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Clinical guidelines for children and adolescents experiencing gender dysphoria or incongruence: a systematic review of guideline quality (part 1)

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ABSTRACT

Background Increasing numbers of children and adolescents experiencing gender dysphoria/incongruence are being referred to specialist gender services. There are various guidelines outlining approaches to the clinical care of these children and adolescents.

Aim To examine the quality and development of published guidelines or clinical guidance containing recommendations for managing gender dysphoria/incongruence in children and/or adolescents (age 0-18). A separate paper reports the synthesis of guideline recommendations.

Methods A systematic review and narrative synthesis. Databases (Medline, Embase, CINAHL, PsycINFO, Web of Science) were searched to April 2022 and web-based searches and contact with international experts continued to December 2022, with results assessed independently by two reviewers. The Appraisal of Guidelines for Research and Evaluation tool was used to examine guideline quality.

Results Twenty-three guidelines/clinical guidance publications (1998–2022) were identified (4 international, 3 regional and 16 national). The quality and methods reporting in these varied considerably. Few guidelines systematically reviewed empirical evidence, and links between evidence and recommendations were often unclear. Although most consulted with relevant stakeholders, including 10 which involved service users or user representatives, it was often unclear how this influenced recommendations and only two reported including children/adolescents and/or parents. Guidelines also lacked clarity about implementation. Two international guidelines (World Professional Association for Transgender Health and Endocrine Society) formed the basis for most other guidance, influencing their development and recommendations.

Conclusions Most clinical guidance for managing children/adolescents experiencing gender dysphoria/incongruence lacks an independent and evidence-based approach and information about how recommendations were developed. This should be considered when using these to inform service development and clinical practice.

PROSPERO registration number CRD42021289659.

INTRODUCTION

Internationally, there has been a reported increase in the number of children and adolescents describing themselves as gender questioning or identifying as

WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Increasing numbers of children and adolescents are being referred to specialist gender services.
- ⇒ Several clinical guidelines of varying quality exist to support the clinical care of children and adolescents experiencing gender dysphoria/incongruence and their families.
- ⇒ Current systematic reviews have focused on a subset of guidelines and there is a need to assess all guidelines that may be influencing care provision for these children/adolescents.

WHAT THIS STUDY ADDS

- ⇒ This review identified 23 guidelines or clinical guidance publications that contain recommendations about the management of children and/or adolescents experiencing gender dysphoria/incongruence.
- ⇒ Few guidelines are informed by a systematic review of empirical evidence and lack transparency about how recommendations were developed. Only two reported consulting directly with children and/or adolescents during their development.
- ⇒ Most national and regional guidance has been influenced by the World Professional Association for Transgender Health and Endocrine Society guidelines, which themselves lack developmental rigour and are linked through cosponsorship.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ Healthcare services and professionals should take into account the poor quality and inter-related nature of published guidance to support the management of children and adolescents experiencing gender dysphoria/incongruence.

transgender.¹ For some, this experience may not be distressing and require limited professional input; however, for others, difficulties in gender development can be associated with significant distress.² Gender dysphoria is the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition diagnostic category referring to psychological distress and/or functional impairment that results from incongruence between experienced or expressed

gender and sex registered at birth.³ The more recently published International Classification of Diseases, 11th edition uses the broader term of gender incongruence,⁴ although both terms continue to be used in clinical practice. The prevalence of gender dysphoria/incongruence in children and adolescents is currently unknown due to lack of population-level data.^{2 5} However, referrals to specialist paediatric gender services have increased considerably over the last 10–15 years.² For example, the UK paediatric gender service received 3585 referrals in 2021–2022 compared with 210 in 2011–2012.⁶

Alongside this overall rise in numbers, there has been recognition that this population have high rates of mental health and well-being needs as well as broader psychological and social complexity.^{7–10} There is a need to ensure that the increasing numbers of children and adolescents presenting with experiences of gender-related distress receive timely, appropriate and evidence-based care. Guidelines for the management of gender dysphoria/incongruence can help to ensure the needs of children and adolescents are met, and that provision is equitable and evidence based.¹¹

Several clinical guidelines exist to inform care provision for this population.^{12 13} Recent systematic reviews have identified and appraised guidelines for transgender care, raising concerns about their quality.^{12–14} However, they each focus on a subset of guidelines: Dahlen *et al*¹² only included international guidelines and Ziegler *et al*^{13 14} focused on guidelines for primary care. This systematic review builds on these reviews by appraising and synthesising all published guidance that includes recommendations regarding the care of children and adolescents experiencing gender dysphoria/incongruence. The review is reported in two papers, with this first paper describing the guidelines and examining their quality and development, and the second synthesising recommendations.¹⁵

METHODS

This review forms part of a linked series examining the epidemiology, care pathways, outcomes and experiences for children and adolescents experiencing gender dysphoria/incongruence (protocol registered on PROSPERO: CRD42021289659¹⁶). The review is reported in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.¹⁷

Search strategy

A single search strategy was used comprising two combined concepts: ‘children’, which included all terms for children and adolescents; and ‘gender dysphoria’, which included associated terms such as gender-related distress and gender incongruence, and gender identity terms including transgender, gender diverse and non-binary.

MEDLINE (online supplemental table 1), EMBASE and PsycINFO through OVID, CINAHL Complete through EBSCO and Web of Science (Social Science Citation Index) were searched (13–23 May 2021; updated 27 April 2022).

Reference lists of included guidelines and relevant systematic reviews were assessed.^{12–14} International experts were contacted and key organisational websites reviewed to December 2022.

Inclusion criteria

Published articles or documents that provide at least one specific recommendation for the assessment and/or care of children and/or adolescents (age 0–18) experiencing gender dysphoria/incongruence, and which were developed by or for a professional,

healthcare or government organisation or from a research study, were included in the review.

These criteria enabled us to include documents like blueprints and position statements that include recommendations developed for practice and that are available for clinicians to use. Adopting these broad criteria enabled us to map and assess the quality of all clinical guidance that is potentially influencing practice regardless of method of development or year of publication and to examine any changes in guidance and its development over time. In making this decision, we also considered the knowledge that clinical guidelines are not always informed by a systematic review of evidence or developed robustly, despite this being implied in guideline definitions.¹¹ The document type or title is, therefore, potentially misleading as a criterion for inclusion.

Guidelines for adults, all ages or those not specifying a target population were included if they contained explicit recommendations for children/adolescents.

Originally we planned to include publications in the English language¹⁶; however, in order to include the increasing number of national guidelines published in Europe, we expanded this to include those that could be reliably translated. For guidance not published in English, we requested official or reliable translations from international experts or used DeepL Pro translation services¹⁸ where these were not available.

Selection

The results of database and other searches were uploaded to Covidence¹⁹ and screened independently by two reviewers. Full texts for potentially relevant articles were reviewed against inclusion criteria by two reviewers independently. Disagreements were resolved through discussion and inclusion of a third reviewer where necessary.

Data extraction

We extracted data on guidance characteristics, development and content into prepiloted data extraction templates. All extraction was undertaken by a single reviewer and second checked by another.

Quality appraisal

To be eligible for appraisal, guidance needed to describe the methodology in the main or auxiliary documents,¹¹ in addition to meeting inclusion criteria for the review.

We used the Appraisal of Guidelines for REsearch & Evaluation (AGREE) II instrument to assess quality.²⁰ This validated tool was designed to assess the quality of practice guidelines but has been successfully applied to other types of guidance in this practice area.^{12 13} The tool contains 23 criteria organised around six quality domains (scope and purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability and editorial independence), followed by an overall assessment on quality and whether a guideline should be recommended for use in practice. The criteria and overall assessment are rated on a 7-point scale from 1 ‘strongly disagree’ to 7 ‘strongly agree’. Response options for recommendation for use are ‘yes’, ‘yes, with modifications’ or ‘no’. A quality score is calculated for each domain, which represents the total summed score of all reviewers’ ratings as a percentage of the maximum possible domain score.²¹

Guidance was appraised independently by three reviewers using My AGREE PLUS, an online appraisal platform.²¹ Following the Dahlen *et al* systematic review,¹² a colour coding

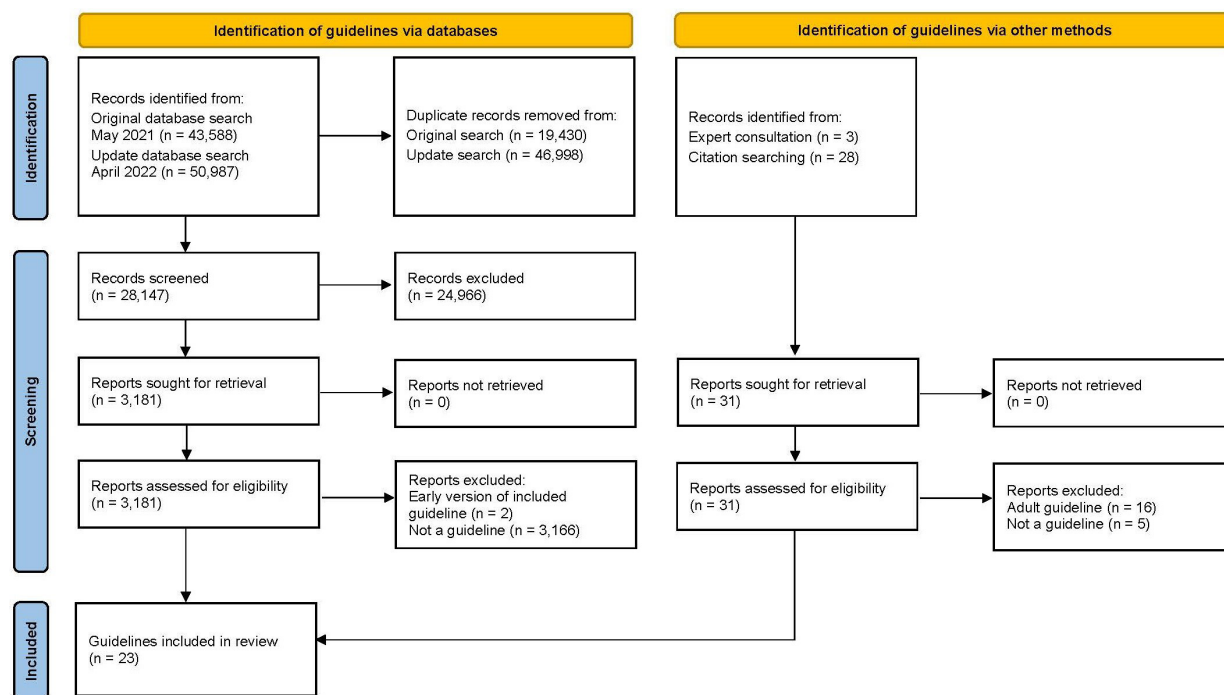


Figure 1 Study flow diagram.

scheme was used to aid visual comparison of domain scores ($\leq 30\%$, $31\%–69\%$, $\geq 70\%$). All reviewers undertaking appraisal read the AGREE II User Manual²¹ and appraised and discussed the same two guidance publications first to improve reviewer competence.

Synthesis

Synthesis was undertaken using a narrative approach and involved a series of team discussions to ensure accurate interpretation of included guidance. To examine development, we reviewed reported methods against AGREE II domains, considering both quality of reporting and methods described. This included exploring how evidence was used to inform recommendations, how recommendations were developed and agreed and who was involved in this process and how the guidance referenced and used other included guidance during their development. For the latter, we produced a visual map to show these links.

RESULTS

Database searches yielded 28 147 records, 3181 of which were potentially relevant for the linked series of reviews. From these, 13 guidelines or other clinical guidance meeting our criteria were identified.^{22–34} An additional 31 sources were identified as potential guidelines (via citation searching and expert consultation), 10 of which met inclusion criteria.^{35–44} In total, 23 distinct clinical guidance publications (referred to in the synthesis as guidelines) were identified (see figure 1 and online supplemental table 2).

The 23 guidelines were published from 1998 to 2022, with all but two published after 2010. Four guidelines are international,^{25 31 33 34} three regional (one covering Europe,²⁶ one Asia and the Pacific³⁸ and one the Caribbean⁴⁰), and others are national, with four from the US,^{22–24 44} two from Spain^{32 42} and one each from Australia,²⁹ Canada,³⁷ Denmark,³⁶ Finland,³⁵ Italy,²⁷ New Zealand,²⁸ Norway,³⁹ South Africa,⁴¹ Sweden⁴³ and

the UK³⁰ (see figure 2). Three guidelines were translated into English.^{35 39 43}

Five guidelines are position or policy statements from professional societies or organisations,^{23 26 27 31 32} two are blueprints developed by multiple regional and international organisations,^{38 40} and one is a practice parameter developed by a professional organisation.²² The remaining 15 are guidelines: four were developed for national government bodies,^{35 36 39 43} seven for or adopted by professional organisations,^{24 25 28 30 34 41 42} three for healthcare organisations^{29 37 44} and one a research study.³³

Seven guidelines reference a previous version,^{25 28 34 36 40 43 44} two of which have multiple updates.^{34 36} Three guidelines were published by the developer^{45–47} and as an academic paper.^{28 29 41}

Seven guidelines focus on the care and/or treatment of children and adolescents experiencing gender dysphoria/incongruence^{22 23 29 30 32 35 43} (one also covers practice for sexual minority children/adolescents²²). Four guidelines cover adolescents only,^{27 31 33 37} one of which is about co-occurring autism spectrum condition and gender dysphoria/incongruence.³³ One guideline, which has a specific focus on sexual function and satisfaction, covers adolescents and adults,²⁶ and 10 guidelines cover all transgender and/or gender diverse people but include chapters or sections specific to children/adolescents.^{25 28 34 36 38–42 44} The final guideline is about psychological practice for adults but contains one section about adolescents.²⁴

The target audience is generally broad, with 11 guidelines targeting healthcare providers^{27–29 31 32 34–36 39 41 44} and five healthcare providers plus other stakeholders, for example, social care professionals or policymakers.^{26 37 38 40 43} Two are for psychiatrists,^{22 30} one for psychologists,²⁴ one for paediatricians,²³ one for endocrinologists²⁵ and two do not specify.^{33 42}

Multiple areas of practice are covered in the guidelines. These include care models, principles and practices; service composition, roles and expertise; assessment; psychosocial care; information and advocacy; social transition; puberty suppression; masculinising/feminising hormones; surgical interventions;

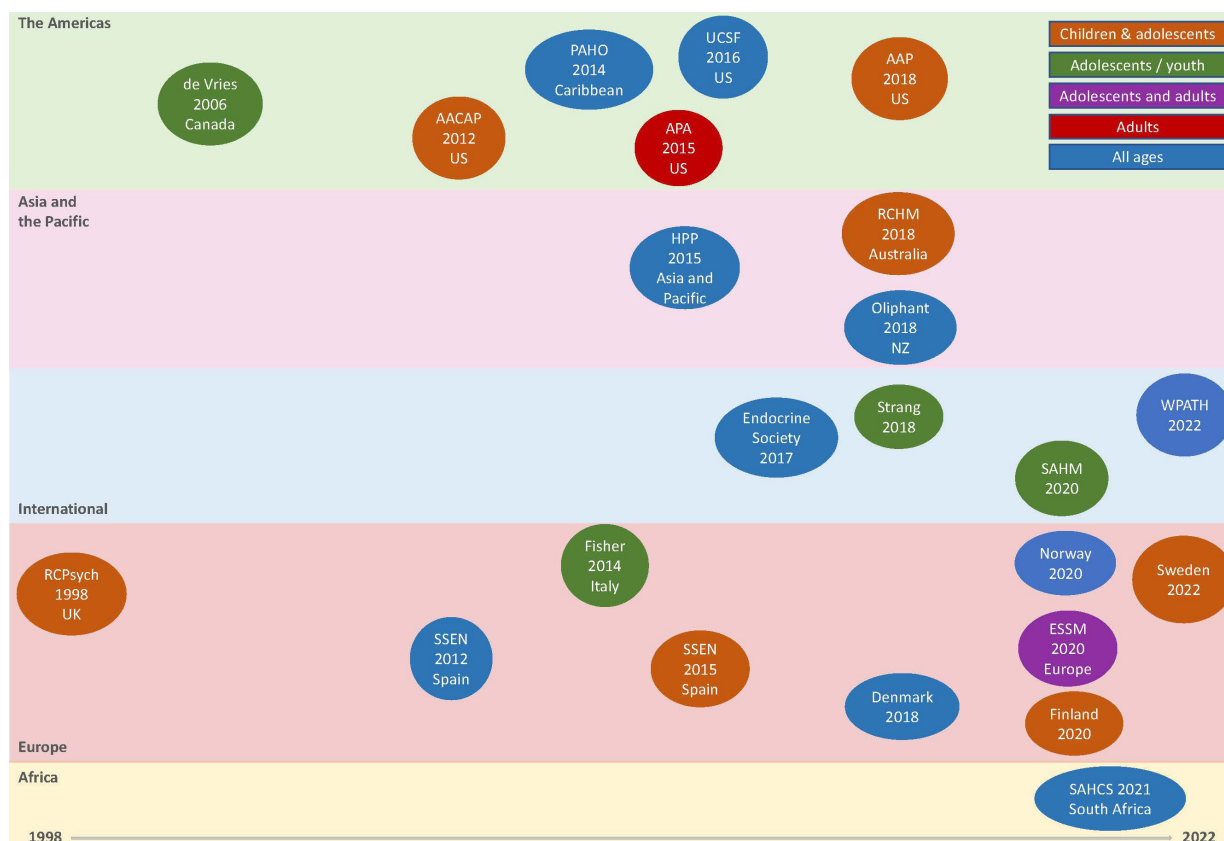


Figure 2 Regional timeline for guidelines. Presents a timeline for the included guidelines by geographical region, country and target population. AACAP, American Academy of Child and Adolescent Psychiatry; AAP, American Academy of Pediatrics; APA, American Psychological Association; ESSM, European Society for Sexual Medicine; HPP, Health Policy Project; PAHO, Pan American Health Organisation; RCHM, Royal Children's Hospital Melbourne; RCPsych, UK Royal College of Psychiatrists; SAHCS, South African HIV Clinicians Society; SAHM, Society for Adolescent Health and Medicine; SSEN, Spanish Society for Endocrinology and Nutrition; UCSF, University California, San Francisco; WPATH, World Professional Association for Transgender Health.

fertility care; other interventions (eg, voice therapy); sexual health and functioning; and physical health and lifestyle. Content varies depending on guideline scope and audience. More guidelines focus on medical treatments than psychosocial care.

Guideline methods and quality

Of the 23 guidelines, four provided no information about the process of development and could not be appraised.^{30 32 36 42}

The 19 guidelines reporting methods varied in approach and quality of reporting. Most were developed by a core group of clinical experts with broader consultation with other professional stakeholders, although the nature of consultation and stakeholders varied. Few provided clear information about how experts were recruited or selected. Of the 16 that reported wider consultation,^{22–25 28–30 33 34 37–41 43 44} only two described a formal consensus methodology^{33 34} and a third reported a modified consensus process, but no details are provided.⁴⁴ Across guidelines, it was unclear how input from wider stakeholders informed recommendations.

Ten guidelines reported engaging with service users or service user representatives.^{24 28 29 34 35 38–41 43} Methods varied, with two reporting separate research or consultation,^{24 35} but most consulting with service users alongside other stakeholders during development or by obtaining their views on draft guidelines, although details are limited. Three of these guidelines also published a draft guideline for public comment,^{24 34 39} which may have involved contributions from the transgender and

gender diverse community although again details are limited. Only two guidelines reported consulting directly with children/adolescents or their parents,^{29 43} and a second guideline listed them as potential stakeholders but it was unclear whether their views were included.³⁴ Others consulted with transgender or gender diverse adults or organisations representing children/adolescents experiencing gender dysphoria/incongruence or the broader transgender community.

Most guidelines reference evidence sources to support recommendations. However, only five described using a systematic approach to searching and/or selecting evidence, and in most cases, this covered one or two specific aspects of practice.^{22 25 34 35 43} Three of the guidelines that reviewed evidence,^{25 34 43} and another guideline not reporting a systematic approach to finding evidence,⁴⁴ reported appraising the quality and strength of evidence they reviewed. The Finnish guideline chose not to appraise quality in their systematic review because they determined all studies were poor quality on the basis of study design.³⁵

Across guidelines, it was difficult to detect what evidence had been reviewed and how this informed development of recommendations, and the links between specific recommendations and evidence were often unclear or missing. For example, all but seven guidelines^{27 28 30 38 40–42} describe insufficient evidence about the risks and benefits of medical treatments for adolescents, particularly in relation to long-term outcomes. At the same time, many of these guidelines then cite this evidence or

Table 1 Critical appraisal domain scores

Guideline ID	Scope and purpose	Stakeholder involvement	Rigour of development	Clarity of presentation	Applicability	Editorial independence
AACAP 2012	65	39	44	63	7	31
American Academy of Paediatrics 2018	70	26	12	30	6	69
American Psychological Association 2015	74	74	24	50	18	14
Council for Choices in Healthcare Finland 2020	91	69	51	72	56	0
de Vries 2006	63	31	10	74	17	6
Endocrine Society 2009	65	33	44	70	22	31
Endocrine Society 2017	63	33	42	72	21	92
European Society for Sexual Medicine 2020	63	52	39	70	7	58
Fisher 2014	65	20	12	35	17	44
Health Policy Project 2015	63	63	16	24	33	6
Norwegian Directorate of Health 2020	76	81	30	57	47	17
Oliphant 2018	44	39	12	33	21	0
Pan American Health Organisation 2014	52	44	13	31	21	0
Royal Children's Hospital Melbourne 2018	81	59	19	41	19	14
Society for Adolescent Health and Medicine 2020	41	24	17	41	7	0
South African HIV Clinicians Society 2021	59	59	21	43	24	69
Strang 2018	87	31	18	37	15	19
Swedish National Board of Health & Welfare 2022	91	87	71	83	25	36
UCSF 2016	70	41	23	37	26	0
WPATH 2012	85	61	26	56	17	17
WPATH 2022	83	63	35	56	24	39

≥70%, 31%–69%, ≤30%.

AACAP, American Academy of Child & Adolescent Psychiatry; UCSF, University of California, San Francisco; WPATH, World Professional Association for Transgender Health.

refer to guidelines that recommend these treatments to support a similar recommendation. Only the Swedish guideline makes a different recommendation, linking the lack of evidence about medical treatments to their recommendation that these should be provided under a research framework and for exceptional cases until this is established.⁴³ The Finnish guideline also takes a more cautious approach and recommends that medical interventions, which are described as experimental on the basis of their own evidence review, must be provided at the two central research clinics in Finland, and that data on the effects of these treatments should be systematically collected.³⁵

Table 1 shows the AGREE II domain scores for the appraised guidelines. Most scored well regarding clarity of scope and purpose and scored poorly regarding applicability, editorial independence and rigour of development. Guidelines often differed between domains, although overall few guidelines scored highly across the domains. Only six guidelines scored higher than 30% for rigour,^{22 25 26 34 35 43} and only the Swedish guideline scored higher than 70%.⁴³ In the stakeholder involvement and clarity of presentation domains, guidelines varied considerably. For example, in certain guidelines, it was not always easy to discern a recommendation from a suggestion, and recommendations were not always specific or unambiguous. Additionally, in guidelines covering all age groups, the terms adults and people were sometimes used interchangeably without defining them, making it difficult to assess whether recommendations about people were referring to children and/or adolescents.

Online supplemental table 3 shows the overall scores and assessment of whether guidelines should be recommended for practice. Only two guidelines were recommended for practice by all three appraisers: the Swedish⁴³ and Finnish³⁵ guidelines. These guidelines were the only two that scored higher than 50% for rigour of development due to their evidence-based approach and transparent reporting of this. They were also the only guidelines, which included a formal ethics review and they both scored highly on stakeholder involvement.

Links and influences between guidelines

All but two guidelines,^{30 36} both of which contain no reference list and do not report methods of development, cite at least one other guideline. Figure 3 shows the different ways in which guidelines reference or use other guidelines and the level of influence guidelines have on each other. Examples of different links include citing another guideline as a resource for the reader, citing a guideline to justify or support a single or multiple recommendations, explicitly adopting another guideline's recommendation(s), recommending that another guideline be used alongside their own or reviewing other guidelines to inform the development of recommendations.

The links examined show that early versions of two international guidelines, the Endocrine Society²⁵ and World Professional Association for Transgender Health (WPATH)³⁴ guidelines (specifically the 2009 Endocrine Society guideline⁴⁸ and WPATH V.7 published in 2012)⁴⁹ have influenced nearly all the national and regional guidelines identified. The two guidelines also have close links, with WPATH adopting Endocrine Society recommendations in its own guideline and acting as a cosponsor for and providing input on drafts of the Endocrine Society guideline. Due to the considerable influence of these two guidelines, the quality of the current and preceding versions for both was appraised.

The type of relationship between the Endocrine Society and WPATH guidelines and other guidelines varied. For example, WPATH V.7⁴⁹ formed the basis of an initial draft of the Australian guideline²⁹; the American Psychological Association (APA)²⁴ recommends using their guideline in tandem with WPATH⁴⁹ and Endocrine Society⁴⁸ guidelines; the guideline developed in New Zealand²⁸ is offered as additional guidance to WPATH⁴⁹ and adopts numerous recommendations from this and Endocrine Society²⁵ guidelines; the regional blueprints^{38 40} adopt WPATH⁴⁹ criteria for hormone treatments; and the Norwegian guideline³⁹ describes their overall approach and principles as consistent with WPATH⁴⁹ and Endocrine Society,²⁵ along with

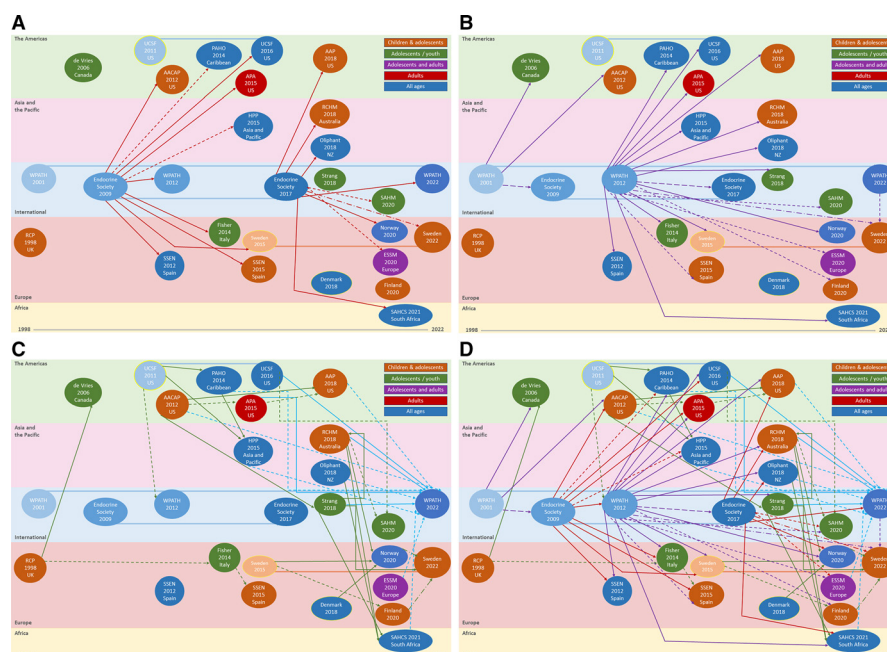


Figure 3 Links between guidelines. (A–D) show how the guidelines have influenced each other using the regional timeline shown in figure 2. (A) Shows how guidelines have cited and drawn on the Endocrine Society guidelines (indicated by red arrows). (B) Shows how guidelines have cited and drawn on the World Professional Association for Transgender Health (WPATH) guidelines (indicated by purple arrows). (C) Shows how guidelines have cited and drawn on other guidelines (indicated by green arrows). A different colour (blue) was used to show how the latest Endocrine Society and WPATH guidelines have cited and drawn on these other guidelines. (D) Shows all the links between the guidelines. Link symbol: Solid line: guideline has been adapted from the source guideline, has adopted numerous key recommendations from the source guideline or used the source guideline as evidence to support numerous key recommendations or recommends using the source guideline alongside its own. Short-dashed line: included reference to the source guideline or has adopted one or two key recommendations or used the source guideline as evidence to support these. Long dashed line: co-sponsor with direct involvement in development process. Long and short dashed line: critically reviewed recommendations from source guideline as key element of development process. Guidelines circled in yellow are those for which there are no available references to assess any potential links with other guidelines.

the Australian,²⁹ Danish³⁶ and Swedish 2015⁵⁰ guidelines. The updated 2022 Swedish guideline⁴³ took a different approach, which involved examining the WPATH,⁴⁹ Endocrine Society,²⁵ Finnish³⁵ and Norwegian³⁹ recommendations against their own evidence review and knowledge base to consider whether to adopt them (with the process reported in a separate Appendix published alongside the guideline⁵¹). The basis for decisions to adopt WPATH or Endocrine Society recommendations in other guidelines is unclear.

The Endocrine Society and WPATH V.7 guidelines contain few references to other guidelines. However, WPATH V.8 published in 2022 identifies numerous national and regional guidelines published as early as 2012 as potentially valuable resources and cites the APA,²⁴ Australian,²⁹ New Zealand²⁸ and University California, San Francisco⁴⁴ guidelines multiple times to support recommendations, all of which were themselves influenced considerably by WPATH V.7.

DISCUSSION

This systematic review identified 23 guidelines or clinical guidance publications (4 international, 3 regional and 16 national), nine of which focus solely on the management of children and/or adolescents experiencing gender dysphoria/incongruence.^{23 27 29–32 35 37 43} Guidance quality and methods reporting varied considerably, and only five reported using a systematic approach to using evidence to inform recommendations.^{22 25 34 35 43} Links between evidence and recommendations are often unclear, and information about how recommendations

were developed in the absence of reviewing evidence is limited. There is also limited guidance on how to implement recommendations, and in some cases, a lack of clarity as to what is being recommended and for who. Although consultation with stakeholders was common, only 10 involved service users or their representatives, and it was unclear how this influenced recommendations. Only two reported consulting directly with children/adolescents or their parents, so few guidelines have been informed by an understanding of the needs and preferences of this population.

The findings from this review, therefore, raise questions about the credibility of currently available guidance, despite the majority being published in the last 5 years. Most guidelines have not followed international standards for guideline development set out by the AGREE2 initiative,²⁰ and/or provide insufficient information about their development. Because of this, the review team only recommended two guidelines for practice—the Finnish guideline published in 2020³⁵ and the Swedish guideline published in 2022,⁴³ neither of which were included in previously published systematic reviews.^{12 13} These are the only guidelines to publish details of how developers reviewed and utilised the evidence-base and the decision-making behind their recommendations. For example, they explicitly link the lack of robust evidence about medical treatments for adolescents, as established from their own systematic reviews,^{52 53} with the recommendation for a more cautious approach to treatment and the need for gender services providing these treatments to collect outcome data, with Sweden recommending that medical

treatments should only occur under a research framework. They are also the only guidelines which have been informed by an ethical review conducted as part of guideline development. However, even these guidelines, like others, lack clear recommendations regarding certain aspects of practice and would benefit from more detailed guidance regarding implementation of recommendations.

Although other guidance mostly acknowledges the lack of robust evidence regarding medical treatments for adolescents, some then suggest existing evidence is sufficient to recommend them. Others have instead used a consensus or expert-led approach that results in the same recommendation or have adopted recommendations from the Endocrine Society guideline^{25,48} or WPATH V.7,⁴⁹ despite the latter having been published a decade earlier in some cases. These two guidelines are themselves linked through cosponsorship and like other guidelines lack a robust and transparent approach to their development. Although it is not uncommon to adopt an expert consensus-based approach when evidence is limited, it is less common for guideline developers to draw so heavily on other guidelines.¹¹ This relationship may explain why there has until recently been an apparent consensus on key areas of practice for which evidence remains lacking.⁵⁴

Previous systematic reviews have also found guidelines to be lacking in methodological quality, transparency and clarity,^{12,13} and Dahlen *et al* recommend clinicians proceed with caution due to the gap between clinical practice and research in this area. Although neither highlight the interdependent nature of available guidance, this is not surprising due to their focus on a subset of mainly international guidelines. However, a recent BMJ article,⁵⁵ which too highlights the lack of an evidence-based approach, draws attention to the different conclusions in the Swedish and Finnish guidelines about the risks and benefits of medical treatments, which marks a considerable departure from all other guidance.

The different conclusions in recently published guidelines and concerns about guideline quality, combined with limited evidence about the most appropriate assessment and care pathways for children and adolescents experiencing gender dysphoria/incongruence has led to clinical uncertainty in practice and changing service provision and policy.⁵⁵ Large well-designed and conducted research that assesses long-term care outcomes for this population is urgently needed to inform future clinical guidelines, which themselves must be underpinned by an evidence-based and transparent approach that includes direct consultation with children and adolescents and their families.

Strengths and limitations

This review followed a published protocol and used robust search strategies. A systematic approach to appraise quality was used, although the AGREE2 tool was developed to appraise clinical guidelines rather than the broader set of guidance included in this review. A detailed examination of how guidance was developed facilitated new insights about the links between published guidelines. The search strategy may not have identified all guidelines not published in English. As searches were conducted to April 2022, this review does not include more recently published guidance; as this is a rapidly evolving area this is a limitation.

CONCLUSIONS

Most clinical guidance lacks an evidence-based approach and provides limited information about how recommendations were developed. The WPATH and Endocrine Society international guidelines, which like other guidance lack developmental rigour and transparency have, until recently, dominated

the development of other guidelines. Healthcare professionals should consider the lack of quality and independence of available guidance when utilising this for practice. Future guidelines should adhere to standards for guideline development and provide greater transparency about how recommendations are developed and links between evidence and recommendations. The views of children, adolescents, parents and carers should also inform future guideline development.

Contributors LF and TL contributed to the conception of the review. JT, RH, LF, and TL designed the review methods. JT, RH and CH carried out screening, extraction and critical appraisal. JT, CEH, RH, LF, and TL contributed to data synthesis. JT drafted the manuscript. All authors contributed to interpretation of results and reviewed the manuscript prior to submission. CEH accepts full responsibility for the finished work and/or the conduct of the study, had access to the data, and controlled the decision to publish.

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Supplementary Table S1: Final search strategy for Ovid MEDLINE

1	exp Child/ or Child Behavior/ or Child Health/ or Child Welfare/ or Psychology, Child/ or Child Psychiatry/ or Child Health Services/ or Child Development/ (1984459)
2	Minors/ (2638)
3	(child\$ or minor or minors or boy or boys or boyhood\$ or girl or girls or girlhood\$ or kid or kids or youngster\$ or emerging adult\$).ti,ab,kf,jn. (1862660)
4	(young\$ adj (people\$ or person\$1 or adult\$ or man\$1 or men\$1 or woman\$ or women\$ or male\$1 or female\$1)).ti,ab,kf,jn. (224878)
5	pediatrics/ (55388)
6	(pediatric\$ or paediatric\$ or peadiatric\$).ti,ab,kf,jn. (543516)
7	Adolescent/ or Adolescent Behavior/ or Adolescent Health/ or Psychology, Adolescent/ or Adolescent Psychiatry/ or Adolescent Health Services/ or Adolescent Medicine/ or Adolescent Development/ (2088552)
8	Puberty/ (13562)
9	(adolescen\$ or pubescen\$ or prepubescen\$ or postpubescen\$ or pubert\$ or prepubert\$ or postpubert\$ or teen or teens or teenag\$ or tween\$ or preteen\$ or preadolescen\$ or juvenil\$ or youth\$ or underage\$ or under-age\$).ti,ab,kf,jn. (522801)
10	Schools/ or Schools, Nursery/ (42221)
11	exp Child Day Care Centers/ or Child Care/ (11287)
12	(school\$ or highschool\$ or preschool\$ or kindergar\$ or nursery or nurseries or pupil\$1).ti,ab,kf,jn. (356157)
13	or/1-12 (4333601)
14	Gender Dysphoria/ (581)
15	"Sexual and Gender Disorders"/ (79)
16	Transsexualism/ (3895)
17	Transgender Persons/ (3835)
18	Health Services for Transgender Persons/ (152)
19	exp Sex Reassignment Procedures/ (969)
20	"Sexual and Gender Minorities"/ (4924)
21	((gender\$ and dysphori\$) or (gender\$ adj5 incongru\$) or sexual dysphori\$).ti,ab,kf. (1784)
22	(gender\$ adj (disorder\$ or identi\$)).ti,ab,kf. or (gender identity/ and dysphori\$.ti,ab,kf.) (4568)
23	(GID or GIDS or GIDC or GIDCS).ti,ab,kf. (456)
24	(gender\$ adj5 (confusion or confused or questioning or distress\$ or discomfort)).ti,ab,kf. (980)
25	(gender\$ adj5 (minority or minorities)).ti,ab,kf. (1593)
26	(gender\$ adj5 (variant\$ or variance\$ or nonconform\$ or non-conform\$ or diverse or diversity or atypical\$)).ti,ab,kf. (3409)
27	(non-binary or nonbinary or enby or genderqueer or gender-queer or neutrois).ti,ab,kf. (796)
28	(agender\$ or genderless\$ or gender-less\$ or genderfree or gender-free or ungender\$ or un-gender\$ or non-gender\$ or nongender\$ or bigender\$ or bi-gender\$ or dual gender\$ or dualgender\$ or demi-gender\$ or demigender\$ or genderfluid\$ or gender-fluid\$ or trigender\$ or tri-gender\$).ti,ab,kf. (315)

- 29 two spirit\$.ti,ab,kf. (84)
- 30 (trans adj3 (female\$ or feminin\$ or woman\$ or women\$ or male\$1 or man or mans or men or mens or masculin\$ or person\$1 or peopl\$ or population\$ or individual\$)).ti,ab,kf. (1362)
- 31 (transgend\$ or trans-gend\$ or transex\$ or transsex\$ or trans-sex\$ or transfemale\$ or transfeminin\$ or transwom\$ or transmale\$ or transman\$ or transmasculin\$ or transmen\$ or transperson\$ or transpeopl\$ or transpopulation\$ or transindividual\$).ti,ab,kf. (10832)
- 32 (trans adj3 identi\$).ti,ab,kf. or (gender identity/ and trans.ti,ab,kf.) or (trans and dysphori\$).ti,ab,kf. (1447)
- 33 (crossgender\$ or cross-gender\$ or crossex\$ or crosssex\$ or cross-sex\$).ti,ab,kf. (836)
- 34 ((sex or gender\$) adj3 (reassign\$ or re-assign\$ or affirm\$ or confirm\$ or transition\$)).ti,ab,kf. (3963)
- 35 ((gender\$ or sex) adj (change or changes or changing or changed)).ti,ab,kf. (825)
- 36 (detransition\$ or de-transition\$ or desister\$ or de-sister\$).ti,ab,kf. (134)
- 37 ((desist\$ or persist\$) adj5 (transition\$ or trans or dysphori\$)).ti,ab,kf. (823)
- 38 or/14-37 (28731)
- 39 (trans and (child\$ or minor or minors or boy or boys or boyhood\$ or girl or girls or girlhood\$ or kid or kids or youngster\$ or young\$ people\$ or young\$ person\$ or young\$ adult\$ or young\$ man\$1 or young\$ men\$1 or young\$ woman\$ or young\$ women\$ or young\$ male\$1 or young\$ female\$ or adolescen\$ or pubescen\$ or prepubescen\$ or postpubescen\$ or pubert\$ or prepubert\$ or postpubert\$ or teen or teens or teenag\$ or tween\$ or preteen\$ or preadolescen\$ or juvenil\$ or youth\$ or emerging adult\$ or underage\$ or under-age\$ or school\$ or highschool\$ or preschool\$ or kindergar\$ or nursery or nurseries or pupil\$1 or pediatric\$ or paediatric\$ or peadiatric\$)).ti. (339)
- 40 (trans adj5 (child\$ or minor or minors or boy or boys or boyhood\$ or girl or girls or girlhood\$ or kid or kids or youngster\$ or young\$ people\$ or young\$ person\$ or young\$ adult\$ or young\$ man\$1 or young\$ men\$1 or young\$ woman\$ or young\$ women\$ or young\$ male\$1 or young\$ female\$ or adolescen\$ or pubescen\$ or prepubescen\$ or postpubescen\$ or pubert\$ or prepubert\$ or postpubert\$ or teen or teens or teenag\$ or tween\$ or preteen\$ or preadolescen\$ or juvenil\$ or youth\$ or emerging adult\$ or underage\$ or under-age\$ or school\$ or highschool\$ or preschool\$ or kindergar\$ or nursery or nurseries or pupil\$1 or pediatric\$ or paediatric\$ or peadiatric\$)).ab,kf. (397)
- 41 (transchild\$ or transminor\$ or transboy\$ or transgirl\$ or transkid or transkids or transyoung\$ or transyouth\$ or transteen\$ or transtween\$ or transadoles\$ or transjuvenil\$).ti,ab,kf. (15)
- 42 13 and 38 (9819)
- 43 39 or 40 or 41 or 42 (10343)
- 44 exp animals/ not humans/ (4823832)
- 45 (editorial or news or comment or case reports).pt. or case report.ti. (3692318)
- 46 43 not (44 or 45) (9429)
- 47 limit 46 to english language (9029)

Key to Ovid symbols and commands:

\$ Unlimited right-hand truncation symbol

\$N Limited right-hand truncation - restricts the number of characters following the word to N

ti,ab,kf,	Searches are restricted to the Title (ti), Abstract (ab), Keyword Heading Word (kf) fields
.jn	Searches are restricted to the Journal name field
adj	Retrieves records that contain terms next to each other (in the shown order)
adjN	Retrieves records that contain terms (in any order) within a specified number (N) of words of each other
/	Searches are restricted to the Subject Heading field
exp	The subject heading is exploded
pt.	Search is restricted to the publication type field
or/1-12	Combines sets 1 to 12 using OR

Supplementary Table S2 - Guideline characteristics*

Guideline ID, Year	Type of guideline	Country	Summary of guideline	Target audience	Population	Stated Aim	Produced by	Weblink	Version
American Academy of Child & Adolescent Psychiatry (AACAP) 2012 ²¹	Practice Parameter	US	Sets out principles for practice but does not include specific treatment recommendations	Psychiatrists	Children and adolescents (includes sexual minority care as well)	To foster clinical competence in those caring for children and adolescents	American Academy of Child & Adolescent Psychiatry (AACAP)	https://doi.org/10.1016/j.jaac.2012.07.004	1
American Academy of Paediatrics (AAP) 2018 ²²	Policy Statement	US	Sets out nine recommendations regarding role of paediatricians but does not include specific treatment recommendations	Paediatricians	Children and adolescents	To provide suggestions for paediatric providers that are focused on promoting the health and positive development of youth that identity as transgender and gender diverse while eliminating discrimination and stigma	American Academy of Paediatrics	https://doi.org/10.1542/peds.2018-2162	1
American Psychological Association (APA) 2015 ²³	Guideline	US	Sets out 16 guidelines which are principles for psychological practice but within these are recommendations for assessment and psychological care	Psychologists	Adults (includes guideline specific to children and young people)	To assist psychologists in the provision of culturally competent, developmentally appropriate, and trans-affirmative psychological practice	American Psychological Association	https://www.apa.org/practice/guidelines/transgender.pdf	1
Council for Choices in Healthcare in (COHERE) Finland 2020 ³⁴	Guideline	Finland	National guideline focusing on medical research and treatment methods for the treatment of gender dysphoria	All healthcare providers	Minors (<18) - guidelines for adults and minors developed together but published separately	To provide a recommendation on medical treatment methods for dysphoria associated with variations in gender identity of minors	Council for Choices in Healthcare in Finland	https://palveluvalikoima.fi/en/recommendations#genderidentity	1
Danish Health Authority 2018 ³⁵	Guideline	Denmark	National guideline covering all aspects of care and broad recommendations	All healthcare providers	All (includes chapter on under 18s)	To ensure a high quality and equal access to healthcare related to gender identity in Denmark.	Danish Health Authority	https://www.sst.dk/-/media/English/Publications/2018/Guide-on-healthcare-related-to-gender-identity.ashx?sc_lang=en&hash=OFF626604C50D5EED94852CA5D042A8E	3
de Vries 2006 ³⁶	Guideline	Canada	Covers all aspects of care including assessment, psychosocial care and medical interventions	Health and social service professionals	Adolescents (not defined)	To provide professionals working with adolescents with gender-dysphoric feelings practical clinical guidelines for diagnosis and treatment.	Trans Care Project - initiative of Transcend Transgender Support & Education Society and Vancouver Coastal Health's Transgender Health Program	https://rainbowhealth.wpenginepowered.com/wp-content/uploads/2009/05/Guidelines-adolescent.pdf	1

Endocrine Society 2017 ²⁴	Guideline	International	Covers all aspects of hormone treatment and surgery, including assessment for these	Endocrinologists	All (includes sections on children and adolescents)	To make recommendations and suggestions, based on existing literature and clinical experience, that will enable treating physicians to maximize benefit and minimize risk when caring for individuals diagnosed with gender dysphoria/gender incongruence.	Endocrine Society	https://doi.org/10.1210/ic.2017-01658	2
European Society for Sexual Medicine (ESSM) 2020 ²⁵	Position statement	Europe	Covers assessment and hormone treatments with emphasis on sexual functioning - includes general principles and treatment recommendations	European sexologists and healthcare providers who encounter trans people in clinical practice.	Adolescents and Adults	To provide an up-to-date overview of clinical consensus statements on trans health care with attention for sexual function and satisfaction.	European Society for Sexual Medicine	https://doi.org/10.1016/j.jsxm.2020.01.012	1
Fisher 2014 ²⁶	Position Statement	Italy	Covers psychological support and medical intervention including specific recommendations regarding hormone treatments	All healthcare providers	Adolescents	To develop and subscribe Italian guidelines for treatment of gender dysphoria in adolescents, based on the “Dutch Approach”, and in line with the Endocrine Society (ES), and the WPATH guidelines.	Fisher et al. (2014)	https://doi.org/10.1007/s40618-014-0077-6	1
Health Policy Project (HPP) 2015 ³⁷	Blueprint	Asia and the Pacific	Covers all aspects of policy affecting trans people and includes specific guidance about assessment, psychological care and medical care	Health providers, policymakers and governments	All (includes section on children and adolescents)	To improve access to competent primary and specialised care for trans people in Asia and the Pacific.	The Health Policy Project (HPP), Asia Pacific Transgender Network (APTNet), United Nations Development Programme (UNDP)	https://www.undp.org/asia-pacific/publications/blueprint-provision-comprehensive-care-trans-people-and-trans-communities-asia-and-pacific	1
Norwegian Directorate of Health 2020 ³⁸	Guideline	Norway	Naitonal guideline containing broad assessment and care recommendations and some criteria for medical treatments	Healthcare managers and staff working in general and specialist services	All (includes specific recommendations for children and young people)	To prepare recommendations on the treatment of gender dysphoria and gender incongruence, and to confirm the health services offered to people who experience gender incongruence.	Norwegian Directorate of Health	https://www.helsedirektoratet.no/r-etningslinjer/kjonnsinkongruens	1
Olipphant 2018 ^{27, 44}	Guidelines	New Zealand	Includes principles for care and covers all aspects of care and includes specific recommendations regarding hormone treatments	All healthcare providers	All (includes specific recommendations for children and young people)	To present guidance for the provision of gender affirming health care in Aotearoa, New Zealand, which is in step with current practice and international standards.	Olipphant et al. (2018)	https://nzmi.org.nz/journal/vol-131-no-1487/guidelines-for-gender-affirming-healthcare-for-gender-diverse-and-transgender-children-young-people-and-adults-in-aotearoa-new-z	2
Pan American Health Organisation (PAHO) 2014 ³⁹	Blueprint	The Caribbean	Covers all aspects of policy affecting trans people and includes specific guidance about assessment, psychological care and medical care	Health providers, programme planners and managers, policymakers, community leaders, and other stakeholders	All (includes section on children and adolescents)	To provide guidance on improving access to competent primary and specialized care for trans persons in the Latin American and Carribbean region	Pan American Health Organisation (PAHO), John Snow Inc. and WPATH are named as co-authors	https://www.paho.org/en/node/50469	2

Royal Children's Hospital Melbourne (RCHM) 2018 ^{28, 45}	Guidelines	Australia	Includes general principles and covers all aspects of care including specific recommendations regarding hormone treatments	All healthcare providers	Children and adolescents	To maximise quality care provision for trans and gender diverse children and adolescents across Australian	The Royal Children's Hospital, Melbourne	https://doi.org/10.5694/mja17.01044	1
Royal College of Psychiatrists (RCPsych) 1998 ²⁹	Guideline	UK	Covers psychological assessment and management and broad recommendations about medical treatments	Psychiatrists	Children and adolescents	Not reported	Royal College of Psychiatrists (UK)	http://web.archive.org/web/20070503090525/http://www.symposium.com/ijtc0402.htm	1
Society for Adolescent Health and Medicine (SAHM) 2020 ³⁰	Position Statement	International	Includes broad recommendations relating to care approach and model, and medical intervention - does not include specific treatment recommendations	All healthcare providers	Young people	Not reported	Society for Adolescent Health and Medicine	https://doi.org/10.1016/j.jadohealth.2020.03.016	1
South African HIV Clinicians Society (SAHCS) 2021 ^{40, 46}	Guideline	South Africa	Covers all aspects of care and treatment and includes detailed guidance on hormone treatments	All healthcare providers, particularly those working in a primary care setting, public or private	All (includes sections on children and adolescents)	To provide evidence-informed best practice recommendations to enable South African healthcare providers to offer quality, affirming services to transgender and gender diverse clients. The term 'client', for the purposes of this guideline, includes service users, patients and participants.	South African HIV Clinicians Society	https://doi.org/10.4102/saihimed.v22i1.1299	1
Spanish Society of Endocrinology and Nutrition (SSEN) 2012 ⁴¹	Guideline	Spain	Covers assessment and treatment with main focus on hormone treatments	Not reported	All (includes section on children and adolescents)	To meet the need for implementing a coordinated action protocol for comprehensive health care for transgender people in the [Spanish] National Health System.	SSEN Identity and Sexual Differentiation Group (GIDSEEN)	https://doi.org/10.1016/j.endonu.2012.02.001	1
Spanish Society of Endocrinology and Nutrition (SSEN) 2015 ³¹	Position Statement	Spain	Sets out broad recommendations for evaluation and treatment (no specific details)	All healthcare providers	Children and adolescents	To set out recommendations for evaluation and treatment of gender dysphoria in children and adolescents.	SSEN Working Group on Gender Identity and Sexual Development (GIDSEEN)	https://doi.org/10.1016/j.endonu.2015.03.004	1
Strang 2018 ³²	Guideline	International	Covers all aspects of care but does not include specific guidance on hormone treatments	Not reported	Adolescents (time of onset of puberty to age 19) with autism spectrum disorder and gender dysphoria	To develop initial clinical consensus guidelines for the care of adolescents with co-occurring autism spectrum disorder and gender non-conformity/gender dysphoria.	Strang et al. (2018)	https://doi.org/10.1080/15374416.2016.1228462	1

Swedish National Board of Health and Welfare 2022 ⁴²	Guideline	Sweden	National guideline covering all aspects of assessment and care including psychosocial care and hormone treatments	Health professionals in health care sector and decision-makers with responsibility for health care activities concerned	Children and adolescents	To contribute to good and equal care for children and young people with gender inequality and gender dysphoria.	Swedish National Board of Health and Welfare	https://www.socialstyrelsen.se/globalassets/sharepoint-dokument/artikelkatalog/kunskapsstud/2022-12-8302.pdf	2
University of California San Francisco (UCSF) 2016 ⁴³	Guideline	US	Covers all aspects of care including assessment, psychosocial care, medical and other interventions	All healthcare providers	All (includes chapter on children and adolescents)	To equip primary care providers and health systems with the tools and knowledge to meet the health care needs of their transgender and gender nonconforming patients.	Center of Excellence for Transgender Health, University of California, San Francisco (UCSF)	https://transcare.ucsf.edu/guidelines	2
World Professional Association for Transgender Health (WPATH) 2022 ³³	Guideline	International	Covers all aspects of assessment, care and treatment including specific recommendations regarding medical treatment	All healthcare providers	All (includes sections on children and adolescents)	To provide clinical guidance to assist transgender and gender diverse people in accessing safe and effective pathways to achieving lasting personal comfort with their gendered selves with the aim of optimizing overall physical health, psychological well-being, and self-fulfillment.	World Professional Association for Transgender Health (WPATH)	https://doi.org/10.1080/26895269.2022.2100644	8

* The terminology and language used by guidelines has been retained in this summary

Supplementary Table S3 – Critical appraisal overall rating and recommendations for use

Guideline ID	OQA1	R1	OQA2	R2	OQA3	R3
AACAP 2012	3	No	3	No	4	Yes (mod)
American Academy of Paediatrics 2018	2	No	3	No	1	No
American Psychological Association 2015	3	No	2	No	3	No
Council for Choices in Healthcare Finland 2020	5	Yes (mod)	5	Yes	5	Yes (mod)
de Vries 2006	2	No	3	No	2	No
Endocrine Society 2009	3	No	4	No	4	Yes (mod)
Endocrine Society 2017	4	Yes (mod)	4	No	4	Yes (mod)
European Society for Sexual Medicine 2020	3	Yes (mod)	2	No	3	No
Fisher 2014	2	No	3	No	1	No
Health Policy Project 2015	2	No	1	No	2	No
Norwegian Directorate of Health 2020	3	No	3	Yes (mod)	4	Yes (mod)
Oliphant 2018	2	No	3	No	1	No
Pan American Health Organisation 2014	2	No	2	No	1	No
Royal Children's Hospital Melbourne 2018	3	No	3	No	2	No
Society for Adolescent Health and Medicine 2020	2	No	2	No	1	No
South African HIV Clinicians Society 2021	3	No	3	No	2	No
Strang 2018	3	Yes (mod)	2	No	2	No
Swedish National Board of Health & Welfare 2022	6	Yes (mod)	6	Yes	6	Yes
University California San Francisco 2016	3	No	2	No	3	No
WPATH 2012	3	Yes (mod)	3	No	2	No
WPATH 2022	3	Yes (mod)	3	No	3	No

OQA: Overall quality assessment - 1-7 where 1 is lowest possible score and 7 is the highest possible score

R: Recommend guideline for use - Possible responses are Yes, Yes with modifications (Yes (mod)), No

The numbers 1-3 refer to the three reviewers who appraised the guidelines

Abbreviations

AACAP – American Academy of Child & Adolescent Psychiatry

WPATH – World Professional Association for Transgender Health