



## Florida Department of Health Updates

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April 8, 2022

Ron DeSantis  
Governor

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**Mission:**

To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.



**Ron DeSantis**  
Governor

**Joseph A. Ladapo, MD, PhD**  
State Surgeon General

**Vision:** To be the **Healthiest State** in the Nation

## **Surgical Procedures on Children and Adolescents for Gender Dysphoria**

April XX, 2022

Recently, the United States Department of Health and Human Services issued guidance on "[gender-affirming care and young people](#)" and treating gender dysphoria in children and adolescents.

However, the State of Florida contends that [gender reassignment surgery](#) should not be performed on children and adolescents under 18 diagnosed with gender dysphoria. These are major surgeries, some of which have permanent implications. Life-long decisions of this magnitude should not be an option for children and adolescents as the scientific understanding of gender dysphoria is still evolving.

Children and adolescents experiencing or diagnosed with gender dysphoria should seek social support by peers and family, and counseling from a licensed health care provider.

This recommendation does not apply to minors born with medical conditions affecting the development of sex organs unrelated to gender dysphoria.

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# Gender-Affirming Care and Young People

## What is gender-affirming care?

Gender-affirming care is a supportive form of healthcare. It consists of an array of services that may include medical, surgical, mental health, and non-medical services for transgender and nonbinary people.

For transgender and nonbinary children and adolescents, early gender-affirming care is crucial to overall health and well-being as it allows the child or adolescent to focus on social transitions and can increase their confidence while navigating the healthcare system.

## Why does it matter?

Research demonstrates that gender-affirming care improves the mental health and overall well-being of gender diverse children and adolescents.<sup>1</sup> Because gender-affirming care encompasses many facets of healthcare needs and support, it has been shown to increase positive outcomes for transgender and nonbinary children and adolescents. Gender-affirming care is patient-centered and treats individuals holistically, aligning their outward, physical traits with their gender identity.

Gender diverse adolescents, in particular, face significant health disparities compared to their cisgender peers. Transgender and gender nonbinary adolescents are at increased risk for mental health issues, substance use, and suicide.<sup>2,3</sup> The Trevor Project's 2021 *National Survey on LGBTQ Youth Mental Health* found that 52 percent of LGBTQ youth seriously considered attempting suicide in the past year.<sup>4</sup>

A safe and affirming healthcare environment is critical in fostering better outcomes for transgender, nonbinary, and other gender expansive children and adolescents. Medical and psychosocial gender affirming healthcare practices have been demonstrated to yield lower rates of adverse mental health outcomes, build self-esteem, and improve overall quality of life for transgender and gender diverse youth.<sup>5,6</sup> Familial and peer support is also crucial in fostering similarly positive outcomes for these populations. Presence of affirming support networks is critical for facilitating and arranging gender affirming care for children and adolescents. Lack of such support can result in rejection, depression and suicide, homelessness, and other negative outcomes.<sup>7,8,9</sup>

### Additional Information

- [Endocrine Treatment of Gender-Dysphoric/Gender-Incongruent Persons: An Endocrine Society Clinical Practice Guideline](#)
- [Ensuring Comprehensive Care and Support for Transgender and Gender-Diverse Children and Adolescents | American Academy of Pediatrics](#)
- [Standards of Care \(SOC\) for the Health of Transsexual, Transgender, and Gender Nonconforming People | World Professional Association for Transgender Health](#)

### Common Terms: (in alphabetical order)

**Cisgender:** Describes a person whose gender identity aligns with their sex assigned at birth.

**Gender diverse or expansive:** An umbrella term for a person with a gender identity and/or expression broader than the male or female binary. Gender minority is also used interchangeably with this term.

**Gender dysphoria:** Clinically significant distress that a person may feel when sex or gender assigned at birth is not the same as their identity.

**Gender identity:** One's internal sense of self as man, woman, both or neither.

**Nonbinary:** Describes a person who does not identify with the man or woman gender binary.

**Transgender:** Describes a person whose gender identity and or expression is different from their sex assigned at birth, and societal and cultural expectations around sex.

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# Gender-Affirming Care and Young People

Affirming Care	What is it?	When is it used?	Reversible or not
<b>Social Affirmation</b>	Adopting gender-affirming hairstyles, clothing, name, gender pronouns, and restrooms and other facilities	At any age or stage	Reversible
<b>Puberty Blockers</b>	Using certain types of hormones to pause pubertal development	During puberty	Reversible
<b>Hormone Therapy</b>	Testosterone hormones for those who were assigned female at birth  Estrogen hormones for those who were assigned male at birth	Early adolescence onward	Partially reversible
<b>Gender-Affirming Surgeries</b>	“Top” surgery – to create male-typical chest shape or enhance breasts  “Bottom” surgery – surgery on genitals or reproductive organs  Facial feminization or other procedures	Typically used in adulthood or case-by-case in adolescence	Not reversible

## Resources

- [Discrimination on the Basis of Sex | HHS Office of Civil Rights](#)
- [Lesbian, Gay, Bisexual, and Transgender Health | Healthy People 2030](#)
- [Lesbian, Gay, Bisexual, and Transgender Health: Health Services | Centers for Disease Control and Prevention](#)
- [National Institutes of Health Sexual & Gender Minority Research Office](#)
- [Family Support: Resources for Families of Transgender & Gender Diverse Children | Movement Advancement Project](#)
- [Five Things to Know About Gender-Affirming Health Care | ACLU](#)
- [Gender-Affirming Care is Trauma-Informed Care | The National Child Traumatic Stress Network](#)
- [Gender-Affirming Care Saves Lives | Columbia University](#)
- [Gender Identity | The Trevor Project](#)
- [Genderspectrum.org](#)
- [Glossary of Terms | Human Rights Campaign](#)
- [Health Care for Transgender and Gender Diverse Individuals | ACOG](#)
- [Transgender and Gender Diverse Children and Adolescents | Endocrine Society](#)

<sup>1</sup> Green, A. E., DeChants, J. P., Price, M. N., & Davis, C. K. (2021). Association of Gender-Affirming Hormone Therapy With Depression, Thoughts of Suicide, and Attempted Suicide Among Transgender and Nonbinary Youth. *Journal of Adolescent Health*, 70(4). <https://doi.org/https://doi.org/10.1016/j.jadohealth.2021.10.036>

<sup>2</sup> Rimes, K., Goodship N., Ussher, G., Baker, D. and West, E. (2019). Non-binary and binary transgender youth: Comparison of mental health, self-harm, suicidality, substance use and victimization experiences. *International Journal of Transgenderism*, 20 (2-3); 230-240.

<sup>3</sup> Price-Feeney, M., Green, A. E., & Dorison, S. (2020). Understanding the mental health of transgender and nonbinary youth. *Journal of Adolescent Health*, 66(6), 684–690. <https://doi.org/10.1016/j.jadohealth.2019.11.314>

<sup>4</sup> Trevor Project. (2021). *National Survey on LGBTQ Youth Mental Health 2021*. Trevor Project. <https://www.thetrevorproject.org/survey-2021/>.

<sup>5</sup> Wagner J, Sackett-Taylor AC, Hodax JK, Forcier M, Rafferty J. (2019). Psychosocial Overview of Gender-Affirmative Care. *Journal of pediatric and adolescent gynecology*, (6):567-573. doi: 10.1016/j.jpag.2019.05.004. Epub 2019 May 17. PMID: 31103711.

<sup>6</sup> Hughto JMW, Gunn HA, Rood BA, Pantalone DW. (2020). Social and Medical Gender Affirmation Experiences Are Inversely Associated with Mental Health Problems in a U.S. Non-Probability Sample of Transgender Adults. *Archives of sexual behavior*, 49(7):2635-2647. doi: 10.1007/s10508-020-01655-5. Epub 2020 Mar 25. PMID: 32215775; PMCID: PMC7494544.

<sup>7</sup> Brown, C., Porta, C. M., Eisenberg, M. E., McMorris, B. J., & Sieving, R. E. (2020). Family relationships and the health and well-being of transgender and gender-diverse youth: A critical review. *LGBT Health*, 7, 407-419. <https://doi.org/10.1089/lgbt.2019.0200>

<sup>8</sup> Seibel BL, de Brito Silva B, Fontanari AMV, Catelan RF, Bercht AM, Stucky JL, DeSousa DA, Cerqueira-Santos E, Nardi HC, Koller SH, Costa AB. (2018). The Impact of the Parental Support on Risk Factors in the Process of Gender Affirmation of Transgender and Gender Diverse People. *Front Psychol*, 27;9:399. doi: 10.3389/fpsyg.2018.00399. Erratum in: *Front Psychol*. 2018 Oct 12;9:1969. PMID: 29651262; PMCID: PMC5885980.

<sup>9</sup> Sievert ED, Schweizer K, Barkmann C, Fahrenkrug S, Becker-Hebly I. (2021). Not social transition status, but peer relations and family functioning predict psychological functioning in a German clinical sample of children with Gender Dysphoria. *Clin Child Psychol Psychiatry*, 26(1):79-95. doi: 10.1177/1359104520964530. Epub 2020 Oct 20. PMID: 33081539.

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# Gender dysphoria in children and adolescents: an inventory of the literature

A systematic scoping review

SBU POLICY SUPPORT | EVIDENCE ASSESSMENT TO SUPPORT DECISION MAKERS IN SWEDEN

DECEMBER 2019 | WWW.SBU.SE/307E

## Executive summary

This report was commissioned by the Swedish government and is a scoping review of the literature on gender dysphoria in children and adolescents. The report can be a basis for further evaluation of risk of bias and evidence.

### Conclusions

- ▶ We have not found any scientific studies which explains the increase in incidence in children and adolescents who seek the health care because of gender dysphoria.
- ▶ We have not found any studies on changes in prevalence of gender dysphoria over calendar time, nor any studies on factors that can affect the societal acceptance of seeking for gender dysphoria.
- ▶ There are few studies on gender affirming surgery in general in children and adolescents and only single studies on gender affirming genital surgery.
- ▶ Studies on long-term effects of gender affirming treatment in children and adolescents are few, especially for the groups that have appeared during the recent decennium.
- ▶ The scientific activity in the field seems high. A large part of the identified studies are published during 2018 and 2019.
- ▶ Almost all identified studies are observational, some with controls and some with evaluation before and after gender affirming treatment. No relevant randomised controlled trials in children and adolescents were found.

- ▶ We have not found any composed national information from Sweden on:
  - the proportion of those who seek health care for gender dysphoria that get a formal diagnosis
  - the proportion starting endocrine treatment to delay puberty
  - the proportion starting gender affirming hormonal treatment
  - the proportion subjected to different gender affirming surgery

### Background

The number of persons below age 18 who seeks the health care for gender dysphoria in Sweden has increased during the last decade. There is a debate as to why this happens and how it should be managed.

### Aim

To assess the scientific literature for explanations of the increased number of children and adolescents seeking for gender dysphoria and to make an inventory of the literature on management and long-term effects.

### Method

The following questions were assessed.

#### Are there any scientific studies explaining the increase in numbers seeking for gender dysphoria?

**Population:** Children and adolescents with gender dysphoria up to 18 years of age.

**Intervention:** Not applicable.

**Control:** Not applicable.

**Outcome:** Studies on incidence and prevalence of gender dysphoria and pattern of self-referral or referral.

**Are there any scientific studies on long-term effects of treatment for gender dysphoria?**

**Population:** Persons with gender dysphoria.  
**Intervention:** Treatment for gender dysphoria.  
**Control:** Any.  
**Outcome:** Studies reporting long-term effects such as mental health, suicide attempts, suicide, cardiovascular effects, cancer development, bone health and regrets.

**What scientific papers on diagnosis and treatment of gender dysphoria has been published after the National Board of Health and Welfare in Sweden issued its national support for managing children and adolescents with gender dysphoria in 2015?**

**Population:** Children and adolescents with gender dysphoria up to 18 years of age.  
**Intervention:** Diagnosis and treatment for gender dysphoria.  
**Control:** Any.  
**Outcome:** Studies on diagnosis and treatment.

This review is limited to peer reviewed papers with primary data and systematic reviews following PRISMA-standards. Case studies, meeting abstracts and editorials where not included. Only studies written in English or Scandinavian languages were eligible.

A structured systematic literature search in the following databases CINAHL (EBSCO), Cochrane Library (Wiley), EMBASE (Embase.com), PsycINFO (EBSCO), PubMed (NLM), Scopus (Elsevier), SocINDEX (EBSCO). The searches were finalised September 19, 2019.

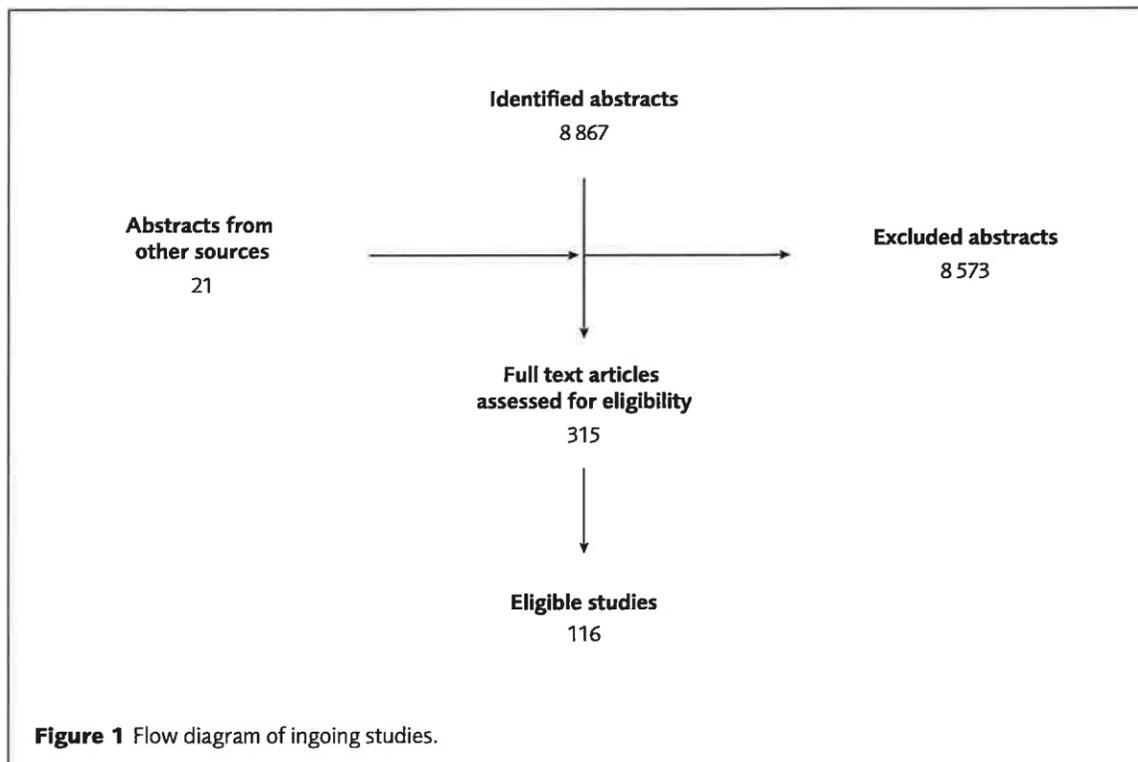
The studies were assessed for their relevance to the questions by two reviewers independently. Assessment of risk of bias, compilation of data or grading of evidence was not done.

**Results/discussion**

No studies explaining the increase of children and adolescents seeking for gender dysphoria were identified. The literature on management and long-term effects in children and adolescents is sparse, particularly regarding gender affirming surgery. All identified studies are observational, and few are controlled or followed-up over time. Much of the data in the literature are from the University Medical Centre in Amsterdam based on their management tradition. A large part of the literature that was considered relevant was published during 2018 and 2019.

**Appendices**

For search strategies, excluded articles, references and tables, see [www.sbu.se/307e](http://www.sbu.se/307e)



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Patient representatives were not involved in the work.

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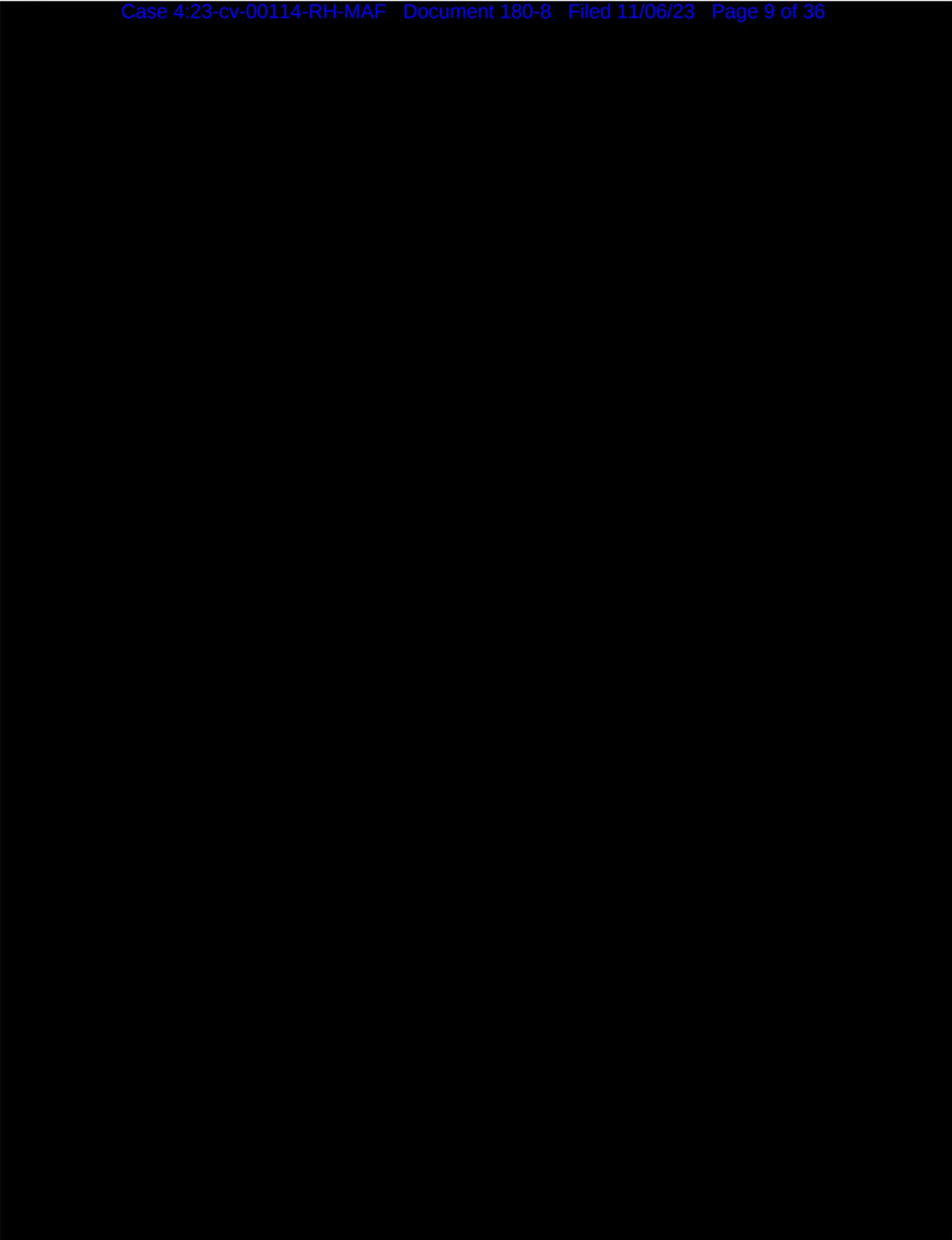
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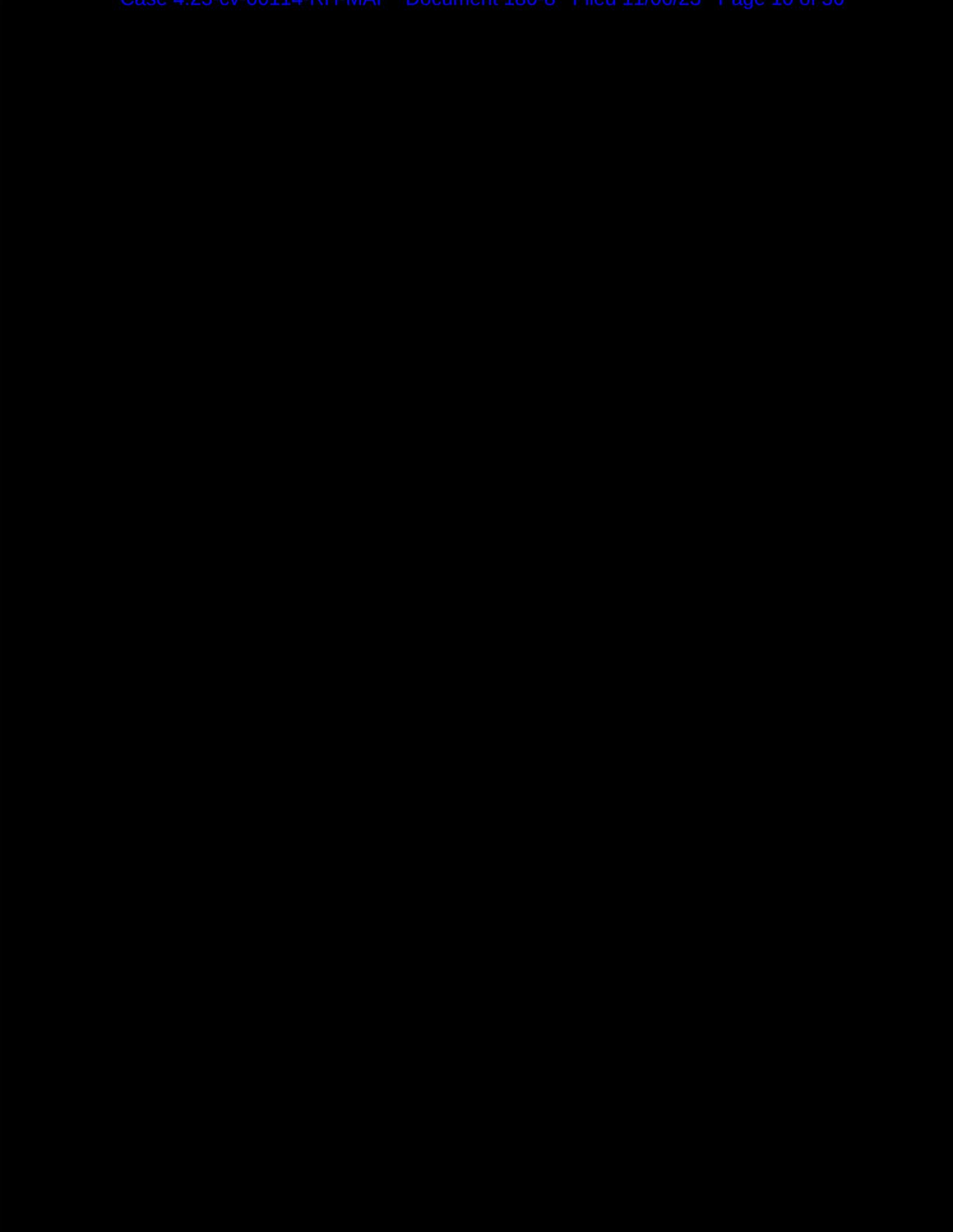
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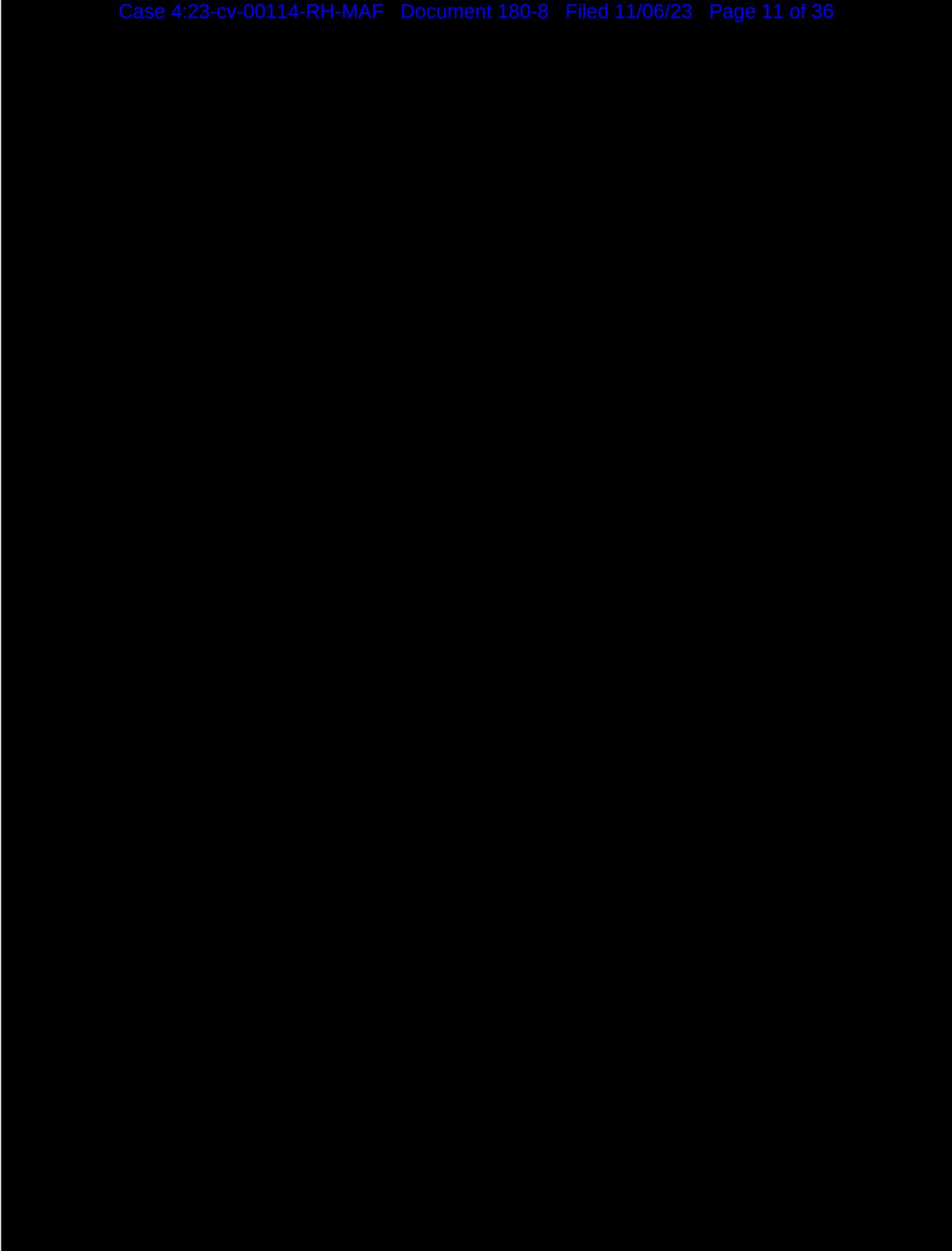
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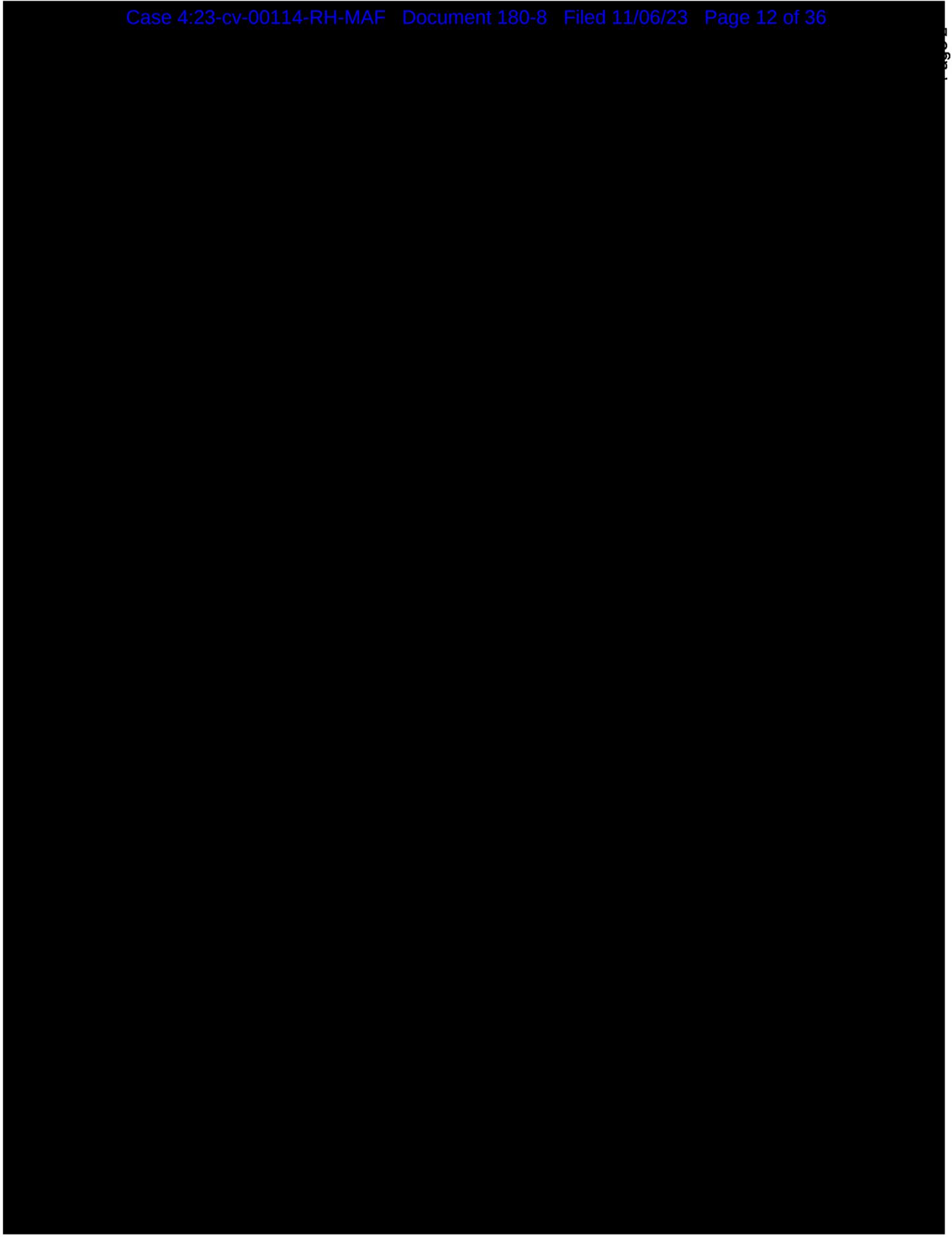
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# Recommendation of the Council for Choices in Health Care in Finland (PALKO / COHERE Finland)

## **Medical Treatment Methods for Dysphoria Related to Gender Variance In Minors**



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**Concepts**

**Suppression treatment**

Pubertal suppression with GnRH analogues (drugs that inhibit gonadotropin-releasing hormone activity) to halt the development of secondary sex characteristics of the biological sex.

**Cisgender/Cis person**

A person whose gender identity matches the sex determined at birth (identifies, and is satisfied with, the sex determined at birth and generally expresses his/her gender accordingly).

**Other gender identity**

A person who does not identify as a man or a woman, but rather somewhere along the continuum or outside of it; genderless, nonbinary, or multigendered.

**Transgender**

A person whose gender identity differs from the legal and biological sex determined at birth but instead aligns with the opposite sex.



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## 1. Basis for Preparing These Recommendations

As the number of patients, including minors, referred to the Helsinki University Hospital (HUS) and the Tampere University Hospital (TAYS) multidisciplinary outpatient clinics for assessment and treatment of gender dysphoria has increased, PALKO (Council for Choices in Healthcare in Finland / COHERE Finland) decided to prepare recommendations for medical treatments of gender dysphoria, i.e., distress which is associated with a minor's gender variance and impairs function. Gender variance refers to a spectrum of gender experience anywhere on the male-female identity continuum or outside it, and is not exclusively confined to the dichotomized male/female conception of gender. Not all patients with gender variance experience significant suffering or functional impairments, and not all seek medical treatment.

These recommendations are based on the legislation in force at the time of the adoption of the recommendation, the available research evidence, and the clinical experience of multidisciplinary teams with expertise in gender dysphoria assessment and treatment at HUS and TAYS. The knowledge base supporting these recommendations is detailed in a separate Preparatory Memorandum and appendices and includes a description of planning and implementation of medical treatments, a literature review of medical treatments, an extensive ethical analysis, and feedback following meetings with patients and the advocacy groups who represent them.

Finnish legislation defines the requirements for the legal gender recognition of transsexuals (Act on Legal Recognition of the Gender of Transsexuals (Trans Act) 536/2002). The detailed requirements for providing the assessment and treatment to enable legal gender recognition are spelled out further in a Decree of the Ministry of Social Affairs and Health (1053/2002). The Trans Act and the related Decree apply to adults. For those who are not of legal age, there are no laws governing the provision and needs of transgender healthcare; however, these are subject to the Health Care Act of Finland (1326/2010), in particular section 7 (criteria for integrated care), section 7a (criteria for treatment options), section 8 (evidence-based, high quality, safe and appropriate care) and section 10 (rationale for centralization); and also to the Constitution of Finland (731/1999)'s section 6 on equality and section 19 on the right to adequate social and healthcare services. Finland's Act on the Status and Rights of Patients, (785/1992), and especially sections 5, 6, and 7, are also relevant.



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## 2. Recommendations' Target Population

These recommendations apply to minors suffering from dysphoria related to gender variance who are seeking a consultation regarding an evaluation of medical examination and treatment needs; the children and adolescents may identify with the opposite sex (transgender), or may identify as genderless, non-binary, or anywhere along or outside the male/female gender identity continuum (other gender).

## 3. Procedures Assessed

These recommendations focus on medical treatment procedures that aim to decrease suffering and functional impairment of gender-dysphoric minors.

## 4. Current Care

Cross-sex identification in childhood, even in extreme cases, generally disappears during puberty. However, in some cases, it persists or even intensifies. Gender dysphoria may also emerge or intensify at the onset of puberty. There is considerable variation in the timing of the onset of puberty in both sexes. The first-line treatment for gender dysphoria is psychosocial support and, as necessary, psychotherapy and treatment of possible comorbid psychiatric disorders.

Consultation appointments (for parents / caregivers) regarding pre-pubescent children's cross-sex identification or gender dysphoria are provided by the research group on the gender identity of minors at TAYS or HUS. However, ongoing support or other treatment of psychiatric disorders are provided through the local municipal services.

In clear cases of pre-pubertal onset of gender dysphoria that intensified during puberty, a referral can be made for an assessment by the research group at TAYS or HUS regarding the appropriateness for puberty suppression. If no contraindications to early intervention are identified, pubertal suppression with GnRH analogues (to suppress the effect of gonadotropin-releasing hormone) may be considered to prevent further development of secondary sex characteristics of the biological sex.

Adolescents who have already undergone puberty, whose gender dysphoria occurs in the absence of co-occurring symptoms requiring psychiatric treatment, and whose experience of transgender identity failed to resolve following a period of reflection, can be referred for assessment by the research group on the gender identity of minors at TAYS or HUS. Hormone therapy (testosterone/estrogen and anti-androgen) can be started after the diagnostic evaluations, but no earlier than age 16. Additionally, patients under 18 receive three to six months of GnRH analogue treatment prior to the initiation of cross-sex hormones in order to suppress the hormonal activity of the gonads. No gender confirmation surgeries are performed on minors.



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## 5. Risks, Benefits and Uncertainty

The literature review identified two studies with the total of 271 persons diagnosed with childhood-onset gender identity disorder and associated gender or body dysphoria that intensified after the onset of puberty (Preparatory Memorandum Appendix 1, Tables 15 and 16, pages 46-48).

In a smaller study of 70 adolescents, puberty was suppressed with the GnRH analogue at the average age of 14.8 (12-18 years) and puberty blockade continued for an average of 2 years. During the treatment period, the adolescents' mood improved, and the risk of behavioral disorders diminished, but gender dysphoria itself did not diminish, and there were no changes in body image. In a larger study consisting of 201 adolescents, 101 patients with the average age of 15.5 (12-18 years) started an 18-month psychological supportive intervention, and, additionally at six months, pubertal development was suppressed by starting GnRH analogue treatment. The other cohort of 100 only received psychological supportive intervention for 18 months. In both groups, statistically significant increases in global psychosocial functioning were found at 12 and 18 months; among those having received psychological intervention alone, the improvement in global functioning was already significant at the 6-month mark. Both studies lack long-term treatment follow-up into adulthood.

A recent Finnish study, published after the completion of this literature review, reported on the effect of initiating cross-sex hormone therapy on functioning, progression of developmental tasks of adolescence, and psychiatric symptoms. This study found that during cross-sex hormone therapy, problems in these areas did not decrease.

Potential risks of GnRH therapy include disruption in bone mineralization and the as yet unknown effects on the central nervous system. In trans girls, early pubertal suppression inhibits penile growth, requiring the use of alternative sources of tissue grafts for a potential future vaginoplasty. The effect of pubertal suppression and cross-sex hormones on fertility is not yet known.

## 6. Ethical Assessment

Although the ethics analysis did not systematically address the issues pertaining to children and adolescents, they have been discussed in several areas in the related documents (Preparatory Memorandum pages 52-62; Appendix 5).

According to the Health Care Act (section 8), healthcare services must be based on evidence and recognized treatment and operational practices. As far as minors are concerned, there are no medical treatment that can be considered evidence-based. At the same time, the numbers of minors developing gender dysphoria has increased. In this situation, it is vital to assure that children and young people are able to talk about their feelings, and that their feelings are acknowledged. The opportunity to reflect on one's experience should be easily accessible through the local health system (i.e., school or student health care, primary care). A young



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person's feelings should not be interpreted as immediately requiring specialized medical examinations or treatments.

In cases of children and adolescents, ethical issues are concerned with the natural process of adolescent identity development, and the possibility that medical interventions may interfere with this process. It has been suggested that hormone therapy (e.g., pubertal suppression) alters the course of gender identity development; i.e., it may consolidate a gender identity that would have otherwise changed in some of the treated adolescents. The reliability of the existing studies with no control groups is highly uncertain, and because of this uncertainty, no decisions should be made that can permanently alter a still-maturing minor's mental and physical development.

From the point of view of patient advocacy groups, halting puberty is providing young people with a period of reflection, rather than consolidating their gender identity. This is based on the premise that halting the development of one's permanent sex characteristics will improve the minor's social interactions, while allowing more time for diagnostic evaluations. Additionally, patient advocacy groups assert that early intervention with hormonal treatments will lead to improved outcomes for the patients who do eventually pursue gender reassignment. Professionals, for their part, consider it important to ensure that irreversible interventions, which may also have significant adverse effects, both physical and mental, are only performed on individuals who are able to understand the permanence of the changes and the potential for harm, and who are unlikely to regret such interventions. It is not known how the hormonal suppression of puberty affects young people's judgement and decision-making.

The Act on the Status and Rights of Patients (1992/785) states that the patient shall be provided with information about his/her state of health, the significance of the treatment, various alternative forms of treatment and their effects, and about other factors concerning treatment that have an effect on treatment decision-making. In a situation where a minor's identification with the opposite sex causes long-term and severe dysphoria, it is important to make sure that he/she understands the realistic potential of gender reassignment treatments to alter secondary sex characteristics, the reality of a lifelong commitment to medical therapy, the permanence of the effects, and the possible physical and mental adverse effects of the treatments. Although patients may experience regret, after reassignment treatments, there is no going back to the non-reassigned body and its normal functions. Brain development continues until early adulthood – about age 25, which also affects young people's ability to assess the consequences of their decisions on their own future selves for rest of their lives.

A lack of recognition of comorbid psychiatric disorders common among gender-dysphoric adolescents can also be detrimental. Since reduction of psychiatric symptoms cannot be achieved with hormonal and surgical interventions, it is not a valid justification for gender reassignment. A young person's identity and personality development must be stable so that they can genuinely face and discuss their gender dysphoria, the significance of their own feelings, and the need for various treatment options.

For children and adolescents, these factors are key reasons for postponing any interventions until adulthood.



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## 7. Conclusions

The first-line intervention for gender variance during childhood and adolescent years is psychosocial support and, as necessary, gender-exploratory therapy and treatment for comorbid psychiatric disorders. Uncertainty related to gender identity should be dealt with according to the severity of symptoms and the need for treatment and should be handled at the school / student health care, primary health care at the local level, or in specialty care.

In adolescents, psychiatric disorders and developmental difficulties may predispose a young person to the onset of gender dysphoria. These young people should receive treatment for their mental and behavioral health issues, and their mental health must be stable prior to the determination of their gender identity.

Clinical experience reveals that autistic spectrum disorders (ASD) are overrepresented among adolescents suffering from gender dysphoria; even if such adolescents are presenting with gender dysphoria, rehabilitative interventions for ASD must be properly addressed.

In light of available evidence, gender reassignment of minors is an experimental practice. Based on studies examining gender identity in minors, hormonal interventions may be considered before reaching adulthood in those with firmly established transgender identities, but it must be done with a great deal of caution, and no irreversible treatment should be initiated. Information about the potential harms of hormone therapies is accumulating slowly and is not systematically reported. It is critical to obtain information on the benefits and risks of these treatments in rigorous research settings.

At a minimum, a consultation for a pre-pubescent child at the specialist setting at the TAYS includes an extensive assessment appointment costing EUR 369. If necessary, a day-long outpatient consultation can be arranged, costing EUR 1,408.

The consultation and assessment process for minors at the specialist settings of TAYS or HUS costs EUR 4,300. If it is determined that this process would be untimely, the minimum cost is EUR 640. An initial assessment / consultation by phone costs EUR 100.

The planning and monitoring costs for pubertal suppression are EUR 2,000 for the first year, and EUR 1,200 for subsequent years. The costs for the planning and monitoring of hormone treatments are a minimum of EUR 400 per year.

These costs do not take into account the additional costs of psychosocial support provided in the local level, the possible need for psychiatric treatment, or hormone treatment medication costs.



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## 8. Summary of the Recommendations

PALKO / COHERE maintains the following:

1. For the treatment of gender dysphoria due to variations in gender identity in minors, psychosocial support should be provided in school and student healthcare and in primary healthcare, and there must be sufficient competency to provide such support.
2. Consultation with a child or youth psychiatrist and the necessary psychiatric treatment and psychotherapy should be arranged locally according to the level of treatment needed.
3. If a child or young person experiencing gender-related anxiety has other simultaneous psychiatric symptoms requiring specialised medical care, treatment according to the nature and severity of the disorder must be arranged within the services of their own region, as no conclusions can be drawn on the stability of gender identity during the period of disorder caused by a psychiatric illness with symptoms that hamper development.

PALKO / COHERE considers that the consultation, periods of assessment, and treatments by the research group on the gender identity of minors at TAYS or HUS must be carried out according to the following principles:

1. Children who have not started puberty and are experiencing persistent, severe anxiety related to gender conflict and/or identification as the other sex may be sent for a consultation visit to the research group on the gender identity of minors at TAYS or HUS. Any need for support beyond the consultation visit or need for other psychiatric treatment should be addressed by local services according to the nature and severity of the problem.
2. If a child is diagnosed prior to the onset of puberty with a persistent experience of identifying as the other sex and shows symptoms of gender-related anxiety, which increases in severity in puberty, the child can be guided at the onset of puberty to the research group on the gender identity of minors at TAYS or HUS for an assessment of the need for treatment to suppress puberty. Based on these assessments, puberty suppression treatment may be initiated on a case-by-case basis after careful consideration and appropriate diagnostic examinations if the medical indications for the treatment are present and there are no contraindications. Therapeutic amenorrhea, i.e. prevention of menstruation, is also medically possible.
3. A young person who has already undergone puberty can be sent to the research clinic on the gender identity of minors at TAYS or HUS for extensive gender identity studies if the variation in gender identity and related dysphoria do not reflect the temporary search for identity typical of the development stage of adolescence and do not subside once the young person has had the opportunity to reflect on their identity but rather their identity and personality development appear to be stable.
4. Based on thorough, case-by-case consideration, the initiation of hormonal interventions that alter sex characteristics may be considered before the person is 18 years of age only if it can be ascertained that their identity as the other sex is of a permanent nature and causes severe dysphoria. In addition, it must be confirmed that the young person is able to understand the significance of irreversible treatments and the



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benefits and disadvantages associated with lifelong hormone therapy, and that no contraindications are present.

5. If a young person experiencing gender-related anxiety has experienced or is simultaneously experiencing psychiatric symptoms requiring specialized medical care, a gender identity assessment may be considered if the need for it continues after the other psychiatric symptoms have ceased and adolescent development is progressing normally. In this case, a young person can be sent by the specialized youth psychiatric care in their region for an extensive gender identity study by the TAYS or HUS research group on the gender identity of minors, which will begin the diagnostic studies. Based on the results of the studies, the need for and timeliness of medically justified treatments will be assessed individually.

Surgical treatments are not part of the treatment methods for dysphoria caused by gender-related conflicts in minors. The initiation and monitoring of hormonal treatments must be centralized at the research clinics on gender identity at HUS and TAYS.

## 9. Additional Evidence Gathering and Monitoring the Effectiveness of Recommendations

Moving forward, the following information must be obtained about the patients diagnosed and receiving treatments in Finland before re-evaluating these recommendations:

- Number of new patient referrals
- Number of patients starting the assessment period, and numbers of new transgender (F64.0) vs “other gender” (F64.8) diagnoses
- Whether the diagnosis remains stable or changes during the assessment phase
- Number of patients discontinuing the assessment period and the reasons for the discontinuation
- Adverse effects of treatments (especially long-term effects and effect on fertility)
- Number of patients regretting hormone therapy
- Analysis of the effects of the assessment and the treatment period on gender dysphoria outcomes, as measured by the Gender Congruence and Life Satisfaction Scale (GCLS)
- Analysis of the effects of the assessment and the treatment period on functional capacity and quality of life
- The prevalence of co-occurring psychiatric diagnoses (especially neurodevelopmental diagnoses F80-F90) among those diagnosed with / seeking treatment for gender dysphoria, and whether the presence of these co-occurring diagnoses impacts the ability to achieve the desired outcome (e.g. decreased dysphoria) in the assessment or the treatment phase.
- Whether the assessment and treatment periods lead to a reduction of suicide attempts
- Whether the assessment and treatment periods lead to a reduction in depression and distress



**PALVELUVALIKOIMA**  
Tjänsteutbudet | Choices in health care

**Recommendation**

11(14)

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## **10. Appendices**

Preparatory Memorandum, with Appendices 1-5.

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HOUSE BILL NO. 427

INTRODUCED BY J. FULLER, B. TSCHIDA

A BILL FOR AN ACT ENTITLED: "AN ACT PROVIDING FOR YOUTH HEALTH PROTECTION LAWS;  
PROHIBITING SURGICAL PROCEDURES FOR THE TREATMENT OF GENDER DYSPHORIA IN MINORS;  
PROVIDING ENFORCEMENT; AND PROVIDING DEFINITIONS."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA:

NEW SECTION. Section 1. Short title. [Sections 1 through 5] may be cited as the "Youth Health Protection Act".

NEW SECTION. Section 2. Purpose. The purpose of [sections 1 through 5] is to enhance the protection of minors, pursuant to Article II, section 15, of the Montana constitution, who experience distress at identifying with their biological sex from being subjects of irreversible and drastic nongenital gender reassignment surgery and irreversible, permanently sterilizing genital gender reassignment surgery.

NEW SECTION. Section 3. Definitions. As used in [sections 1 through 5], unless the context clearly indicates otherwise, the following definitions apply:

- (1) "Gender" means the psychological, behavioral, social, and cultural aspects of being male or female.
- (2) "Gender dysphoria" means a medical diagnosis based on a persistent, marked difference between a patient's expressed or experienced gender and the gender others would assign the patient causing clinically significant distress or impairment, as defined in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders.
- (3) "Gender reassignment surgery" means any medical surgical service that seeks to surgically alter or remove healthy physical or anatomical characteristics or features that are typical for the individual's biological sex in order to instill or create physiological or anatomical characteristics that resemble a sex different from the



1 individual's birth sex, including but not limited to genital or nongenital gender reassignment surgery performed  
2 for the purpose of assisting an individual with a gender transition.

3 (4) "Gender transition" means the process in which an individual goes from identifying with and living  
4 as a gender that corresponds with the individual's biological sex to identifying with and living as a gender  
5 different from the individual's biological sex and which may involve social, legal, or physical changes.

6 (5) (a) "Gender transition procedures" means gender reassignment surgery or nongender  
7 reassignment surgery.

8 (b) The term does not include:

9 (i) puberty-blocking drugs, cross-sex hormones, or other nonsurgical mechanisms that prevent the  
10 development of feminizing or masculinizing features or promote the development of feminizing or masculinizing  
11 features in the opposite;

12 (ii) services to those born with a medically verifiable disorder of sex development, including an  
13 individual with external biological sex characteristics that are irresolvably ambiguous, such as those born with  
14 46, XX chromosomes with virilization, 46, XY chromosomes with undervirilization, or having both ovarian and  
15 testicular tissues;

16 (iii) services provided when a physician has diagnosed a disorder of sexual development in which the  
17 physician has determined through genetic or biochemical testing that the individual does not have normal sex  
18 chromosome structure, sex steroid hormone production, or sex steroid hormone action for a biological male or  
19 a biological female;

20 (iv) the treatment of an infection, injury, disease, or disorder that has been caused by or exacerbated  
21 by the performance of gender transition procedures, whether or not the gender transition procedure was  
22 performed in accordance with state or federal law; or

23 (v) a procedure undertaken because the individual suffers from a physical disorder, physical injury, or  
24 physical illness that would, as certified by a physician, place the individual in imminent danger of death or  
25 impairment of a major bodily function unless surgery is performed.

26 (6) "Genital gender reassignment surgery" includes but is not limited to the following surgical  
27 procedures when performed for the purpose of assisting an individual with a gender transition:

28 (a) penectomy, orchiectomy, vaginoplasty, clitoroplasty, or vulvoplasty for biological male patients; or

1 (b) hysterectomy or oophorectomy, reconstruction of the fixed part of the urethra with or without a  
2 metoidioplasty or a phalloplasty, vaginectomy, scrotoplasty, or implantation of erection or testicular prostheses  
3 for biologically female patients.

4 (7) "Health care provider" means a physician licensed under Title 37, chapter 3, an advanced practice  
5 registered nurse licensed under Title 37, chapter 8, or a physician assistant licensed under Title 37.

6 (8) "Nongenital gender reassignment surgery" includes but is not limited to the following surgical  
7 procedures when performed for the purposes of assisting an individual with a gender transition:

8 (a) augmentation mammoplasty, facial feminization surgery, liposuction, lipofilling, voice surgery,  
9 thyroid cartilage reduction, gluteal augmentation (implants), hair reconstruction, or aesthetic procedures for  
10 biologically male patients; or

11 (b) subcutaneous mastectomy, voice surgery, liposuction, lipofilling, pectoral implants, or aesthetic  
12 procedures for biologically female patients.

13 ((9) "Sex", "birth sex", or "biological sex" refers to the biological indication of male or female as  
14 understood in the context of reproductive potential or capacity, including sex chromosomes, naturally occurring  
15 sex hormones, gonads, and nonambiguous internal and external genitalia present at birth, without regard to an  
16 individual's psychological, chosen, or subjective experience of gender.

17

18 **NEW SECTION. Section 4. Surgical procedures prohibited.** A health care provider may not:

19 (1) perform gender transition procedures on a minor to treat gender dysphoria;

20 (2) remove any otherwise healthy or nondiseased body part or tissue of a minor to treat gender  
21 dysphoria; or

22 (3) refer a minor to a health care provider for gender transition procedures.

23

24 **NEW SECTION. Section 5. Enforcement -- cause of action.** (1) A referral for or provision of gender  
25 transition procedures to a minor is considered unprofessional conduct and the health care provider is subject to  
26 discipline by the appropriate licensing entity under Title 37.

27 (2) A person may assert an actual or threatened violation of [sections 1 through 5] as a claim or  
28 defense in a judicial or administrative proceeding and obtain compensatory damages, injunctive relief,

1 declaratory relief, or any other appropriate relief.

2 (3) (a) Except as provided in subsection (3)(b), a person may not bring a claim for a violation of  
3 [sections 1 through 5] later than 2 years after the day the cause of action accrues.

4 (b) A minor who has undergone a gender transition procedure may bring a cause of action through a  
5 parent or next friend and may bring an action in the minor's own name on reaching majority. The action must be  
6 commenced before the minor reaches 27 years of age.

7 (4) An action under [sections 1 through 5] may be commenced and relief granted in a judicial  
8 proceeding regardless of whether the person commencing the action has sought or exhausted available  
9 administrative remedies.

10 (5) In an action or proceeding to enforce a provision of [sections 1 through 5], a prevailing party who  
11 establishes a violation of [sections 1 through 5] is entitled to recover reasonable attorney fees.

12 (6) The attorney general may bring an action to enforce compliance with [sections 1 through 5] no  
13 later than 2 years after the date that the cause of action occurs. Nothing in [sections 1 through 5] may be  
14 construed to deny, impair, or otherwise affect a right or authority of the attorney general, the state, or an  
15 agency, officer, or employee of the state to institute or intervene in a proceeding.

16

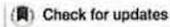
17 **NEW SECTION. Section 6. Codification instruction.** [Sections 1 through 5] are intended to be  
18 codified as an integral part of Title 37, chapter 2, and the provisions of Title 37, chapter 2, apply to [sections 1  
19 through 5].

20

21 **NEW SECTION. Section 7. Severability.** If a part of [this act] is invalid, all valid parts that are  
22 severable from the invalid part remain in effect. If a part of [this act] is invalid in one or more of its applications,  
23 the part remains in effect in all valid applications that are severable from the invalid applications.

24

- END -



Article

# Deficiencies in Scientific Evidence for Medical Management of Gender Dysphoria

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## Abstract

Individuals who experience a gender identity that is discordant with biological sex are increasingly presenting to physicians for assistance in alleviating associated psychological distress. In contrast to prior efforts to identify and primarily address underlying psychiatric contributors to gender dysphoria, interventions that include uncritical social affirmation, use of gonadotropin-releasing hormone agonists to suppress normally timed puberty, and administration of cross-sex steroid hormones to induce desired secondary sex characteristics are now advocated by an emerging cohort of transgender medicine specialists. For patients with persistent gender dysphoria, surgery is offered to alter the appearance of breasts and genital organs. Efforts to address ethical concerns regarding this contentious treatment paradigm are dependent upon reliable evidence on immediate and long-term risks and benefits. Although strong recommendations have been made for invasive and potentially irreversible interventions, high-quality scientific data on the effects of this approach are generally lacking. Limitations of the existing transgender literature include general lack of randomized prospective trial design, small sample size, recruitment bias, short study duration, high subject dropout rates, and reliance on “expert” opinion. Existing data reveal significant intervention-associated morbidity and raise serious concern that the primary goal of suicide prevention is not achieved. In addition to substantial moral questions, adherence to established principles of evidence-based medicine necessitates a high degree of caution in accepting gender-affirming medical interventions as a preferred treatment approach. Continued consideration and rigorous investigation of alternate approaches to alleviating suffering in people with gender dysphoria are warranted.

**Summary:** This paper provides an overview of what is currently known about people who experience a gender identity that differs from their biological sex and the associated desire to engage the medical profession in alleviating associated discomfort and distress. The scientific evidence used to support current recommendations for affirming one's preferred gender, halting normally timed puberty, administering cross-sex hormones, and surgically altering primary and secondary sexual traits are summarized and critically evaluated. Serious deficits in understanding the cause of this condition, the reasons for the marked increase in people presenting for medical care, together with immediate and long-term risks relative to benefit of medical intervention are exposed.

## Keywords

Cross-sex hormones, Evidence-based medicine, Gender dysphoria, Gender identity, Medical research, Puberty blockade, Risk–benefit analysis, Sexuality, Suicide, Transgender operations

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Patients who experience a gender identity that is discordant with biological sex have an alarmingly high incidence of serious psychosocial morbidity including depression, anxiety, eating disorders, substance abuse, HIV infection, and homelessness (Connolly et al. 2016). Most concerning, nearly half of all affected individuals will contemplate suicide and a third will attempt suicide (Adams, Hitomi, and Moody 2017). While a need for effective treatment modalities is clear, there are significant deficiencies in understanding the etiology of this condition, the risks and benefits of proposed medical interventions, and the long-term success of various approaches in achieving the primary desired goal of preventing suicide (Institute of Medicine 2011; Olson-Kennedy et al. 2016). With a desire to provide real and sustained assistance to patients who experience gender dysphoria within established ethical boundaries, it is essential to understand the scientific evidence used to support proposed medical interventions and acknowledge the limits of these data.

To adequately address the role of healthcare providers in treating patients with gender dysphoria, it is necessary to define this clinical condition in a way consistent with established scientific understanding of sex as a biological trait intrinsically ordered to the purpose of procreation. Despite ideologically influenced efforts to portray sex along a continuum, reproductive biology is inherently binary. Specifically, there are only two gonads (testes and ovaries) that contribute to the conception of new human life. The existence of individuals with disorders of sexual development (DSDs) does not alter this basic biological reality (Eid and Biason-Lauber 2016). In many individuals with DSDs, fertility is absent or severely impaired (Lee et al. 2006, 2016). When genital ambiguity is present, there are established clinical pathways involving hormonal, genetic, and imaging studies to assist clinicians in determining the sex of the affected child (Lee et al. 2016). In these rare cases, which affect <0.02 percent of all infants, the physician must make a tentative sex assignment at the time of birth. For the remaining 99.9% of infants, sex is not “assigned” at birth but rather is correctly recognized by the observation of the appearance of the external genitalia. Nearly all patients who present to medical establishments for the treatment of gender dysphoria have normally formed and functioning sexual anatomy and function prior to hormonal or surgical intervention.

Although the ability to obtain accurate information on the number of people who experience a gender identity that is discordant with biological sex has remained challenging, several sources have reported

a marked increase in the number of patients presenting to specialized clinics that offer gender affirmation services. In the Fifth Edition of the *Diagnostic and Statistical Manual* (DSM-5) used to classify psychiatric disease, the reported prevalence of “gender dysphoria” was 0.005 percent to 0.014 percent for adult males and 0.002 percent to 0.003 percent for adult females (American Psychiatric Association [APA] 2013). Epidemiologic data from Sweden have demonstrated rising prevalence of individuals claiming a transgendered identity who sought treatment over the past fifty years, with most of the increase since 2000 (Dhejne et al. 2014). Some more recent estimates have suggested a prevalence as high as .4 percent of the US population (Meerwijk and Sevelius 2017).

Assessing the accuracy of these estimates requires consideration of the methodologies used. Higher estimates rely upon patient responses to questionnaires in which answers appear to be influenced by the wording of the questions asked. There is evidence that male to female ratio of individuals with sex–gender identity discordance has reversed, with more recent estimates showing that much of the observed increase is due to biological females who identify as male (Zucker 2017). It is frequently claimed, without documented scientific evidence, that this increase is driven by an increase in existing patients coming forward for treatment rather than a change in overall incidence or change in rates of persistence among affected youth. The degree to which social affirmation of transgendered identity has affected these epidemiologic trends is unknown. Recently, the phenomenon of adolescent girls with no prior expression of gender dysphoria presenting as having a transgendered identity in social networks has been reported (aka rapid onset gender dysphoria; Littman 2018). This study is limited by relatively small sample size and a significant risk of ascertainment bias. Further research is required to establish the validity and extent of this phenomenon.

Understanding of the cause of any medical condition greatly assists efforts to develop effective treatment strategies. To date, the cause of discordance between sex and gender identity remains unknown. There is no available blood test or imaging procedure that can be used to determine a person’s self-perceived gender identity. Evaluation relies exclusively in the domain of patient report of internally held feelings and beliefs. There are, however, published data that provide potential clues to influencing factors (Saleem and Rizvi 2017). This includes several reports of structural and functional differences between brains of individuals with sex-

discordant gender identity compared to brains from people with gender identity that matches sex (Burke et al. 2014; Luders et al. 2009; Kruijver et al. 2000). Among the limitations of these data are significant overlap between male and female brain structures and heterogeneity between individuals. This precludes the ability to determine sex by examining structure alone. Furthermore, the existing data on brain structure and function do not account for the known phenomenon of neuronal plasticity (i.e., environmental stimuli can alter brain structure; Ismail, Fatemi, and Johnston 2017). Thus, it is not clear whether changes in brain structure are the cause or effect of transgendered identity and behavior.

It is known that prenatal and perinatal hormone exposure can alter sexual phenotype (i.e., the physical appearance of the body; Jost et al. 1973). The degree to which these hormones influence gender identity remains an area of active investigation (Berenbaum and Beltz 2016). Although insight has been gained by study of DSDs, there is conflicting evidence on the nature and magnitude of this effect and the dependence upon the etiology of the developmental defect. For example, female infants born with congenital adrenal hyperplasia (CAH), a condition that exposes the developing baby to high levels of male hormones (androgens), often exhibit typical male preferences and behaviors. Several potential explanations for this phenomenon that are independent of prenatal male hormone exposure have been proposed (Jordan-Young 2012). Importantly, the vast majority of affected children with CAH historically did not experience self-perceived transgender identity or gender dysphoria (Zucker et al. 1996).

Limited data also suggest a role of genetics in gender identity. This includes investigation of identical twins (Heylens et al. 2012). Because identical twins have exactly the same genes, if gender identity is exclusively determined by genetics, one would predict that there would be 100 percent concordance in identical twin pairs (i.e., if one twin experienced transgender identity, the other twin would also share this experience). However, the observed concordance is closer to 40 percent of affected twins. There are ongoing efforts to sequence the genomes of individuals with sex-discordant gender identity to find a specific gene (or genes) that contribute(s) to this experience (Yang et al. 2017). The data published to date addressing this question provide potential clues, but similar to the limitations of with brain structures, there is considerable overlap between affected and nonaffected individuals (Foreman et al. 2019). Thus, it is likely that influences, whether primary or secondary, are polygenetic (i.e., the

genetic differences are many, with each contributing only a small fraction of the observed phenotype).

The presence of genetic differences does not mean that the genetic variation is the cause of an individual's identity. There are numerous alternate hypotheses that can be proposed (e.g., a genetic difference in resiliency). Several reports have found high co-occurrence of autism in children with gender dysphoria (Glidden et al. 2016). Thus, in light of existing data, it can be reasonably concluded that the cause of gender dysphoria is multifactorial with both genetic and environmental contributions. Further research is needed to establish the number of contributing factors and to determine relative influences for individual patients. Heterogeneity among patient populations is likely to complicate efforts to make generalizable outcome predictions in clinical studies, particularly with small randomized trial designs.

In children who express gender discordance, the majority will experience reintegration of gender identity with biological sex by the time of puberty in the absence of directed medical or societal intervention. This is supported by nearly a dozen published studies over the past forty years. Many of the earlier studies included a small number of subjects and used definitions of gender discordance (e.g., gender identity disorder) that differ from current criteria for gender dysphoria as listed in the *DSM-V* (APA 2013). In some studies, loss of patients to follow-up hinders determination of desistance (Wallien and Cohen-Kettenis 2008). The most recent studies report desistance rates near 85 percent (Steensma et al. 2011; Drummond et al. 2008).

There is some evidence that the degree of distress experienced by a gender dysphoric child correlates with the likelihood of spontaneous resolution (Steensma et al. 2013). Whether and to what extent changes in social and medical approaches to dealing with individuals with transgender identity alters the rate of desistance is unclear, but there is indirect evidence that such effects may occur (de Vries et al. 2011). For patients who experience sex-discordant gender identity beyond puberty, there are relatively few published reports of desistance. Most of these data are found among case reports and personal testimony outside of peer-reviewed journals (Heyer 2018; Meijer et al. 2017). There are several hypotheses that can be put forth to account for this observation including differences between children and adults with respect to underlying etiology and the effects of extended social reinforcement. As in affected children, there are few data on the influence of gender-affirming medical procedures on altering desistance rates.

Before addressing specific aspects of medical interventions intended to alleviate gender dysphoria, several general observations can be made regarding the published literature in this field. Despite the endorsement of gender affirmation approaches by several medical organizations including the Endocrine Society (Hembree et al. 2017) and the World Professional Alliance for Transgender Health (WPATH; Coleman et al. 2012), it is important to recognize the low quality of scientific evidence used in generating these treatment recommendations. With the publication of both the initial treatment guidelines by the Endocrine Society guidelines in 2009 and revised guidelines in 2017, the Grading of Recommendations, Assessment, Development and Evaluations system was used to assess data quality (Guyatt et al. 2008). This system ranks evidence into four categories (strong, moderate, low, and very low). Nearly all of the recommendations made were based upon “low” or “very low” quality evidence. By definition, these designations mean that there is a high likelihood that the attainment of new data will necessitate changes to the guidelines provided. The only data that reached the level of “moderate” quality were related to adverse medical outcomes. The limitations of the published studies in the growing field of transgender medicine are many. They include a general lack of randomized controlled trial design, small sample sizes, high potential for recruitment bias, questions regarding the precision of measured parameters, nongeneralizable population groups, relatively short follow-up, high numbers of patients lost to follow-up, and frequent reliance upon “expert opinion” alone. While such deficiencies are not unique to this field of investigation, the strength of the recommendations made on the basis of this type of evidence is, in many respects, disproportionate. In other areas of medicine, much greater caution is generally applied to advancing a single treatment approach over other potential interventions.

The care of patients who experience gender dysphoria has included efforts to understand and address underlying psychosocial morbidity (Brown and Jones 2016; de Graaf et al. 2018; Kaltiala-Heino et al. 2015). Underlying factors that have been investigated include unresolved developmental challenges, underlying depression and anxiety disorders, strained family relationships, sexual abuse, autism, and peer conflicts (Saleem and Rizvi 2017). The pioneering work of Zucker established that many but not all patients who received psychological counseling and support were able to manage and resolve conflicts arising from discordant gender

identity, particularly in affected children (Zucker et al. 2012).

Among contemporary approaches to alleviate gender dysphoria are efforts to support and encourage affected patients to adopt a social role in accord with gender identity irrespective of biological sex. Social transition includes the use of preferred name and pronouns, cross-dressing, and access to sex-segregated facilities corresponding to perceived gender identity. Since the widespread adoption of interventional strategies directed toward affirming transgender identity, efforts to identify psychological approaches to mitigate dysphoria, with or without desistance as a desired goal, have largely been abandoned. The WPATH has rejected psychological counseling as a viable means to address sex-gender discordance with the claim that this approach has been proven to be unsuccessful and is harmful (Coleman et al. 2012). Yet the evidence cited to support this assertion, mostly from case reports published over forty years ago, includes data showing patients who benefited from this approach (Cohen-Kettenis and Kuiper 1984). Although largely unstudied, cognitive behavioral therapy in particular may have significant benefit to this patient population by reducing social anxiety (Busa, Janssen, and Lakshman 2018). To date, there have been no randomized controlled trials investigating the risks and benefits of social transition.

There have been studies that report positive effects of nonmedical interventions: cross-sectional data on preferred name use have reported significant short-term improvement in self-reported sense of well-being (Russell et al. 2018). Furthermore, children who have undergone social transition with parental support have reported reduced levels of dysphoria (Durwood, McLaughlin, and Olson 2017; Olson et al. 2016). Limitations of these data include small sample size, restriction of study subjects to those with mild dysfunction, reliance on parental report, and lack of long-term follow-up.

A variety of medical interventions have been introduced to support physical changes in the appearance and function of primary and secondary sexual organs to align with an individual’s desired gender role when this is discordant with biological sex. This includes hormonal blockade of normal pubertal development in adolescent children, administration of cross-sex hormones (i.e., testosterone to females desiring to appear male and estrogen to males desiring to appear female), and surgery to alter the appearance of primary and secondary sexual features. While surgical procedures have been available to affected adults for decades, the use of such

interventions in children has only recently been advocated (de Vries and Cohen-Kettenis 2012).

Long-acting gonadotropin-releasing hormone (GnRH) agonists (aka “puberty blockers”) have been recommended to halt pubertal progression when this process occurs prematurely in children (Carel et al. 2009). Purported justification of this intervention for children with persisting dysphoria includes overall safety of these medications, allowance of more time for a child to explore their gender identity, reversibility upon treatment cessation for desisting individuals, and prevention of irreversible changes in secondary sexual characteristics for patients with persistent gender discordance. Yet the use of this intervention remains controversial (Vrouenraets et al. 2015; Giovanardi 2017). There are a few relatively small studies that have demonstrated improved sense of well-being and reduced dysphoria in adolescent transgendered youth who receive puberty-blocking drugs (de Vries et al. 2011, 2014), but there are also significant concerns related to associated risks (Hruz, Mayer, and McHugh 2017). First, there are limited data specifically assessing the long-term safety of delaying normally timed puberty (Schagen et al. 2016). This class of medication has not been approved by the US Food and Drug Administration for use in halting normally timed puberty for gender-dysphoric youth (AbbVie 2018). Risks include osteopenia (low bone density), altered adult height, and impaired special memory (de Vries et al. 2011; Hough et al. 2017). Rather than merely providing more time for the exploration of gender identity, there is a concern that most if not all children exposed to this intervention will proceed to cross-sex hormone therapy (de Vries et al. 2011). While cessation of GnRH agonist administration will allow resumption of the signals that direct gonadal maturation, the interruption of a normal developmental process, which is time-dependent, cannot be “reversed.”

In the peer-reviewed literature on individuals who have undergone gender-affirming medical procedures to change bodily appearance, relatively low rates of regret and desire to “de-transition” to a gender role corresponding to biological sex have been observed (Wiepjes et al. 2018). Due to limitations in available data, questions remain regarding long-term satisfaction, particularly when initiated in adolescent children (Mahfouda et al. 2019). Most reports are from retrospective chart review or longitudinal study design.

None of the available studies include matched randomized prospective control groups. There is a deficiency of scientific study systematically assessing this patient population to understand factors that

are correlated with and may contribute to failure to achieve lasting relief of dysphoria following the affirmation of discordant gender identity. Affected individuals who desire to transition back to a gender role concordant with biological sex have reported negative social stigma similar to or in some cases exceeding that encountered prior to their initial medical intervention to support transgendered identity (Heyer 2018).

The available data on the long-term effects of gender affirmation in this patient population indicate that the most serious concern, suicide, remains significantly elevated above the background population after medical intervention to alter sexual appearance. Specifically, a thirty-year follow-up study in Sweden on patients who had undergone medical transition showed a rate of completed suicide that was nineteenfold above the background population (Dhejne et al. 2011). Because this was not a controlled study, it is not possible to assess the impact of the medical treatments themselves on outcomes. However, these data clearly show that this approach did not resolve the problem of depression and suicide.

Further indicating a lack of efficacy of this approach is a recent meta-analysis in North American patients, where suicidal ideation was assessed over the course of an individual’s lifetime and within the past year (Adams, Hitomi, and Moody 2017). In this report, suicide rates were similar in both groups. The few studies that examined suicidal ideation before and after gender transition found suicidal ideation to be increased.

In addition to remaining questions regarding the efficacy of hormonal and surgical efforts to align the body of an individual with gender dysphoria to his or her desired sex, the safety of these interventions is only partially understood, particularly when administered to children. A known consequence of cross-sex hormone administration is the disruption of gonadal function and the signals that regulate human reproduction. The infertility that results can be irreversible, particularly where this intervention is undertaken prior to full gonadal maturation (Hembree et al. 2017). Androgen levels achieved in female patients given testosterone exceed those observed in women with polycystic ovarian syndrome and frequently reach levels seen in androgen-secreting tumors with associated cardiovascular risk (Macut, Antić, and Bjekić-Macut 2015). Males receiving estrogen have a fivefold increase in the incidence of thromboembolic stroke (Getahun et al. 2018). Adverse metabolic effects that increase the risk of cardiovascular disease have also been reported (Irwig 2018; Maraka et al. 2017). The

influence of cross-sex hormones on cancer risk remains unclear. Potential risks for cancer development include exposure to cross-sex hormones, effects of sexually transmitted diseases (i.e., some sexually transmitted diseases increase risk of some cancers), and failure to obtain recommended screening in patients presenting to medical facilities with a gender that does not match biological sex. Further research is needed to adequately address this serious concern (Braun et al. 2017).

In summary, the information presented in this report highlights many of the deficiencies in the existing knowledge base regarding the etiology and prevalence of gender dysphoria and current treatment approaches. Although far from exhaustive, these data provide a rationale for exercising caution in accepting the currently proposed gender affirmation treatment paradigms that have been advocated by the WPATH (Coleman et al. 2012) and other professional organizations (Hembree et al. 2017). With heightened awareness of the suffering experienced by individuals who experience a gender identity that is discordant with biological sex, there remains a strong moral imperative to engage this vulnerable patient population. As increasing numbers of affected people, both children and adults, are presenting to medical centers for help, there is a need to better understand this condition and provide means to address all associated medical needs. This includes efforts to welcome and support individuals claiming a transgendered identity with the provision of routine medical care and treatment (Rahman, Li, and Moskowitz 2019). As in all other areas of medicine, efforts to provide safe and effective clinical care of patients with gender dysphoria should be grounded on sound scientific evidence. Where this evidence is lacking, academic healthcare institutions have an opportunity to contribute to rigorous clinical investigation of novel treatment approaches. This can include efforts to better understand psychological influences on gender identity and the design of properly controlled clinical trials using modern psychiatric approaches such as cognitive behavioral therapy (Butler et al. 2006). Administrators who are charged with developing institutional policy and educating staff on the complexity of this unique condition and diverse patient population can benefit from recognizing the ambiguities present. Physicians who deliver this care can also remain mindful of the long history of the harms that have been done to patients from the use of unproven medical interventions (Johnson 2014). Ongoing critical appraisal of emerging scientific evidence and continued open dialogue regarding potential alternate approaches

to the care of individuals with sex–gender discordance provides hope for lasting benefit, both to affected patients and to society as a whole.

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