National Institute for Health and Care Excellence

Disabled children and young people up to 25 with severe complex needs: integrated service delivery and organisation across health, social care and education

[I] Evidence review for suitability and accessibility of environments

NICE guideline TBC

Evidence reviews

August 2021

These evidence reviews were developed by the National Guideline Alliance which is a part of the Royal College of Obstetricians and Gynaecologists

Disclaimer

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Contents

1 2 Suitability and accessibility of environments

3 Recommendations supported by this evidence review

4 This evidence review supports recommendations 1.10.1 - 1.10.7, 1.11.1 - 1.11.12, 1.12.1 -
5 1.12.5, 1.17.15 and the research recommendation on environmental adaptations. Other
6 evidence supporting these recommendations can be found in the evidence reviews on
7 Barriers and facilitators of joined-up care (evidence report K), Views and experiences of
8 service providers (evidence report M).

9 Review question

10 What are the most effective practices (for example, environmental assessments and use of
11 equipment such as assistive technology across different contexts) to ensure the suitability
12 and accessibility of the environments in which disabled children and young people with
13 severe complex needs receive health and social care and education?

14 Introduction

15 This review aims to determine effective approaches to ensuring the suitability and
16 accessibility of health, social care and education environments for disabled children and
17 young people with severe complex needs.

18 At the time of scoping and developing the review protocols, documents referred to health,
19 social care and education in accordance with NICE style. When discussing the evidence and
20 making recommendations, these services will be referred to in the order of education, health
21 and social care for consistency with education, health and care plans.

22 Summary of the protocol

23 See Table 1 for a summary of the Population, Intervention, Comparison and Outcome
24 (PICO) characteristics of this review.

25 **Table 1: Summary of the protocol (PICO table)**

26

Population	Disabled children and young people from birth to 25 years with severe complex needs who require health, social care and education support.

Intervention	Any practices to ensure the suitability and accessibility of the environments in which disabled children and young people with severe complex needs receive health and social care and education.
	For example:
	• Assessment of health, social care or education environment
	• Delivery arrangements:
	  ○ Where care is provided and changes to the healthcare, social care or education environment:
	  ○ Adaptations or changes to the physical or sensory health, social care or educational environment
	  ○ Outreach services
	  ○ Site of service delivery (including co-location)
	  ○ Transportation services
	• Information and communication technology (ICT):
	  ○ Smart home technologies and/or electronic assistive technologies
	  ○ Telemedicine
	• Provision of mobility aids/equipment (e.g., wheelchairs, hoists)
	• Strategies to promote positive cultures and social interactions and behaviours (e.g., disability awareness training, early bird training.

Comparison	• Any other practices to ensure the suitability and accessibility of environments for disabled children and young people • Different assessment thresholds for making adaptations
Outcome	**Critical** • Service user satisfaction (child or young person and parent or carer) as measured by validated scales or assisted communication aids (such as talking mats or 'it's all about me') • Participation and inclusion as measured by validated scales or assisted communication aids (such as talking mats or 'it's all about me') • Access to health, social care and education services (including not being able to access services at all or not being able to access locally available services) **Important** • Independence (e.g. meeting steps towards outcomes in the preparing for adulthood framework) • Adverse events (e.g., serious incident reports, unplanned admission, attendance at accident and emergency services, complaints)

1   *ICT: Information and communication technology*

2   For further details see the review protocol in appendix A.

3 **Methods and processes**

4   This evidence review was developed using the methods and process described in
5   Developing NICE guidelines: the manual. Methods specific to this review question are
6   described in the review protocol in appendix A and the methods document (Supplement A).

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

1 Effectiveness evidence

2 Included studies

3 Four studies were included in this review; one cross sectional study (Carter 2005) and three
4 before and after studies (Cady 2009, Desideri 2016 and Haveman 2014).

5 The included studies are summarised in Table 2.

6 Two studies (Cady 2009 and Desideri 2016) compared different uses of information and
7 communication technology (ICT), one study compared differences in where care/education is
8 provided and changes to the healthcare, social care or education environment (Carter 2005),
9 one study compared different strategies to promote positive cultures and social interactions
10 and behaviours (Carter 2005) and one study compared before and after an intervention
11 including transportation services and strategies to promote positive cultures and social
12 interactions and behaviours (Haveman 2014).

13 See the literature search strategy in appendix B and study selection flow chart in appendix C.

14 Excluded studies

15 Studies not included in this review are listed, and reasons for their exclusion are provided in
16 appendix J.

17 Summary of studies included in effectiveness evidence

18 Summaries of the studies that were included in this review are presented in Table 2.

19 **Table 2: Summary of included studies**

Study	Population	Intervention	Comparison	Outcomes	Comments
Cady 2009 Before and after study* USA	Children who had been enrolled in the U Special Kids Program for at least 2 years.	U Special Kids Program (n=43) Telehealth nursing intervention that coordinates the communication between the family, tertiary care services, social services, the child's primary care site and other local providers, specialists, the school system and health insurers.		• Adverse events	*Comparison between year 1 and year 2 of intervention rather than before and after intervention.
Carter 2005 Cross sectional study USA	Students with significant disabilities attending one of three large, urban high schools in a metropolitan school district who attended both special education and general education classes.	More integrated (n=16) Observation setting where at least 50% of the students present did not have a disability. Peer buddy (n=16) Observation setting were the general education student in closest	Less integrated (n=16) Observation setting where more than 50% of the students present had a disability. No peer buddy (n=16) Observation setting where	• Participation and inclusion	This study used a crossover design but it is unclear if all participants were observed in both peer buddy conditions.

Study	Population	Intervention	Comparison	Outcomes	Comments
		proximity to the participant was a peer buddy. Peer buddies provided social and academic peer support and friendship to students with disabilities.	the general education student in closest proximity to the participant was not a peer buddy.		
Desideri 2016 Before and after study Italy	Referrals to the Centre of Assistive Technology (CAT).	CAT (n=45) Publicly funded assistive technology provider. Assesses need for the following categories of AT: access solutions for information communication technology (ICT) devices and toys, educational software and alternative augmentative communication (AAC) devices. Families are provided with recommendations and support implementing AT.	Before referral to CAT (n=45) No information reported.	• Participation and inclusion	Evidence for the intervention is indirect as only 64% of those contacted at follow-up had obtained and were using the recommended AT.
Haveman 2014 Before and after study Germany	Students in 3rd to 12th grade with intellectual disability; sufficient motor skills to get around independently (including with wheelchair or walking aids); basic communication skills, visual and auditory orientation; not requiring permanent supervision.	Nordhorn Public Transportation Intervention Study (NOPTIS) (n=124) Partnership that aimed to increase independent use of public transport for students with intellectual disabilities. Included training for students with disabilities and disability awareness training for bus drivers.	Before NOPTIS (n=124) No information reported.	• Independence	Intervention included both transportation services and strategies to promote positive cultures and social interactions and behaviours.

1   *AAC: Alternative augmentative communication; AT: Assistive technology; CAT: Centre of Assistive Technology;*
2   *ICT: Information communication technology; NOPTIS: Nordhorn Public Transportation Intervention Study*

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See the full evidence tables in appendix D. No meta-analysis was conducted (and so there are no forest plots in appendix E).

Summary of the effectiveness evidence

Overall, there was evidence of an important benefit of peer buddies and transport training and disability awareness training for participation and inclusion, and independence, respectively. There was also evidence of a possible important benefit of assistive technology for participation and inclusion but there was uncertainty in the estimated effect.

There was some evidence of important harm of more integrated, compared with less integrated settings for participation and inclusion. However, this study was from USA and the definitions of more and less integrated depended on the proportion of the students in the setting with and without a disability and were not consistent with definitions of mainstream and specialist education used in the UK. There was no evidence of important differences in adverse events between year 2 and year 1 of a telemedicine service.

Only four studies were found for this review question and the evidence was very low quality, from single studies and seriously imprecise. Further, none of the included studies reported service user satisfaction or access to education, health and social care services.

See appendix F for full GRADE tables.

Economic evidence

Included studies

Two economic studies were identified which were relevant to this question (Ganashree 2017, Desideri 2016).

A single economic search was undertaken for all topics included in the scope of this guideline. See Supplement B for details.

Excluded studies

Economic studies not included in this review are listed, and reasons for their exclusion are provided in appendix J.

Summary of included economic evidence

The systematic search of the economic literature undertaken for the guideline identified:

- One UK study on the costs of an intervention comprising home adaptations including the provision of additional space, safe outdoor space, padding to walls, new doors, air-conditioning, secure shatterproof windows, specialist equipment such as bedding and bathroom furniture (Ganashree 2017);
- One Italian study on the cost-effectiveness of assistive technology including communication, Information Communication Technology access solutions, adapted toys, and educational software (Desideri 2016).

See the economic evidence tables in appendix H. See

1   Table 3 and Table 4 for the economic evidence profiles for home adaptations and assistive
2   technologies, respectively.

1 **Table 3: The economic evidence profile for home adaptations (i.e. provision of additional space, safe outdoor space, padding to walls,**
2   **new doors, air-conditioning, secure shatterproof windows, specialist equipment such as bedding and bathroom furniture)**

Study and country	Limitations	Applicability	Other comments	Costs/Incremental costs	Effects /Incremental effects	Results/ICER	Uncertainty
Ganashree 2017 UK (Leeds)	Potentially serious limitations[1]	Directly applicable[2]	Cost-offset analysis Intervention: home adaptations, e.g. additional space, safe outdoor space, padding to walls. Comparator: NA, i.e. cost-offset analysis, non-comparative Time horizon: 1 year	£360,000 (for cohort of 6 children)	NA	Cost savings of £1.14-1.84 million (for cohort of 6 children)	None reported

3 *Abbreviations: ICER: Incremental cost effectiveness ratio; IPPA: NA: Not applicable; SD: Standard deviation*

4
5 *1. Very small sample i.e. 6 families; hasn't considered the consequences of mismanaged home adaptations and the potential increase in the risk of a child becoming looked after;*
6   *hasn't considered the impact on other health and social care costs; discounting hasn't been applied; the source of unit costs was unclear.*
7 *2. UK study*

8 **Table 4: The economic evidence profile for assistive technology solutions (i.e. communication, ICT access solutions, adapted toys,**
9   **educational software)**

Study and country	Limitations	Applicability	Other comments	Costs/Incremental costs	Effects /Incremental effects	Results/ICER	Uncertainty
Desideri 2016 Italy	Potentially serious limitations[1]	Partially applicable[2]	Cost-effectiveness analysis Intervention: Assistive technology solutions, e.g. communication, information communication technologies, adapted toys, educational software Comparator: No assistive technology solutions	Per participant: -€1,325 (year 1) -€2,132 (year 2) -€1,687 (year 3)	Per participant -4.7 (total score)[3]	Intervention utilising AT dominant	The SD for total IPPA score change: 3.7

Study and country	Limitations	Applicability	Other comments	Costs/Incremental costs	Effects /Incremental effects	Results/ICER	Uncertainty
			Time horizon: 3 years for costs, outcomes unclear Outcome measure: Individual Prioritised Problem Assessment (IPPA) scale score				

1 *Abbreviations: AT: Assistive technology; ICER: Incremental cost effectiveness ratio; IPPA: Individual Prioritised Problem Assessment scale; NA: Not applicable; SD: Standard*
2 *deviation*
3 *1. Small sample (n=8) for cost data; unclear source for unit cost data; no sensitivity/statistical analysis; the incremental analysis was not undertaken by the authors*
4 *2. Non-UK study*
5 *3. IPPA measured on a scale of 1 to 25; higher scores indicated higher difficulty and/or importance of problem; with negative difference indicating an improvement /less difficulty*

Economic model

No economic modelling was undertaken for this review because the committee agreed that other topics were higher priorities for economic evaluation.

Evidence statements

Economic

- There was evidence from one cost-offset analysis showing that home adaptations, e.g. additional space, safe outdoor space, padding to walls, for young people with Autistic Spectrum Disorders who have behaviours that challenge, resulted in cost savings. The economic analysis was based on an observational study / interrupted time series (N=6). This evidence is directly applicable to the NICE decision-making context and is characterised by potentially serious limitations, including a very small study sample, excluding the consequences of mismanaged home adaptations.

- There was evidence from one cost effectiveness analysis showing that intervention utilising assistive technology, e.g. communication, information communication technologies, adapted toys, is dominant when compared with intervention without assistive technology solutions in children with physical or multiple disabilities, i.e. intervention results in lower costs and better outcomes. This economic analysis was based on a pre-post observational study (n=45 parents/carers). This evidence partially applies to the NICE decision-making context, as it was conducted in Italy and is characterised by potentially serious limitations, including a very small sample for costs (N=8) and unclear unit cost data.

The committee's discussion and interpretation of the evidence

The outcomes that matter most

Service user satisfaction, participation and inclusion and access to services were prioritised as critical outcomes by the committee. Service user satisfaction was selected as a critical outcome due to the importance of providing person-centred services. Participation and inclusion was selected as a critical outcome due to their potential impact on children and young people's development and wellbeing. Access to services was selected as a critical outcome as this will be directly impacted by the suitability and accessibility of environments and being unable to access services may exacerbate children and young peoples' needs.

Independence and adverse events (e.g., serious incident reports, unplanned admission, attendance at accident and emergency services, complaints) were chosen as important outcomes by the committee. Independence was selected as an important outcome as successful transition to independent living is one of the goals of the Preparing for Adulthood programme funded by the Department for Education. Adverse events was chosen as an important outcome due to the potential long term impact of such events and the possible increased likelihood of these occurring if children and young people cannot access services or the environment is not suitable.

No evidence was found that reported service user satisfaction or access to education, health and social care services.

The quality of the evidence

The quality of the evidence was assessed with GRADE and was rated as very low. Concerns about risk of bias ranged from "very serious" to "serious". The most serious concerns for the

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1 cross sectional study was bias arising from the validity and reliability of measurements,
2 whereas the most serious concerns for the before and after studies were biases arising from
3 random sequence generation, allocation concealment and lack of a separate control group.
4 There was "no serious inconsistency" for all outcomes due to only one study reporting each
5 outcome of interest. Indirectness ranged from "serious" to "no serious indirectness". For all
6 outcomes rated as "serious", this was due to an indirect intervention. Concerns about
7 imprecision ranged from "serious" to "no serious imprecision". Imprecision was due to 95%
8 confidence intervals crossing boundaries for minimally important differences.

9 **Benefits and harms**

10 No evidence was available about the effect of assessing education, health and social care
11 environments. However, the committee were aware that regular assessment of the
12 accessibility of education environments is part of statute as specified in the Department for
13 Education's 2013 guidance to help schools interpret the Equality Act 2010. However, the
14 committee agreed that this statute is not well known and poorly understood and, therefore,
15 agreed it was important to highlight that this should be done [1.11.8]. Further, they agreed
16 these assessments should also be conducted by providers of health and social care
17 services, so that children and young people can access the full range of services that they
18 require, otherwise this could form a barrier to accessing some health and social care
19 services [1.11.8]. The committee explicitly included sensory aspects in assessments of the
20 physical environment as these would be relevant to some children and young people with
21 specific conditions and disorders. The committee recommended that staff's knowledge of
22 disability and accessibility should also be assessed because, in order for environments to be
23 fully accessible, staff need to be committed to this and making reasonable adjustments;
24 physical adaptations alone are not sufficient [1.11.8]. This is consistent with SEND Code of
25 Practice (2015) guidance that the expertise and training of staff to support children and
26 young people with special educational needs must be assessed. Finally, the committee
27 agreed that making the results of these assessments publicly available would be sensible
28 because they provide important information to inform decision making for children and young
29 people and their families and carers [1.11.9; 1.11.10]. Given that it is a statutory requirement
30 for education providers to make their accessibility assessments publicly available, the
31 committee made a strong recommendation for this sector, but a weaker recommendation for
32 health and social care. Whilst the committee did not specify how these assessments should
33 be made publicy available in the recommendation to allow flexibility in implementation, the
34 committee considered that the websites for specific services would be a suitable route. The
35 committee agreed it was important to recommend that accessibility assessments are
36 available for other places that disabled children and young people need to access in order to
37 receive provision specified in their EHC plans and increase participation and inclusion. There
38 is a statutory duty for publicly funded bodies to make reasonable adaptations to promote
39 accessibility but, in the committee's experience, some community organisations might not be
40 aware of this duty or have sufficient knowledge about the required adaptions. Therefore, the
41 committee agreed interagency teams should ensure such assessments are available
42 [1.11.11].

43 There was also no comparative evidence available regarding the effectiveness of
44 adaptations to physical or sensory environments. However, the committee were concerned
45 that a lack of recommendations in this area could be interpreted as this not being considered
46 important. Therefore, the committee recommended that services and family follow best-
47 practice and statutory guidance on environmental accessibility [1.11.7]. Making necessary
48 adaptions would be particularly relevant to those with physical disabilities and children and
49 young people with specific conditions and disorders who may require lighting and acoustic
50 adaptations to avoid distractions or distress. The committee also recommended further
51 research into the effectiveness of environmental adaptations for ensuring the suitability and
52 accessibility of environments for disabled children and young people.

1	There was evidence of a possible benefit of assistive technology in terms of increasing
2	interpersonal interactions and participation and inclusion in community, social and civic life.
3	While this was very low quality evidence, the evidence was from a service that made
4	recommendations for assistive technology but did not fund or provide this technology.
5	Therefore, the committee agreed that a greater benefit would be likely if assistive technology
6	was provided by the service. Further, there was evidence from evidence report G of a benefit
7	of gaze-based assistive technology when provided in association with an interagency team
8	for participation and inclusion. There are existing augmentative and alternative
9	communication and environmental control services that provide support for people who have
10	communication needs and/or physical disabilities and multi-sensory impairments, but these
11	services are not well known and, therefore, under-utilised. Therefore, the committee made a
12	strong recommendation that children and young people should be referred to these services
13	if they meet the eligibility criteria [1.10.6; 1.11.5]. This was supported by qualitative evidence
14	that more training and multi-agency work is needed to adapt communication for disabled
15	children and young people and make better use of communication aids (see evidence report
16	M, sub-theme 6.2). The committee also agreed it was important to recommend that
17	requirements for referral do not exceed those outlined in the NHS England service
18	specifications (2016, 2018), as additional criteria will introduce delays and the committee
19	were aware that referrals typically come through occupational and speech and language
20	therapists despite health and social care practitioners being able to refer people to both
21	services and education practitioners able to refer to augmentative and alternative
22	communication services [1.10.7; 1.11.6]. They also recommended that staff should be made
23	aware of these services, based on their knowledge that referrals for these services typically
24	come from health services, such as occupational and speech and language therapy, and are
25	not widely known about among staff from other services [1.10.5; 1.11.4]. This was supported
26	by qualitative evidence (see evidence report K, sub-theme 11.1) that professionals and staff
27	lack the necessary skills and knowledge to work effectively to meet the needs of children and
28	young people. The committee agreed that when assistive technology assessments are
29	conducted, it is important to think about whether the technology can be used across, and is
30	available in multiple settings and whether the equipment can be provided to the child or
31	young person directly, as there was qualitative evidence (see evidence report M, sub-theme
32	1.2) that using a consistent approach was beneficial for children and young people in that it is
33	more predictable and helps them to generalise across settings [1.10.1; 1.11.12]. Similarly,
34	they agreed it was important to provide support during transitions so that children and young
35	people using communication aids can continue to use the same equipment in new settings
36	and with new practitioners [1.10.2].
37	The committee agreed that staff and families should be provided with information about and
38	receive training in how to use, and support children and young people to use, communication
39	aids and environmental adaptations [1.10.2; 1.10.3; 1.11.1; 1.11.2]. This was supported by
40	qualitative evidence that more training and multi-agency work is needed to communicate
41	effectively with disabled children and young people (see evidence report M, sub-theme 6.2).
42	There was no evidence on the effectiveness of staff or family training on assistive
43	technology. However, one of the qualitative evidence reviews (see evidence report K, sub-
44	theme 11.1) highlighted concerns about the lack of training and knowledge of staff and the
45	committee agreed there would be safety concerns if adaptations were not used correctly.
46	The SEND Code of Practice (2015) specifies that the Local Offer must include information
47	about support groups, so, the committee highlighted this for children and young people who
48	use assistive technologies [1.17.15]. They also recommended that this information should be
49	communicated by education, health and social care practitioners [1.10.4; 1.11.3]. This was
50	supported by qualitative evidence (see evidence report K, sub-theme 2.3) that more
51	information and support was needed to help children and young people and their families
52	and carers to understand the services available to them to empower them to make decisions
53	and access services. Based on their experience, the committee recommended it was
54	important to agree who is responsible for maintaining, servicing and insuring communication
55	aids and environmental adaptations to ensure equipment stays fit for purpose [1.10.2;

1.11.1]. It was not possible to specify whose responsibility this should be in the recommendation as this will vary depending on where the equipment is used (for example, home adaptations might be covered by home insurance).

There was some evidence that travel training, including route planning, mobility and traffic awareness training and how parents, carers and relevant professionals can support children and young people to use public transport, increased independent use of public transport by children and young people. Although this evidence was specific to children and young people who may be able to travel independently by the end of the training, the committee agreed it was important that travel training was not limited to this population because being able to travel is a key factor in facilitating independence, even if the child or young person needs to be accompanied to do so. Therefore, they recommended that travel training should also include travelling with parents and carers for those who are unable to travel alone which will be particularly relevant to those with cognitive impairments [1.12.4]. Further, the evidence was focused on travel to and from school but the committee agreed that training should help children and young people to go anywhere they need to, in order to increase independence and participation [1.12.1]. Although the evidence was about the effectiveness of travel training in supporting the use of public transport, the committee agreed it was appropriate to extrapolate this effectiveness to all forms of transport because the same travel training process would apply, and there was no plausible reason the same approach would not work equally as well for these additional scenarios. Based on their experience, they also agreed that travel training should not be limited to travel by public transport because there are many children and young people with severe complex needs for whom travel on public transport will not be possible but the benefits to independence of being able to use transport (such as using powered wheelchairs, taxis or learning to drive adapted vehicles) will be significant [1.12.1]. Based on their experience, the committee agreed that local authorities should consider providing a training framework to facilitate providing travel training to all disabled children and young people with severe complex needs. This was because local authorities sometimes commission third party organisations to provide the training. The committee were aware of existing transport training programs, such as ASDAN's Using Transport, which could be used by local authorities rather than requiring them to develop their own training programmes [1.12.1].

Based on their experience the committee agreed that a recommendation was needed for local authorities to ensure services implement the training framework, to prevent any confusion about who had overall responsibility for the training happening. The committee were not prescriptive about how this should be done as the methods would need to be bespoke to each local authority [1.12.2] The committee agreed that local authorities should provide parents, carers and relevant professionals with information to help them support children and young people using public transport as this was a key part of the above training program [1.12.5]. This aligns with the requirements in the Department for Education's (2019) Post-16 transport and travel support to education and training statutory guidance for local authorities about information provision. They were not able to be specific about what information should be provided as this would depend on the needs of this child or young person. The committee also agreed it was important that children and young people who use communication aids received training about how to use communication aids to assist with travel, as children and young people may not be familiar with travel-specific terms that would need programming into communication aids [1.12.4]. This would be particularly relevant to those with communication needs or disorders. They also agreed that assessing children and young people's mobility skills and identifying problems they may have using public transport, would be particularly relevant for those with physical disabilities [1.12.4]. They also agreed, based on their experience, that travel training needs to include assessing risks and supporting risk management because there are particular risks for children and young people with severe complex needs associated with travel that need to be assessed and managed correctly so that they do not become a barrier to travel [1.12.4]. Children and young people should also be trained in how they can safely ask for help when something goes wrong as the committee agreed that this could be difficult for children and young people who may have

1 communication problems or not have the confidence to ask for help. Further, getting help will
2 involve talking to strangers, which children and young people may have been told not to do.
3 So they may need more training and support to understand this conflicting message [1.12.4].
4 The committee also recommended that disability awareness training is provided for transport
5 staff as this was an element of the transport training intervention provided in the included
6 study and it should facilitate independent use by disabled children and young people with
7 severe complex needs [1.12.3]. There was also qualitative evidence that professionals and
8 staff lack the necessary skills and knowledge to work effectively to meet the needs of
9 disabled children and young people (see evidence report K, sub-theme 11.1). Further,
10 providers of public transport have a statutory duty under the Equality Act (2010) to provide
11 disability awareness training to their staff.

12 Based on their experience, the committee agreed with the evidence that having peer buddies
13 confers benefits on participation and inclusion. However, they noted that whilst this approach
14 may have some benefits, it could be perceived as discriminatory as it is pairing people with
15 buddies based on the presence or absence of a disability. The committee thought that the
16 recommendations made throughout the guideline would be likely to achieve the same
17 benefits more naturally by facilitating the formation of friendships and networks and therefore
18 did not make a recommendation based on this evidence.

19 There was also evidence that disabled children and young people had less interaction with
20 non-disabled peers when they were in more, compared with less, integrated settings.
21 However, this evidence was from the USA and the definitions of more and less integrated
22 used in the study was based on the proportion of children and young people present with and
23 without a disability, rather than a comparison between mainstream and special educational
24 settings. Therefore, the committee agreed there was not enough evidence to make
25 recommendations about setting.

26 The committee agreed that the recommendations made on environmental adaptions and
27 environmental accessibility would all help to remove inequalities for those with physical
28 disabilities. Similarly, the recommendations made on communication aids would help to
29 remove inequalities for those with communication needs and disorders.

30 **Cost effectiveness and resource use**

31 The review of existing economic literature identified two economic evaluations, however,
32 both were characterised by potentially serious limitations and the committee could not draw
33 any conclusions from this evidence.

34 The committee explained that the mechanisms to implement recommendations about referral
35 to local specialised augmentative and alternative communication and environmental control
36 services are already in place. The committee explained that eligible children and young
37 people should be able to access such services and an increase in the utilisation of services
38 in this area would be expected if services are used in a way they have been commissioned
39 for. Such services exist, they are at present underutilised, and any increased referrals as a
40 result of the recommendations would not result in any additional resource requirement for
41 education, health and care services because they are already funded by NHS England. The
42 committee also explained that there are established frameworks in place for maintaining,
43 servicing and insuring the communication aids, e.g. the augmentative and alternative
44 communication services would be responsible for this. This is current practice and the
45 recommendation is only highlighting those responsibilities.

46 There is a duty under the Equalities Act 2010 for providers of public transport to provide
47 disability awareness training for their staff and the Office of Rail and Road provide a
48 framework for them to do this. The recommendation on this therefore represents current
49 practice and would not have resource implications.

1　The committee noted that travel training is not happening consistently everywhere and so
2　there would be a change in practice associated with these recommendations for those local
3　authorities that were not currently providing a framework for training. However, the need for
4　travel training will likely already be included in most EHC plans, either because independent
5　travel has been specified as an outcome in its own right or as a means to achieve another
6　outcome (for example employment where travel would be needed to be able to get to the
7　place of work). There is unlikely to be a significant resource implication from this
8　recommendation because the SEND Code of Practice (2015) requires funding to be set at a
9　level to secure the agreed provision in EHC plans.

10　It was noted that recommendations around training staff in the use of communication aids
11　and environmental adaptations / general equipment so that they can provide support and
12　training to users, may have some resource implications. When equipment is provided,
13　relevant practitioners need to spend time with the child or young person and their families /
14　carers to show them how to use it. The amount of time required will vary depending on the
15　complexity of the equipment and the number of people that need to be trained to use it.
16　Currently, the training received about equipment is variable so there may be some costs
17　associated with providing this more consistently. The committee explained that practitioners
18　being properly trained in the use of equipment will ensure that the often costly equipment that
19　has been assessed and prescribed will be used and most importantly will be used
20　appropriately. It will improve patients' outcomes for example independence. It will also
21　mitigate against the risk that only one practitioner knows how to use the equipment, so if they
22　stop working with the child or young person, the equipment stops being used, potentially
23　resulting in a deterioration of the child or young persons' health and wellbeing. Overall the
24　committee was of the view that the recommendations in this area may result is some
25　additional costs from providing training more consistently but could also result in some cost
26　savings from expensive equipment being properly used once prescribed. Any additional
27　costs would be justified by the likely improvements in quality of life and independence and
28　prevention of injuries resulting from children and young people knowing how to use their
29　communication aids/environmental adaptations correctly.

30　An annual assessment of the accessibility of education environments is part of statue and
31　should already be undertaken, so is not expected to have resource implications for the
32　education sector. It was noted that annual accessibility assessments are not currently done
33　at a service level in health or social care but that they are generally being done for each
34　individual to comply with legislation about disabled access. Therefore the committee agreed
35　that for services providing health and social care there may be some resource implications
36　and change in practice associated with conducting annual accessibility assessments but
37　these were not likely to be substantial. The committee noted the quality of life and general
38　wellbeing benefits to families/carers and children and young people of having accessible
39　services and the importance of having services that work for everyone. As a result, the
40　committee was of the view that services providing health and social care undertaking annual
41　accessibility assessments where they are not currently done would represent value for
42　money.

43　The committee was of a view that all other recommendations represent current practice for
44　most services and would not have resource implications.

Recommendations supported by this evidence review

46　This evidence review supports recommendations 1.10.1 - 1.10.7, 1.11.1 - 1.11.12, 1.12.1 -
47　1.12.5, 1.17.15 and the research recommendation on environmental adaptations. Other
48　evidence supporting these recommendations can be found in the evidence reviews on
49　Barriers and facilitators of joined-up care (evidence report K), Views and experiences of
50　service providers (evidence report M).

51
52

1 References – included studies

2 Effectiveness

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5 hospitalizations in children with complex health conditions. Journal of Telemedicine and
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11 Desideri 2016

12 Desideri, L., Bizzarri, M., Bitelli, C., Roentgen, U., Gelderblom, G., & de Witte, L,
13 Implementing a routine outcome assessment procedure to evaluate the quality of assistive
14 technology service delivery for children with physical or multiple disabilities: Perceived
15 effectiveness, social cost, and user satisfaction. Assistive Technology, 28, 30-40, 2016

16 Haveman 2014

17 Haveman, M., Tillmann, V., Stöppler, R., Kvas, S., & Monninger, D., Mobility and public
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24 Implementing a routine outcome assessment procedure to evaluate the quality of assistive
25 technology service delivery for children with physical or multiple disabilities: Perceived
26 effectiveness, social cost, and user satisfaction. Assistive Technology, 28, 30-40, 2016

27 Ganashree 2017

28 Ganashree, A., Akromaite, A., Panayotov, B., O'Neal, C., Waziri, D., Kalonzo, D., et al.,
29 Disabled Children and the Cost Effectiveness of Home Adaptations & Disabled Facilities
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31 Other

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Department for Education and Department for Health, Special educational needs and disability code of practice: 0 to 25 years. Statutory guidance for organisations which work with and support children and young people who have special educational needs or disabilities. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/398815/SEND_Code_of_Practice_January_2015.pdf [Accessed 05/11/2020]

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NHS England, Service specification number D01/S/c, Environmental Control Equipment for Patients with Complex Disability (All Ages). Available at: https://www.england.nhs.uk/wp-content/uploads/2018/08/complex-disability-equiptment-environmental-controls-all-ages.pdf [Accessed 24/02/2021]

Disabled children and young people up to 25 with severe complex needs: evidence reviews for suitability and accessibility of environments DRAFT(August 2021)

22

1 # Appendices

2 ## Appendix A – Review protocol

3 **Review protocol for review question: What are the most effective practices (for example, environmental assessments and**
4 **use of equipment such as assistive technology across different contexts) to ensure the suitability and accessibility of the**
5 **environments in which disabled children and young people with severe complex needs receive health and social care and**
6 **education?**

7 **Table 5: Review protocol**

ID	Field	Content
0.	PROSPERO registration number	CRD42020167071
1.	Review title	What are the most effective practices (for example, environmental assessments and use of equipment such as assistive technology across different contexts) to ensure the suitability and accessibility of the environments in which disabled children and young people with severe complex needs receive health and social care and education?
2.	Review question	What are the most effective practices (for example, environmental assessments and use of equipment such as assistive technology across different contexts) to ensure the suitability and accessibility of the environments in which disabled children and young people with severe complex needs receive health and social care and education?
3.	Objective	To determine effective approaches to ensuring the suitability and accessibility of health, social care and education environments for disabled children and young people with severe complex needs.
4.	Searches	The following databases will be searched: • Cochrane Central Register of Controlled Trials (CENTRAL) • Cochrane Database of Systematic Reviews (CDSR) • Embase • MEDLINE • Health Technology Assessment (HTA) • Database of Abstracts of Reviews of Effects (DARE) • British Education Index (BEI) • Educational Information Resources Center (ERIC) • Health Management Information Consortium (HMIC)

ID	Field	Content
		• Applied Social Science Index and Abstracts (ASSIA) • Social Care Online • Social Policy and Practice • Social Science Citation Index • Social Services Abstracts • Sociological Abstracts • PsycINFO • CINAHL • Emcare Searches will be restricted by: • Date: 2000 onwards • Language: English Other searches: • Inclusion lists of systematic reviews • Kings Fund Reports (https://www.kingsfund.org.uk/publications) • National Audit Office • Audit Commission • Open Grey (if insufficient studies are found from other sources) The full search strategies for all databases will be published in the final review.
5.	Condition or domain being studied	Disabled children and young people from birth to 25 years with severe complex needs requiring health, social care and education support.
6.	Population	Inclusion: Disabled children and young people from birth to 25 years with severe complex needs who require health, social care and education support. Exclusion: Children and young people who do not have needs in all three areas of health, social care and education.
7.	Intervention/Exposure/Test	Any practices to ensure the suitability and accessibility of the environments in which disabled children and young people with severe complex needs receive health and social care and education.

ID	Field	Content

		For example:
		Assessment of health, social care or education environment
		• Delivery arrangements:
		  o Where care is provided and changes to the healthcare, social care or education environment:
		    - Adaptations or changes to the physical or sensory health, social care or educational environment
		    - Outreach services
		    - Site of service delivery (including co-location)
		    - Transportation services
		• Information and communication technology (ICT):
		  o Smart home technologies and/or electronic assistive technologies
		  o Telemedicine
		• Provision of mobility aids/equipment (e.g., wheelchairs, hoists)
		• Strategies to promote positive cultures and social interactions and behaviours (e.g., disability awareness training, early bird training.

8.	Comparator/Reference standard/Confounding factors	• Any other practices to ensure the suitability and accessibility of environments for disabled children and young people • Different assessment thresholds for making adaptations
9.	Types of study to be included	Systematic reviews of test and treat RCTs or non-randomised comparative test and treat studies (including cohort studies, before and after studies and interrupted time series), and test and treat RCTS will be included. Non-randomised studies will be included in the absence of RCTs. Service evaluations, process evaluations and audits will be included in the absence of comparative non-randomised studies. Conference abstracts will not be included. Non-randomised studies should adjust for confounders in their analysis such as: dominant provision (e.g. primarily autism, primarily physical disability), definitions of eligibility for service (e.g. for primary SEN), socioeconomic status. Studies will be downgraded for risk of bias if important confounding factors are not adequately adjusted for but will not be excluded for this reason.
10.	Other exclusion criteria	Studies will not be included for the following reasons: • Published prior to 2000

ID	Field	Content
		• Not published in the English language • Non Organisation for Economic Co-operation and Development (OCED) country (https://www.oecd.org/about/members-and-partners/) Studies published prior to 2000 will not be considered due to legislative changes, specifically the Children and Families Care Act 2014, and the Aiming High for Disabled Children (AHDC) programme 2007. Studies published in languages other than English will not be considered due to time and resource constraints with translation. Studies published by non OCED countries will not be considered due to differences in health, social care and education services to those implemented in the UK.
11.	Context	All settings will be considered where health, social care and education is provided for disabled children and young people from birth to 25 years with severe complex needs.

12.	Primary outcomes (critical outcomes)	Critical Outcomes:
		• Person focused:
		  ○ Service user satisfaction (child or young person and parent or carer) as measured by validated scales or assisted communication aids (such as talking mats or 'it's all about me')
		  ○ Participation and inclusion as measured by validated scales or assisted communication aids (such as talking mats or 'it's all about me')
		• Service focused:
		  ○ Access to health, social care and education services (including not being able to access services at all or not being able to access locally available services)

13.	Secondary outcomes (important outcomes)	Important Outcomes:
		• Person focused:
		  ○ Independence (e.g. meeting steps towards outcomes in the preparing for adulthood framework)
		  ○ Adverse events (e.g., serious incident reports, unplanned admission, attendance at accident & emergency services, complaints)

14.	Data extraction (selection and coding)	All references identified by the searches and from other sources will be uploaded into STAR and de-duplicated. Titles and abstracts of the retrieved citations will be screened to identify studies that potentially meet the inclusion criteria outlined in the review protocol. Full versions of the selected studies will be obtained for assessment. Studies that fail to meet the inclusion criteria once the full version has been checked will be excluded at this stage. Each study excluded after checking the full version will be listed, along with the reason for its exclusion.

ID	Field	Content
		A standardised form will be used to extract data from studies. The following data will be extracted: study details (reference, country where study was carried out, type and dates), participant characteristics, inclusion and exclusion criteria, details of the interventions, setting and follow-up, relevant outcome data and source of funding. One reviewer will extract relevant data into a standardised form, and this will be quality assessed by a senior reviewer.
15.	Risk of bias (quality) assessment	Quality assessment of individual studies will be performed using the following checklists: • ROBIS tool for systematic reviews • Cochrane RoB tool v.2 for RCTs and quasi-RCTs • Cochrane ROBINS-I tool for non-randomised (clinical) controlled trials and cohort studies • Effective Practice and Organisation of Care (EPOC) RoB Tool for before and after studies • Effective Practice and Organisation of Care (EPOC) RoB Tool for interrupted time series The quality assessment will be performed by one reviewer and this will be quality assessed by a senior reviewer.
16.	Strategy for data synthesis	Intervention review (test and treat): Depending on the availability of the evidence, the findings will be summarised narratively or quantitatively. Where possible, meta-analyses will be conducted using Cochrane Review Manager software. A fixed effect meta-analysis will be conducted and data will be presented as risk ratios or odds ratios for dichotomous outcomes, and mean differences or standardised mean differences for continuous outcomes. Heterogeneity in the effect estimates of the individual studies will be assessed using the I2 statistic. I2 values of greater than 50% and 80% will be considered as significant and very significant heterogeneity, respectively. Heterogeneity will be explored as appropriate using sensitivity analyses. If heterogeneity cannot be explained through sensitivity analysis then a random effects model will be used for meta-analysis, or the data will not be pooled if the I2 statistic is greater than 80%. The confidence in the findings 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/ **Minimally important differences:** We will check the rehabilitation measures database (www.sralab.org) for published MIDs for scales reported by included studies and use these if available. If not, we will use GRADE default MIDs. For not being able to access services, we will use any statistically significant difference. For all remaining continuous outcomes, we will use GRADE default MID of 0.5 times SD of the control groups at baseline (or at follow-up if the SD is not available a baseline). For all remaining dichotomous outcomes (RRs, ORs and HRs), we will use the GRADE default for RRs of 0.8 and 1.25 for consistency.

ID	Field	Content		
17.	Analysis of sub-groups	N/A		
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	27/01/20		
22.	Anticipated completion date	May 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 National Guideline Alliance 5b Named contact e-mail CYPseverecomplexneeds@nice.org.uk 5e Organisational affiliation of the review National Institute for Health and Care Excellence (NICE) and National Guideline Alliance		

ID	Field	Content		
25.	Review team members	National Guideline Alliance		
26.	Funding sources/sponsor	This systematic review is being completed by the National Guideline Alliance which receives funding from 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-ng10113		
29.	Other registration details	None		
30.	Reference/URL for published protocol	https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020167071		
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	Child, infant, young person, disability, health care, education, social care, service delivery, service organisation, assessment		
33.	Details of existing review of same topic by same authors	None		
34.	Current review status	☒	Ongoing	
		☐	Completed but not published	
		☐	Completed and published	
		☐	Completed, published and being updated	

ID	Field	Content	
		☐	Discontinued
35..	Additional information	None	
36.	Details of final publication	www.nice.org.uk	

AHDC: Aiming High for Disabled Children; ASSIA: Applied Social Science Index and Abstracts; BEI: British Education Index; CDSR: Cochrane Database of Systematic Reviews; CENTRAL: Cochrane Central Register of Controlled Trials; CINAHL: Cumulative Index to Nursing & Allied Health; DARE: Database of Abstracts of Reviews of Effects; EPOC: Effective Practice and Organisation of Care; ERIC: Educational Information Resources Center; ERIC: Educational Information Resources Center; GRADE: Grading of Recommendations Assessment, Development and Evaluation; HMIC: Health Management Information Consortium; HR: hazard ratio; HTA: Health Technology Assessment; ICT: information and communication technology; MID: minimally important difference; NICE: National Institute for Health and Care Excellence; OECD: Organisation for Economic Co-operation and Development; OR: odds ratio; RCT: randomised controlled trial; RoB: risk of bias; ROBINS-I: risk of bias in non-randomised studies – of interventions; ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; SD: standard deviation; SEN: special educational needs

1 Appendix B – Literature search strategies

2 Literature search strategies for review question: What are the most effective
3 practices (for example, environmental assessments and use of equipment such
4 as assistive technology across different contexts) to ensure the suitability and
5 accessibility of the environments in which disabled children and young people
6 with severe complex needs receive health and social care and education?

7

8 Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process &
9 Other Non-Indexed Citations

10   **Date of last search: 31/03/2020**

#	Searches
1	ADOLESCENT/ or MINORS/
2	(adolescen$ or teen$ or youth$ or young or juvenile? or minors or highschool$).ti,ab.
3	exp CHILD/
4	(child$ or schoolchild$ or "school age" or "school aged" or preschool$ or toddler$ or kid? or kindergar$ or boy? or girl?).ti,ab.
5	exp INFANT/
6	(infan$ or neonat$ or newborn$ or baby or babies).ti,ab.
7	exp PEDIATRICS/
8	p?ediatric$.ti,ab.
9	YOUNG ADULT/
10	young$ adult?.ti,ab.
11	or/1-10
12	exp DISABLED PERSONS/
13	exp MENTAL DISORDERS/
14	exp COMMUNICATION DISORDERS/
15	exp INTELLECTUAL DISABILITY/
16	(disable? or disabilit$ or handicap$ or retard$ or disorder? or impair$ or condition? or difficulty or difficulties or deficit? or dysfunct$).ti.
17	((sever$ or complex$ or special or high) adj3 need?).ti,ab.
18	SHCN.ti,ab.
19	or/12-18
20	11 and 19
21	DISABLED CHILDREN/
22	CSHCN.ti,ab.
23	"Education Health and Care plan?".ti,ab.
24	EHC plan?.ti,ab.
25	EHCP?.ti,ab.
26	or/20-25
27	INTERINSTITUTIONAL RELATIONS/
28	INTERSECTORAL COLLABORATION/
29	"DELIVERY OF HEALTH CARE, INTEGRATED"/
30	(interinstitution$ or multiinstitution$ or jointinstitution$).ti,ab.
31	(interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$).ti,ab.
32	(intersector$ or multisector$ or jointsector$).ti,ab.
33	(interagenc$ or multiagenc$ or jointagenc$).ti,ab.
34	(interprovider? or multiprovider? or jointprovider?).ti,ab.
35	(interstakeholder? or multistakeholder? or jointstakeholder?).ti,ab.
36	(interprofession$ or multiprofession$ or jointprofession$).ti,ab.
37	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$)).ti,ab.
38	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj5 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$)).ti.
39	or/27-38
40	(HEALTH SERVICES/ or CHILD HEALTH SERVICES/ or ADOLESCENT HEALTH SERVICES/ or COMMUNITY HEALTH SERVICES/ or HOME CARE SERVICES/ or HEALTH SERVICES FOR PEOPLE WITH DISABILITIES/ or MENTAL HEALTH SERVICES/ or NURSING SERVICES/ or exp HEALTH PERSONNEL/) and (exp SOCIAL WORK/ or SOCIAL WORK, PSYCHIATRIC/ or SOCIAL WORKERS/)
41	(HEALTH SERVICES/ or CHILD HEALTH SERVICES/ or ADOLESCENT HEALTH SERVICES/ or COMMUNITY HEALTH SERVICES/ or HOME CARE SERVICES/ or HEALTH SERVICES FOR PEOPLE WITH DISABILITIES/ or MENTAL HEALTH SERVICES/ or NURSING SERVICES/ or exp HEALTH PERSONNEL/) and (EDUCATION/ or exp EDUCATION, SPECIAL/ or SCHOOLS/ or SCHOOL HEALTH SERVICES/ or SCHOOLS, NURSERY/ or exp

#	Searches
	NURSERIES/ or CHILD DAY CARE CENTERS/ or UNIVERSITIES/ or TEACHING/ or REMEDIAL TEACHING/ or SCHOOL TEACHERS/)
42	(exp SOCIAL WORK/ or SOCIAL WORK, PSYCHIATRIC/ or SOCIAL WORKERS/) and (EDUCATION/ or exp EDUCATION, SPECIAL/ or SCHOOLS/ or SCHOOL HEALTH SERVICES/ or SCHOOLS, NURSERY/ or exp NURSERIES/ or CHILD DAY CARE CENTERS/ or UNIVERSITIES/ or TEACHING/ or REMEDIAL TEACHING/ or SCHOOL TEACHERS/)
43	or/40-42
44	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 social$ adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
45	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
46	(social$ adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
47	or/44-46
48	STATE MEDICINE/og [Organization & Administration]
49	CHILD HEALTH SERVICES/og [Organization & Administration]
50	ADOLESCENT HEALTH SERVICES/og [Organization & Administration]
51	EDUCATION/og [Organization & Administration]
52	exp EDUCATION, SPECIAL/og [Organization & Administration]
53	exp SOCIAL WORK/og [Organization & Administration]
54	or/48-53
55	ENVIRONMENT DESIGN/
56	ERGONOMICS/
57	EQUIPMENT DESIGN/
58	TRANSPORTATION OF PATIENTS/
59	COMMUNICATION AIDS FOR DISABLED/
60	SELF-HELP DEVICES/
61	TELEMEDICINE/
62	WHEELCHAIRS/
63	*AWARENESS/
64	environment$.ti.
65	(disab$ adj3 aware$).ti,ab.
66	early bird train$.ti,ab.
67	or/55-66
68	((interinstitution$ or multiinstitution$ or jointinstitution$ or interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$ or intersector$ or multisector$ or jointsector$ or interagenc$ or multiagenc$ or jointagenc$ or interprovider? or multiprovider? or jointprovider? or interstakeholder? or multistakeholder? or jointstakeholder? or interprofession$ or multiprofession$ or jointprofession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
69	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
70	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj10 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
71	or/68-70
72	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or

#	Searches
	language) adj3 therapist?) or SLT?) adj10 social$ adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
73	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
74	(social$ adj10 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
75	or/72-74
76	26 and (39 or 43 or 47 or 54) and 67
77	26 and 71
78	26 and 75
79	or/76-78
80	limit 79 to english language
81	limit 80 to yr="2000 -Current"
82	LETTER/
83	EDITORIAL/
84	NEWS/
85	exp HISTORICAL ARTICLE/
86	ANECDOTES AS TOPIC/
87	COMMENT/
88	CASE REPORT/
89	(letter or comment*).ti.
90	or/82-89
91	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
92	90 not 91
93	ANIMALS/ not HUMANS/
94	exp ANIMALS, LABORATORY/
95	exp ANIMAL EXPERIMENTATION/
96	exp MODELS, ANIMAL/
97	exp RODENTIA/
98	(rat or rats or mouse or mice).ti.
99	or/92-98
100	81 not 99

1

2 Databases: Embase; and Embase Classic

3   Date of last search: 31/03/2020

#	Searches
1	exp ADOLESCENT/
2	(adolescen$ or teen$ or youth$ or young or juvenile? or minors or highschool$).ti,ab.
3	exp CHILD/
4	(child$ or schoolchild$ or "school age" or "school aged" or preschool$ or toddler$ or kid? or kindergar$ or boy? or girl?).ti,ab.
5	exp INFANT/
6	(infan$ or neonat$ or newborn$ or baby or babies).ti,ab.
7	exp PEDIATRICS/
8	p?ediatric$.ti,ab.
9	YOUNG ADULT/
10	young$ adult?.ti,ab.
11	or/1-10
12	exp DISABLED PERSON/
13	exp MENTAL DISEASE/
14	INTELLECTUAL IMPAIRMENT/

#	Searches
15	(disable? or disabilit$ or handicap$ or retard$ or disorder? or impair$ or condition? or difficulty or difficulties or deficit? or dysfunct$).ti.
16	((sever$ or complex$ or special or high) adj3 need?).ti,ab.
17	SHCN.ti,ab.
18	or/12-17
19	11 and 18
20	HANDICAPPED CHILD/
21	CSHCN.ti,ab.
22	"Education Health and Care plan?".ti,ab.
23	EHC plan?.ti,ab.
24	EHCP?.ti,ab.
25	or/19-24
26	PUBLIC RELATIONS/
27	INTERSECTORAL COLLABORATION/
28	INTEGRATED HEALTH CARE SYSTEM/
29	(interinstitution$ or multiinstitution$ or jointinstitution$).ti,ab.
30	(interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$).ti,ab.
31	(intersector$ or multisector$ or jointsector$).ti,ab.
32	(interagenc$ or multiagenc$ or jointagenc$).ti,ab.
33	(interprovider? or multiprovider? or jointprovider?).ti,ab.
34	(interstakeholder? or multistakeholder? or jointstakeholder?).ti,ab.
35	(interprofession$ or multiprofession$ or jointprofession$).ti,ab.
36	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$)).ti,ab.
37	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj5 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$)).ti.
38	or/26-37
39	(HEALTH SERVICE/ or CHILD HEALTH CARE/ or COMMUNITY CARE/ or HOME CARE/ or MENTAL HEALTH SERVICE/ or *NURSING/ or exp HEALTH CARE PERSONNEL/) and (SOCIAL CARE/ or SOCIAL WORK/ or SOCIAL WORKER/)
40	(HEALTH SERVICE/ or CHILD HEALTH CARE/ or COMMUNITY CARE/ or HOME CARE/ or MENTAL HEALTH SERVICE/ or *NURSING/ or exp HEALTH CARE PERSONNEL/) and (EDUCATION/ or exp SPECIAL EDUCATION/ or SCHOOL/ or SCHOOL HEALTH SERVICE/ or NURSERY SCHOOL/ or NURSERY/ or KINDERGARTEN/ or PRIMARY SCHOOL/ or MIDDLE SCHOOL/ or HIGH SCHOOL/ or COLLEGE/ or COMMUNITY COLLEGE/ or UNIVERSITY/ or TEACHING/ or exp TEACHER/)
41	(SOCIAL CARE/ or SOCIAL WORK/ or SOCIAL WORKER/) and (EDUCATION/ or exp SPECIAL EDUCATION/ or SCHOOL/ or SCHOOL HEALTH SERVICE/ or NURSERY SCHOOL/ or NURSERY/ or KINDERGARTEN/ or PRIMARY SCHOOL/ or MIDDLE SCHOOL/ or HIGH SCHOOL/ or COLLEGE/ or COMMUNITY COLLEGE/ or UNIVERSITY/ or TEACHING/ or exp TEACHER/)
42	or/39-41
43	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 social$ adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
44	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
45	(social$ adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
46	or/43-45
47	NATIONAL HEALTH SERVICE/ and ORGANIZATION/
48	CHILD HEALTH CARE/ and ORGANIZATION/
49	EDUCATION/ and ORGANIZATION/
50	exp SPECIAL EDUCATION/ and ORGANIZATION/
51	SOCIAL WORK/ and ORGANIZATION/
52	or/47-51
53	ENVIRONMENTAL PLANNING/
54	ERGONOMICS/
55	EQUIPMENT DESIGN/
56	PATIENT TRANSPORT/
57	COMMUNICATION AID/
58	SELF HELP DEVICE/
59	ASSISTIVE TECHNOLOGY/

#	Searches
60	TELEMEDICINE/
61	exp WHEELCHAIR/
62	*AWARENESS/
63	environment$.ti.
64	(disab$ adj3 aware$).ti,ab.
65	early bird train$.ti,ab.
66	or/53-65
67	((interinstitution$ or multiinstitution$ or jointinstitution$ or interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$ or intersector$ or multisector$ or jointsector$ or interagenc$ or multiagenc$ or jointagenc$ or interprovider? or multiprovider? or jointprovider? or interstakeholder? or multistakeholder? or jointstakeholder? or interprofession$ or multiprofession$ or jointprofession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
68	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
69	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj10 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
70	or/67-69
71	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 social$ adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
72	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
73	(social$ adj10 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
74	or/71-73
75	25 and (38 or 42 or 46 or 52) and 66
76	25 and 70
77	25 and 74
78	or/75-77
79	limit 78 to english language
80	limit 79 to yr="2000 -Current"
81	letter.pt. or LETTER/
82	note.pt.
83	editorial.pt.
84	CASE REPORT/ or CASE STUDY/
85	(letter or comment*).ti.
86	or/81-85
87	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
88	86 not 87
89	ANIMAL/ not HUMAN/
90	NONHUMAN/

Disabled children and young people up to 25 with severe complex needs: evidence reviews for suitability and accessibility of environments DRAFT(August 2021)

35

#	Searches
91	exp ANIMAL EXPERIMENT/
92	exp EXPERIMENTAL ANIMAL/
93	ANIMAL MODEL/
94	exp RODENT/
95	(rat or rats or mouse or mice).ti.
96	or/88-95
97	80 not 96

1

2 Database: Health Management Information Consortium (HMIC)

3   Date of last search: 31/03/2020

#	Searches
1	exp YOUNG PEOPLE/
2	(adolescen$ or teen$ or youth$ or young or juvenile? or minors or highschool$).ti,ab.
3	exp CHILDREN/
4	(child$ or schoolchild$ or "school age" or "school aged" or preschool$ or toddler$ or kid? or kindergar$ or boy? or girl?).ti,ab.
5	(infan$ or neonat$ or newborn$ or baby or babies).ti,ab.
6	exp PAEDIATRICS/
7	p?ediatric$.ti,ab.
8	YOUNG ADULTS/
9	young$ adult?.ti,ab.
10	or/1-9
11	DISABLED PEOPLE/
12	exp DISABILITIES/
13	(disable? or disabilit$ or handicap$ or retard$ or disorder? or impair$ or condition? or difficulty or difficulties or deficit? or dysfunct$).ti.
14	((sever$ or complex$ or special or high) adj3 need?).ti,ab.
15	SHCN.ti,ab.
16	or/11-15
17	10 and 16
18	CSHCN.ti,ab.
19	"Education Health and Care plan?".ti,ab.
20	EHC plan?.ti,ab.
21	EHCP?.ti,ab.
22	or/17-21
23	COLLABORATION/
24	exp INTERAGENCY COLLABORATION/
25	INTERPROFESSIONAL COLLABORATION/
26	COLLABORATIVE CARE/
27	INTEGRATED PROVIDERS/
28	INTEGRATED CARE/
29	INTERDISCIPLINARY SERVICES/
30	JOINT WORKING/
31	HEALTH & SOCIAL SERVICES INTERACTION/
32	COMMUNICATION/
33	HEALTH SERVICE PROVISION/
34	(interinstitution$ or multiinstitution$ or jointinstitution$).ti,ab.
35	(interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$).ti,ab.
36	(intersector$ or multisector$ or jointsector$).ti,ab.
37	(interagenc$ or multiagenc$ or jointagenc$).ti,ab.
38	(interprovider? or multiprovider? or jointprovider?).ti,ab.
39	(interstakeholder? or multistakeholder? or jointstakeholder?).ti,ab.
40	(interprofession$ or multiprofession$ or jointprofession$).ti,ab.
41	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$)).ti,ab.
42	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj5 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$)).ti.
43	or/23-42
44	(HEALTH SERVICES/ or exp CHILD HEALTH SERVICES/ or COMMUNITY HEALTH SERVICES/ or exp MENTAL HEALTH SERVICES/ or NURSING CARE/ or exp HEALTH SERVICE STAFF/) and (exp SOCIAL WORK/ or SOCIAL WORK SERVICE/ or SOCIAL WORK PROFESSION/ or SOCIAL WORKERS/ or exp SOCIAL WORKER TEAMS/ or SOCIAL CARE/ or exp SOCIAL CARE SERVICES/ or SOCIAL SERVICES/ or SOCIAL SERVICES DEPARTMENTS/ or SUPPORTIVE SOCIAL WORK/)
45	(HEALTH SERVICES/ or exp CHILD HEALTH SERVICES/ or COMMUNITY HEALTH SERVICES/ or exp MENTAL HEALTH SERVICES/ or NURSING CARE/ or exp HEALTH SERVICE STAFF/) and (EDUCATION/ or PRIMARY EDUCATION/ or SECONDARY EDUCATION/ or exp SPECIAL EDUCATION/ or exp SCHOOLS/ or exp SCHOOL HEALTH SERVICES/ or exp NURSERIES/ or UNIVERSITIES/ or TEACHING/ or REMEDIAL TEACHING/ or

#	Searches
	TEACHERS/)
46	(exp SOCIAL WORK/ or SOCIAL WORK SERVICE/ or SOCIAL WORK PROFESSION/ or SOCIAL WORKERS/ or exp SOCIAL WORKER TEAMS/ or SOCIAL CARE/ or exp SOCIAL CARE SERVICES/ or SOCIAL SERVICES/ or SOCIAL SERVICES DEPARTMENTS/ or SUPPORTIVE SOCIAL WORK/) and (EDUCATION/ or PRIMARY EDUCATION/ or SECONDARY EDUCATION/ or exp SPECIAL EDUCATION/ or exp SCHOOLS/ or exp SCHOOL HEALTH SERVICES/ or exp NURSERIES/ or UNIVERSITIES/ or TEACHING/ or REMEDIAL TEACHING/ or TEACHERS/)
47	or/44-46
48	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 social$ adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
49	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
50	(social$ adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
51	or/48-50
52	ENVIRONMENTAL DESIGN/
53	ERGONOMICS/
54	PATIENT TRANSPORT SERVICES/
55	COMMUNICATION AIDS/
56	ASSISTIVE TECHNOLOGY/
57	TELEMEDICINE/
58	exp WHEELCHAIRS/
59	AWARENESS/
60	environment$.ti.
61	(disab$ adj3 aware$).ti,ab.
62	early bird train$.ti,ab.
63	or/52-62
64	((interinstitution$ or multiinstitution$ or jointinstitution$ or interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$ or intersector$ or multisector$ or jointsector$ or interagenc$ or multiagenc$ or jointagenc$ or interprovider? or multiprovider? or jointprovider? or interstakeholder? or multistakeholder? or jointstakeholder? or interprofession$ or multiprofession$ or jointprofession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
65	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
66	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj10 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
67	or/64-66
68	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 social$ adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
69	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?)

#	Searches
	adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
70	(social$ adj10 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
71	or/68-70
72	22 and (43 or 47 or 51) and 63
73	22 and 67
74	22 and 71
75	or/72-74
76	limit 75 to yr="2000 -Current"

1

Database: Social Policy and Practice

Date of last search: 31/03/2020

#	Searches
1	(adolescen$ or teen$ or youth$ or young or juvenile? or minors or highschool$).ti,ab.
2	(child$ or schoolchild$ or "school age" or "school aged" or preschool$ or toddler$ or kid? or kindergar$ or boy? or girl?).ti,ab.
3	(infan$ or neonat$ or newborn$ or baby or babies).ti,ab.
4	p?ediatric$.ti,ab.
5	young$ adult?.ti,ab.
6	or/1-5
7	(disable? or disabilit$ or handicap$ or retard$ or disorder? or impair$ or condition? or difficulty or difficulties or deficit? or dysfunct$).ti.
8	((sever$ or complex$ or special or high) adj3 need?).ti,ab.
9	SHCN.ti,ab.
10	or/7-9
11	6 and 10
12	CSHCN.ti,ab.
13	"Education Health and Care plan?".ti,ab.
14	EHC plan?.ti,ab.
15	EHCP?.ti,ab.
16	or/11-15
17	(interinstitution$ or multiinstitution$ or jointinstitution$).ti,ab.
18	(interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$).ti,ab.
19	(intersector$ or multisector$ or jointsector$).ti,ab.
20	(interagenc$ or multiagenc$ or jointagenc$).ti,ab.
21	(interprovider? or multiprovider? or jointprovider?).ti,ab.
22	(interstakeholder? or multistakeholder? or jointstakeholder?).ti,ab.
23	(interprofession$ or multiprofession$ or jointprofession$).ti,ab.
24	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$)).ti,ab.
25	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj5 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$)).ti.
26	or/17-25
27	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 social$ adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
28	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
29	(social$ adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or

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38

#	Searches
	collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
30	or/27-29
31	environment$.ti.
32	(disab$ adj3 aware$).ti,ab.
33	early bird train$.ti,ab.
34	or/31-33
35	((interinstitution$ or multiinstitution$ or jointinstitution$ or interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$ or intersector$ or multisector$ or jointsector$ or interagenc$ or multiagenc$ or jointagenc$ or interprovider? or multiprovider? or jointprovider? or interstakeholder? or multistakeholder? or jointstakeholder? or interprofession$ or multiprofession$ or jointprofession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
36	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
37	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj10 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
38	or/35-37
39	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 social$ adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
40	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 (educat$ or school$ or teach$ or headmaster? or headmistress? or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
41	(social$ adj10 (educat$ or school$ or teach$ or headmaster? or headmistress? or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
42	or/39-41
43	16 and (26 or 30) and 34
44	16 and 38
45	16 and 42
46	or/43-45
47	limit 46 to yr="2000 -Current"

1

2 Database: PsycInfo

3 Date of last search: 31/03/2020

#	Searches
1	(adolescen$ or teen$ or youth$ or young or juvenile? or minors or highschool$).ti,ab.
2	(child$ or schoolchild$ or "school age" or "school aged" or preschool$ or toddler$ or kid? or kindergar$ or boy? or

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39

#	Searches
	girl?).ti,ab.
3	(infan$ or neonat$ or newborn$ or baby or babies).ti,ab.
4	PEDIATRICS/
5	p?ediatric$.ti,ab.
6	young$ adult?.ti,ab.
7	or/1-6
8	DISORDERS/
9	exp DISABILITIES/
10	PHYSICAL DISORDERS/
11	exp SENSE ORGAN DISORDERS/
12	exp MENTAL DISORDERS/
13	exp COMMUNICATION DISORDERS/
14	SPECIAL NEEDS/
15	(disable? or disabilit$ or handicap$ or retard$ or disorder? or impair$ or condition? or difficulty or difficulties or deficit? or dysfunct$).ti.
16	((sever$ or complex$ or special or high) adj3 need?).ti,ab.
17	SHCN.ti,ab.
18	or/8-17
19	7 and 18
20	CSHCN.ti,ab.
21	"Education Health and Care plan?".ti,ab.
22	EHC plan?.ti,ab.
23	EHCP?.ti,ab.
24	or/19-23
25	INTEGRATED SERVICES/
26	INTERDISCIPLINARY TREATMENT APPROACH/
27	(interinstitution$ or multiinstitution$ or jointinstitution$).ti,ab.
28	(interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$).ti,ab.
29	(intersector$ or multisector$ or jointsector$).ti,ab.
30	(interagenc$ or multiagenc$ or jointagenc$).ti,ab.
31	(interprovider? or multiprovider? or jointprovider?).ti,ab.
32	(interstakeholder? or multistakeholder? or jointstakeholder?).ti,ab.
33	(interprofession$ or multiprofession$ or jointprofession$).ti,ab.
34	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$)).ti,ab.
35	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj5 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$)).ti.
36	or/25-35
37	(HEALTH CARE SERVICES/ or COMMUNITY SERVICES/ or HOME CARE/ or MENTAL HEALTH SERVICES/ or COMMUNITY MENTAL HEALTH SERVICES/ or NURSING/ or exp HEALTH PERSONNEL/) and (exp SOCIAL CASEWORK/ or exp SOCIAL WORKERS/)
38	(HEALTH CARE SERVICES/ or COMMUNITY SERVICES/ or HOME CARE/ or MENTAL HEALTH SERVICES/ or COMMUNITY MENTAL HEALTH SERVICES/ or NURSING/ or exp HEALTH PERSONNEL/) and (EDUCATION/ or ELEMENTARY EDUCATION/ or MIDDLE SCHOOL EDUCATION/ or HIGH SCHOOL EDUCATION/ or SECONDARY EDUCATION/ or HIGHER EDUCATION/ or SPECIAL EDUCATION/ or "MAINSTREAMING (EDUCATIONAL)"/ or REMEDIAL EDUCATION/ or exp SCHOOLS/ or TEACHING/ or TEACHERS/ or PRESCHOOL TEACHERS/ or ELEMENTARY SCHOOL TEACHERS/ or JUNIOR HIGH SCHOOL TEACHERS/ or MIDDLE SCHOOL TEACHERS/ or HIGH SCHOOL TEACHERS/ or COLLEGE TEACHERS/ or VOCATIONAL EDUCATION TEACHERS/ or SPECIAL EDUCATION TEACHERS/)
39	(exp SOCIAL CASEWORK/ or exp SOCIAL WORKERS/) and (EDUCATION/ or ELEMENTARY EDUCATION/ or MIDDLE SCHOOL EDUCATION/ or HIGH SCHOOL EDUCATION/ or SECONDARY EDUCATION/ or HIGHER EDUCATION/ or SPECIAL EDUCATION/ or "MAINSTREAMING (EDUCATIONAL)"/ or REMEDIAL EDUCATION/ or exp SCHOOLS/ or TEACHING/ or TEACHERS/ or PRESCHOOL TEACHERS/ or ELEMENTARY SCHOOL TEACHERS/ or JUNIOR HIGH SCHOOL TEACHERS/ or MIDDLE SCHOOL TEACHERS/ or HIGH SCHOOL TEACHERS/ or COLLEGE TEACHERS/ or VOCATIONAL EDUCATION TEACHERS/ or SPECIAL EDUCATION TEACHERS/)
40	or/37-39
41	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 social$ adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
42	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
43	(social$ adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or

Disabled children and young people up to 25 with severe complex needs: evidence reviews for suitability and accessibility of environments DRAFT(August 2021)

40

#	Searches
	network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
44	or/41-43
45	LEARNING ENVIRONMENT/
46	HUMAN FACTORS ENGINEERING/
47	HUMAN MACHINE SYSTEMS DESIGN/
48	AUGMENTATIVE COMMUNICATION/
49	ASSISTIVE TECHNOLOGY/
50	TELEMEDICINE/
51	MOBILITY AIDS/
52	"DISABLED (ATTITUDES TOWARD)"/
53	AWARENESS/
54	environment$.ti.
55	(disab$ adj3 aware$).ti,ab.
56	early bird train$.ti,ab.
57	or/45-56
58	((interinstitution$ or multiinstitution$ or jointinstitution$ or interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$ or intersector$ or multisector$ or jointsector$ or interagenc$ or multiagenc$ or jointagenc$ or interprovider? or multiprovider? or jointprovider? or interstakeholder? or multistakeholder? or jointstakeholder? or interprofession$ or multiprofession$ or jointprofession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
59	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
60	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj10 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
61	or/58-60
62	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 social$ adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
63	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
64	(social$ adj10 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
65	or/62-64
66	24 and (36 or 40 or 44) and 57
67	24 and 61
68	24 and 65
69	or/66-68
70	limit 69 to english language
71	limit 70 to yr="2000 -Current"
72	limit 71 to ("0100 journal" or "0110 peer-reviewed journal" or "0120 non-peer-reviewed journal")

1

2 **Database: Emcare**

3 **Date of last search: 31/03/2020**

#	Searches
1	exp ADOLESCENT/
2	(adolescen$ or teen$ or youth$ or young or juvenile? or minors or highschool$).ti,ab.
3	exp CHILD/
4	(child$ or schoolchild$ or "school age" or "school aged" or preschool$ or toddler$ or kid? or kindergar$ or boy? or girl?).ti,ab.
5	exp INFANT/
6	(infan$ or neonat$ or newborn$ or baby or babies).ti,ab.
7	exp PEDIATRICS/
8	p?ediatric$.ti,ab.
9	YOUNG ADULT/
10	young$ adult?.ti,ab.
11	or/1-10
12	exp DISABLED PERSON/
13	exp MENTAL DISEASE/
14	INTELLECTUAL IMPAIRMENT/
15	(disable? or disabilit$ or handicap$ or retard$ or disorder? or impair$ or condition? or difficulty or difficulties or deficit? or dysfunct$).ti.
16	((sever$ or complex$ or special or high) adj3 need?).ti,ab.
17	SHCN.ti,ab.
18	or/12-17
19	11 and 18
20	HANDICAPPED CHILD/
21	CSHCN.ti,ab.
22	"Education Health and Care plan?".ti,ab.
23	EHC plan?.ti,ab.
24	EHCP?.ti,ab.
25	or/19-24
26	PUBLIC RELATIONS/
27	INTERSECTORAL COLLABORATION/
28	INTEGRATED HEALTH CARE SYSTEM/
29	(interinstitution$ or multiinstitution$ or jointinstitution$).ti,ab.
30	(interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$).ti,ab.
31	(intersector$ or multisector$ or jointsector$).ti,ab.
32	(interagenc$ or multiagenc$ or jointagenc$).ti,ab.
33	(interprovider? or multiprovider? or jointprovider?).ti,ab.
34	(interstakeholder? or multistakeholder? or jointstakeholder?).ti,ab.
35	(interprofession$ or multiprofession$ or jointprofession$).ti,ab.
36	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$)).ti,ab.
37	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj5 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$)).ti.
38	or/26-37
39	(HEALTH SERVICE/ or CHILD HEALTH CARE/ or COMMUNITY CARE/ or HOME CARE/ or MENTAL HEALTH SERVICE/ or *NURSING/ or exp HEALTH CARE PERSONNEL/) and (SOCIAL CARE/ or SOCIAL WORK/ or SOCIAL WORKER/)
40	(HEALTH SERVICE/ or CHILD HEALTH CARE/ or COMMUNITY CARE/ or HOME CARE/ or MENTAL HEALTH SERVICE/ or *NURSING/ or exp HEALTH CARE PERSONNEL/) and (EDUCATION/ or exp SPECIAL EDUCATION/ or SCHOOL/ or SCHOOL HEALTH SERVICE/ or NURSERY SCHOOL/ or NURSERY/ or KINDERGARTEN/ or PRIMARY SCHOOL/ or MIDDLE SCHOOL/ or HIGH SCHOOL/ or COLLEGE/ or COMMUNITY COLLEGE/ or UNIVERSITY/ or TEACHING/ or exp TEACHER/)
41	(SOCIAL CARE/ or SOCIAL WORK/ or SOCIAL WORKER/) and (EDUCATION/ or exp SPECIAL EDUCATION/ or SCHOOL/ or SCHOOL HEALTH SERVICE/ or NURSERY SCHOOL/ or NURSERY/ or KINDERGARTEN/ or PRIMARY SCHOOL/ or MIDDLE SCHOOL/ or HIGH SCHOOL/ or COLLEGE/ or COMMUNITY COLLEGE/ or UNIVERSITY/ or TEACHING/ or exp TEACHER/)
42	or/39-41
43	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 social$ adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
44	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering

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#	Searches
	or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
45	(social$ adj5 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj5 (care or service? or department? or institution$ or organi?ation$ or sector$ or agenc$ or provider? or policy or policies or collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partnership? or partnering or network$ or inter or multi or joint$ or across or share? or sharing or together or communicat$ or barrier? or facilitat$ or deliver$)).ti,ab.
46	or/43-45
47	NATIONAL HEALTH SERVICE/ and ORGANIZATION/
48	CHILD HEALTH CARE/ and ORGANIZATION/
49	EDUCATION/ and ORGANIZATION/
50	exp SPECIAL EDUCATION/ and ORGANIZATION/
51	SOCIAL WORK/ and ORGANIZATION/
52	or/47-51
53	ENVIRONMENTAL PLANNING/
54	ERGONOMICS/
55	EQUIPMENT DESIGN/
56	PATIENT TRANSPORT/
57	COMMUNICATION AID/
58	SELF HELP DEVICE/
59	ASSISTIVE TECHNOLOGY/
60	TELEMEDICINE/
61	exp WHEELCHAIR/
62	*AWARENESS/
63	environment$.ti.
64	(disab$ adj3 aware$).ti,ab.
65	early bird train$.ti,ab.
66	or/53-65
67	((interinstitution$ or multiinstitution$ or jointinstitution$ or interorgani?ation$ or multiorgani?ation$ or jointorgani?ation$ or intersector$ or multisector$ or jointsector$ or interagenc$ or multiagenc$ or jointagenc$ or interprovider? or multiprovider? or jointprovider? or interstakeholder? or multistakeholder? or jointstakeholder? or interprofession$ or multiprofession$ or jointprofession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
68	((inter or multi$ or joint) adj3 (institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
69	((institution$ or organi?ation$ or sector$ or agenc$ or provider? or stakeholder? or profession$ or care or service? or department$) adj10 (collaborat$ or coordinat$ or co-ordinat$ or cooperat$ or co-operat$ or integrat$ or partner$) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
70	or/67-69
71	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 social$ adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
72	((health$ or NHS or clinical or clinician? or medical or medic? or physician? or consultant? or nurse? or general practitioner? or GP? or occupational therapist? or OT? or allied health professional? or AHP? or ((speech or language) adj3 therapist?) or SLT?) adj10 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help) adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
73	(social$ adj10 (educat$ or school$ or teach$ or headmaster? or headmistress$ or SENCO? or DfE?) adj10 (((assess$ or chang$ or adapt$) adj3 environment$) or outreach service? or (site? adj3 service? adj3 deliver$) or co-locat$ or (transport$ adj3 service?) or ((informat$ or communicat$) adj3 technolog$) or ICT or (communicat$ adj3 (aid? or system?)) or (augmentative adj3 communicat$) or (interpret$ adj3 (device? or technolog$)) or ((selfhelp or self help)

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#	Searches
	adj3 (device? or technolog$)) or (assist$ adj3 (device? or technolog$)) or ((adapt$ or modif$) adj3 equipment) or (environment$ adj3 control$) or telemedicine or wheel chair? or wheelchair? or power$ chair? or powerchair? or seat? or chair? or hoist?)).ti,ab.
74	or/71-73
75	25 and (38 or 42 or 46 or 52) and 66
76	25 and 70
77	25 and 74
78	or/75-77
79	limit 78 to english language
80	limit 79 to yr="2000 -Current"
81	letter.pt. or LETTER/
82	note.pt.
83	editorial.pt.
84	CASE REPORT/ or CASE STUDY/
85	(letter or comment*).ti.
86	or/81-85
87	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
88	86 not 87
89	ANIMAL/ not HUMAN/
90	NONHUMAN/
91	exp ANIMAL EXPERIMENT/
92	exp EXPERIMENTAL ANIMAL/
93	ANIMAL MODEL/
94	exp RODENT/
95	(rat or rats or mouse or mice).ti.
96	or/88-95
97	80 not 96

1

2 Databases: Cochrane Central Register of Controlled Trials (CCTR); and Cochrane
3   Database of Systematic Reviews (CDSR)

4   Date of last search: 31/03/2020

#	Searches
#1	[mh ^"ADOLESCENT"]
#2	[mh ^"MINORS"]
#3	(adolescen* or teen* or youth* or young or juvenile* or minors or highschool*):ti,ab
#4	[mh "CHILD"]
#5	(child* or schoolchild* or "school age" or "school aged" or preschool* or toddler* or kid* or kindergar* or boy* or girl*):ti,ab
#6	[mh "INFANT"]
#7	(infan* or neonat* or newborn* or baby or babies):ti,ab
#8	[mh "PEDIATRICS"]
#9	(pediatric* or paediatric*):ti,ab
#10	[mh ^"YOUNG ADULT"]
#11	"young$ adult*":ti,ab
#12	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11
#13	[mh "DISABLED PERSONS"]
#14	[mh "MENTAL DISORDERS"]
#15	[mh "COMMUNICATION DISORDERS"]
#16	[mh "INTELLECTUAL DISABILITY"]
#17	(disable* or disabilit* or handicap* or retard* or disorder* or impair* or condition* or difficulty or difficulties or deficit* or dysfunct*):ti
#18	((sever* or complex* or special or high) near/3 (need or needs)):ti,ab
#19	SHCN:ti,ab
#20	#13 or #14 or #15 or #16 or #17 or #18 or #19
#21	#12 and #20
#22	[mh ^"DISABLED CHILDREN"]
#23	CSHCN:ti,ab
#24	"Education Health and Care plan*":ti,ab
#25	EHC plan*:ti,ab
#26	EHCP*:ti,ab
#27	#21 or #22 or #23 or #24 or #25 or #26
#28	[mh ^"INTERINSTITUTIONAL RELATIONS"]
#29	[mh ^"INTERSECTORAL COLLABORATION"]
#30	[mh ^"DELIVERY OF HEALTH CARE, INTEGRATED"]
#31	(interinstitution* or multiinstitution* or jointinstitution*):ti,ab
#32	(interorganisation* or interorganization* or multiorganisation* or multiorganization* or jointorganisation* or

#	Searches
	jointorganization*):ti,ab
#33	(intersector* or multisector* or jointsector*):ti,ab
#34	(interagenc* or multiagenc* or jointagenc*):ti,ab
#35	(interprovider* or multiprovider* or jointprovider*):ti,ab
#36	(interstakeholder* or multistakeholder* or jointstakeholder*):ti,ab
#37	(interprofession* or multiprofession* or jointprofession*):ti,ab
#38	((inter or multi or joint) near/3 (institution* or organisation* or organization*or sector* or agenc* or provider? or stakeholder? or profession*)):ti,ab
#39	((institution* or organisation* or organization* or sector* or agenc* or provider? or stakeholder? or profession* or care or service* or department*) near/5 (collaborat* or coordinat* or co-ordinat* or cooperat* or co-operat* or integrat* or partner*)):ti
#40	#28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39
#41	([mh ^"HEALTH SERVICES"] or [mh ^"CHILD HEALTH SERVICES"] or [mh ^"ADOLESCENT HEALTH SERVICES"] or [mh ^"COMMUNITY HEALTH SERVICES"] or [mh ^"HOME CARE SERVICES"] or [mh ^"HEALTH SERVICES FOR PEOPLE WITH DISABILITIES"] or [mh ^"MENTAL HEALTH SERVICES"] or [mh ^"NURSING SERVICES"] or [mh "HEALTH PERSONNEL"]) and ([mh "SOCIAL WORK"] or [mh ^"SOCIAL WORK, PSYCHIATRIC"] or [mh ^"SOCIAL WORKERS"] or [mh ^"SOCIAL SUPPORT"])
#42	([mh ^"HEALTH SERVICES"] or [mh ^"CHILD HEALTH SERVICES"] or [mh ^"ADOLESCENT HEALTH SERVICES"] or [mh ^"COMMUNITY HEALTH SERVICES"] or [mh ^"HOME CARE SERVICES"] or [mh ^"HEALTH SERVICES FOR PEOPLE WITH DISABILITIES"] or [mh ^"MENTAL HEALTH SERVICES"] or [mh ^"NURSING SERVICES"] or [mh "HEALTH PERSONNEL"]) and ([mh ^EDUCATION] or [mh "EDUCATION, SPECIAL"] or [mh ^SCHOOLS] or [mh ^"SCHOOL HEALTH SERVICES"] or [mh ^"SCHOOLS, NURSERY"] or [mh NURSERIES] or [mh ^"CHILD DAY CARE CENTERS"] or [mh ^UNIVERSITIES] or [mh ^TEACHING] or [mh ^"REMEDIAL TEACHING"] or [mh ^"SCHOOL TEACHERS"])
#43	([mh "SOCIAL WORK"] or [mh ^"SOCIAL WORK, PSYCHIATRIC"] or [mh ^"SOCIAL WORKERS"] or [mh ^"SOCIAL SUPPORT"]) and ([mh ^EDUCATION] or [mh "EDUCATION, SPECIAL"] or [mh ^SCHOOLS] or [mh ^"SCHOOL HEALTH SERVICES"] or [mh ^"SCHOOLS, NURSERY"] or [mh NURSERIES] or [mh ^"CHILD DAY CARE CENTERS"] or [mh ^UNIVERSITIES] or [mh ^TEACHING] or [mh ^"REMEDIAL TEACHING"] or [mh ^"SCHOOL TEACHERS"])
#44	#41 or #42 or #43
#45	((health* or NHS or clinical or clinician* or medical or medic or medics or physician* or consultant* or nurse* or general practitioner* or GP or GPs or occupational therapist* or OT or OTs or allied health professional* or AHP or AHPs or ((speech or language) near/3 therapist*) or SLT or SLTs) near/5 social* near/5 (care or service* or department* or institution* or organisation* or organization* or sector* or agenc* or provider* or policy or policies or collaborat* or coordinat* or co-ordinat* or cooperat* or co-operat* or integrat* or partnership* or partnering or network* or inter or multi or joint* or across or share* or sharing or together or communicat* or barrier* or facilitat* or deliver*)):ti,ab
#46	((health* or NHS or clinical or clinician* or medical or medic or medics or physician* or consultant* or nurse* or general practitioner* or GP or GPs or occupational therapist* or OT or OTs or allied health professional* or AHP or AHPs or ((speech or language) near/3 therapist*) or SLT or SLTs) near/5 (educat* or school* or teach* or headmaster* or headmistress* or SENCO or SENCOs or DfE*) near/5 (care or service* or department* or institution* or organisation* or organization* or sector* or agenc* or provider* or policy or policies or collaborat* or coordinat* or co-ordinat* or cooperat* or co-operat* or integrat* or partnership* or partnering or network* or inter or multi or joint* or across or share* or sharing or together or communicat* or barrier* or facilitat* or deliver*)):ti,ab
#47	(social* near/5 (educat* or school* or teach* or headmaster* or headmistress* or SENCO or SENCOs or DfE*) near/5 (care or service* or department* or institution* or organisation* or organization* or sector* or agenc* or provider* or policy or policies or collaborat* or coordinat* or co-ordinat* or cooperat* or co-operat* or integrat* or partnership* or partnering or network* or inter or multi or joint* or across or share* or sharing or together or communicat* or barrier* or facilitat* or deliver*)):ti,ab
#48	#45 or #46 or #47
#49	[mh ^"STATE MEDICINE"/og]
#50	[mh ^"CHILD HEALTH SERVICES"/og]
#51	[mh ^"ADOLESCENT HEALTH SERVICES"/og]
#52	[mh ^EDUCATION/og]
#53	[mh "EDUCATION, SPECIAL"/og]
#54	[mh "SOCIAL WORK"/og]
#55	#49 or #50 or #51 or #52 or #53 or #54
#56	[mh ^"ENVIRONMENT DESIGN"]
#57	[mh ^ERGONOMICS]
#58	[mh ^"EQUIPMENT DESIGN"]
#59	[mh ^"TRANSPORTATION OF PATIENTS"]
#60	[mh ^"COMMUNICATION AIDS FOR DISABLED"]
#61	[mh ^"SELF-HELP DEVICES"]
#62	[mh ^TELEMEDICINE]
#63	[mh ^WHEELCHAIRS]
#64	[mh ^AWARENESS]
#65	environment*:ti
#66	(disab* near/3 aware*):ti,ab
#67	"early bird train*":ti,ab
#68	#56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67
#69	((interinstitution* or multiinstitution* or jointinstitution* or interorganisation* or interorganization* or multiorganisation* or multiorganization* or jointorganisation* or jointorganization* or intersector* or multisector* or jointsector* or interagenc* or multiagenc* or jointagenc* or interprovider* or multiprovider* or jointprovider* or interstakeholder* or

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#	Searches
	multistakeholder* or jointstakeholder* or interprofession* or multiprofession* or jointprofession*) near/10 (((assess* or chang* or adapt*) near/3 environment*) or "outreach service*" or (site* near/3 service* near/3 deliver*) or co-locat* or (transport* near/3 service*) or ((informat* or communicat*) near/3 technolog*) or ICT or (communicat* near/3 (aid* or system*)) or (augmentative near/3 communicat*) or (interpret* near/3 (device* or technolog*)) or ((selfhelp or "self help") near/3 (device* or technolog*)) or (assist* near/3 (device* or technolog*)) or ((adapt* or modif*) near/3 equipment) or (environment* near/3 control*) or telemedicine or "wheel chair*" or wheelchair* or "power* chair*" or powerchair* or seat* or chair* or hoist*)):ti,ab
#70	((inter or multi* or joint) near/3 (institution* or organisation* or organization* or sector* or agenc* or provider* or stakeholder* or profession*) near/10 (((assess* or chang* or adapt*) near/3 environment*) or "outreach service*" or (site* near/3 service* near/3 deliver*) or co-locat* or (transport* near/3 service*) or ((informat* or communicat*) near/3 technolog*) or ICT or (communicat* near/3 (aid* or system*)) or (augmentative near/3 communicat*) or (interpret* near/3 (device* or technolog*)) or ((selfhelp or "self help") near/3 (device* or technolog*)) or (assist* near/3 (device* or technolog*)) or ((adapt* or modif*) near/3 equipment) or (environment* near/3 control*) or telemedicine or "wheel chair*" or wheelchair* or "power* chair*" or powerchair* or seat* or chair* or hoist*)):ti,ab
#71	((institution* or organisation* or organization* or sector* or agenc* or provider* or stakeholder* or profession* or care or service* or department*) near/10 (collaborat* or coordinat* or co-ordinat* or cooperat* or co-operat* or integrat* or partner*) near/10 (((assess* or chang* or adapt*) near/3 environment*) or "outreach service*" or (site* near/3 service* near/3 deliver*) or co-locat* or (transport* near/3 service*) or ((informat* or communicat*) near/3 technolog*) or ICT or (communicat* near/3 (aid* or system*)) or (augmentative near/3 communicat*) or (interpret* near/3 (device* or technolog*)) or ((selfhelp or "self help") near/3 (device* or technolog*)) or (assist* near/3 (device* or technolog*)) or ((adapt* or modif*) near/3 equipment) or (environment* near/3 control*) or telemedicine or "wheel chair*" or wheelchair* or "power* chair*" or powerchair* or seat* or chair* or hoist*)):ti,ab
#72	#69 or #70 or #71
#73	((health* or NHS or clinical or clinician* or medical or medic* or physician* or consultant* or nurse* or "general practitioner*" or GP* or "occupational therapist*" or OT* or "allied health professional*" or AHP* or ((speech or language) near/3 therapist*) or SLT*) near/10 social* near/10 (((assess* or chang* or adapt*) near/3 environment*) or "outreach service*" or (site* near/3 service* near/3 deliver*) or co-locat* or (transport* near/3 service*) or ((informat* or communicat*) near/3 technolog*) or ICT or (communicat* near/3 (aid* or system*)) or (augmentative near/3 communicat*) or (interpret* near/3 (device* or technolog*)) or ((selfhelp or "self help") near/3 (device* or technolog*)) or (assist* near/3 (device* or technolog*)) or ((adapt* or modif*) near/3 equipment) or (environment* near/3 control*) or telemedicine or "wheel chair*" or wheelchair* or "power* chair*" or powerchair* or seat* or chair* or hoist*)):ti,ab
#74	((health* or NHS or clinical or clinician* or medical or medic* or physician* or consultant* or nurse* or "general practitioner*" or GP* or "occupational therapist*" or OT* or "allied health professional*" or AHP* or ((speech or language) near/3 therapist*) or SLT*) near/10 (educat* or school* or teach* or headmaster* or headmistress* or SENCO* or DfE*) near/10 (((assess* or chang* or adapt*) near/3 environment*) or "outreach service*" or (site* near/3 service* near/3 deliver*) or co-locat* or (transport* near/3 service*) or ((informat* or communicat*) near/3 technolog*) or ICT or (communicat* near/3 (aid* or system*)) or (augmentative near/3 communicat*) or (interpret* near/3 (device* or technolog*)) or ((selfhelp or "self help") near/3 (device* or technolog*)) or (assist* near/3 (device* or technolog*)) or ((adapt* or modif*) near/3 equipment) or (environment* near/3 control*) or telemedicine or "wheel chair*" or wheelchair* or "power* chair*" or powerchair* or seat* or chair* or hoist*)):ti,ab
#75	(social* near/10 (educat* or school* or teach* or headmaster* or headmistress* or SENCO* or DfE*) near/10 (((assess* or chang* or adapt*) near/3 environment*) or "outreach service*" or (site* near/3 service* near/3 deliver*) or co-locat* or (transport* near/3 service*) or ((informat* or communicat*) near/3 technolog*) or ICT or (communicat* near/3 (aid* or system*)) or (augmentative near/3 communicat*) or (interpret* near/3 (device* or technolog*)) or ((selfhelp or "self help") near/3 (device* or technolog*)) or (assist* near/3 (device* or technolog*)) or ((adapt* or modif*) near/3 equipment) or (environment* near/3 control*) or telemedicine or "wheel chair*" or wheelchair* or "power* chair*" or powerchair* or seat* or chair* or hoist*)):ti,ab
#76	#73 or #74 or #75
#77	#27 and (#40 or #44 or #48 or #55) and #68
#78	#27 and #72
#79	#27 and #76
#80	#77 or #78 or #79
#81	#77 or #78 or #79 with Cochrane Library publication date Between Jan 2000 and Mar 2020, in Cochrane Reviews
#82	#77 or #78 or #79 with Publication Year from 2000 to 2020, in Trials

1

2 Database: Database of Abstracts of Reviews of Effects (DARE)

3   Date of last search: 31/03/2020

#	Searches
1	MeSH DESCRIPTOR ADOLESCENT IN DARE
2	MeSH DESCRIPTOR MINORS IN DARE
3	((adolescen* or teen* or youth* or young or juvenile* or minors or highschool*)) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
4	MeSH DESCRIPTOR CHILD EXPLODE ALL TREES IN DARE
5	((child* or schoolchild* or "school age" or "school aged" or preschool* or toddler* or kid* or kindergar* or boy* or girl*)) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
6	MeSH DESCRIPTOR INFANT EXPLODE ALL TREES IN DARE
7	((infan* or neonat* or newborn* or baby or babies)) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
8	MeSH DESCRIPTOR PEDIATRICS EXPLODE ALL TREES IN DARE

#	Searches
9	((pediatric* or paediatric*)) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
10	MeSH DESCRIPTOR YOUNG ADULT IN DARE
11	(("young* adult*")) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
12	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11
13	MeSH DESCRIPTOR DISABLED PERSONS EXPLODE ALL TREES IN DARE
14	MeSH DESCRIPTOR MENTAL DISORDERS EXPLODE ALL TREES IN DARE
15	MeSH DESCRIPTOR COMMUNICATION DISORDERS EXPLODE ALL TREES IN DARE
16	MeSH DESCRIPTOR INTELLECTUAL DISABILITY EXPLODE ALL TREES IN DARE
17	((disable* or disabilit* or handicap* or retard* or disorder* or impair* or condition* or difficulty or difficulties or deficit* or dysfunct*):TI) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
18	((((sever* or complex* or special or high) adj3 need*))) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
19	#13 OR #14 OR #15 OR #16 OR #17 OR #18
20	#12 AND #19
21	MeSH DESCRIPTOR DISABLED CHILDREN IN DARE
22	((CSHCN)) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
23	((("Education Health" adj2 "Care plan*"))) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
24	(("EHC plan*")) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
25	((EHCP*)) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
26	#20 OR #21 OR #22 OR #23 OR #24 OR #25
27	MeSH DESCRIPTOR ENVIRONMENT DESIGN IN DARE
28	MeSH DESCRIPTOR HUMAN ENGINEERING IN DARE
29	MeSH DESCRIPTOR EQUIPMENT DESIGN EXPLODE ALL TREES IN DARE
30	MeSH DESCRIPTOR TRANSPORTATION OF PATIENTS IN DARE
31	MeSH DESCRIPTOR COMMUNICATION AIDS FOR DISABLED IN DARE
32	MeSH DESCRIPTOR SELF-HELP DEVICES IN DARE
33	MeSH DESCRIPTOR TELEMEDICINE IN DARE
34	MeSH DESCRIPTOR WHEELCHAIRS IN DARE
35	MeSH DESCRIPTOR AWARENESS IN DARE
36	((environment*):TI) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
37	((((assess* or chang* or adapt*) adj3 environment*))) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
38	(("outreach service*" or co-locat* or "transport service*" or "information technolog*" or "communication technolog*" or "communication aid*" or "communication system*" or "augmentative communicat*" or "alternative communicat*" or "assistive technolog*" or telemedicine or "wheel chair*" or wheelchair* or hoist*)) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
39	((disab* adj3 aware*)) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
40	(("early bird train$")) and ((Systematic review:ZDT and Bibliographic:ZPS) OR (Systematic review:ZDT and Abstract:ZPS))
41	#27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40
42	#26 AND #41

1

2 Database: Health Technology Abstracts (HTA)

3 Date of last search: 31/03/2020

#	Searches
1	MeSH DESCRIPTOR ADOLESCENT IN HTA
2	MeSH DESCRIPTOR MINORS IN HTA
3	(adolescen* or teen* or youth* or young or juvenile* or minors or highschool*) IN HTA
4	MeSH DESCRIPTOR CHILD EXPLODE ALL TREES IN HTA
5	(child* or schoolchild* or "school age" or "school aged" or preschool* or toddler* or kid* or kindergar* or boy* or girl*) IN HTA
6	MeSH DESCRIPTOR INFANT EXPLODE ALL TREES IN HTA
7	(infan* or neonat* or newborn* or baby or babies) IN HTA
8	MeSH DESCRIPTOR PEDIATRICS EXPLODE ALL TREES IN HTA
9	(pediatric* or paediatric*) IN HTA
10	MeSH DESCRIPTOR YOUNG ADULT IN HTA
11	("young* adult*") IN HTA
12	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11
13	MeSH DESCRIPTOR DISABLED PERSONS EXPLODE ALL TREES IN HTA
14	MeSH DESCRIPTOR MENTAL DISORDERS EXPLODE ALL TREES IN HTA
15	MeSH DESCRIPTOR COMMUNICATION DISORDERS EXPLODE ALL TREES IN HTA
16	MeSH DESCRIPTOR INTELLECTUAL DISABILITY EXPLODE ALL TREES IN HTA

Disabled children and young people up to 25 with severe complex needs: evidence reviews for suitability and accessibility of environments DRAFT(August 2021)

47

#	Searches
17	(disable* or disabilit* or handicap* or retard* or disorder* or impair* or condition* or difficulty or difficulties or deficit* or dysfunct*):TI IN HTA
18	(((sever* or complex* or special or high) adj3 need*)) IN HTA
19	#13 OR #14 OR #15 OR #16 OR #17 OR #18
20	#12 AND #19
21	MeSH DESCRIPTOR DISABLED CHILDREN IN HTA
22	(CSHCN) IN HTA
23	(("Education Health" adj2 "Care plan*")) IN HTA
24	("EHC plan*") IN HTA
25	(EHCP*) IN HTA
26	#20 OR #21 OR #22 OR #23 OR #24 OR #25
27	MeSH DESCRIPTOR ENVIRONMENT DESIGN IN HTA
28	MeSH DESCRIPTOR HUMAN ENGINEERING IN HTA
29	MeSH DESCRIPTOR EQUIPMENT DESIGN IN HTA
30	MeSH DESCRIPTOR TRANSPORTATION OF PATIENTS IN HTA
31	MeSH DESCRIPTOR COMMUNICATION AIDS FOR DISABLED IN HTA
32	MeSH DESCRIPTOR SELF-HELP DEVICES IN HTA
33	MeSH DESCRIPTOR TELEMEDICINE IN HTA
34	MeSH DESCRIPTOR WHEELCHAIRS IN HTA
35	MeSH DESCRIPTOR AWARENESS IN HTA
36	(environment*):TI IN HTA
37	(((assess* or chang* or adapt*) adj3 environment*)) IN HTA
38	("outreach service*" or co-locat* or "transport service*" or "information technolog*" or "communication technolog*" or "communication aid*" or "communication system*" or "augmentative communicat*" or "alternative communicat*" or "assistive technolog*" or telemedicine or "wheel chair*" or wheelchair* or hoist*) IN HTA
39	(disab* adj3 aware*) IN HTA
40	("early bird train$") IN HTA
41	#27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40
42	#26 AND #41

1

2 Databases: Applied Social Sciences Index & Abstracts (ASSIA); Social Services
3 Abstracts; Sociological Abstracts; and ERIC (Education Resources Information
4 Centre)

5 **Date of last search: 31/03/2020**

#	Searches
1	AB,TI(adolescen* OR teen* OR youth* OR young OR juvenile? OR minors OR highschool* OR child* OR schoolchild* OR "school age" OR "school aged" OR preschool* OR toddler* OR kid? OR kindergar* OR boy? OR girl? OR infan* OR neonat* OR newborn* OR baby OR babies OR p?ediatric* OR "young* adult?")
2	TI(disable? OR disabilit* OR handicap* OR retard* OR disorder? OR impair* OR condition? OR difficulty OR difficulties OR deficit? OR dysfunct* OR ((sever* OR complex* OR special OR high) NEAR/3 need?) OR SHCN OR CSHCN OR "Education Health and Care plan?" OR "EHC plan?" OR EHCP?)
3	AB,TI((health* OR NHS OR clinical OR clinician? OR medical OR medic? OR physician? OR consultant? OR nurse? OR "general practitioner?" OR GP? OR "occupational therapist?" OR OT? OR "allied health professional?" OR AHP? OR "speech therapist?" OR "language therapist?" OR SLT?) AND social* AND (educat* OR school* OR teach* OR headmaster? OR headmistress* OR SENCO? OR DfE?))
4	TI(interinstitution* OR multiinstitution* OR jointinstitution* OR interorgani?ation* OR multiorgani?ation* OR jointorgani?ation* OR intersector* OR multisector* OR jointsector* OR interagenc* OR multiagenc* OR jointagenc* OR interprovider* OR multiprovider* OR jointprovider* OR interstakeholder* OR multistakeholder* OR jointstakeholder* OR interprofession* OR multiprofession* OR jointprofession* OR service? OR collaborat* OR "care coordinat*" OR "coordinat* care" OR partnership? OR partnering OR network*)
5	TI(((health* OR NHS OR clinical OR clinician? OR medical OR medic? OR physician? OR consultant? OR nurse? OR "general practitioner?" OR GP? OR "occupational therapist?" OR OT? OR "allied health professional?" OR AHP? OR "speech therapist?" OR "language therapist?" OR SLT?) AND (health* OR NHS OR clinical OR clinician? OR medical OR medic? OR physician? OR consultant? OR nurse? OR "general practitioner?" OR GP? OR "occupational therapist?" OR OT? OR "allied health professional?" OR AHP? OR "speech therapist?" OR "language therapist?" OR SLT?) AND (educat* OR school* OR teach* OR headmaster? OR headmistress* OR SENCO? OR DfE?)) OR (social* AND (educat* OR school* OR teach* OR headmaster? OR headmistress* OR SENCO? OR DfE?)))
6	TI(environment* or "outreach service?" or co-locat* or colocat* or transport or transporting or "information technolog*" or "communication technolog*" or "communication aid?" or "augmentative communication" or "alternative communication" or "assistive technolog*" or telemedicine or "wheel chair?" or wheelchair?)
7	1 AND 2 AND 3 AND 6 Additional limits - Date: From January 2000 to March 2020
8	1 AND 2 AND 4 AND 6 Additional limits - Date: From January 2000 to March 2020
9	1 AND 2 AND 5 AND 6 Additional limits - Date: From January 2000 to March 2020
10	7 OR 8 OR 9

6

1 **Database: British Education Index**

2 **Date of last search: 31/03/2020**

#	Searches
1	TX(environment* or "outreach service?" or co-locat* or colocat* or transport or transporting or "information technolog*" or "communication technolog*" or "communication aid?" or "augmentative communication" or "alternative communication" or "assistive technolog*" or telemedicine or "wheel chair?" or wheelchair?) AND TX (adolescen* OR teen* OR youth* OR young OR juvenile? OR minors OR highschool* OR child* OR schoolchild* OR "school age" OR "school aged" OR preschool* OR toddler* OR kid? OR kindergar* OR boy? OR girl? OR infan* OR neonat* OR newborn* OR baby OR babies OR p#ediatric* OR "young* adult?") AND TI (disable? OR disabilit* OR handicap* OR retard* OR disorder? OR impair* OR condition? OR difficulty OR difficulties OR deficit? OR dysfunct* OR "sever* need?" OR "complex* need?" OR "special need?" OR "special educat* need?" OR "high need?" OR SHCN OR CSHCN OR "Education Health and Care plan?" OR "EHC plan?" OR EHCP?) AND TI (interinstitution* OR multiinstitution* OR jointinstitution* OR interorgani?ation* OR multiorgani?ation* OR jointorgani?ation* OR intersector* OR multisector* OR jointsector* OR interagenc* OR multiagenc* OR jointagenc* OR interprovider* OR multiprovider* OR jointprovider* OR interstakeholder* OR multistakeholder* OR jointstakeholder* OR interprofession* OR multiprofession* OR jointprofession* OR service? OR collaborat* OR "care coordinat*" OR "care co-ordinat*" OR "coordinat* care" OR "coordinat* care" OR partnership? OR partnering OR network*) Limiters - Publication Date: 20000101-20200331
2	TX(environment* or "outreach service?" or co-locat* or colocat* or transport or transporting or "information technolog*" or "communication technolog*" or "communication aid?" or "augmentative communication" or "alternative communication" or "assistive technolog*" or telemedicine or "wheel chair?" or wheelchair?) AND TX (adolescen* OR teen* OR youth* OR young OR juvenile? OR minors OR highschool* OR child* OR schoolchild* OR "school age" OR "school aged" OR preschool* OR toddler* OR kid? OR kindergar* OR boy? OR girl? OR infan* OR neonat* OR newborn* OR baby OR babies OR p#ediatric* OR "young* adult?") AND TI (disable? OR disabilit* OR handicap* OR retard* OR disorder? OR impair* OR condition? OR difficulty OR difficulties OR deficit? OR dysfunct* OR "sever* need?" OR "complex* need?" OR "special need?" OR "special educat* need?" OR "high need?" OR SHCN OR CSHCN OR "Education Health and Care plan?" OR "EHC plan?" OR EHCP?) AND TI ((((health* OR NHS OR clinical OR clinician? OR medical OR medic? OR physician? OR consultant? OR nurse? OR "general practitioner?" OR GP? OR "occupational therapist?" OR OT? OR "allied health professional?" OR AHP? OR "speech therapist?" OR "language therapist?" OR SLT?) AND social*) OR ((health* OR NHS OR clinical OR clinician? OR medical OR medic? OR physician? OR consultant? OR nurse? OR "general practitioner?" OR GP? OR "occupational therapist?" OR OT? OR "allied health professional?" OR AHP? OR "speech therapist?" OR "language therapist?" OR SLT?) AND (educat* OR school* OR teach* OR headmaster? OR headmistress* OR SENCO? OR DfE?)) OR (social* AND (educat* OR school* OR teach* OR headmaster? OR headmistress* OR SENCO? OR DfE?)))) Limiters - Publication Date: 20000101-20200331
3	1 or 2

3

4 **Database: CINAHL Plus (Cumulative Index to Nursing and Allied Health**
5 **Literature)**

6 **Date of last search: 31/03/2020**

#	Searches
1	TX(environment* or "outreach service?" or co-locat* or colocat* or transport or transporting or "information technolog*" or "communication technolog*" or "communication aid?" or "augmentative communication" or "alternative communication" or "assistive technolog*" or telemedicine or "wheel chair?" or wheelchair?) AND TX (adolescen* OR teen* OR youth* OR young OR juvenile? OR minors OR highschool* OR child* OR schoolchild* OR "school age" OR "school aged" OR preschool* OR toddler* OR kid? OR kindergar* OR boy? OR girl? OR infan* OR neonat* OR newborn* OR baby OR babies OR p#ediatric* OR "young* adult?") AND TI (disable? OR disabilit* OR handicap* OR retard* OR disorder? OR impair* OR condition? OR difficulty OR difficulties OR deficit? OR dysfunct* OR "sever* need?" OR "complex* need?" OR "special need?" OR "special educat* need?" OR "high need?" OR SHCN OR CSHCN OR "Education Health and Care plan?" OR "EHC plan?" OR EHCP?) AND TI (interinstitution* OR multiinstitution* OR jointinstitution* OR interorgani?ation* OR multiorgani?ation* OR jointorgani?ation* OR intersector* OR multisector* OR jointsector* OR interagenc* OR multiagenc* OR jointagenc* OR interprovider* OR multiprovider* OR jointprovider* OR interstakeholder* OR multistakeholder* OR jointstakeholder* OR interprofession* OR multiprofession* OR jointprofession* OR service? OR collaborat* OR "care coordinat*" OR "care co-ordinat*" OR "coordinat* care" OR "coordinat* care" OR partnership? OR partnering OR network*) Limiters - Publication Date: 2000- 2020
2	TX(environment* or "outreach service?" or co-locat* or colocat* or transport or transporting or "information technolog*" or "communication technolog*" or "communication aid?" or "augmentative communication" or "alternative communication" or "assistive technolog*" or telemedicine or "wheel chair?" or wheelchair?) AND TX (adolescen* OR teen* OR youth* OR young OR juvenile? OR minors OR highschool* OR child* OR schoolchild* OR "school age" OR "school aged" OR preschool* OR toddler* OR kid? OR kindergar* OR boy? OR girl? OR infan* OR neonat* OR newborn* OR baby OR babies OR p#ediatric* OR "young* adult?") AND TI (disable? OR disabilit* OR handicap* OR retard* OR disorder? OR impair* OR condition? OR difficulty OR difficulties OR deficit? OR dysfunct* OR "sever* need?" OR "complex* need?" OR "special need?" OR "special educat* need?" OR "high need?" OR SHCN OR CSHCN OR "Education Health and Care plan?" OR "EHC plan?" OR EHCP?) AND TI ((((health* OR NHS OR clinical OR clinician? OR medical OR medic? OR physician? OR consultant? OR nurse? OR "general practitioner?" OR GP? OR "occupational therapist?" OR OT? OR "allied health professional?" OR AHP? OR "speech therapist?" OR "language therapist?" OR SLT?) AND social*) OR ((health* OR NHS OR clinical OR clinician? OR medical OR medic? OR physician? OR consultant? OR nurse? OR "general practitioner?" OR GP? OR "occupational therapist?" OR OT? OR "allied health professional?" OR AHP? OR "speech therapist?" OR "language therapist?" OR SLT?) AND (educat* OR school* OR teach* OR headmaster? OR headmistress* OR SENCO? OR DfE?)) OR (social* AND (educat* OR school* OR teach* OR headmaster? OR headmistress* OR SENCO? OR DfE?)))) Limiters - Publication Date: 2000- 2020

#	Searches
3	1 or 2

1

2 Database: Social Sciences Citation Index (SSCI)

3   Date of last search: 31/03/2020

#	Searches
# 1	TOPIC: ((adolescen* or teen* or youth* or young or juvenile$ or minors or highschool*)) Indexes=SSCI Timespan=2000-2020
# 2	TOPIC: ((child* or schoolchild* or "school age" or "school aged" or preschool* or toddler* or kid$ or kindergar* or boy$ or girl$)) Indexes=SSCI Timespan=2000-2020
# 3	TOPIC: ((infan* or neonat* or newborn* or baby or babies)) Indexes=SSCI Timespan=2000-2020
# 4	TOPIC: (p$ediatric*) Indexes=SSCI Timespan=2000-2020
# 5	TOPIC: ("young* adult$") Indexes=SSCI Timespan=2000-2020
# 6	#5 OR #4 OR #3 OR #2 OR #1 Indexes=SSCI Timespan=2000-2020
# 7	TITLE: ((disable$ or disabilit* or handicap* or retard* or disorder$ or impair* or condition$ or difficulty or difficulties or deficit$ or dysfunct*)) Indexes=SSCI Timespan=2000-2020
# 8	TOPIC: (((sever* or complex* or special or high) near/3 need$)) Indexes=SSCI Timespan=2000-2020
# 9	TOPIC: (SHCN) Indexes=SSCI Timespan=2000-2020
# 10	#9 OR #8 OR #7 Indexes=SSCI Timespan=2000-2020
# 11	#10 AND #6 Indexes=SSCI Timespan=2000-2020
# 12	TOPIC: (CSHCN) Indexes=SSCI Timespan=2000-2020
# 13	TOPIC: ("Education Health and Care plan$") Indexes=SSCI Timespan=2000-2020
# 14	TOPIC: ("EHC plan$") Indexes=SSCI Timespan=2000-2020
# 15	TOPIC: (EHCP$) Indexes=SSCI Timespan=2000-2020
# 16	#15 OR #14 OR #13 OR #12 OR #11 Indexes=SSCI Timespan=2000-2020
# 17	TOPIC: (((health or healthcare or NHS or clinical or medical or medic or medics or nurse or nurses) near/5 social)) Indexes=SSCI Timespan=2000-2020
# 18	TOPIC: ((health or healthcare or NHS or clinical or medical or medic or medics or nurse or nurses) near/5 (education or educating or educator or educators or school or schools or teach or teaching or teachers)) Indexes=SSCI Timespan=2000-2020
# 19	TOPIC: ((social near/5 (education or educating or educator or educators or school or schools or teach or teaching or teachers))) Indexes=SSCI Timespan=2000-2020
# 20	#19 OR #18 OR #17 Indexes=SSCI Timespan=2000-2020
# 21	TOPIC: (((inter* OR multi* OR collaborat* OR coordinat* OR co-ordinat* OR cooperat* OR co-operat* OR integrat* OR partner* OR service OR practice OR care) NEAR/3 model$)) Indexes=SSCI Timespan=2000-2020
# 22	TITLE: (environment*) Indexes=SSCI Timespan=2000-2020
# 23	TOPIC: ("outreach service$" or co-locat* or colocat* or transport or transporting or "information technolog*" or "communication technolog*" or "communication aid$" or "augmentative and alternative communication" or "assistive technolog*" or telemedicine or "wheel chair$" or wheelchair$) Indexes=SSCI Timespan=2000-2020
# 24	#22 OR #23 Indexes=SSCI Timespan=2000-2020
# 25	#21 OR #20 Indexes=SSCI Timespan=2000-2020
# 26	#25 AND #24 AND #16 Indexes=SSCI Timespan=2000-2020

4

5 Database: Social Care Online

6   Date of last search: 31/03/2020

#	Searches
	All fields:'disabled or disability or disabilities or handicap or retard or disorder or impaired or impairment or condition or difficulty or difficulties or deficit or dysfunction or "special need" or "complex need"'
	AND All fields:'child or children or schoolchild or schoolchildren or "school age" or "school aged" or preschool or toddler or kid or kindergarden or boy or girl or infant or neonate or newborn or baby or babies or pediatric or paediatric or "young people" or "young adults"'
	AND Title: 'environment or "outreach service" or co-location or colocation or transport or transporting or "information technology" or "communication technology" or "communication aid" or "augmentative communication" or "alternative communication" or "assistive technology" or telemedicine or "wheel chair" or wheelchair'
	AND PublicationYear:'2000 2020'

7

8

1 Appendix C – Effectiveness evidence study selection

2 **Study selection for review question: What are the most effective practices (for**
3 **example, environmental assessments and use of equipment such as assistive**
4 **technology across different contexts) to ensure the suitability and accessibility**
5 **of the environments in which disabled children and young people with severe**
6 **complex needs receive health and social care and education?**

7 **Figure 1: Study selection flow chart**

8
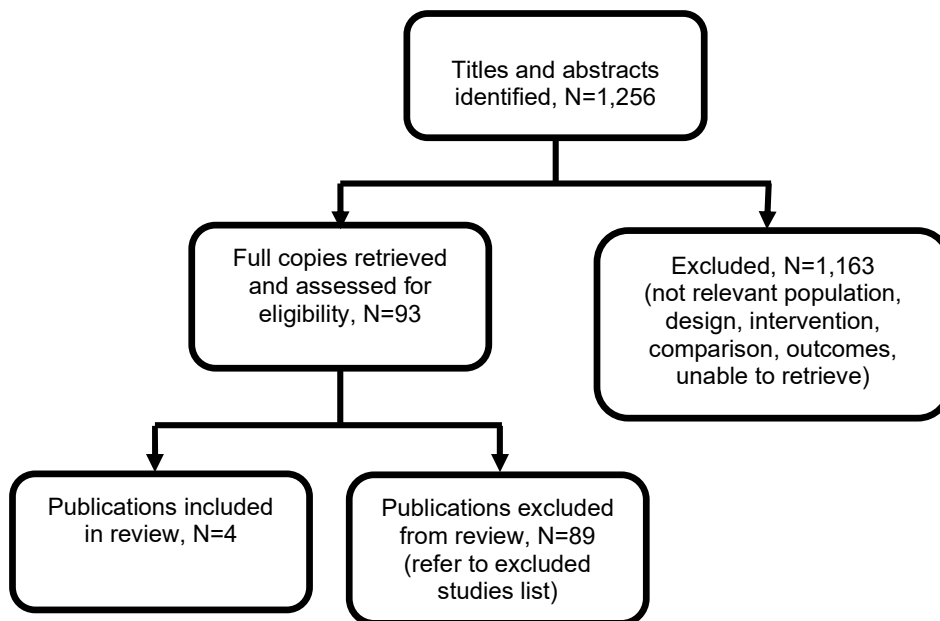
9

10

1 Appendix D – Effectiveness evidence

2 **Evidence tables for review question: What are the most effective practices (for example, environmental assessments and use**
3 **of equipment such as assistive technology across different contexts) to ensure the suitability and accessibility of the**
4 **environments in which disabled children and young people with severe complex needs receive health and social care and**
5 **education?**

6 **Table 6: Evidence tables**

Study details	Results and risk of bias assessment
Full citation Cady, Rhonda, Finkelstein, Stanley, Kelly, Anne, A telehealth nursing intervention reduces hospitalizations in children with complex health conditions, Journal of Telemedicine and Telecare, 15, 317-20, 2009 **Ref Id** 1234098 **Country/ies where the study was carried out** USA **Study type** Before and after study* *Comparison between year 1 and year 2 of intervention rather than before and after intervention **Study dates** July 1996-December 2006 **Inclusion criteria** Children who had been enrolled in the U Special Kids Program for at least 2 years. Criteria for enrolment into the programme: 4 or more significant chronic medical problems; multiple medical specialists;	**Results** **Information and communication technology: Telemedicine** Adverse events - unplanned hospital admission (number of admissions): Year 2: M=0.8, SD=1.7, N=43 versus Year 1: M=1.7, SD=2.5, N=43 Adverse events - unplanned hospital admission (number of days): Year 2: M=10.1, SD=36.4, N=43 versus Year 1: M=24.1, SD=48.7, N=43 **1. Random sequence generation** High risk, controlled before-after study - no randomisation **2. Allocation concealment** High risk, controlled before-after study - no randomisation **3. Baseline outcome measurements similar** Unclear risk, no baseline data presented for outcomes of interest **4. Baseline characteristics similar** Low risk, only one baseline measurement was taken **5. Incomplete outcome data** Low risk, no missing outcome data

Study details	Results and risk of bias assessment
multiple medications/rare pharmaceuticals; repeated hospitalisations and/or emergency department visits; dependence on technology; needs not being met by another service. **Exclusion criteria** No additional criteria reported **Patient characteristics** N=43 Age at enrolment into programme (mean; range): 4.4 years; 2 weeks to 17 years Gender: n=19 (44%) male; n=34 (56%) female Diagnosis: n=23 (54%) genetic disorder/congenital anomaly; n=5 (12%) cerebral palsy; n= 3 (7%) neurodegenerative disease; n=4 (9%) gastrointestinal; n=4 (9%) immunodeficiency; n=4 (9%) other **Interventions** **U Special Kids Program:** Care coordination and case management telephone-based service provided by advanced practice nurses for children with special health care needs. The service coordinates communication between the family, tertiary care services, social services, the child's primary care site and other local providers, specialists, the school system and health insurers. **Follow-up** Data was collected for the first 5 years of each child's participation in the service. Comparative data presented for year 1 and 2 of the programme.	**6. Knowledge of the allocated interventions adequately prevented during the study** Low risk, outcomes are objective **7. Protection against contamination** High risk, control group was receiving the intervention as comparison is between year 1 and year 2 of the service **8. Selective outcome reporting** Low risk, all outcomes reported sufficiently **9. Other risks of bias** High risk, no separate control group (year 1 outcomes act as control group for year 2 outcomes) **Source of funding** No sources of funding reported **Other information** The authors hypothesised that unplanned hospitalisations would decreased as the time the children had been enrolled in the service increased. Therefore, whilst this study is not strictly a before and after study, it is probable that it may take time for children and their families to become embedded in the service and that the service received may be more comprehensive in year 2 compared with year 1.
Full citation Carter, Erik W., Hughes, Carolyn, Guth, Carol B., Copeland, Susan R., Factors influencing social interaction among high school students with intellectual disabilities and their general education peers, American Journal on Mental Retardation, 110, 366-377, 2005 **Ref Id**	**Results** **Delivery arrangements: Where care/education is provided and changes to the healthcare, social care or education environment** Participation and inclusion: Occurrence of interaction (defined as percentage of observations that included interaction between participant and general education peer)

Study details	Results and risk of bias assessment
1234108	More integrated: M=68.65, SD=24.5, N=16 versus Less integrated: M=87.42, SD=14.19, N=16
Country/ies where the study was carried out USA	**Strategies to promote positive cultures and social interactions and behaviours** Participation and inclusion: Occurrence of interaction (defined as percentage of observations that included interaction between participant and general education peer)
Study type Crossover cross sectional study	Peer buddy: M=86.96, SD=14.97, N=16* versus No peer buddy: M=62.52, SD=39.56, N=16*
Study dates Not reported	*Unclear if all participants were observed in both conditions (presence/absence of peer buddy)
Inclusion criteria Students with significant disabilities attending one of three large, urban high schools in a metropolitan school district who attended both special education and general education classes	**1. Were the criteria for inclusion in the sample clearly defined?** Yes.
Exclusion criteria No additional criteria reported	**2. Were the study subjects and the setting described in detail?** No. Study dates and location are not reported.
Patient characteristics N=16 Age (mean; range): 16.7 years; 15 to 20 Gender: n=6 (37.5%) male; n=10 (62.5%) female Ethnicity: n=10 (62.5%) Caucasian; n=6 (37.5%) African American Intellectual disabilities: n=8 (50%) moderate; n=8 (50%) severe Additional disabilities: n=5 (31.3%) autism; n=4 (25%) physical impairment; n=2 (12.5%) speech or language impairment; n=1 (6.3%) visual impairment; n=1 (6.3%) hearing impairment	**3. Was the exposure measured in a valid and reliable way?** Unclear. No information provided on the validity or reliability of exposure measurement. **4. Were objective, standard criteria used for the measurement of the condition?** No. Definition for 'significant disabilities' not provided. **5. Were confounding factors identified?** Not applicable. Crossover design.
Interventions **More integrated setting:** An observation setting where at least 50% of the students present did not have a disability.	**6. Were strategies to deal with confounding factors stated?** Not applicable. Crossover design.
Less integrated setting: An observation setting where more than 50%	

Study details	Results and risk of bias assessment
of the students present had a disability. **Peer buddy:** Voluntary programme where students provided social and academic peer support and friendship to students with disabilities. Peer buddies spend a minimum of one class per day with their peers with disabilities. Peer buddies received training on disability awareness, communication strategies, suggestions for social interactions and strategies for dealing with inappropriate behaviours. Observation settings where classified as 'peer buddy' when the general education student in closest proximity to the participant was a peer buddy, and 'no peer buddy' if the general education student in closest proximity to the participant was not a peer buddy. **Follow-up** Not applicable. Observations conducted over a 4-month period.	**7. Were the outcomes measured in a valid and reliable way?** No. Outcomes were not measured using validated scales. However, interobserver agreement ranged from 86% to 100% for outcome of interest. **8. Was appropriate statistical analysis used?** Yes **Source of funding** No sources of funding reported **Other information**
Full citation Desideri, Lorenzo, Bizzarri, Martina, Bitelli, Claudio, Roentgen, Uta, Gelderblom, Gert-Jan, de Witte, Luc, Implementing a routine outcome assessment procedure to evaluate the quality of assistive technology service delivery for children with physical or multiple disabilities: Perceived effectiveness, social cost, and user satisfaction, Assistive Technology, 28, 30-40, 2016 **Ref Id** 1140566 **Country/ies where the study was carried out** Italy **Study type** Before and after study **Study dates** Not reported	**Results** **Information and communication technology (ICT): Smart home technologies and/or electronic assistive technologies** Participation and inclusion: Interpersonal interactions (measured on a scale of 1 to 25; higher scores indicated higher difficulty and/or importance of problem) After AT: M=10.6, SD=4.9, N=6* versus Before AT: M=16.5, SD=6.2, N=6* Participation and inclusion: Community, social and civic life (measured on a scale of 1 to 25; higher scores indicated higher difficulty and/or importance of problem) After AT: M=15.2, SD=5.5, N=7* versus Before AT: M=20.2, SD=5.2, N=7* *N corresponds to the number of problems in this area. Unclear if this is the number of participants who had problems in this area or if participants could have multiple problems in the same area. **1. Random sequence generation** High risk, controlled before-after study - no randomisation **2. Allocation concealment**

Study details	Results and risk of bias assessment
Inclusion criteria Referrals to the Centre of Assistive Technology (CAT) **Exclusion criteria** No additional criteria reported **Patient characteristics** N=45 Age (mean; SD): 10.5 (4.5) Gender: n=23 (51%) male; n=22 (49%) female Diagnosis: n=36 (80%) Cerebral palsy (n=3 hemiplegia, n=3 diplegia, n=1 dyskinetic, n=51 tetraplegia, n=8 other/not specified); n=5 (11%) genetic syndrome; n=4 (9%) other/not specified Type of assistive technology recommended: n=21 (46%) communication; n=28 (62%) ICT access solution; n=4 (9%) adapted toys; n=9 (20%) educational software **Interventions** **Centre for Assistive Technology (CAT):** Publicly funded assistive technology provider managed by a non-profit organisation in collaboration with the Local Health Authority. Receives referrals for assessment from families, health or educational professionals. Assessments take approximately half a working day and assess the following categories: access solutions for information communication technology (ICT) devices and toys (e.g., mechanical switches, alternative keyboards/mouse), educational software, and alternative augmentative communication devices (AAC). Families are provided with recommendations in a written report that can be used by health and social services to support an application for public funding for recommended AT. The CAT does not play a role in purchasing the AT solution but may be involved in supporting implementation in the child's home/learning environment. **Follow-up** 6 months after the AT assessment	High risk, controlled before-after study - no randomisation **3. Baseline outcome measurements similar** Low risk, one baseline measurement was taken at the time of the assessment (i.e., before the receipt of AT) **4. Baseline characteristics similar** Low risk, only one baseline measurement was taken **5. Incomplete outcome data** High risk, 13% were not contactable at follow-up and 31% did not obtain the recommended AT **6. Knowledge of the allocated interventions adequately prevented during the study** High risk, outcomes were not assessed blindly **7. Protection against contamination** Low risk, controlled before-after study so control group was pre-intervention **8. Selective outcome reporting** Low risk, all outcomes reported sufficiently **9. Other risks of bias** High risk, no separate control group (pre-intervention scores act as control group for post-intervention scores) **Source of funding** No sources of funding reported **Other information** Evidence for the intervention is indirect as only 64% of those contacted at follow-up had obtained and were using the recommended AT.

Study details	Results and risk of bias assessment
Full citation Haveman, Meindert, et, al, Mobility and public transport use abilities of children and young adults with intellectual disabilities: results from the 3-year Nordhorn public transportation intervention study, Journal of Policy and Practice in Intellectual Disabilities, 10, 289-299, 2014 **Ref Id** 1234232 **Country/ies where the study was carried out** Germany **Study type** Before and after study **Study dates** Not reported **Inclusion criteria** Students in 3rd to 12th grade with intellectual disability; sufficient motor skills to get around independently (including with wheelchair or walking aids); basic communication skills, visual and auditory orientation; not requiring permanent supervision **Exclusion criteria** CYP aged <7 or >18; greater than 1 hour away from school by public transport; seizures **Patient characteristics** N=124 Age: n=12 (9.8%) 7 to 8 years; n=20 (16.1%) 9 to 10; n=24 (19.4%) 11 to 12; n=33 (26.6%) 13 to 14; n=26 (20.9%) 15 to 16; n=9 (7.2%) 17 to 18 Gender: n= 72 (58.1%) male; n=52 (41.9%) female	**Results** **Delivery arrangements: Transportation services/Strategies to promote positive cultures and social interactions and behaviours (disability awareness training)** Independence: Travelling to school independently by public transport After training: 81/124 versus Before training 2/124 **1. Random sequence generation** High risk, controlled before-after study - no randomisation **2. Allocation concealment** High risk, controlled before-after study - no randomisation **3. Baseline outcome measurements similar** Low risk, one baseline measurement was taken before the initiation of intervention **4. Baseline characteristics similar** Low risk, only one baseline measurement was taken **5. Incomplete outcome data** Low risk, no missing data for outcome of interest **6. Knowledge of the allocated interventions adequately prevented during the study** High risk, outcomes were not assessed blindly **7. Protection against contamination** Low risk, controlled before-after study so control group was pre-intervention **8. Selective outcome reporting** Low risk, all outcomes reported sufficiently

Study details	Results and risk of bias assessment
Interventions **Nordhorn Public Transportation Intervention Study (NOPTIS):** Partnership between three universities, a school for students with intellectual disabilities and the County of Bentheim that aimed to increase independent use of public transport for students with intellectual disabilities. Included the identification of physical, psychological and social barriers to public transport use, assessment of mobility skills, a mobility and traffic curriculum, analysis of the path between home and school to identify efficient routes and methods for dealing with barriers, development of individual action plans, mobility trainers to perform training on the bus, trip companions, information for teachers and parents, disability awareness training for bus drivers and incident management and passenger information via mobile phones with GPS tracking. The mobility and traffic curriculum covered traditional safety aspects and skills, as well as environmental, health and social support. The disability awareness training consisted of 1 week of seminars covering respectful behaviour towards people with intellectual disability, traffic safety, stress management and conflict resolution. **Follow-up** 3 years after the start of the project (unclear how long the project lasted, i.e., how long follow-up was after the completion of training)	**9. Other risks of bias** High risk, no separate control group (pre-intervention scores act as control group for post-intervention scores) **Source of funding** No sources of funding reported **Other information**

1 *AAC: Alternative augmentative communication; AT: Assistive technology; CAT: Centre of Assistive Technology; CYP: children and young people; GPS: global positioning*
2 *system; ICT: Information communication technology; M: mean; N: number of participants; NOPTIS: Nordhorn Public Transportation Intervention Study; SD: standard deviation*

3

4 Appendix E – Forest plots

5 Forest plots for review question: What are the most effective practices (for
6   example, environmental assessments and use of equipment such as assistive
7   technology across different contexts) to ensure the suitability and accessibility
8   of the environments in which disabled children and young people with severe
9   complex needs receive health and social care and education?

10   No meta-analysis was conducted for this review question and so there are no forest plots.

1 Appendix F – GRADE tables

2 **GRADE tables for review question: What are the most effective practices (for example, environmental assessments and use**
3 **of equipment such as assistive technology across different contexts) to ensure the suitability and accessibility of the**
4 **environments in which disabled children and young people with severe complex needs receive health and social care and**
5 **education?**

6 **Table 7: Evidence profile for comparison 1: More integrated setting versus less integrated setting (Delivery arrangements: Where**
7 **care/education is provided and changes to the healthcare, social care or education environment)**

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	More integrated setting	Less integrated setting	Relative (95% CI)	Absolute	Quality	Importance
Participation and inclusion: Occurrence of interaction (percentage of observations that included interaction between participant and general education peer) (Better indicated by higher values)												
1 (Carter 2005)	observational studies	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16	16	-	MD 18.77 lower (32.64 to 4.9 lower)	VERY LOW	CRITICAL

8 *CI: confidence interval; JBI: Joanna Briggs Institute; MD: mean difference; MID: minimally important difference; SD: standard deviation*
9 *[1] Serious risk of bias in the evidence contributing to the outcomes as per JBI checklist for cross sectional studies*
10 *[2] 95% CI crosses 1 MID (0.5x control group SD, for 'occurrence of interaction' = 7.10)*

11 **Table 8: Evidence profile for comparison 2: After assistive technology (AT) versus before AT (Information and communication**
12 **technology (ICT): Smart home technologies and/or electronic assistive technologies)**

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	After AT	Before AT	Relative (95% CI)	Absolute	Quality	Importance
Participation and inclusion: Interpersonal interactions (range of scores: 1-25; Better indicated by lower values)												

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	After AT	Before AT	Relative (95% CI)	Absolute	Quality	Importance
1 (Desideri 2016)	observational studies	very serious [1]	no serious inconsistency	serious [2]	serious [3]	none	6 [4]	6 [4]	-	MD 5.9 lower (12.22 lower to 0.42 higher)	VERY LOW	CRITICAL
Participation and inclusion: Community, social and civic life (range of scores: 1-25; Better indicated by lower values)												
1 (Desideri 2016)	observational studies	very serious [1]	no serious inconsistency	serious [2]	serious [3]	none	7 [4]	74	-	MD 5 lower (10.61 lower to 0.61 higher)	VERY LOW	CRITICAL

1   AT: assistive technology; CI: confidence interval; EPOC: Effective Practice and Organisation of Care; MD: mean difference; MID: minimally important difference; RoB: risk of
2   bias; SD: standard deviation
3   [1] Very serious risk of bias in the evidence contributing to the outcomes as per EPOC RoB tool for before and after studies
4   [2] Intervention is indirect
5   [3] 95% CI crosses 1 MID (0.5x control group SD, for 'interpersonal interactions' = 3.10; for 'community, social and civic life' = 2.60)
6   [4] Number of problems in this area. Unclear if this is the number of participants who had problems in this area or if participants could have multiple problems in the same area

7   **Table 9: Evidence profile for comparison 3: Telemedicine year 2 versus telemedicine year 1 (Information and communication
8   technology: Telemedicine)**

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Year 2	Year 1	Relative (95% CI)	Absolute	Quality	Importance
Adverse events - Unplanned hospital admissions (number of admissions) (Better indicated by lower values)												
1 (Cady 2009)	observational studies	very serious [1]	no serious inconsistency	no serious indirectness	serious [2]	none	43	43	-	MD 0.9 lower (1.8 lower to 0 higher)	VERY LOW	IMPORTANT
Adverse events - Unplanned hospital admissions (number of days) (Better indicated by lower values)												

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Year 2	Year 1	Relative (95% CI)	Absolute	Quality	Importance
1 (Cady 2009)	observational studies	very serious [1]	no serious inconsistency	no serious indirectness	serious[2]	none	43	43	-	MD 14 lower (32.17 lower to 4.17 higher)	VERY LOW	IMPORTANT

1 *CI: confidence interval; EPOC: Effective Practice and Organisation of Care; MD: mean difference; MID: minimally important difference; RoB: risk of bias; SD: standard deviation*
2 *[1] Very serious risk of bias in the evidence contributing to the outcomes as per EPOC RoB tool for before and after studies*
3 *[2] 95% CI crosses 1 MID (0.5x control group SD, for 'number of admissions' = 1.25; for 'number of days' = 24.35)*

4 **Table 10: Evidence profile for comparison 4: Peer buddy versus no peer buddy (Strategies to promote positive cultures and social**
5 **interactions and behaviours)**

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Peer buddy	No peer buddy	Relative (95% CI)	Absolute	Quality	Importance
Participation and inclusion: Occurrence of interaction (percentage of observations that included interaction between participant and general education peer) (Better indicated by higher values)												
1 (Carter 2005)	observational studies	serious [1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[3]	16[3]	-	MD 24.43 higher (3.7 to 45.16 higher)	VERY LOW	CRITICAL

6 *CI: confidence interval; JBI: Joanna Briggs Institute; MD: mean difference; MID: minimally important difference; SD: standard deviation*
7 *[1] Serious risk of bias in the evidence contributing to the outcomes as per JBI checklist for cross sectional studies*
8 *[2] 95% CI crosses 1 MID (0.5x control group SD, for 'occurrence of interaction' = 19.78)*
9 *[3] Unclear if all participants were observed in both conditions*

1 **Table 11: Evidence profile for comparison 5: After transport training versus before transport training (Delivery arrangements:**
2 **Transportation services/Strategies to promote positive cultures and social interactions and behaviours (disability**
3 **awareness training))**

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	After training	Before training	Relative (95% CI)	Absolute	Quality	Importance
Independence: Travelling to school independently by public transport												
1 (Haveman 2014)	observational studies	very serious [1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	81/124 (65.3%)	2/124 (1.6%)	RR 40.5 (10.18 to 161.09)	637 more per 1000 (from 148 more to 1000 more)	VERY LOW	IMPORTANT

4 *CI: confidence interval; EPOC: Effective Practice and Organisation of Care; RoB: risk of bias; RR: risk ratio*
5 *[1] Very serious risk of bias in the evidence contributing to the outcomes as per EPOC RoB tool for before and after studies*

6

1 Appendix G – Economic evidence study selection

2 **Economic evidence study selection for review question: What are the most**
3   **effective practices (for example, environmental assessments and use of**
4   **equipment such as assistive technology across different contexts) to ensure**
5   **the suitability and accessibility of the environments in which disabled children**
6   **and young people with severe complex needs receive health and social care**
7   **and education?**

8   One global search was undertaken – please see Supplement B for details on study selection.

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1 Appendix H – Economic evidence tables

2 **Economic evidence tables for review question: What are the most effective practices (for example, environmental**
3 **assessments and use of equipment such as assistive technology across different contexts) to ensure the suitability and**
4 **accessibility of the environments in which disabled children and young people with severe complex needs receive health**
5 **and social care and education?**

6 **Table 12: Economic evidence tables for home adaptations**

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
Ganashree 2017 UK (Leeds) Cost-offset analysis Conflict of interest: none declared Funding: not reported	Home adaptations - additional space for the disabled young person i.e. provision of extra space in bedroom and bathroom - safe outdoor space to enable disabled person to play and let off steam - padding to walls - new doors - air-conditioning - secure shatterproof windows - specialist equipment such as bedding and bathroom furniture Comparator: NA, i.e. cost-offset analysis, non-comparative	Young people with Autistic Spectrum Disorders who have behaviours that challenge, ages ranged from 5-15 years Observational study (n=6 families) and modelling Source of effectiveness data: assumptions Source of resource use data: interviews with the carers/families Source of unit costs: unclear (looked after costs approximated using various published sources which may be generalizable to the	Costs: costs associated with making adaptations and being looked after The mean cost of adaptations: £60,000 (range: £20,000-£60,000) or £360,000 for a cohort of 6 children Primary outcome measure: value of years of looked after child funding avoided Adaptations avoided 14 years' of looked after child funding Assuming a figure of £2000-3000/week for the cost of	Home adaptations resulted in the cost savings of £1.14-1.84 million for a cohort of 6 children	Perspective: public sector Currency: UK£ Cost year: likely 2017 Time horizon: 14 years Discounting: none Applicability: directly applicable Quality: potentially serious limitations

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
		country as a whole)	accommodating than the total cost amounts to £1.5-2.2 million In all but one case the impacts on well-being were positive relating to the young person and also parents; in 30% of cases the adaptations enabled a parent to remain in work; positive impact on siblings was also reported; families report that the young person suffers from fewer injuries as a result of home adaptations (i.e. fewer emergency visit to the GP at accident and emergency department); limit the ability to abscond		

1   *Abbreviations: GP: General Practitioner, NA: not applicable*

2   **Table 13: Economic evidence tables for assistive technology**

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
Desideri 2016 Italy Cost-effectiveness	Intervention with Assistive Technology (AT) solutions versus no AT solutions	Children with physical or multiple disabilities (e.g. cerebral palsy) aged 3-17 years referred to the Centre	Costs: investment, maintenance, human assistance (teacher or health professional), the cost of AT service	Intervention utilising AT solutions: dominant Sensitivity analyses: none undertaken	Perspective: narrow public sector provider Currency: Euro Cost year: likely 2015 Time horizon: 3 years

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
analysis

Conflict of interest: not reported

Funding: not reported | At solutions included communication (46%), ICT access solutions (62%), adapted toys (9%), and educational software (20%) | for Assistive Technology

Source of effectiveness data: pre-post observational study (n=45 parents/carers)

Source of resource use data: pre-post observational study (n=8 parents/carers)

Source of unit costs: unclear | Mean cost per participant at year 1:
AT intervention: €4,016
No AT intervention: € 5,341
The difference: -€1,325

Mean cost per participant at year 2:
AT intervention: €8,032
No AT intervention: €10,163
The difference: -€2,132

Mean cost per participant at year 3:
AT intervention: €12,049
No AT intervention: €13,736
The difference: -€1,687

Primary outcome measure: change in Individual Prioritised Problem Assessment (IPPA) scale scores on communication; general tasks and demands; learning and applying knowledge; interpersonal; interactions with | | for costs, outcomes unclear
Discounting: none
Applicability: partially applicable
Quality: potentially serious limitations |

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
			community, social and civic life domains (measured on a scale of 1 to 25; higher scores indicated higher difficulty and/or importance of problem) Change in IPPA domain scores (compared to the baseline measurement), all study participants: Communication: -6.4 (SD: 4.3) General tasks and demands: -4.1 (SD: 3.9) Learning and applying knowledge: -3.5 (SD: 5.1) **Interpersonal: -5.8 (SD: 3.7)** **Interactions (community, social, and civic life): -5.0 (SD: 6.4)** Total: -4.7 (SD: 3.7)		

1   *Abbreviations: AT: Assistive technology; ICT: Information communication technology; IPPA: Individual Prioritised Problem Assessment scale; SD: Standard deviation*

1

Appendix I – Economic model

Economic model for review question: What are the most effective practices (for example, environmental assessments and use of equipment such as assistive technology across different contexts) to ensure the suitability and accessibility of the environments in which disabled children and young people with severe complex needs receive health and social care and education?

No economic analysis was conducted for this review question.

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1 Appendix J – Excluded studies

2 **Excluded studies for review question: What are the most effective practices (for**
3 **example, environmental assessments and use of equipment such as assistive**
4 **technology across different contexts) to ensure the suitability and accessibility**
5 **of the environments in which disabled children and young people with severe**
6 **complex needs receive health and social care and education?**

7 **Effectiveness studies**

8 **Table 14: Excluded studies and reasons for their exclusion**

Study	Reason for Exclusion
A Collection of Early Intervention Articles: Family-Centered Service Delivery, Play of Children with Disabilities, Assistive Technology for Young Children. Birth through Two. Let's Play! Project, 1-264, 2000	Publication type and publication date: Collection of articles. All published prior to year 2000
Anaby, D., Hand, C., Bradley, L., Direzze, B., Forhan, M., Digiacomo, A., Law, M., The effect of the environment on participation of children and youth with disabilities: A scoping review, Disability and Rehabilitation, 35, 1589-1598, 2013	Study design: Includes qualitative and non-comparative studies
Audit, Commission, The special school run: reviewing special educational needs transport in London, 59p.,tables,diags., 2001	Publication type and outcomes: Overview of special education needs transport. Descriptive data only
Barretto, A., Wacker, D. P., Harding, J., Lee, J., Berg, W. K., Using telemedicine to conduct behavioral assessments, Journal of Applied Behavior Analysis, 39, 333-340, 2006	Study design: Single-subject experimental design/descriptive
Biggs, E. E., Carter, E. W., Bumble, J. L., Barnes, K., Mazur, E. L., Enhancing Peer Network Interventions for Students With Complex Communication Needs, Exceptional Children, 85, 66-85, 2018	Study design: Single-subject experimental design
Boisvert, M., Lang, R., Andrianopoulos, M., Boscardin, M. L., Telepractice in the assessment and treatment of individuals with autism spectrum disorders: a systematic review, Developmental Neurorehabilitation, 13, 423-432, 2010	Study design: Includes non-comparative studies and single-subject experimental designs
Borgestig, Maria, Falkmer, Torbjörn, Hemmingsson, Helena, Improving computer usage for students with physical disabilities through a collaborative approach: A pilot study, Scandinavian Journal of Occupational Therapy, 20, 463-470, 2013	Outcomes: No relevant outcomes reported
Bray, Nathan, Noyes, Jane, Edwards, Rhiannon T., Harris, Nigel, Wheelchair interventions, services and provision for disabled children: a mixed-method systematic review and conceptual framework, BMC health services research, 14, 309, 2014	Study design: Includes non-comparative studies and single-subject experimental designs
Bruce, Susan M., Bashinski, Susan M., The	Publication type: Narrative review

Study	Reason for Exclusion
Trifocus Framework and Interprofessional Collaborative Practice in Severe Disabilities, American Journal of Speech-Language Pathology, 26, 162-180, 2017	
Buono, Serafino, Citta, Santina, Bennett, Buono Manchanda, Tele-assistance in intellectual disability, Journal of Telemedicine and Telecare, 13, 241-245, 2007	Insufficient presentation of results
Chantry, Jane, Duford, Carolyn, How do computer assistive technologies enhance participation in childhood occupations for children with multiple and complex disabilities? A review of the current literature, British Journal of Occupational Therapy, 73, 351-365, 2010	Study design: Includes non-comparative studies and single-subject experimental designs
Colver, Allan F., Dickinson, Heather O., Parkinson, Kathryn, Arnaud, Catherine, Beckung, Eva, Fauconnier, Jerome, Marcelli, Marco, McManus, Vicki, Michelsen, Susan I., Parkes, Jackie, Thyen, Ute, Access of children with cerebral palsy to the physical, social and attitudinal environment they need: A cross-sectional European study, Disability and Rehabilitation: An International, Multidisciplinary Journal, 33, 28-35, 2011	Comparison: Comparison between CYP with different levels of walking ability
Copley, Jodie, Ziviani, Jenny, Assistive technology assessment and planning for children with multiple disabilities in educational settings, British Journal of Occupational Therapy, 68, 559-566, 2005	Publication type: Narrative review
Cormack, Carrie L., Garber, Kelli, Cristaldi, Kathryn, Edlund, Barbara, Dodds, Cindy, McElligott, Liah, Implementing school based telehealth for children with medical complexity, Journal of pediatric rehabilitation medicine, 9, 237-40, 2016	Outcomes: No relevant outcomes reported
Cox, Diane L., Wheelchair needs for children and young people: a review, British Journal of Occupational Therapy, 66, 219-223, 2003	Publication type: Narrative review
Davies, Murray, Morgan, Alun, Using computer-assisted self-interviewing (CASI) questionnaires to facilitate consultation and participation with vulnerable young people, Child Abuse Review, 14, 389-406, 2005	Study design and outcomes: Non-comparative and no data on effectiveness
Davis, T. N., Barnard-Brak, L., Dacus, S., Pond, A., Aided AAC systems among individuals with hearing loss and disabilities, Journal of Developmental and Physical Disabilities, 22, 241-256, 2010	Publication date and study design: All includes studies use a single-subject experimental design and/or were published pre year 2000
Desideri, Lorenzo, Stefanelli, Brunella, Bitelli, Claudio, Roentgen, Uta, Gelderblom, Gert-Jan, de Witte, Luc, Satisfaction of users with assistive technology service delivery: An exploratory analysis of experiences of parents of children with physical and multiple disabilities, Developmental Neurorehabilitation, 19, 255-266, 2016	Study design: Quantitative component is non-comparative
Dodd, J. L., Hagge, D. K., AAC camp as an	Outcomes: No relevant outcomes reported

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Study	Reason for Exclusion
alternative school-based service delivery model: A retrospective survey, Communication Disorders Quarterly, 35, 123-132, 2014	
Dunst, C. J., Trivette, C. M., Humphries, T., Raab, M., Roper, N., Contrasting approaches to natural learning environment interventions, Infants & Young Children, 14, 48-63, 2001	Publication type: Narrative review/framework for classifying interventions
Dunst, Carl J., et, al, Everyday activity settings, natural learning environments, and early intervention practices, Journal of Policy and Practice in Intellectual Disabilities, 3, 3-10, 2006	Comparison and outcomes: Comparison between different ways of conceptualising the learning environment. No relevant outcomes reported
Egilson,S.T., Traustadottir,R., Participation of students with physical disabilities in the school environment, American Journal of Occupational Therapy, 63, 264-272, 2009	Study design: Quantitative component is non-comparative
Epstein, Jeffery N., Langberg, Joshua M., Lichtenstein, Philip K., Kolb, Rebecca C., Simon, John O., Bussing, Chan Epstein Epstein Epstein Epstein Epstein Fine Gardner Guyatt Hoagwood Jensen Langberg Larson Leslie Leslie Leslie Nikles Olson Pace Pelham Pelham Polaha Rushton Schonwald Speroff Wolraich Zarin Zito, The myADHDportal.Com Improvement Program: An innovative quality improvement intervention for improving the quality of ADHD care among community-based pediatricians, Clinical Practice in Pediatric Psychology, 1, 55-67, 2013	Study design and outcomes: No relevant comparative data reported
Fage, C., Consel, C. Y., Balland, E., Etchegoyhen, K., Amestoy, A., Bouvard, M., Sauzeon, H., Tablet Apps to Support First School Inclusion of Children With Autism Spectrum Disorders (ASD) in Mainstream Classrooms: A Pilot Study, Frontiers in Psychology, 9, 2018	Insufficient reporting of relevant outcomes
Farmer, J. E., Muhlenbruck, L., Telehealth for children with special health care needs: promoting comprehensive systems of care, Clinical pediatrics, 40, 93-8, 2001	Study design and outcomes: Descriptive survey. No comparative or effectiveness data
Fortin, Dario, Educational interventions for people with social and health difficulties in Italy: the case of a â˜welcoming communityâ ™ for young and adults, European Journal of Social Work, 18, 443-465, 2015	Population: Adults with social problems, psychological problems, alcohol problems and former prisoners
Fricke, Oliver P., Halswick, Daniel, Langler, Alfred, Martin, David D., Acton, Amiel Becker Braun Christenfeld Churchill Corey Downing Dresler Frandsen Gabb Gbyl Gross Gutkowski Higgs Holahan Lambert Lorenz Lundin Lundin Main McGuire McGuire McLaughlan Minde Moos Rohe Sivadon Sommer Clair Ulrich Ulrich Ulrich Whitehead Wilson Wolfflin, Healing architecture for sick kids: Concepts of environmental and architectural factors in child and adolescent psychiatry, Zeitschrift fur Kinder- und Jugendpsychiatrie und Psychotherapie, 47, 27-33, 2019	Publication type: Narrative review
Ganz, J. B., Earles-Vollrath, T. L., Heath, A. K.,	Outcomes and study design: No relevant

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Study	Reason for Exclusion
Parker, R. I., Rispoli, M. J., Duran, J. B., A meta-analysis of single case research studies on aided augmentative and alternative communication systems with individuals with autism spectrum disorders, Journal of Autism and Developmental Disorders, 42, 60-74, 2012	outcomes reported. All included studies use single-subject experimental designs
Gibson, Barbara E., King, Gillian, Teachman, Gail, Mistry, Bhavnita, Hamdani, Yani, Assembling activity/setting participation with disabled young people, Sociology of health & illness, 39, 497-512, 2017	Study design: Qualitative
Goldstein, F. P., Klaiman, C., Willliams, S., Bridging care gaps: Using tele-health to provide care for people with autism spectrum disorder, International Journal of Developmental Disabilities, 63, 190-194, 2017	Publication type and study design: Narrative review and case study
Hanafin, J., Shevlin, M., Kenny, M., Mc Neela, E., Including young people with disabilities: Assessment challenges in higher education, Higher Education, 54, 435-448, 2007	Study design: Qualitative
Harper, D. C., Telemedicine for children with disabilities, Children's Health Care, 35, 11-27, 2006	Insufficient presentation of results
Heaton, Janet, et, al, Families' experiences of caring for technology-dependent children: a temporal perspective, HEALTH AND SOCIAL CARE IN THE COMMUNITY, 13, 441-450, 2005	Study design: Qualitative
Hedgecock, Joseph, Evaluating the role of a humanoid robot to support learning in children with profound and multiple disabilities, Journal of Assistive Technologies, 8, 111-123, 2014	Study design: Single-subject experimental design
Hemmingsson, H., Borell, L., Accommodation needs and student-environment fit in upper secondary schools for students with severe physical disabilities, Canadian Journal of Occupational Therapy, 67, 162-172, 2000	Study design: Non-comparative
Herring, Paul, et, al, A virtual tutor for children with autism, Journal of Enabling Technologies, 11, 19-27, 2017	Outcomes: No relevant outcomes reported
Heuvela, Renee J. F. van den, Robots and ICT to support play in children with severe physical disabilities: a systematic review, Disability and Rehabilitation: Assistive Technology, 11, 103-116, 2016	Outcomes: No relevant outcomes reported
Heywood, Frances, Adaptation policies especially for children: key factors for effective outcomes, Journal of Integrated Care, 11, 22-27, 2003	Study design and outcomes: Non-comparative. Primarily qualitative outcomes
Hooshmand, Mary, Foronda, Cynthia, Comparison of Telemedicine to Traditional Face-to-Face Care for Children with Special Needs: A Quasiexperimental Study, Telemedicine journal and e-health : the official journal of the American Telemedicine Association, 24, 433-441, 2018	Outcomes: No relevant outcomes reported
Hooton, Julie, Westaway, Anna, Booth, Clark	Publication type: Overview of project. No data

Study	Reason for Exclusion
Kirkbride Mitchell Morris Morris Murphy Rabiee, The voice of the child with Down syndrome, Down Syndrome: Research & Practice, 12, 179-183, 2009	on effectiveness
Howells, Sophie, Freedom of expression: communication aids for disabled children, Childright, 16, 2000	Publication type: Overview of survey/recommendations. No data on effectiveness
Hully, M., Brisse, C., Bredillot, M., Brault, R., Lhermitte, Y., Coiffier, C., Belorgey-Frain, A., Gaulard, M., Pik, S., Sellier, P., Fontaine, I., Baba Aissa, L., Bonheur, J., Pinard, J. M., Bellesme, C., Desguerre, I., Billette De Villemeur, T., Patients with Profound Intellectual and Multiple Disabilities (PMID) and access to the pediatric neurologist: An opportunity for Telemedicine?, European Journal of Paediatric Neurology, 21, e210, 2017	Publication type: Conference abstract
Isabelle, S., Bessey, S. F., Dragas, K. L., Blease, P., Shepherd, J. T., Lane, S. J., Assistive technology for children with disabilities, Occupational Therapy in Health Care, 16, 29-51, 2002	Publication type: Narrative review
Jorgensen Smith, Tammy, Dillahunt-Aspillaga, Christina J., Ehlke, Sarah, Accessibility of One Stop Service Centers: Perspectives of Persons With Disabilities and One Stop Center Staff, Journal of Applied Rehabilitation Counseling, 50, 186-195, 2019	Study design: Non-comparative
Kanagasabai, P. S., Mulligan, H., Devan, H., Mirfin-Veitch, B., Hale, L. A., Environmental factors influencing leisure participation of children with movement impairments in aotearoa/new zealand: A mixed method study, New Zealand Journal of Physiotherapy, 47, 105-117, 2019	Study design: Quantitative component is non-comparative
Karlsson, P., Johnston, C., Barker, K., Stakeholders' views of the introduction of assistive technology in the classroom: How family-centred is Australian practice for students with cerebral palsy?, Child: care, health and development, 43, 598-607, 2017	Comparison: Comparison between perspectives of parents, school staff and allied health professionals
Karp, W. B., Grigsby, R. K., McSwiggan-Hardin, M., Pursley-Crotteau, S., Adams, L. N., Bell, W., Stachura, M. E., Kanto, W. P., Use of telemedicine for children with special health care needs, Pediatrics, 105, 843-7, 2000	Study design and outcomes: No relevant comparative data reported
Kramer, Jessica M., Hwang, I. Ting, Helfrich, Christine A., Samuel, Preethy S., Carrellas, Ann, Evaluating the Social Validity of Project TEAM: A Problem-Solving Intervention to Teach Transition Age Youth with Developmental Disabilities to Resolve Environmental Barriers, International Journal of Disability, Development, and Education, 65, 57-75, 2018	Study design: Non-comparative
Langkamp, D. L., McManus, M. D., Blakemore, S. D., Telemedicine for children with developmental disabilities: A more effective	Study design: Non-comparative/case studies

Study	Reason for Exclusion
clinical process than office-based care, Telemedicine and e-Health, 21, 110-114, 2015	
Lindsay, S., Edwards, A., A systematic review of disability awareness interventions for children and youth, Disability and rehabilitation, 35, 623-646, 2013	Outcomes: No relevant outcomes reported
Livingston, N., CanAssist: A unique program dedicated to promoting inclusion and improving the quality of life of persons with special needs, Journal of Intellectual Disability Research, 56, 657, 2012	Publication type: Conference abstract
Livingstone, R., Field, D., Systematic review of power mobility outcomes for infants, children and adolescents with mobility limitations, Clinical Rehabilitation, 28, 954-64, 2014	Study design: Includes non-comparative studies and single-subject experimental designs
Lotan, M., Gold, C., Meta-analysis of the effectiveness of individual intervention in the controlled multisensory environment (Snoezelen) for individuals with intellectual disability, Journal of Intellectual and Developmental Disability, 34, 207-215, 2009	Population: Children and adults with intellectual disabilities. Results not reported separately for CYP
Lovette,B., Safe transportation for children with special needs, Journal of Pediatric Health Care, 22, 323-328, 2008	Publication type: Overview of products available for safe transportation of disabled CYP. No data on effectiveness
Machalicek, W., Sanford, A., Lang, R., Rispoli, M., Molfenter, N., Mbeseha, M. K., Literacy interventions for students with physical and developmental disabilities who use aided AAC devices: A systematic review, Journal of Developmental and Physical Disabilities, 22(3): 219-240, 2010	Study design: All included studies used single-subject experimental designs
Maciver, D., Rutherford, M., Arakelyan, S., Kramer, J. M., Richmond, J., Todorova, L., Romero-Ayuso, D., Nakamura-Thomas, H., ten Velden, M., Finlayson, I., O'Hare, A., Forsyth, K., Participation of children with disabilities in school: A realist systematic review of psychosocial and environmental factors, PLoS ONE, 14, 2019	Analysis: Qualitative
Marcin, J. P., Ellis, J., Mawis, R., Nagrampa, E., Nesbitt, T. S., Dimand, R. J., Using Telemedicine to Provide Pediatric Subspecialty Care to Children with Special Health Care Needs in an Underserved Rural Community, Pediatrics, 113, 1-6, 2004	Population and intervention: Children with special health care needs, including asthma and diabetes - unlikely to have needs in all three areas. Intervention targeting health needs only
Martinez, M. A., Optimal wheelchair service provision for children with disabilities, Journal of Clinical Outcomes Management, 21, 2014	Publication type: Overview of/commentary on a systematic review
McDonald, R., Harris, E., Price, K., Jolleff, N., Elation or frustration? Outcomes following the provision of equipment during the Communication Aids Project: data from one CAP partner centre, Child: care, health and development, 34, 223-9, 2008	Outcomes: No relevant outcomes reported
McDougall, J., Wright, V., Domain-Based and Overall Life Satisfaction for Youth with Chronic Conditions: The Role of Personal, Interpersonal,	Intervention: No intervention of interest

Study	Reason for Exclusion
and Environmental Factors Over a One-Year Period, Applied Research in Quality of Life, 13, 1097-1115, 2018	
Meadan, Hedda, Daczewitz, Marcus E., Internet-Based Intervention Training for Parents of Young Children with Disabilities: A Promising Service-Delivery Model, Early Child Development and Care, 185, 155-169, 2015	Study design and outcomes: Includes single-subject experimental designs and outcomes primarily focused on parental knowledge
Mendoza, S. M., Conesa, A. G., Technical devices in children with motor disabilities: a review, Disability and Rehabilitation: Assistive Technology, epub, 2013	Publication type: DARE summary of systematic review
Menon, D., Singh, V., Lipkin, P., Improving access to specialty care for underserved children with neurodevelopmental disorders using telemedicine, Annals of Neurology, 80, S387, 2016	Publication type: Conference abstract
Michael, S. M., Porter, D., Pountney, T. E., Tilted seat position for non-ambulant individuals with neurological and neuromuscular impairment: a systematic review, Clinical Rehabilitation, 21, 1063-74, 2007	Population and study design: Includes adults with neurological and neuromuscular impairment and single-subject experimental designs
Miguel, Cruz Antonio, et, al, What does the literature say about using robots on children with disabilities?, Disability and Rehabilitation: Assistive Technology, 12, 429-440, 2017	Study design and outcomes: Included single-subject experimental designs and no relevant outcomes reported
Millen, Laura, Cobb, Sue, Patel, Harshada, Glover, Tony, A collaborative virtual environment for conducting design sessions with students with autism spectrum disorder, International Journal of Child Health & Human Development, 7, 367-376, 2014	Outcomes: No relevant outcomes reported
Mortenson, W. B., Demers, L., Fuhrer, M. J., Jutai, J. W., Lenker, J., DeRuyter, F., How assistive technology use by individuals with disabilities impacts their caregivers: a systematic review of the research evidence, American journal of physical medicine & rehabilitation / Association of Academic Physiatrists, 91, 984-998, 2012	Population: Caregivers of adults with disabilities
Naslund, R., Gardelli, A., 'I know, I can, I will try': Youths and adults with intellectual disabilities in Sweden using information and communication technology in their everyday life, Disability and Society, 28, 28-40, 2013	Study design: Qualitative
Nelson, Eve-Lynn, Duncan, Angela Banitt, Peacock, Georgina, Bui, Thao, Ermer, Foy Grady Hilty Hoagwood Leslie Leslie Leslie Myers Myers Myers Olson Polaha, Telemedicine and adherence to national guidelines for ADHD evaluation: A case study, Psychological Services, 9, 293-297, 2012	Study design and outcomes: Non-comparative. No relevant outcomes reported
Paleg, Ginny, Livingstone, Roslyn, Outcomes of gait trainer use in home and school settings for children with motor impairments: a systematic review, Clinical Rehabilitation, 29, 1077-91, 2015	Study design: Includes single-subject experimental designs

Study	Reason for Exclusion
Reese, R. Matthew, Braun, Matthew J., Hoffmeier, Sarah, Stickle, Lee, Rinner, Louann, Smith, Catherine, Ellerbeck, Kathryn, Jamison, Rene, Wendland, Maura, Jarrett, Lindsey, Hadorn, Megan, Preliminary Evidence for the Integrated Systems Using Telemedicine, Telemedicine journal and e-health : the official journal of the American Telemedicine Association, 21, 581-7, 2015	Insufficient presentation of results
Rehm, Roberta S., Creating a context of safety and achievement at school for children who are medically fragile/technology dependent, ANS. Advances in nursing science, 24, 71-84, 2002	Study design: Qualitative
Robinson, S. S., Seale, D. E., Tiernan, K. M., Berg, B., Use of telemedicine to follow special needs children, Telemedicine Journal and e-Health, 9, 57-61, 2003	Insufficient reporting of results
Rosenberg, L., Bart, O., Ratzon, N. Z., Jarus, T., Personal and Environmental Factors Predict Participation of Children With and Without Mild Developmental Disabilities, Journal of Child and Family Studies, 22, 658-671, 2013	Population and comparison: Children with mild developmental disabilities (unlikely to meet criteria of severe complex needs) compared against children without developmental disabilities
Rossi, M., Ehrens, D., Monica, N., Population health management (PHM) for refractory epilepsy and psychiatric comorbidities: Deploying a phm delivery model for amplifying patient outreach, Epilepsy Currents, 14, 280, 2014	Publication type: Conference abstract
SakÄ±z, Halis, Impact of an inclusive programme on achievement, attendance and perceptions towards the school climate and social-emotional adaptation among students with disabilities, Educational Psychology, 37, 611-631, 2017	Population: Students with mild disabilities - unlikely to meet criteria of severe complex needs
Santiago-Pintor, Jorge, Hernandez-Maldonado, Maria, Correa-Colon, Angela, Mendez-Fernandez, Hector L., Assistive technology: a health care reform for people with disabilities, Puerto Rico health sciences journal, 28, 44-7, 2009	Study design and outcomes: No comparative data for outcomes of interest
Schlosser, R. W., Lee, D. L., Promoting generalization and maintenance in augmentative and alternative communication: a meta-analysis of 20 years of effectiveness research, AAC: Augmentative and Alternative Communication, 16, 208-226, 2000	Study design and outcomes: All includes studies used single-subject experimental designs. No relevant outcomes reported
Sharma, Neera, Morrison, Jan, Don't push me around: disabled children's experiences of wheelchair services in the UK, 36p., 2006	Outcomes: Qualitative
Shore, S., Juillerat, S., The impact of a low cost wheelchair on the quality of life of the disabled in the developing world, Medical Science Monitor, 18, CR533-CR542, 2012	Non-OECD country: Aggregated data reported for Chile, India and Vietnam
Social Policy Research, Unit, The community equipment needs of disabled children and their families, 4p., 2003	Study design and outcomes: Non-comparative. No relevant outcomes reported

Study	Reason for Exclusion
Spencer, A. E., Platt, R. E., Bettencourt, A. F., Serhal, E., Burkey, M. D., Sikov, J., Vidal, C., Stratton, J., Polk, S., Jain, S., Wissow, L., Implementation of Off-Site Integrated Care for Children: A Scoping Review, Harvard Review of Psychiatry, 27, 342-353, 2019	Population and interventions: Children and adolescents with mental health problems - unlikely to have needs in all three areas. Interventions are collaboration within healthcare only.
Stainbrook, J. Alacia, Weitlauf, Amy S., Juarez, A. Pablo, Taylor, Julie Lounds, Hine, Jeffrey, Broderick, Neill, Nicholson, Amy, Warren, Zachary, Measuring the service system impact of a novel telediagnostic service program for young children with autism spectrum disorder, Autism : the international journal of research and practice, 23, 1051-1056, 2019	Outcomes: No relevant outcomes reported
Stepanovic, S., Medenica, V., Ristic, I., Ivanovic, L., Recommendations for using assistive technologies for inclusive media education in kindergartens, Technology and Disability, 31, S155, 2019	Publication type: Conference abstract
Sutherland, Rebecca, Trembath, David, Hodge, Antoinette, Drevensek, Suzi, Lee, Sabrena, Silove, Natalie, Roberts, Jacqueline, Telehealth language assessments using consumer grade equipment in rural and urban settings: Feasible, reliable and well tolerated, Journal of telemedicine and telecare, 23, 106-115, 2017	Study design and outcomes: No relevant comparative data reported
Tavares Wendy, An evaluation of the Kids Are Kids disability awareness program: increasing social inclusion among children with physical disabilities, Journal of Social Work in Disability and Rehabilitation, 10, 25-35, 2011	Insufficient reporting of relevant outcomes
Toms,B., Harrison,B., Bower,E., A pilot study to compare the use of prototypes of multipositional paediatric walking sticks and tripods with conventional sticks and tripods by children with cerebral palsy, Child: Care, Health and Development, 33, 96-106, 2007	Outcomes: No relevant outcomes reported
Turner-Stokes, L., Turner-Stokes, T., Schon, K., Turner-Stokes, H., Dayal, S., Brier, S., Charter for disabled people using hospitals: a completed access audit cycle, Journal of the Royal College of Physicians of London, 34, 185-189, 2000	Outcomes: No relevant outcomes reported
Wang, Xianhui, Laffey, James, Xing, Wanli, Galyen, Krista, Stichter, Janine, Fostering Verbal and Non-Verbal Social Interactions in a 3D Collaborative Virtual Learning Environment: A Case Study of Youth with Autism Spectrum Disorders Learning Social Competence in iSocial, Educational Technology Research and Development, 65, 1015-1039, 2017	Outcomes: No relevant outcomes reported

1   *CYP: children and young people; DARE: Database of Abstracts of Reviews of Effects; OECD: Organisation for*
2   *Economic Co-operation and Development*

3 **Economic studies**

4   See Supplement B for the list of excluded studies across all reviews..

5

1 Appendix K – Research recommendations – full details

2 **Research recommendations for review question: What are the most effective**
3 **practices (for example, environmental assessments and use of equipment such**
4 **as assistive technology across different contexts) to ensure the suitability and**
5 **accessibility of the environments in which disabled children and young people**
6 **with severe complex needs receive health and social care and education?**

7 **Research recommendation**
8 What are the most effective environmental adaptations to ensure the suitability and
9 accessibility of the settings where disabled children and young people with severe complex
10 needs receive education, health and social care support?

11 **Why this is important**

12 Disabled Children and young people with severe complex needs would be expected to need
13 access to a number of different settings in order to meet their needs and the outcomes in
14 their EHC plan. Alternatively, children may have a number of different interventions and
15 supports from education, health and social care services that are received in the home. In
16 order to prepare disabled children and young people for productive adulthood, ideally an
17 EHC plan would take into account not only the accessibility of service settings but also the
18 accessibility of playgrounds, transport, arts and culture venues, sports venues and work
19 places.

20 The committee reviewed the available evidence base. There is a paucity of evidence about
21 environmental assessments or which environmental adaptations facilitate access and
22 participation of disabled children and young people with severe complex needs. It is
23 recommended that further research can inform healthcare, education and social care
24 professionals in providing accessible services, and can inform long term planning decisions
25 across communities.

26 **Rationale for research recommendation**

27 **Table 15: Research recommendation rationale**

Importance to the population	Disabled children and young people and their families describe experiences of limited access to a range of statutory and other services which should support their health, wellbeing and participation in their communities. The House of Commons Education Committee's inquiry into SEND reported in 2019 that many disabled children and their families felt let down and abandoned by the services that should be providing them with essential support.
Relevance to NICE guidance	This evidence would be essential to inform future updates of recommendations in the current guideline to enable evidence-based recommendations and guidance about the most effective environmental adaptations to ensure the suitability and accessibility of the environments in which disabled children and young people with severe complex needs receive health and social care and education.
Relevance to the NHS and education and	The Children and Families Act 2014 requires

social care services	NHS Trusts and clinical commissioning groups to ensure that disabled children are able to access the services that they need. The Equality Act 2010 protects disabled children and adults from discrimination. It also reinforces the right of children with disabilities to access mainstream services, such as schools and early years' services. The Children Act 1989 requires local authorities to provide services for disabled children that are designed to minimise the effect of their disability and give them the opportunity to lead lives which are as normal as possible (e.g., access to the same environments as children without disabilities) and assist carers to provide care more effectively. Finally, the Chronically Sick and Disabled Person's Act 1970 requires local authorities to provide home adaptations.
National priorities	The NHS Long Term Plan includes looking at the role of the NHS in shaping local communities and the environments people live in. This includes the development of a Healthy New Towns Standard and a Healthy Homes Quality Mark that will be awarded to places that promote health and wellbeing.
Current evidence base	No comparative evidence was identified that examined the effectiveness or cost effectiveness of environmental adaptations on the accessibility and suitability of health, education and social care settings and activities for disabled children and young people with severe complex needs.
Equality considerations	There may be an equality issue with regard to children and young people whose behaviour may be described as challenging as there is less understanding of what might make environments accessible for them compared with for those with mainly physical disabilities.

1   *NHS: National Health Service; SEND: special educational needs and disabilities*

2   **Modified PICO table**

3   **Table 16:   Research recommendation modified PICO table**

Population	Disabled children and young people (aged from birth to 25 years) with severe complex needs who require health, social care and education support
Intervention	Adaptations to the environment* or original design components aimed at increasing accessibility to, and suitability for, people with disabilities Adaptations may include: • Physical changes e.g. adapted bathrooms, ramps in a range of settings • Provision of extra facilities e.g. accessible play equipment alongside standard equipment on playgrounds • Changes to the social environment e.g., staff with signing skills or autism friendly

	accreditation, information available prior to visiting e.g., videos *This should include both environments designed and built to be accessible and adaptations to existing environments.
Comparator	• Any other environmental adaptations • No environmental adaptations
Outcomes	• Access to health, social care and education services • Confidence using particular services and activities (child or young person and parent or carer) • Service user satisfaction (child or young person and parent or carer) • Participation and inclusion • Independence (e.g. meeting steps towards outcomes in the preparing for adulthood framework) • Adverse events
Study design	Retrospective or prospective audit or service evaluation are likely to be the most feasible but it may be possible to conduct prospective trials of specific environmental adaptations.
Timeframe	In time to inform any future update of this guidance.
Additional information	It may be beneficial to involve disabled children and young people and their families in planning a study to ensure it address areas important to them.

1

Disabled children and young people up to 25 with severe complex needs: evidence reviews for suitability and accessibility of environments DRAFT(August 2021)

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