The "Utah Review" of Hormonal Treatments for Gender-Dysphoric Minors: A *Methodological Appraisal*

EXECUTIVE SUMMARY

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SEGM
SOCIETY FOR EVIDENCE BASED GENDER MEDICINE

This Executive Summary presents key findings from the full report. All supporting evidence, citations, and methodological details are provided in the complete report.

Background

This report provides a methodological analysis of the Utah Review—a set of evidence reviews and recommendations about hormonal interventions for minors with gender dysphoria, published by the Utah Department of Health and Human Services in May 2025. The Utah Review was commissioned by the Utah Legislature in the context of a moratorium on pediatric medical transition (S.B. 16). The analysis was conducted by the University of Utah College of Pharmacy's Drug Regimen Review Center and was presented as a "systematic review of the medical evidence," which concluded that puberty blockers and cross-sex hormones are safe and effective treatments for pediatric gender dysphoria and that the hormonal intervention pathway should remain open for adolescents in Utah.

Methods

Because systematic evidence reviews can substantially influence clinical practice and public policy, adherence to established methodological standards is essential. With more than 90% of the Utah Review comprising analyses of primary clinical studies, we evaluated that component using two standard appraisal tools for systematic reviews of intervention effects—ROBIS and AMSTAR 2. Other components of the Utah Review—including analyses of systematic reviews and clinical guidelines—were also assessed, with a focus on whether the methods were systematic, comprehensive, and reproducible, and whether the conclusions were supported by the evidence presented. We also evaluated the recommendations arising from the evidence review to assess whether the process of moving from evidence review to recommendations followed evidence-based methods.

In addition, we obtained and analyzed several supporting documents, including the Utah Legislature's commissioning requirements, interim results presentations, relevant publications in peer-reviewed journals, and the contractual terms that governed the analysis. Our process also involved a cursory review of the professional backgrounds of the individuals and institutions involved in the Review, to assess potential conflicts of interest. These steps were undertaken to better understand the broader context for the Utah Review, including the Review's provenance, research goals, contractual obligations, and any professional or personal positions that may have influenced the research process, findings, conclusions, and recommendations.

Findings

The Utah Evidence Review consists of four primary analytic components: pharmacological agents used; primary clinical studies on treatment effects, reported separately for short- and long-term outcomes; systematic reviews; and clinical guidelines. Our analysis found that only the review of pharmacological agents was comprehensive.

Although the Review described itself as a "systematic review of the medical evidence related to the use of hormones and hormone analogs in the treatment of pediatric gender dysphoria," and prominent groups of policymakers and academics advocating for pediatric gender transitions have referenced it as such, none of the Utah Review analyses met the basic criteria for a systematic review of treatment effects.

The two analyses that most closely resembled systematic reviews—a review of primary clinical studies and a review of systematic reviews—failed to provide an evidence synthesis that assesses the quality/certainty of the evidence, which rendered them ineligible for classification as systematic reviews. Even as non-systematic reviews, the analyses within the Utah Review suffer from profound methodological limitations, outlined below.

1. **Failure to consider relevant evidence.** All analyses, apart from the pharmacological agents review, missed relevant evidence. The review of primary clinical studies analyzed fewer than 40% of the 230 studies identified as eligible. The review of systematic reviews omitted foundational U.K. evidence reviews by the National Institute for Health and Care Excellence (NICE) and the University of York that informed evidence-based restrictions on pediatric gender transition in the U.K. The clinical guidance analysis identified only five guidelines, compared to more than 20 evaluated in a recent systematic review, omitting major clinical guidance documents, such as those from the American Academy of Pediatrics, guidelines from Australia, and Swedish and Finnish national guidelines.
2. **Omission of key health outcomes.** The researchers made an explicit decision to deprioritize the analysis of studies reporting harms, including infertility, desistance/detransition, regret, and mortality. Infertility was deprioritized on the grounds that fertility harms are expected—a methodologically unjustified reason. No justification was provided for deprioritizing desistance-related studies, which was an explicit mandate from the Utah Legislature. Long-term mortality was eventually examined separately in Part II of the analysis, but findings of elevated mortality were not incorporated into the Review's main conclusions.
3. **Unrecognized problems in guideline and study quality.** The clinical guideline analysis did not evaluate guideline quality, despite the availability of established methodologies, such as AGREE II. Instead, the Review focused on summarizing the World Professional Association for Transgender Health (WPATH) and Endocrine Society treatment recommendations and asserted that those guidelines were inherently "evidence-based" because they originated from "recognized medical authorities." The analysis of primary clinical studies overlooked multiple sources of confounding and bias and inflated quality ratings by treating uncontrolled studies

with subgroup analyses (e.g., males and females) as though each subgroup functioned as a control group for the other.

4. **Failure to assess overall quality/certainty of evidence.** While the researchers assessed individual studies for risk of bias, they failed to provide an evidence synthesis that assesses the evidence across studies for quality/certainty, which is a key step in the systematic review methodology. The researchers stated that they were "not contracted" to perform this analysis. This omission indicates that none of the analyses within the Utah Review qualify as "systematic reviews."
5. **Interpretive bias.** The Utah Review went beyond presenting the evidence, framing the analysis in ways that favored support for pediatric transition. For example, it minimized the significance of the off-label use of puberty blockers and cross-sex hormones in minors through a spurious comparison with pediatric off-label antibiotic prescribing; devoted most of its discussion of existing systematic reviews to criticizing the Swedish review that informed Sweden's national restrictions on youth transition, at times attributing to it methodological flaws it does not have; and ultimately argued against restricting pediatric transition by invoking "high-quality" guidelines and dismissing "regret," even though the Review itself did not properly analyze either the quality of those guidelines or the phenomenon of regret.

Three distinct but interrelated dynamics may have contributed to the serious limitations of the Utah Review. First are the constraints imposed by the research contract itself, which allocated fewer than four months for completion of the work. An unusually broad scope of research—which attempted multiple analyses—appears to have strained the team's ability to finish any of them to an acceptable methodological standard. Additional work conducted later, such as the analysis of long-term outcomes, does not appear to have been appropriately integrated with the prior body of work and did not inform overall conclusions. Further, the vague language of the research contract, which specified the expectation of "systematic reviews of the evidence," but did not specifically mandate adherence to systematic review methods, may have contributed to slippage in methodological rigor.

Second, the University of Utah DRRC researchers themselves inadvertently conflated two distinct analytic steps: *assessing individual studies* for methodological rigor through "risk-of-bias" analysis and *assessing the body of evidence for quality/certainty*. The latter, often conducted using the GRADE methodology, explicitly considers how risk of bias in individual studies as well as patterns across studies—such as the magnitude of reported effects and their precision, the consistency of published results, and publication bias that may have omitted negative outcome reporting—influence how certain one can be about the evidence. This step is required in any analysis that purports to be a "systematic review," yet it was neither specified in the research proposal nor carried out in any of the Utah Review's analyses.

Third is the Review's explicitly advocacy-driven provenance. The Utah Review appears to have been commissioned as part of a coordinated campaign by advocacy groups to supply a new evidentiary basis for lifting the Utah moratorium on pediatric gender transition enacted by S.B. 16. In such a context, in addition to adhering to a rigorous and transparent methodological framework, the management of conflicts of interest during the research and recommendation-making process should be paramount.

Unfortunately, institutional and personal conflicts of interest were neither reported nor managed. The Review did not disclose that four of the six Review advisors had significant professional involvement in pediatric gender medicine, including directly providing or overseeing clinical services at the university-affiliated adolescent gender clinic. The University of Utah DRRC team's ongoing financial dependence on Utah DHHS contract work was not reported. There is no discussion of how conflicts of interest were managed when the leader of the Utah Review—the DHHS Executive Director, Dr. Michelle Hofmann—left DHHS mid-review to join the University of Utah faculty.

Conclusion

The analytic approaches in the Utah Review do not adhere to the standards for systematic evidence reviews established by the National Academies of Sciences, Cochrane, and other expert bodies. Since the Utah Review does not contain systematic evidence reviews, it cannot serve as a reliable basis for evidence-based decision-making. Numerous conflicts of interest do not appear to have been recognized as such, or appropriately managed.

The Utah Review's findings and conclusions contradict nearly two-dozen systematic evidence reviews. These include systematic reviews from the U.K. (the University of York, NICE, and the NHS England) and North America (McMaster University, the U.S. Department of Health and Human Services). Against a backdrop of biologically plausible or even certain harms, the conclusions of these systematic reviews are consistent: the benefits of pediatric transition remain highly uncertain.

Repeated systematic reviews of the same deficient evidence base are unlikely to generate materially different conclusions. Healthcare policymakers should accept the findings of existing high-quality systematic reviews and focus on developing evidence-based policies that prioritize the well-being and long-term health of youth with gender dysphoria.