participate. The training was designed to be interactive and include problem solving opportunities about the various means of collecting available medical records, determining which medical provider to use, and making transportation arrangements, as well as—for determining the responsibilities of each party. Checklists for the case managers, caregivers and providers, and medical providers were given to each participant and posted in e-mail folders accessible to all CPS staff. Copies of the EPSDT forms also were provided, while existing documentation procedures for dental, medical, and psychological and behavioral conditions were reviewed. Informal training was also ongoing through individual contacts with case managers, supervisors, and district management staff.

Study type	Non-randomised controlled trial

Study location	USA
Study setting	four counties serving children entering foster care
Study dates	2001 to 2002
Duration of follow-up	14 days. 30 days, and 1 year
Sources of funding	not reported
Inclusion criteria	Age age 0-18 Care situation entering care in the study period
Sample size	2507
Split between study groups	pilot group = 1060 control group = 1447 pilot group (rural) = 106 control group (rural) = 62

		pilot group (urban) = 954 control group (urban) = 1385
	Loss to follow-up	not reported
	% Female	Rural: 42.5% Urban: 47.8%
	Mean age (SD)	Rural: 7.16 SD 5.63 Urban: 6.14 SD 5.38
	Condition specific characteristics	non-white ethnicity Rural: 7.4%; urban: 16.4% type of care Rural: shelter care: 5.6%; foster family: 43.4%; kinship/relative care: 35.9%; group care settings: 10.4%; other: 4.7%. Urban: shelter care: 10.3%; foster family: 21.7%; kinship/relative care: 46%; group care settings: 17.5%; other: 4.5% Reason for placement Rural: neglect: 77.4%; physical abuse: 12.3; sexual abuse: 9%; emotional abuse: 3.8%. Urban: Rural: neglect: 80.5%; physical abuse: 9.7; sexual abuse: 5%; emotional abuse: 2.4%
Study arms	**Routine assessments (N = 1447)** The law required that children entering foster care in the pilot counties receive a complete health examination within 14 days of the filing of a dependency petition or the acceptance of a child into voluntary placement. Two counties demographically similar to the treatment counties and where "business as usual" would be occurring were used for comparison.	
	% Female	Rural: 42.5%

		Urban: 47.8%
	Mean age (SD)	Rural: 7.32 SD 5.31 years Urban: 7.85 SD 5.81 years
	Condition specific characteristics	type of care Rural: shelter care: 14.5%; foster family: 38.7%; kinship/relative care: 30.7%; group care settings: 3.2%; other: 12.9%. Urban: shelter care: 10.6%; foster family: 23.4%; kinship/relative care: 35.7%; group care settings: 19.2%; other: 11.1% Reason for placement Rural: neglect: 82.3%; physical abuse: 0; sexual abuse: 6.5%; emotional abuse: 4.8%. Urban: neglect: 82.6%; physical abuse: 6.6; sexual abuse: 2.1%; emotional abuse: 1.2%
Risk of bias	**1. Bias due to confounding: Risk of bias judgement for confounding** Serious (the rural county samples differ somewhat in size, and its gender distribution is reversed with the treatment county having 57.5% males and the control county having 54.8% females entering during the study period. more children in the rural control county were placed initially in a shelter facility than in the treatment county. The urban county samples were fairly similar on all the measures, although the treatment county placed a higher percentage of children in kinship foster care than in the control county. In addition, children in the control urban county were slightly older than in the treatment county.) **2. Bias in selection of participants into the study: Risk of bias judgement for selection of participants into the study** Low **3. Bias in classification of interventions: Risk of bias judgement for classification of interventions** Serious (The componenets of the actual intervention itself are not clearly defined in the study. This appears to be a multidimensional intervention delivered in a complex social care system. The control group were defined as "business as usual" but there is little information about what this entails.)	

	4. Bias due to deviations from intended interventions: Risk of bias judgement for deviations from intended interventions Moderate (the pilot study was only run in certain counties so there is little opportunity for contamination. However, few details were provided about the kinds of interventions being received by the control group to support health assessments.) **5. Bias due to missing data: Risk of bias judgement for missing data** Serious (missing data was apparent but it is unclear how the amount of missing data differed between intervention groups.) **6. Bias in measurement of outcomes: Risk of bias judgement for measurement of outcomes** Moderate (it is unlikely that outcome assessors were blind to comparison group and this may have affected measurement. However, outcomes assessed were fairly objective) **7. Bias in selection of the reported result: Risk of bias judgement for selection of the reported result** Low **Overall bias: Risk of bias judgement** Critical **Directness:** Partially Applicable (USA-based study)

Qualitative studies

Swanson 2016

Study type	Semi structured interviews

Aim of study	To explore how access to a family medicine clinic co-locating with the Children's Aid Society (CAS) of Hamilton in Ontario helped meet the unique needs of children in care.
Study location	Canada
Study setting	A medical clinic co-locates with a not-for profit agency, the Children's Aid Society, which provides services and supports to children and families in their own homes. Child Protection Workers will consult and plan with other professionals who know the child, such as teachers, doctors, public health nurses, and other community partners to address immediate issues and establish a plan for future service, as well as help families build a network of support to aid in their ability to provide appropriate care.
Study methods	Semistructured face-to-face or telephone interviews with foster parents. Interviews were audiorecorded when and where feasible, transcribed, and subsequently underwent inductive, thematic analysis. Common themes evolved by consensus.
Population	Foster parents
Study dates	not reported
Sources of funding	The Children's Aid Society of Hamilton in Ontario funded the research.
Inclusion Criteria	Care situation Foster parents using the co-location service
Exclusion criteria	None reported
Sample characteristics	Sample size 19 foster parents Mean age (SD) 53 years

	Gender Male: 15% Non-white ethnicity 42.1% Time in care mean 12 years with children in care Number of children in care "1-200"
Relevant themes	Theme 1 Access to a common location: Access to a common location was a recurrent theme in the conversations with foster parents. Bringing children in care to one location for their medical care provided a forum for children to meet and get to know other children in similar circumstances. "They cannot go to a normal doctor's office and sit with really lots of normal kids that don't have any of the mental problems that these kids all have .... They are all associated with each other. They all see each other at the visitor's [lounge], at the big waiting rooms, so a lot of the kids know each other. So it's like old home week. They feel normal there; every other person in there is in the same boat." Theme 2 Acceptance of children's behaviour: Children's behavioural difficulties were acceptable at the clinic, which is less often the case in a family doctor's office setting. "[In] a waiting room in a mainstream medical clinic, I am usually there with special needs children, a child with fetal alcohol syndrome that is screaming and banging their head on the tile floor, and in the mainstream [medical clinic] the other people are looking at me as if I am a monster, looking at me as if I am a bad mother." Theme 3 Consistency: Children in care are frequently moved; thus, access to the clinic provided a consistency not found in other areas of their lives. "It's the continuity. There are so many variables in this child's life that to have one thing that is continuous is wonderful." Theme 4 Support and care. Access at the clinic provided support and care for the foster parents. "When I go into the clinic, the other mothers are looking to me like, 'Oh my goodness, I had a baby like that last year. I'm probably going to have a baby like that this year. Let me offer some help here.'" Theme 5 Accessible staff instills confidence in foster parents. The clinic staff were accessible to the foster parents and their support helped the foster parents develop confidence in the job they were doing. [Without the clinic] I wouldn't have as much of a peaceful confident time in being a foster parent. Because I rely on them to help me out of situations .... It would help me being more confident in being a foster parent in knowing they're around. They know the kids better than we do as foster parents. I cannot foster properly without them. They give me peace to know I can talk so someone at the clinic and know they know what they're talking about. One parent's tensions were eased with the intervention of the clinic staff. "The [birth] parents were there early and found out who I am because they have mental issues as well .... They met me with the kids and kind of surprised me." Theme 6

	Neutral space: Access to the clinic was a neutral space where foster parents and birth parents could meet while maintaining the privacy of their own personal space. "I would not have invited the birth mother to my family doctor's [office]. Were the clinic not there she would not have been part of that initial first visit. It keeps it a bit more at arm's length from my personal life, the children in care, and my personal life. The doctors [at the clinic] are used to dealing with foster and [birth] parents, so they know how to treat us in a situation that could be tense." Theme 7 Enhancement of communication and care. The clinic co-locating with the CAS made it easy for social workers and child protection staff to meet with foster parents, birth parents, and the children during medical care visits. This in turn facilitated communication and record keeping, leading to a better understanding of the issues and planning and maintaining care. "It is best for everybody in the CAS family to be all here in the same place, the same doctors, all the files are together and the knowledge of the kinds of kids we get in care and the kinds of issues we deal with and that kind of thing. It's centralized. It is there for them [CAS staff] as opposed to them having to deal with umpteen different family doctors in different parts of the province I guess as I am [more than an hour away]. When I go to my family doctor's or the hospital or to a walk-in clinic I'm there on my own; when I go to the clinic the social worker is in the building and usually attends and a support person is there as well …. It's monumental. It's huge." Theme 8 Convenience. Access to consultants and the sharing of information was also easier when the medical records were all in one place. "Psychiatric consult is different; knowledge they have of the child's files, an intimacy you can't get elsewhere. Workers come down and talk to the doctors separately from the child's appointment. When we had a very difficult child here who had mental health issues, the agency set up a consult with the [child psychiatrist] and they sat in a room at a table [of] 8 to 10 people. [The CAS doctor] was part of that. So that you would never get anywhere else. I was able to speak to the CAS doctor and because he already had interviewed the former foster mother he was able, with my knowledge, he was able to prescribe ... for ADHD [attention deficit hyperactivity disorder]." Theme 9 Opportunities for change. The foster parents expressed some opportunities for change in the future. "The only thing the CAS does is the yearly physical; my family doctor does everything else. Regulations say any newborns or [others who] come into care, come in for a medical exam; doesn't happen in time allotted so go to family MD [medical doctor] and then have to go back to med[ical] clinic. My expectations are that there should be a doctor available during regular hours …. I would prefer that the clinic be open during regular 9 to 5 hours."
Study Arms	**Co-location of a medical clinic and a non-profit agency (N = 19)** The Children's Aid Society of Hamilton established a medical clinic in a built-to-purpose space on its premises, which was designed specifically for children placed into care. Initially conceptualized as a pediatric consultation service, the clinic shifted to being facilitated by family physicians in 2009. Thus, in keeping with the principles of family medicine, the clinic provided comprehensive, continuous, patient-centred primary care services that were designed to meet the unique needs of children and young adults placed into care. The team (consisting of 3 family physicians and 2 clinical assistants) tracked, collated, and computerized all patients' medical information, conducted intake assessments of all new cases of children being placed into care, performed annual reviews on all patients, liaised with community-based specialist consultants, and coordinated patients' care. The clinic was funded by a combination of provincial government fee-for-service revenues and the CAS operating budget. When the CAS budget was reduced to providing only mandated, legally designated core activities, the clinic was then scheduled to close. To highlight the clinic's strengths and to consider opportunities for change,

	a program evaluation was undertaken to answer the following questions: What worked? What could be enhanced to improve the health and well-being of children in care?
Risk of bias	**Aims of the research: Was there a clear statement of the aims of the research?** Yes **Appropriateness of methodology: Is a qualitative methodology appropriate?** Yes **Research Design: Was the research design appropriate to address the aims of the research?** Yes **Recruitment Strategy : Was the recruitment strategy appropriate to the aims of the research?** No **Data collection: Was the data collected in a way that addressed the research issue?** Yes (but no discussion of data saturation) **Researcher and participant relationship:** Has the relationship between researcher and participants been adequately considered? Can't tell **Ethical Issues: Have ethical issues been taken into consideration?** Yes (although no discussion of how the study may have impacted the participant before and after the study) **Data analysis: Was the data analysis sufficiently rigorous?** Yes (Interviews were audiorecorded when and where feasible, transcribed, and subsequently underwent inductive, thematic analysis. When it was not feasible to audiorecord the interview, the notes taken during the interview were entered directly into the questionnaire by the interviewer. One member of the research team (G.S.) reviewed all of the transcripts and written reports. Two members of the team (M.M., A.D.) each reviewed 5 transcripts or written reports randomly chosen from all the reports. However unclear if researcher took into account contradictory data.) **Findings: Is there a clear statement of findings?** Yes (Two members of the team (M.M., A.D.) each reviewed 5 transcripts or written reports randomly chosen from all the reports. Similar themes were identified by all the reviewers and consensus was reached through discussion. Limitations discussed.) **Research value: How valuable is the research?** The research has some value

	(The research has some value to the current review question, however, it is not in the context of the systems of health assessments used in the UK. The study does however suggest some approaches that could be used to make attending medical clinics more attractive in the LACYP populations.) **Overall risk of bias and directness: Overall risk of bias** Moderate (The recruitment strategy of this study is unclear. Parents who feared the closure of the clinic and who had had positive experiences might have volunteered for the study more readily than foster parents who were neutral or negative about the clinic, creating a participant bias. The topic and context of this study is only partially applicable to the review question.) **Directness:** Partially applicable (Canadian study. Participants were not describing the specific system of health assessments used in the UK.)

Appendix E – Forest plots

No forest plots were produced for this review question as meta-analysis was not attempted.

Appendix F – GRADE tables and CERQual tables

Grade Tables

Pre vs post- integrated (centralised) assessment programme

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
Association between being in the post vs pre-programme period for whether screening of the looked after child took place								
1 (Bruhn 2008)	Uncontrolled before and after study	2164	**Beta coefficient: 0.29 (0.06 to 0.51)[1]**	Very Serious[1]	N/A	Serious[2]	NE[4]	Very low

1. Adjusted for age at entry, race, and region.
2. Downgrade two levels for very serious risk of bias: this was a non-randomised uncontrolled interrupted time series study. Reporting of characteristics was not sufficient to be sure that there were no important differences between comparison groups other than for the outcomes measured (although results were adjusted for age, region, and ethnicity). No blinding procedures described for analysis of outcomes.
3. Downgrade one level for indirectness since the study was based in the USA
4. Downgrade two levels as imprecision was not estimable

Pre- vs Post- Change Project to support statutory health assessments for looked after children

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
Referrals received among those due a health assessment (likely assessed using review of electronic referral records)								
1 (Eicher 2011)	Interrupted Time Series	225	**OR 583.20 [152.47, 2230.75]**[1]	Very Serious[2]	NA	Not Serious	Not Serious	Very Low
Number of "did not attends" for hospital appointments (likely assessed using review of electronic referral records)								
1 (Eicher 2011)	Interrupted Time Series	225	**OR 0.27 [0.09, 0.85]**[1]	Very Serious[2]	NA	Not Serious	Serious[3]	Very low

1. Total number of participants was calculated from reported percentages
2. Downgrade 2 levels for very serious risk of bias: Not a randomised study and no baseline characteristics were reported between study comparison groups; possible measurement error since it is unclear how outcomes were measured. Study was very poorly reported and it is unclear how audits were conducted and whether missing data was a problem the results. However, validated questionnaires were used so this is unlikely.
3. Downgrade 1 level for serious imprecision since confidence intervals crossed 1 line of MID (defined as 0.8 and 1.25 for odds ratios)

Complete screening vs routine assessment

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
Children who were identified as having difficulties after the screening over 12 months:								
1 (Hardy 2015)	Interrupted Time Series	124	**OR 18.33 [6.80, 49.45]**	Very Serious[1]	NA	Not Serious	Not Serious	Very Low

1. Downgrade 2 levels for very serious risk of bias: no-randomisation or allocation concealment; study inadequately reported baseline characteristics between comparison groups; unclear how groups differed for missing data; likely measurement error: no clear definition of the outcome of interest. E.g. study measured the percentage of children recommended an intervention, however no clear definition of "recommended an intervention" was provided.

Multidisciplinary initial health and mental health assessment vs Usual Care

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
Number with medical problem identified by provider:								
1 (Horwitz 2000)	Non-randomised controlled trial	120	OR 0.72 [0.34, 1.54]	Very Serious[1]	NA	Serious[2]	Very Serious[3]	Very low
Number with educational problem identified by provider								

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
1 (Horwitz 2000)	Non-randomised controlled trial	120	OR 1.42 [0.63, 3.21]	Very Serious[1]	NA	Serious[2]	Very Serious[3]	Very low
Number with developmental problem identified by provider								
1 (Horwitz 2000)	Non-randomised controlled trial	120	**OR 13.74 [4.83, 39.08]**	Very Serious[1]	NA	Serious[2]	Not Serious	Very low
Number with mental health problem identified by provider								
1 (Horwitz 2000)	Non-randomised controlled trial	120	**OR 3.69 [1.49, 9.13]**	Very Serious[1]	NA	Serious[2]	Not Serious	Very low
Number referred with medical health problems by provider at baseline (of those with an identified problem)								
1 (Horwitz 2000)	Non-randomised controlled trial	120	OR 0.52 [0.14, 1.95]	Very Serious[1]	NA	Serious[2]	Very Serious[3]	Very low
Number referred with educational problems by provider at baseline (of those with an identified problem)								

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
1 (Horwitz 2000)	Non-randomised controlled trial	120	OR 3.47 [0.34, 35.06]	Very Serious[1]	NA	Serious[2]	Very Serious[3]	Very low
Number referred with developmental problems by provider at baseline (of those with an identified problem)								
1 (Horwitz 2000)	Non-randomised controlled trial	120	OR 8.32 [0.43, 162.00]	Very Serious[1]	NA	Serious[2]	Very Serious[3]	Very low
Number referred with mental health problems by provider at baseline (of those with an identified problem)								
1 (Horwitz 2000)	Non-randomised controlled trial	120	OR 1.28 [0.25, 6.69]	Very Serious[1]	NA	Serious[2]	Very Serious[3]	Very low
Children with at least one service recommended at baseline								
1 (Horwitz 2000)	Non-randomised controlled trial	120	**OR 3.23 [1.52, 6.87]**	Very Serious[1]	NA	Serious[2]	Not Serious	Very low
Children with at least one service recommended at baseline who received services at 6-months follow up								

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
1 (Horwitz 2000)	Non-randomised controlled trial	120	OR 2.73 [0.99, 7.51]	Very Serious[1]	NA	Serious[2]	Serious[4]	Very low
Children with at least one service recommended at baseline who received services at 12-months follow up								
1 (Horwitz 2000)	Non-randomised controlled trial	120	OR 2.27 [0.78, 6.58]	Very Serious[1]	NA	Serious[2]	Very Serious[3]	Very low
Association between being in the intervention group and receipt of services in children for whom services were recommended								
1 (Horwitz 2000)	Non-randomised controlled trial	120	OR 3.67 (0.99 to 13.64)[5]	Very Serious[1]	NA	Serious[2]	Serious[4]	Very low

1. Downgrade 2 levels for very serious risk of bias: There were several significant differences between comparison groups at baseline, not all were adequately adjusted for in analysis. The intervention group was poorly defined, as such it is difficult to determine exactly what is the difference between groups that might be affecting differences in outcomes. The control group was poorly defined, and as such, it is unclear whether many co-interventions were employed to support health care assessments in other regions. It is difficult to judge whether there could be bias resulting from differences in how outcomes were measured since while the study reports its sources of information, it is unclear how these sources were used to define "types of problems" e.g. medical, educational, developmental, mental health. Many measures are used, and cut-offs are not reported. Without knowing these it is difficult to judge whether the same criteria were used between comparison groups. multiple measurements were used, these were not reported separately, and it is unclear how these measurements were used to define "type of problem" medical, educational, developmental, or mental health.
2. Downgrade one level for serious indirectness since study was based in USA.
3. Downgrade 2 levels for serious imprecision since confidence intervals crossed 2 lines of MID (defined as 0.8 and 1.25 for odds ratios)

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
4. Downgrade 1 level for serious imprecision since confidence intervals crossed 1 line of MID (defined as 0.8 and 1.25 for odds ratios) 5. adjusted for age, number of previous foster homes, medical problem assessed by provider, mental health of the child assessed by foster mother:								

Specialist nursing service before vs after

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
Proportion of children with BAAF health record booklet: special nurse evaluated - number of children with carer-held records (BAAF books)								
1 (Hunter 2008)	Uncontrolled before and after study	152	OR 0.64 [0.36, 1.12][1]	Very Serious[2]	NA	Not Serious	Serious[3]	Very Low
Proportion with up-to-date and complete BAAF books: specialist nurse evaluated - a BAAF book is considered complete and up to date if all verifiable health information relating to each specified procedure or practice has been entered.								
1 (Hunter 2008)	Uncontrolled before and after study	152	**OR 104.97 [39.90, 276.10] [1]**	Very Serious[1]	NA	Not Serious	Not Serious	Very Low
Received a pre-admission medical: specialist nurse evaluated - using BAAF book								
1 (Hunter 2008)	Uncontrolled before and after study	152	OR 1.49 [0.95, 2.34]	Very Serious[1]	NA	Not Serious	Serious[3]	Very Low

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
With all age-appropriate immunisations: specialist nurse evaluated unclear source of information								
1 (Hunter 2008)	Uncontrolled before and after study	152	**OR 22.04 [9.21, 52.76]**	Very Serious[1]	NA	Not Serious	Not Serious	Very Low
Registered with a dentist: specialist nurse evaluated unclear source of data								
1 (Hunter 2008)	Uncontrolled before and after study	152	**OR 10.36 [5.97, 17.97]**	Very Serious[1]	NA	Not Serious	Not Serious	Very Low
With an up-to-date BAAF health assessment (comprehensive medical): specialist nurse evaluated - a BAAF book is considered complete and up to date if all verifiable health information relating to each specified procedure or practice has been entered.								
1 (Hunter 2008)	Uncontrolled before and after study	152	**OR 6.95 [4.13, 11.69]**	Very Serious[1]	NA	Not Serious	Not Serious	Very Low
Section of BAAF book completed: centile charts								
1 (Hunter 2008)	Uncontrolled before and after study	152	**OR 7.55 [4.31, 13.22]**	Very Serious[1]	NA	Not Serious	Not Serious	Very Low

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
Section of BAAF book completed: eyes (registered with an optician and received at least one eye test);								
1 (Hunter 2008)	Uncontrolled before and after study	152	**OR 26.51 [13.58, 51.79]**	Very Serious[1]	NA	Not Serious	Not Serious	Very Low

1. Calculated using reported percentages
2. Downgrade 1 level for serious risk of bias: Study non-randomised, uncontrolled before and after study. Study was not clear about the number of participants who were the same (remained in the study) at before and after comparisons (study estimates approximately 90%). Study did not report baseline characteristics and so it was not possible to tell how groups varied for important characteristics. Study nurse (the intervention) was also the same person performing the evaluation (no blinding procedures apparent). Outcomes were poorly defined and may have been very subjective. Unclear source of data for many outcomes.
3. Downgrade 1 level for serious imprecision since confidence intervals crossed 1 line of MID (defined as 0.8 and 1.25 for odds ratios)

Screening questionnaires used in assessment of children newly entering foster care vs Standard Screening

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
Rate of detection of social-emotional problems: defined using clinical cut off on Ages and Stages Questionnaire scores (unclear in standard screening group)								
1 (Jee 2010)	Interrupted Time Series	269	**OR 7.02 [2.90, 16.97]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low
Rate of detection of social-emotional problems (infants): defined using clinical cut off on Ages and Stages Questionnaire scores (unclear in standard screening group)								

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
1 (Jee 2010)	Interrupted Time Series	139	**OR 20.89 [2.52, 173.00]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low
Rate of detection of social-emotional problems (toddlers): defined using clinical cut off on Ages and Stages Questionnaire scores (unclear in standard screening group)								
1 (Jee 2010)	Interrupted Time Series	65	**OR 4.58 [1.06, 19.77]**	Very Serious[1]	N/A	Serious[2]	Serious[3]	Very low
Rate of detection of social-emotional problems (preschool): defined using clinical cut off on Ages and Stages Questionnaire scores (unclear in standard screening group)								
1 (Jee 2010)	Interrupted Time Series	63	**OR 13.06 [2.18, 78.05]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low

1. Downgrade 2 levels for very serious risk of bias: This was a non-randomised study that compared rates of detection of social-emotional problems in children 5 and younger. However, it is unclear how detection was defined, and this is likely to have differed between comparison groups. Some baseline characteristics were reported and their was no statistical differences reported for child age, sex, and ethnicity. This suggests comparison groups may have been similar. Unclear how much missing data and how this varied between comparison groups.
2. Downgrade 1 level for serious indirectness since study was based in USA
3. Downgrade 1 level for serious imprecision since confidence intervals crossed 1 line of MID (defined as 0.8 and 1.25 for odds ratios)

Health Exam Pilot Project vs Routine assessments

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
Number with complete health examination over 1 year follow up (rural): data from automated child welfare case management data system								
1 (Risley-Curtiss 2007)	Non-randomised controlled trial	2507	**OR 7.13 [3.40, 14.96]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low
Number with complete health examination within 14 days (rural): data from automated child welfare case management data system								
1 (Risley-Curtiss 2007)	Non-randomised controlled trial	2507	**OR 14.80 [6.20, 35.33]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low
Number with complete health examination between 14-30 days (rural): data from automated child welfare case management data system								
1 (Risley-Curtiss 2007)	Non-randomised controlled trial	2507	**OR 0.47 [0.25, 0.91]**	Very Serious[1]	N/A	Serious[2]	Serious[3]	Very low
Number with complete health examination over 1 year follow up (urban): data from automated child welfare case management data system								
1 (Risley-Curtiss 2007)	Non-randomised controlled trial	2507	**OR 22.13 [17.16, 28.54]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
Number with complete health examination within 14 days (urban): data from automated child welfare case management data system								
1 (Risley-Curtiss 2007)	Non-randomised controlled trial	2507	**OR 8.92 [7.32, 10.86]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low
Number with complete health examination between 14-30 days (urban): data from automated child welfare case management data system								
1 (Risley-Curtiss 2007)	Non-randomised controlled trial	2507	**OR 1.96 [1.63, 2.36]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low
Information sharing with out of home care providers (rural)								
1 (Risley-Curtiss 2007)	Non-randomised controlled trial	2507	**OR 63.44 [3.82, 1052.53]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low
Information sharing with medical care providers (rural)								
1 (Risley-Curtiss 2007)	Non-randomised controlled trial	2507	**OR 0.05 [0.01, 0.38]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low

No. of studies	Study design	Sample size	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality
Information sharing with out of home care providers (urban)								
1 (Risley-Curtiss 2007)	Non-randomised controlled trial	2507	**OR 10.95 [7.54, 15.90]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low
Information sharing with medical care providers (urban)								
1 (Risley-Curtiss 2007)	Non-randomised controlled trial	2507	**OR 27.28 [8.50, 87.57]**	Very Serious[1]	N/A	Serious[2]	Not Serious	Very low

1. Downgrade 2 levels for very serious risk of bias: the rural county samples differ somewhat in size, and its gender distribution is reversed with the treatment county having 57.5% males and the control county having 54.8% females entering during the study period. more children in the rural control county were placed initially in a shelter facility than in the treatment county. The urban county samples were fairly similar on all the measures, although the treatment county placed a higher percentage of children in kinship foster care than in the control county. In addition, children in the control urban county were slightly older than in the treatment county. The componenets of the actual intervention itself are not clearly defined in the study. This appears to be a multidimensional intervention delivered in a complex social care system. The control group were defined as "business as usual" but there is little information about what this entails. The pilot study was only run in certain counties so there is little opportunity for contamination. However, few details were provided about the kinds of interventions being received by the control group to support health assessments. Missing data was apparent but it is unclear how the amount of missing data differed between intervention groups. It is unlikely that outcome assessors were blind to comparison group and this may have affected measurement. However, outcomes assessed were fairly objective.
2. Downgrade 1 level for serious indirectness since study was based in USA
3. Downgrade 1 level for serious imprecision since confidence intervals crossed 1 line of MID (defined as 0.8 and 1.25 for odds ratios)

CERQual tables

Co-location of a medical clinic and a non-profit agency

Theme	Studies	Methodological limitations	Coherence	Adequacy	Relevance	Confidence
Access to a common location	1	**Minor concerns** The recruitment strategy of this study is unclear. Parents who feared the closure of the clinic and who had had positive experiences might have volunteered for the study more readily than foster parents who were neutral or negative about the clinic, creating a participant selection bias. The topic and context of this study is only partially applicable to the review question.	**No concerns**	**Serious concerns** Data was derived from one non-UK study only	**Serious concerns** Canadian study. Participants were not describing the specific system of health assessments used in the UK	Very Low
Acceptance of children's behaviour	1	**Minor concerns** The recruitment strategy of this study is unclear. Parents who feared the closure of the clinic and who had had positive experiences might have volunteered for the study more readily than foster parents who were neutral or negative about the clinic, creating a participant selection bias. The topic	**No concerns**	**Serious concerns** Data was derived from one non-UK study only	**Serious concerns** Canadian study. Participants were not describing the specific system of health assessments used in the UK	Very Low

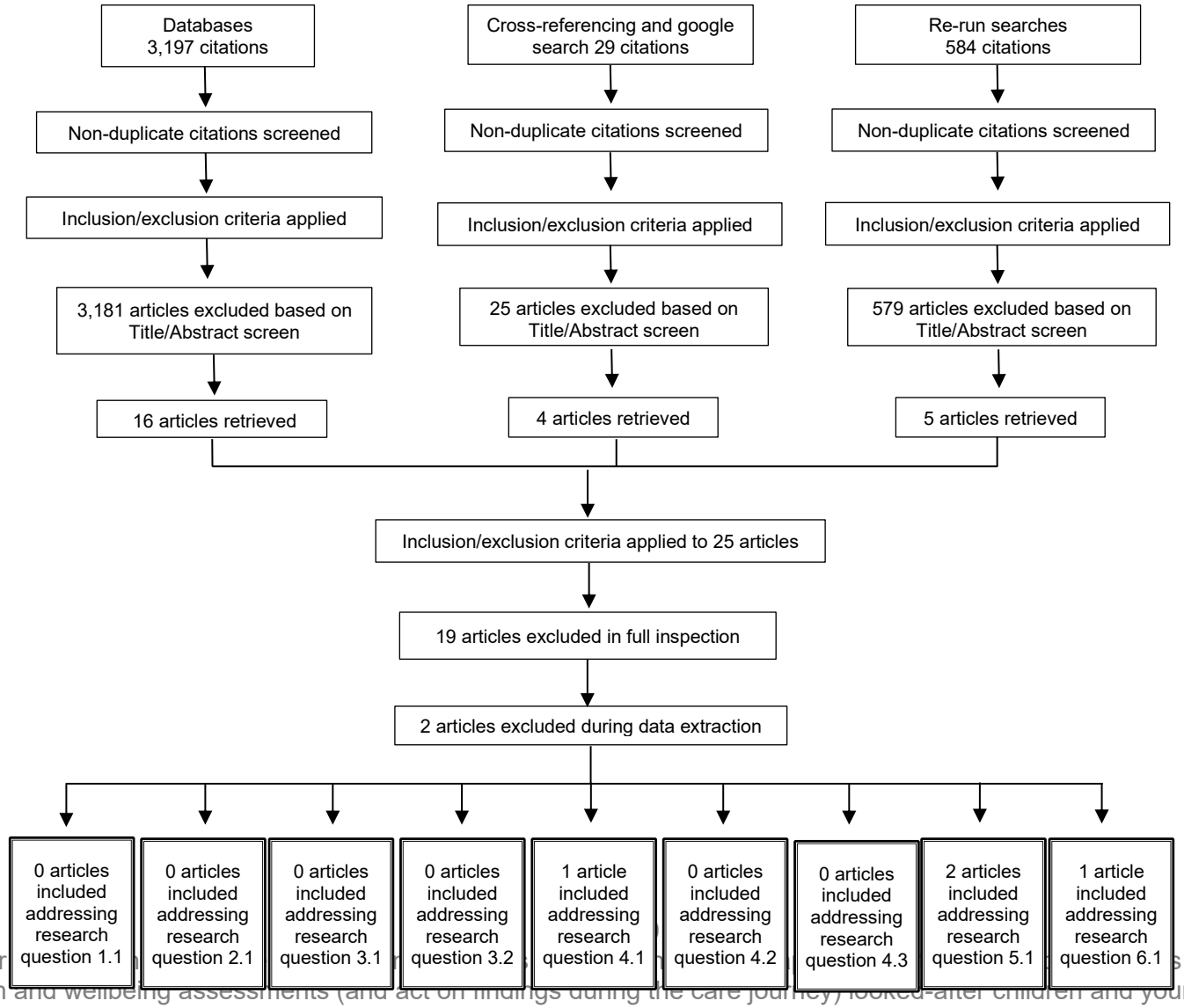
Theme	Studies	Methodological limitations	Coherence	Adequacy	Relevance	Confidence
		and context of this study is only partially applicable to the review question.				
Consistency	1	**Minor concerns** The recruitment strategy of this study is unclear. Parents who feared the closure of the clinic and who had had positive experiences might have volunteered for the study more readily than foster parents who were neutral or negative about the clinic, creating a participant selection bias. The topic and context of this study is only partially applicable to the review question.	**No concerns**	**Serious concerns** Data was derived from one non-UK study only	**Serious concerns** Canadian study. Participants were not describing the specific system of health assessments used in the UK	Very Low
Support and care	1	**Minor concerns** The recruitment strategy of this study is unclear. Parents who feared the closure of the clinic and who had had positive experiences might have volunteered for the study more readily than foster parents who were neutral or negative about the clinic, creating a participant selection bias. The topic	**No concerns**	**Serious concerns** Data was derived from one non-UK study only	**Serious concerns** Canadian study. Participants were not describing the specific system of health assessments used in the UK	Very Low

Theme	Studies	Methodological limitations	Coherence	Adequacy	Relevance	Confidence
		and context of this study is only partially applicable to the review question.				
Accessible staff instils confidence in foster parents	1	**Minor concerns** The recruitment strategy of this study is unclear. Parents who feared the closure of the clinic and who had had positive experiences might have volunteered for the study more readily than foster parents who were neutral or negative about the clinic, creating a participant selection bias. The topic and context of this study is only partially applicable to the review question.	**No concerns**	**Serious concerns** Data was derived from one non-UK study only	**Serious concerns** Canadian study. Participants were not describing the specific system of health assessments used in the UK	Very Low
Neutral space	1	**Minor concerns** The recruitment strategy of this study is unclear. Parents who feared the closure of the clinic and who had had positive experiences might have volunteered for the study more readily than foster parents who were neutral or negative about the clinic, creating a participant selection bias. The topic	**No concerns**	**Serious concerns** Data was derived from one non-UK study only	**Serious concerns** Canadian study. Participants were not describing the specific system of health assessments used in the UK	Very Low

Theme	Studies	Methodological limitations	Coherence	Adequacy	Relevance	Confidence
		and context of this study is only partially applicable to the review question.				
Enhancement of communication and care	1	**Minor concerns** The recruitment strategy of this study is unclear. Parents who feared the closure of the clinic and who had had positive experiences might have volunteered for the study more readily than foster parents who were neutral or negative about the clinic, creating a participant selection bias. The topic and context of this study is only partially applicable to the review question.	**No concerns**	**Serious concerns** Data was derived from one non-UK study only	**Serious concerns** Canadian study. Participants were not describing the specific system of health assessments used in the UK	Very Low
Convenience	1	**Minor concerns** The recruitment strategy of this study is unclear. Parents who feared the closure of the clinic and who had had positive experiences might have volunteered for the study more readily than foster parents who were neutral or negative about the clinic, creating a participant selection bias. The topic	**No concerns**	**Serious concerns** Data was derived from one non-UK study only	**Serious concerns** Canadian study. Participants were not describing the specific system of health assessments used in the UK	Very Low

Theme	Studies	Methodological limitations	Coherence	Adequacy	Relevance	Confidence
		and context of this study is only partially applicable to the review question.				
Opportunities for change	1	**Minor concerns** The recruitment strategy of this study is unclear. Parents who feared the closure of the clinic and who had had positive experiences might have volunteered for the study more readily than foster parents who were neutral or negative about the clinic, creating a participant selection bias. The topic and context of this study is only partially applicable to the review question.	**No concerns**	**Serious concerns** Data was derived from one non-UK study only	**Serious concerns** Canadian study. Participants were not describing the specific system of health assessments used in the UK	Very Low

Appendix G – Economic evidence study selection



Appendix H – Economic evidence tables

No economic evidence was identified for this review question.

Appendix I – Health economic model

No economic modelling was undertaken for this review question.

Appendix J – Excluded studies

Effectiveness studies

Study	Reasons for exclusion
Bastien, James S, Burns, William J, Kelly, Francis D et al. (2005) Increasing the efficiency of program status reporting by residential direct care staff. International Journal of Behavioral Consultation and Therapy 1(1): 12-20	- Non-UK setting [USA] - Unclear that population are LACYP [Residential treatment programmes for specific problems. "residential staff in a large residential setting serving an average daily census of 95 youth residing in four distinct residential programs: including programs for sexually abusive adolescents, sexually reactive adolescents, adolescents with anger management problems, and a latency age children's program. "] - No outcome of interest reported [Completion of report in residential care: 13 item checklist specifying key information such as the number of critical incidents, physical holds, family contacts, completion of scheduled unit activities and completion of required documentation at the end of each residential shift.]
Budd, Karen S (2004) Psychosocial Assessment of Teenage Parents: Lessons Learned in Its Application to Child Welfare. Using evidence in social work practice: Behavioral perspectives.: 291-309	- Review article but not a systematic review
Chisolm, Deena J, Scribano, Philip V, Purnell, Tanjala S et al. (2009) Development of a computerized medical history profile for children in out-of-home placement using Medicaid data. Journal of health care for the poor and underserved 20(3): 748-55	- No outcome of interest reported [descriptions of the contents of these medical profiles] - Not an intervention of interest

Study	Reasons for exclusion
	[Study described the development of a computerized medical history profile for children in out-of-home placement using Medicaid data so that LACYP had a continuous record should placement breakdown occur (standard practice already)?]
Cocker C.; Minnis H.; Sweeting H. (2018) Potential value of the current mental health monitoring of children in state care in England. BJPsych Open 4(6): 486-491	- Not an investigation of an intervention - No outcome of interest reported [descriptive data about SDQ returns from mental health monitoring]
CROFT G. (2009) Implementation of health recommendations after initial statutory health assessment. Adoption and Fostering 33(2): 76-81	- No outcome of interest reported [descriptive outcomes: whether recommendations in the health care plan for children undergoing initial health assessment had been implemented within a six month timescale]
Dorsey, Shannon; Conover, Kate L; Revillion Cox, Julia (2014) Improving foster parent engagement: using qualitative methods to guide tailoring of evidence-based engagement strategies. Journal of clinical child and adolescent psychology : the official journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53 43(6): 877-89	No outcomes of interest to this review question
Evans, Sian (2012) Assessing the health needs of vulnerable children, are the data fit for purpose?. Journal of Public Mental Health 11(3): 117-140	- No outcome of interest reported
Goodman R., Ford T., Corbin T. et al. (2004) Using the Strengths and Difficulties Questionnaire (SDQ) multi-informant algorithm to screen	- No outcome of interest reported [the use of SDQ to predict psychiatric disorders]

Study	Reasons for exclusion
looked-after children for psychiatric disorders. European Child and Adolescent Psychiatry, Supplement 13(2): ii	
HILL Catherine and et al (2002) The emerging role of the specialist nurse: promoting the health of looked after children. Adoption and Fostering 26(4): 35-43	- Review article but not a systematic review
Hill, C M and Watkins, J (2003) Statutory health assessments for looked-after children: what do they achieve?. Child: care, health and development 29(1): 3-13	- Not an investigation of an intervention - No outcome of interest reported [descriptive outcomes]
Hurlburt, Michael S, Leslie, Laurel K, Landsverk, John et al. (2004) Contextual predictors of mental health service use among children open to child welfare. Archives of general psychiatry 61(12): 1217-24	- Unclear that population are LACYP [Children were selected from among the population of children from birth to age 14 years for whom an investigation of abuse or neglect had been opened by the child welfare system] - Non-UK setting
Jee, Sandra, Szilagyi, Moira, Blatt, Steven et al. (2010) Timely identification of mental health problems in two foster care medical homes. Children and Youth Services Review 32(5): 685-690	- Not an investigation of an intervention - No outcome of interest reported [non-comparative] - Non-UK setting [USA]
Kaltner, Melissa and Rissel, Karin (2011) Health of Australian children in out-of-home care: needs and carer recognition. Journal of paediatrics and child health 47(3): 122-6	- Not an investigation of an intervention - No outcome of interest reported

Study	Reasons for exclusion
	[descriptive outcomes of the results of health assessments, number/types of referrals, and if carers had health concerns] - Non-UK setting [Australia]
Kim, Tae Im; Shin, Yeong Hee; White-Traut, Rosemary C (2003) Multisensory intervention improves physical growth and illness rates in Korean orphaned newborn infants. Research in nursing & health 26(6): 424-33	Not an intervention of interest
Lakshminarayana, I (2016) Measures to improve non attendance rates of community paediatric outpatient clinics. Archives of disease in childhood conferenceannualconferenceoftheroyalcollegeofpaediatricsandchildhealthrcpch2016unitedkingdomconferencestart20160426conferenceend20160428101: a106	- Conference abstract
Leslie, Laurel K, Hurlburt, Michael S, Landsverk, John et al. (2003) Comprehensive assessments for children entering foster care: a national perspective. Pediatrics 112(1pt1): 134-42	- Not an investigation of an intervention - No outcome of interest reported [descriptive data on the comprehensiveness and inclusiveness of health assessments for children entering foster care. Comparing different providers across the united states.]
McLean K., Little K., Hiscock H. et al. (2019) Health needs and timeliness of assessment of Victorian children entering out-of-home care: An audit of a multidisciplinary assessment clinic. Journal of Paediatrics and Child Health	- Not an investigation of an intervention - No outcome of interest reported [descriptive outcomes of health assessments]

Study	Reasons for exclusion
Myers, Kathleen, Valentine, Jeanette, Morganthaler, Roxanne et al. (2006) Telepsychiatry with incarcerated youth. The Journal of adolescent health : official publication of the Society for Adolescent Medicine 38(6): 643-8	- Unclear that population are LACYP
Newlove-Delgado T, Murphy E, Ford T. Evaluation of a pilot project for mental health screening for children looked after in an inner London borough. Journal of Children's Services. 2012 Sep 7.	- non-comparative, descriptive study
Oswald S.H.; Fegert J.M.; Goldbeck L. (2013) Evaluation of a training program for child welfare case workers on trauma sequelae in foster children. Praxis der Kinderpsychologie und Kinderpsychiatrie 62(2): 128-141	- Study not reported in English
PANTIN Sarah and FLYNN Robert (2007) Training and experience: keys to enhancing the utility for foster parents of the Assessment and Action Record from Looking After Children. Adoption and Fostering 31(4): 62-69	- No outcome of interest reported - Second opinion
Prince, Jonathan and Austin, Michael J (2005) Inter-Agency Collaboration in Child Welfare and Child Mental Health Systems. Social Work in Mental Health 4(1): 1-16	- Non-UK setting [USA] - no methods described - No outcome of interest reported - Not a relevant study design [review]
REVOIR Keith (2004) Time of their lives. Community Care 6504: 38	- Intervention description/practice report

Study	Reasons for exclusion
RIVRON Marilyn (2001) A health promotion project for young people who are looked after. Adoption and Fostering 25(2): 70-71	- Intervention description/practice report
Salari, Raziye, Malekian, Cariz, Linck, Linda et al. (2017) Screening for PTSD symptoms in unaccompanied refugee minors: a test of the CRIES-8 questionnaire in routine care. Scandinavian journal of public health 45(6): 605-611	- Not an intervention of interest - No outcome of interest reported [Some validation and descriptive outcomes from a PTSD screening questionnaire applied in unaccompanied assylum seekers]
Schneiderman, Janet U, Smith, Caitlin, Arnold-Clark, Janet S et al. (2016) Pediatric return appointment adherence for child welfare-involved children in Los Angeles California. Maternal and Child Health Journal 20(2): 477-483	- Unclear that population are LACYP [Child-welfare involved children, unclear that participants were looked after. A proportion were still with birth parents, Information about the extent of involvement of child welfare caseworkers was not available. Results not stratified for foster care.] - Non-UK setting [USA]
SCOTT Jane and HILL Malcolm (2004) The Looking After Children in Scotland materials. Scottish Journal of Residential Child Care 3(1): 17-30	- no methods described - Intervention description/practice report - Not an intervention of interest ["looking After Children" establishing a care plan system]

Study	Reasons for exclusion
Simkiss D.E. (2005) Integrated care pathway to promote the health of looked after children. Journal of Integrated Care Pathways 9(3): 123-128	- No outcome of interest reported
Stahmer, Aubyn C, Leslie, Laurel K, Landsverk, John A et al. (2007) Developmental services for young children in foster care: Assessment and service delivery. Journal of Social Service Research 33(2): 27-38	- Not an intervention of interest [study considered the "comprehensiveness" of policies for developmental screening in foster care and the impact on evaluate children, utilize specialists for periodic screening, refer to early intervention agencies and engage in joint service planning. "comprehensiveness" considered whether the child was assessed on entry to foster care or periodically thereafter.]
Terrell L.G.; Skinner A.C.; Narayan A.P. (2018) Improving timeliness of medical evaluations for children entering foster care. Pediatrics 142(6): e20180725	unclear how many participants contributed to each "time to evaluation" assessment period. Data were otherwise descriptive. No measure of spread reported. No raw data reported (only graphically).
Thompson, Cori and Lau, Francis Y (2013) A scoping review on health records for child-in-care. Studies in health technology and informatics 183: 43-8	Systematic review checked for relevant citations
van Os, E C C Carla, Zijlstra, A E Elianne, Knorth, E J Erik et al. (2018) Recently arrived refugee children: The quality and outcomes of Best Interests of the Child assessments. International journal of law and psychiatry 59: 20-30	- No outcome of interest reported - Unclear that population are LACYP [mixed population of accompanied and unaccompanied asylum seekers]
WISE Sarah (2002) An evaluation of a trial of looking after children in the state of Victoria, Australia. Children and Society 17(1): 3-17	- not an intervention of interest

Cost-effectiveness studies

Study	Reason for exclusion
Bennett, C.E.; Wood, J.N.; Scribano, P.V. (2020) Health Care Utilization for Children in Foster Care. Academic Pediatrics 20(3): 341-347	- Exclude - compared LAC with non-LAC - Exclude - non-relevant outcomes
DIXON, Jo (2011) How the care system could be improved. Community Care 17211: 16-17	- Exclude - not an economic evaluation
Huefner, Jonathan C, Ringle, Jay L, Thompson, Ronald W et al. (2018) Economic evaluation of residential length of stay and long-term outcomes. Residential Treatment for Children & Youth 35(3): 192-208	- Exclude - costs not applicable to the UK perspective
LOFHOLM Cecilia, Andree; OLSSON Tina, M.; SUNDELL, Knut (2020) Effectiveness and costs of a therapeutic residential care program for adolescents with a serious behavior problem (MultifunC). Short-term results of a non-randomized controlled trial. Residential Treatment for Children and Youth 37(3): 226-243	- Exclude - population not specific to LACYP
Lovett, Nicholas and Xue, Yuhan (2020) Family First or the Kindness of Strangers? Foster Care Placements and Adult Outcomes. Labour Economics 65(0)	- Exclude - not an economic evaluation

Appendix K – Research recommendations – full details

Research recommendation

No research recommendations were made under this review question

Appendix L – References

Other references

None

Appendix M – Other appendix

Two expert testimonies were included among evidence presented in this review chapter.

1. Expert testimony to inform NICE guideline development – Service Manager for UASC in Kent

Section A: Developer to complete	
Name:	Alex Stringer
Role:	Practitioner - Service Manager Service for Unaccompanied Asylum-Seeking Children (SUASC)
Institution/Organisation (where applicable): **Contact information: xxxxxxxxxxxxxxxxxxxxx**	Kent County Council
Guideline title:	Looked After Children and Young People
Guideline Committee:	Advisory committee
Subject of expert testimony:	The needs of LACYP who are unaccompanied children seeking asylum

Evidence gaps or uncertainties:	The guideline scope highlighted that special consideration should be given to LACYP who are unaccompanied children seeking asylum. There was a lack of evidence for this population therefore expert testimony was sought to fill this important gap.

Section B: Expert to complete
Summary testimony:

Background

Kent's proximity to mainland Europe and having Dover seaport and Eurotunnel at Folkestone means UASC regularly present to its Children's Services.

Arrive within vehicles crossing the Channel by ferry or the Eurotunnel or on small boats operated by criminal gangs

They become Children in Care to local authorities by nature of absent parenting and that without care and accommodation they would be destitute. They have the same rights and the local authority has the same responsibilities as with citizen children. Data shows a prominence of males, aged between 15 and 17 years old, from Afghanistan, Iran, Iraq, Eritrea and Sudan.

Challenges

They have complexity of need – language, cultural and religious needs and conflict it can bring with other young people, mental health needs, infectious disease (TB)

Arriving with nothing but clothes on their backs

Very little is known – dependent on what the young person tells us

Negative experiences of authority and distrust of professionals/some staff

Expectations that young people put on themselves or put them by family or agents

Wanting to be a doctor or an engineer but arriving with very little English

Pressure this puts on staff

We know young people's journeys to the UK are facilitated by agents and criminal gangs and debt can be owned by the young person or their families

On-going risk once in the UK, Non-EEA children were more likely to be missing at point of referral and majority remained missing. Sexual exploitation was the primary form of exploitation for ¾ of all females. Criminal exploitation was primary form for ½ of all males. When the children are located, they are often in other parts of the UK, e.g. Birmingham or Bristol, and need to be returned to Kent at short notice. Best way to prevent a child going missing was asking the right questions/information at arrival – taking phone numbers / contacts in the UK / IMEI numbers from phones. Close working with Police.

Age assessments

The lack of documentary evidence for newly arrived children's claimed age and a disparity between that claimed age and their presentation leads to concern they could be an adult.

Changes to Home Office policy in response to legal judgements (BF (Eritrea) v Secretary of State for the Home Department 2019) has led to an increase in Home Office referrals for age assessments.

Need to both recognise the emotional impact that age assessments can have, also have to accept that some adults do arrive in the UK and claim to be children. Age assessments need to be done at pace to manage the risks posed to children in placement with the potential adult, about whom very little is known but who is likely to have experienced trauma prior to arrival in the UK. The children themselves are vulnerable due to their pre-placement experiences.

Always encourage professionals to respond if asked for an observation of a young person being age assessed as it comes from a position of safeguarding all children in all settings.

Priorities for UASC

Research and theory regarding social work practice with UASC illustrates the process of resettlement and the importance of this in supporting UASC

Research as well as experience highlights that the priorities for UASC in achieving this initial resettlement are largely practical

From personal experience young people's priorities are -

- Determination of their asylum claim
- Access to a good solicitor
- Access to education or employment
- Securing long-term accommodation and finances

Trauma informed approach, some questions are required in order to make best interest decisions and make sure the child's needs are met but recognising the impact of repeated questioning about past events and loss that could re-traumatise.

Managing risk

Collaborative working – this is key in managing the risks described and managing the volume of demand

Clear protocols – a lack of clarity regarding processes and the reasons for them so we're working hard to make it clear to both our staff and partner agencies what happens, when, how and why

Training and promotion of good practice –I am trying to explain the complex work involved in social work practice with UASC, how good practice does occur and hopefully encourage it to improve

The vast majority of UASC are highly motivated, resilient and a pleasure to work with!

References to other work or publications to support your testimony' (if applicable):
N/ A
Disclosure: Please disclose any past or current, direct or indirect links to, or funding from, the tobacco industry.
None
Declaration of interests: Please complete NICE's declaration of interests (DOI) form and return it with this form. **Note: If giving expert testimony on behalf of an organisation**, please ensure you use the DOI form to declare your own interests and also those of the organisation – this includes any financial interest the organisation has in the technology or comparator product; funding received from the manufacturer of the technology or comparator product; or any published position on the matter under review. The declaration should cover the preceding 12 months and will be available to the advisory committee. For further details, see the NICE policy on declaring and managing interests for advisory committees and supporting FAQs.

Expert testimony papers are posted on the NICE website with other sources of evidence when the draft guideline is published. Any content that is academic in confidence should be highlighted and will be removed before publication if the status remains at this point in time.

2. Expert testimony to inform NICE guideline development – Doctor for Child Protection in Lambeth

Section A: Developer to complete	
Name:	Dr Ann Lorek
Role:	Practitioner - Consultant community paediatrician
Institution/Organisation (where applicable):	Guy's and St Thomas Hospital Evelina London, and Lecturer, (International) Child Studies at King's College London
Contact information: xxxxxxxxxxxxxxxxx	
Guideline title:	Looked After Children and Young People (LACYP)
Guideline Committee:	Advisory committee
Subject of expert testimony:	The healthcare needs of LACYP who are unaccompanied children seeking asylum

Evidence gaps or uncertainties:	The guideline scope highlighted that special consideration should be given to LACYP who are unaccompanied children seeking asylum. There was a lack of evidence for this population therefore expert testimony was sought to fill this important gap.

Section B: Expert to complete

Summary testimony:	[Please use the space below to summarise your testimony in 250–1000 words. Continue over page if necessary]

The following aims to address the specific questions of this NICE review in the context of the experiences of the UASC.

1 Supporting care and placement stability

UASC are more likely to settle if they have:

- a safe and supportive place to live
- continuities with past relationships, customs and cultures, and opportunities to create new ones
- access to purposeful education and training
- opportunities to move forward from troubling experiences, re-centre their lives, and find new purpose in everyday routines and activities

Wade (2005)

a) Placements; Foster care rather than semi independent. Foster care, mainly for children under the age of 16 years on arrival is found to be positive in terms of education, MH, and integration as well as advocacy (Wade, 2012; Oppedal & Idsoe, 2015; Hodes, 2008).

b) Cultural similarity may help promote wellbeing and good MH as reviewed by O'Higgins (2018). However if carers are sensitive to culture, familiar foods and religious practices then other placements can still be helpful (Chase, 2008; Wade, 2012). Wade notes that placement stability was linked to 'sensitivity, capacity to adapt and curiosity' and that developing trust was important in preventing placement breakdown. (See also Hardy, 2018).

c) In order to meet the cultural needs of unaccompanied children it is important that foster carers are able to access support, information and training (Rogers, 2018).

d) Social work training needs have been mapped by IOM (2018) and about a quarter of SW have not had specialist training. Key training needs have been identified in terms of Immigration and Asylum process, understanding the context of migration/experiences, psychological/MH needs, identifying support services for UASC, identity needs (gender, race, culture etc).

e) Paediatricians and carers also need specialist training (The Children's Society 2019).

f) Older UASC may also have greater difficulty in navigating systems if they may find language learning more difficult and foster care may support this.

g) Placement stability is supported by being in education as it improves mental health (other than PTSD which is linked to past trauma).

h) Key environmental supports are linked to relationships and education (Doggett, 2012).

i) Placement stability requires identification and management of unmet MH and bereavement need relating to trauma (see below).

j) Young people are actors in the settling process, and the importance of community is noted.

k) Developing autonomy should be acknowledged and supported, with acknowledgement that the care system can also be intrusive.

l) Multiple transitions should be avoided.

2 Interventions to promote positive relationships

Relationships will be more positive with authority if there is mutual respect, understanding of possible mistrust of authority, appropriate interpreter support, and an understanding of possible trauma, culture and needs of the young person. There needs to be appropriate training of staff, professionals and carers as outlined above.

Education is one of the most powerful tools to support normalising of life and building relationships (Kia Keating, 2011), as well as faith and social groups, including sports. Football and Cricket are the most requested, with football the more likely to be provided! There needs to be recognition of the need for culturally familiar, as well as to support integration. There is also potential vulnerability within similar backgrounds and cultural awareness is essential for carers and social workers. Food is part of 'finding sanctuary and negotiating belonging within a foster family' (Kohli, 2010).

Faith, culture and identity

Foster carers can help in making cultural links but notes that not all young people wanted links to the same degree – 'important to remember that their 'concepts of faith culture and identity are fluid and change over time'. Importance of support noted whilst recognising developing autonomy (Wade, 2012).

3 Supporting physical, mental and emotional health and wellbeing of looked-after children and young people during the care journey and as care leavers

Health

- Early screening may not have taken place in the country of origin and should be considered, for example relating to haemoglobinopathy.
- Vision and hearing screening forms part of the LAC guidance.

- Nutrition has often been poor in the journey, and not all UASC know how to shop and cook. Poor diet also leads to a common complaint of constipation. Vitamin D deficiency can occur.
- UASC often have epigastric symptoms and good practice is to refer for further management of possible helicobacter. Skin conditions are common.
- There is a lot of information about communicable disease in studies, as well as nutritional and dental problems, skin complaints and constipation. MH is found to be a key issue.
- For an overview relating to refugee children in general see reviews by Williams (2016) and Kadir (2019).
- Statutory health assessment should be comprehensive, and related to possible experiences of loss, trauma and trafficking. Interpreters should be culturally appropriate. Guidance is provided relating to UASC in care (CoramBAAF 2017).
- Immunisations are rarely documented and so need to be provided according to current Public Health England Guidance.
- Infectious diseases are relatively common, and testing is recommended for blood borne infection including Hepatitis B.
- TB screening is recommended with IGRA blood test if available, or referral to a local chest clinic may be indicated.
- Specialist training and clinics are recommended to provide a holistic culturally appropriate assessment, give health promotion, and to identify contextual harm.
- There should be identified pathways for referral on relating to Mental Health, infectious disease, and sexual health.

Access to services

The basics need to be in place. Early studies indicated that 22 % of UASC were not registered with a GP (Hollins, 2007).

It is essential that documentation is processed quickly from Social services in order to access services and initial statutory health assessment. Many UASC from a range of

boroughs were not referred for many months outside statutory guidance for their initial health assessment (Habeeb, 2016) leading to lack of advocacy and health care.
UASC were also less likely to attend MH provision if they were in independent accommodation. (Mitra, 2019) and older adolescents may be expected to access MH provision without a responsible adult.
A study by Sanchez-Cao (2013) found that many UASC were distressed but only 17% were in contact with MH services. They were more likely to be in contact if they had depressive symptoms, and other issues were not identified by observers. Hollins et al (2007) found that Albanian speakers arriving at an older age had greater psychological difficulties, and may have been less likely to access services.
These all indicated that there needs to be appropriate placement, settling in education, timely statutory LAC assessment including more formal MH screening of adolescents.

Mental Health and wellbeing ;
UASC have greater MH difficulties including PTSD compared with refugees in families. They have needs to support wellbeing, as for any child in care, including placement stability, education, sport, faith groups, friends and similar language friendships. Red Cross family tracing can be transformational. Promoting resilience is essential to consider in the care journey.
The following does not explore best methods of treatment of particular conditions, but considers issues, services and support that may be needed in order to improve access to MH services.
Older arrivals can have more psychological difficulties and may be less able to find the language or understand service provision (Hollins, 2007)
Difficulties for older children increase as they reach the end of their asylum application or are applying at the end of UASC leave, and are not able to control their future or plan effectively.
Those UASC receiving status can also become isolated as they lose the supports of the care system after leaving care. Application to education is complicated by asylum status, age assessment, access and the cost of applying for further education.

Others are at risk of homelessness or a return to uncertain settings that have not been studied fully in terms of outcome. These all impact on wellbeing.
Issues of fear and stigma prevent UASC seeking help for MH difficulties (Fazel 2016). It is essential that foster carers and social workers for UASC are trained and sensitive to MH difficulties. It is essential for the UASC to be registered with GPs in order to access help.
Boys are in general less likely to seek help. (NCB, 2016).
Issues of service provision are reviewed by Davies Hayon et al (2019).
Depression may be more easily recognised than other conditions and there is evidence of the need for additional MH screening for this population (Children's Society, 2018) and this is being piloted in a number of areas, and has formed part of local practice in conjunction with Clinical Psychology in UASC and LAC assessments since 2006 leading to increased referrals to CAMHS as SDQ were found to be insufficient for example in identifying PTSD type symptoms. Lack of awareness and training of paediatricians, GPs and social workers are described in the Children's Society (2018) report, with longer term vulnerability and harmful symptoms of PTSD. Other issues raised include legal barriers, lack of support, difficulties settling and relating to long term prospects.
Fazel (2015) and Fazel et al (2016) describe how the supportive role of teachers can help some UASC access MH services and in providing support. Peer support and recognition is also part of the healing journey and also highlights the importance of teachers and school based services (Fazel 2015).
Whatever their legal status, there is often mistrust of health professionals because of perceived with the state leading to distrust and anxiety, as noted by Majumder (2015) in relation to MH services in clinic or hospital settings.
UASC may find therapy unhelpful if they have been expecting medication, or were afraid of being misunderstood. A number found the experience re-traumatising if required to talk about past experiences Majumder et al (2015) although talking therapies were found to be helpful in peer relations if not re-visiting trauma. (Fazel et al, 2016)
Red Cross family tracing can have life improving consequences, and needs facilitation.

Education in itself is crucial to supporting wellbeing and helps with depressive symptoms (Kia–Keating, 2011) and early education placement is essential.
Foster care is highly protective, but many carers do not recognise underlying trauma (Mitra, 2019) and training and supervision is essential.

Sleep disturbances
Sleep disturbances are common with significant impact on daily functioning. These range from nightmares to PTSD. Sleep hygiene advice to cut stimulants, good nutrition and support have been found to be helpful as part of the project. 'We didn't know because we hadn't asked' (Carr, 2017). Training is crucial in this area for practitioners.

Safeguarding issues and sexual health
Care for UASC requires specialist knowledge, in addition to that required for supporting Looked after Children, relating to their past experiences and background.
YP are living away from home without a usual adult carer. They are vulnerable to child sexual abuse and child criminal exploitation.
Many, including boys, have experienced past sexual violence, sometimes at the hands of humanitarian operations.
Gender difference is noted in that abused boys may report later (Majeed-Ariss, 2019).
Recent sexual assault requires early referral to a sexual assault centre. Past assault also needs follow up for infection, and referral for sexual violence counselling. There is some evidence that may not identify as victims (see also McKibbin et al, Child abuse review Vol 28:418-430).
They also need to know of, and be supported to access advice and services, as many young people are unaware of contraceptives or how to protect from infection and need further advice and services. Half of pregnant girls were pregnant before going into care (John-Legere, 2012). Frontline response may not identify abuse, or recognise the need to address past abuse in terms of Sexual Violence Counselling, and sexually transmitted diseases.

A number of young people arrive from countries not usually associate with asylum claims (Vietnam, Nigeria), but are highly vulnerable to episodes of missing and to trafficking. Specialist UASC teams are more likely to address episodes of missing in the light of this. There also needs to be carer and key worker awareness of ongoing vulnerability, and a trusted adult who is able to support with safe choices and encourage resilience.
There needs to be a sensitive awareness of what UASC may have experienced, as well as their ongoing vulnerabilities. Specialist training of carers and social workers is required relating to vulnerabilities.
FGM may have taken place, and would form part of the requirement to report to the police, and would need to be done very sensitively, given the vulnerabilities of UASC in terms of authority figures and legal status.
See also Home Office (2017) Safeguarding strategy Unaccompanied Asylum Seeking and Refugee Children

Age assessment
Age dispute leads to possible detention as a child, delays in placements and education and health access, as well as potential vulnerability of other children if age is underestimated. Ethnicity and social experience will impact on presentation, and there has been a culture of disbelief (Crawley 2005).
Cole (2015) has reviewed the literature, and advises against wrist X ray. Wrist MRI and X-Ray of the 3rd molar proved wrong in a third, with particular errors if scans were immature. These scans are not recommended by the Royal College of Paediatrics and Child Health.
Children that have been detained as adults have MH difficulties as found by Ehntholt et al (2018) in a survey of adults where age disputes were a factor in poor MH, more than three years after detention.

4 Supporting Learning needs
The first hurdle is access to appropriate education. The UK target for placement in education by 20 days but no region in the UK met that target. Gladwell (2019) highlights

difficulties in obtaining places, and lack of specialist Local Authority UASC teams as well as delays when the UASC are part of the National Transfer Scheme. This is particularly if there are MH difficulties, and age disputes.
Gladwell (2018) UNICEF report involved an FOI request from all LA in E and W, in depth interviews and focus group discussions (24 UASC) and key informant interviews. Individual and institutional commitment were found to decrease barriers to access and support retention.
Barriers to education were if UASC were placed in college rather than school, insufficient EAL support, ongoing MH difficulties, and anxiety about asylum claim.
Recommendations are made in terms of EAL and pastoral support availability, and training of staff around education and MH needs of UASC as well as peer involvement.
UASC are often highly motivated in education and do well (Cameron et al. (2012), being disproportionately represented in care leavers going to university in Jackson et al.'s (2005) *By Degrees* study. Recent attention to educational outcomes for children in care appears to have translated into higher educational expectations for this group, but these are not always backed up by the necessary expertise among social workers or competence and confidence in foster carers (Driscoll, 2018). Virtual school heads may fulfil a valuable role in supporting young people's individual aspirations (Driscoll, 2018).

Supporting learning needs requires;
MH and wellbeing support, including via access to education and community

A key figure in young person's life essential to build resilience

Facilitation, either by carer, or SW who has been appropriately trained

Language learning as early as possible
YP – may not be in appropriate education eg a few days a week English classes may not stretch them enough
MH support – assessment and management as MH Difficulties and trauma related issues will affect capacity to sleep and their abilities

General support to attend including Bus Pass etc

A designated teacher who understands the needs of the young person

Appropriate course and careers advice for UASC

5 Preparing children and young people for leaving care

Older UASC are often accommodated under s20 Children Act 1989 rather than placed in care, with the result that no-one holds parental responsibility for them, although they are entitled to leaving care services if they meet the criteria and subject to later changes in status.

In common with other care leavers, UASC are at risk of a dearth of supportive adult relationships in their lives coupled with delayed educational progress coinciding with accelerated transitions to adulthood (Driscoll, 2018).

Attention should be paid to relational aspects of autonomy, and professionals should be alert to self-reliance manifesting in a reluctance to seek help, which may be seen as developmentally inappropriate or reflecting dependency (Driscoll, 2018).

All need timely referral for IHA and RHA in order to address unrecognised need, and should be seen by trained LAC doctors able to explore health including sexual health, MH and social need holistically and in a culturally appropriate way.

Social workers and health need to work together to promote transition, and handover of health information to young people in a sensitive way.

There are pressures for all LAC leaving care, but there is the added factor of legal status, and many UASC have discretionary leave until 17.5 years of age, and need a skilled solicitor to present the evidence base. Support and resilience building at an early stage is essential as MH can deteriorate with ongoing uncertainty.

Obtaining status is not the answer to difficulties, and may mean that support is withdrawn.

Any cognitive or learning needs must have been identified within the health or education setting and the capacity to live independently should have been assessed with the social worker.

Further education should be supported, as well as appropriate careers advice.

A child rights approach is essential to both safeguard and to allow to develop autonomy.

Kohli (2011) sums it up well, that there is 'some good evidence of safety and belonging in the context of permanent resettlement, and relatively poor understanding of success when children and young people are forced to return away from the country of asylum'. UASC need support relating to the possibility of leaving UK, in terms of exploring options for future and coping strategies. Best practice around this should form part of further research.

6 Preparing care leavers for independent living

Each young person is unique and needs an individualise care plan. Early MH support is essential, including supporting education, social and health needs, as ongoing MH difficulties will lead to further exclusion.

The transition is made harder as others move away from care homes and receive status or are deported and ongoing relational work and activities are essential if possible, particularly as further education placements may be difficult to consider financially as they would be 'overseas' students whilst applying for status.

A number in care continue to be vulnerable, and there is a transitional safeguarding risk beyond 18 years. There should be regard to the risk from county lines, criminal exploitation, and the risk of homelessness if their asylum application fails.

There is vulnerability of YP returning to countries such as Afghanistan – and a particular vulnerability of young people unable to speak home language and without contacts, and these require appropriate legal advice early in application, with a culturally appropriate interpreter.

As described above, young people do better in foster care in terms of mental health, although it is recognised that many want to be independent. Good foster carers can help to build resilience and ideally are able to continue a supportive relationship after leaving the care system.

References to other work or publications to support your testimony' (if applicable):
Cameron et al (2012). Continuing educational participation among children in care in five countries: some issues of social class. Journal of Education Policy, 27(3): 387-399 Carr (2017) Evaluation of the sleep project for UASC in Kent. create.canterbury.ac.uk/16763/ Cole TJ (2015) The evidential value of developmental age imaging for assessing age of majority. Annals of Human Biology 42:4, pp 379 – 399 CoramBAAF (2017) The health of unaccompanied asylum–seeking and other separated children. CoramBAAF Practice Note 66 Crawley H (2007) When is a Child not a Child? Asylum, age disputes and the process of age assessment. Available at www.ilpa.org.uk/pages/publications.html Davies Hayon T, Oates J. (2019) The mental health service needs and experiences of unaccompanied asylum-seeking children in the UK: a literature review. Mental Health Practice 2019 doi: 10.7748/mhp.2019.e1387
Disclosure: Please disclose any past or current, direct or indirect links to, or funding from, the tobacco industry.

None
Declaration of interests: Please complete NICE's declaration of interests (DOI) form and return it with this form. **Note: If giving expert testimony on behalf of an organisation**, please ensure you use the DOI form to declare your own interests and also those of the organisation – this includes any financial interest the organisation has in the technology or comparator product; funding received from the manufacturer of the technology or comparator product; or any published position on the matter under review. The declaration should cover the preceding 12 months and will be available to the advisory committee. For further details, see the NICE policy on declaring and managing interests for advisory committees and supporting FAQs.

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