IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF TENNESSEE
Nashville Division

L.W., by and through her parents and next friends, Samantha Williams and Brian Williams, et al.,

Plaintiffs,

v.

JONATHAN SKRMETTI, in his official capacity as the Tennessee Attorney General and Reporter, et al.,

Defendants.

Civil No. 3:23-cv-00376

EXPERT DECLARATION OF
ARMAND H. MATHENY ANATOMMARIA, MD, PhD, FAAP, HEC-C

I, Armand H. Matheny Antommaria, hereby declare and state as follows:

1. I have been retained by counsel for Plaintiffs as an expert in connection with the above-captioned litigation.

2. I have actual knowledge of the matters stated herein.

3. In preparing this declaration, I reviewed Tennessee Senate Bill 1 (hereafter “the ban”). In addition to this legislation and the materials cited herein, I have also relied on my years of research and other experience, as set out in my curriculum vitae (Exhibit A), in forming my opinions. The materials I have relied upon in preparing this declaration are the same types of materials that experts in my fields of study regularly rely upon when forming opinions on subjects. I may wish to supplement these opinions or the bases for them as a result of new scientific research or publications or in response to statements and issues that may arise in my area of expertise.
OVERVIEW

4. I am a pediatrician and bioethicist with extensive clinical and research experience. I am the author of 41 peer-reviewed articles, which have been published in high-impact journals including the *Journal of the American Medical Association* and *Annals of Internal Medicine*, and I direct the Ethics Center at Cincinnati Children’s Hospital Medical Center. I have reviewed the ban and submit this declaration to explain my disagreement with and concerns about many of the assertions offered in its support.

5. The ban, singles out gender transition procedures, which I will refer to as gender-affirming medical care, for anomalous treatment, prohibiting healthcare professionals from providing gender-affirming medical care to minors.

6. The ban holds gender-affirming medical care for adolescents with gender dysphoria to a standard that many accepted medical treatments do not attain. The evidence for gender-affirming care is comparable to the evidence for many other treatments in pediatrics. The legislative findings also mischaracterize the potential benefits and risks of gender-affirming medical care and fail to demonstrate that parents or legal guardians are incapable of providing informed consent for this medical care for their minor adolescents.

7. As a result, the ban puts clinicians in the untenable position of either following state law and violating their ethical duties to promote their patients’ well-being and protect them from harm, or facing professional discipline, including permanent revocation of their licenses, and other potential penalties. Either outcome results in harm to patients.

BACKGROUND AND QUALIFICATIONS

8. I am the Director of the Ethics Center, the Lee Ault Carter Chair of Pediatric Ethics, and an Attending Physician in the Division of Hospital Medicine at Cincinnati Children’s Hospital.
Medical Center (“Cincinnati Children’s”). I am also a Professor in the Departments of Pediatrics and Surgery at the University of Cincinnati College of Medicine.

9. I received my medical degree from Washington University School of Medicine in St. Louis, Missouri in 2000. I received my PhD in Religious Ethics from The University of Chicago Divinity School in 2000. I completed my pediatrics residency at the University of Utah in 2003.

10. I have been licensed to practice medicine since 2001 and am currently licensed to practice medicine in Ohio. I have been Board Certified in General Pediatrics since 2004 and in Pediatric Hospital Medicine since the inception of this certification in 2019. I have been certified as a Healthcare Ethics Consultant since the inception of this certification in 2019.

11. I have extensive experience as a pediatrician and as a bioethicist. I have been in clinical practice since 2003 and 30% of my current effort is dedicated to caring for hospitalized patients. I was Chair of the Ethics Committee at Primary Children’s Medical Center in Salt Lake City, Utah from 2005 to 2012 and have been Director of the Ethics Center at Cincinnati Children’s since 2012. I regularly consult on the care of patients in the Transgender Health Clinic at Cincinnati Children’s and participate in the Clinic’s monthly multidisciplinary team meetings. I remain current with the medical and bioethics literature regarding the treatment of minors with gender dysphoria. I am also part of Cincinnati Children’s team that cares for patients born with differences or disorders of sex development (DSD), also known as intersex traits. I chair Cincinnati Children’s Fetal Care Center’s Oversight Committee, which provides the Center recommendations on the use of innovative treatments and experimental interventions.

12. I am a member of the American Academy of Pediatrics (AAP), the American Society for Bioethics and Humanities (ASBH), the Association of Bioethics Program Directors, and the Society for Pediatric Research. I was a member of the AAP Committee on Bioethics from
2005 to 2011. I have also served as a member of ASBH’s Clinical Ethics Consultation Affairs Committee from 2009 to 2014 and currently serve on its Healthcare Ethics Consultant Certification Commission.

13. I am the author of 41 peer-reviewed journal articles, 11 non-peer-reviewed journal articles, 6 book chapters, and 28 commentaries. My peer-reviewed journal articles have been published in high-impact journals, including the Journal of the American Medical Association and Annals of Internal Medicine. I am also an author of 17 policy statements and technical reports, including 4 as lead author, by the AAP.

14. I am a member of the Executive Editorial Board and the Associate Editor for Ethics Rounds of Pediatrics. I am an active peer reviewer for many medical journals, including the American Journal of Bioethics and the Journal of Pediatrics. I also review abstracts for meetings of professional organizations, including the Pediatric Academic Societies and ASBH. I was previously a member of the editorial boards of the Journal of Clinical Ethics and the Journal of Medical Humanities.

15. I have previously testified at deposition and trial in Dylan Brandt, et al., v. Leslie Rutledge, et al., United States District Court, Eastern District of Arkansas, Case No. 5:21-CV-00450-JM-1; and at deposition in August Dekker, et al., v. Jason Weida, et al., United States District Court, Northern District of Florida, Case No. 4:22-cv-00325-RH-MAF. I have also previously testified in the preliminary injunction phase in the following matters: Jane Doe, et al., v. Greg Abbott, et al., District Court of Travis County, Texas 353rd Judicial District, Case No. D-1-GN-22-000977; and Brianna Boe, et al., and United States v. Marshall, et al., United States District Court, Middle District of Alabama Northern Division, Case No. 22-cv-184-LCB-CWB. I am being compensated at an hourly rate of $250 per hour for preparation of expert declarations.
and reports, and $400 per hour for time spent preparing for or giving deposition or trial testimony. My compensation does not depend on the outcome of this litigation, the opinions I express, or the testimony I provide.

THE TREATMENT OF GENDER DYSPHORIA IS SUPPORTED BY EVIDENCE COMPARABLE TO THE EVIDENCE FOR MANY OTHER MEDICAL TREATMENTS

Clinical Practice Guidelines

16. Medical professional organizations develop clinical practice guidelines to provide clinicians with helpful, evidence-based recommendations and improve patient care and outcomes. Clinical practice guidelines are developed using systematic processes to select and review scientific evidence. Guidelines typically rate the quality of the evidence and grade the strength of recommendations.¹

17. Clinical practice has different goals and methods from research or experimentation. Clinical practice’s goal is to benefit individual patients and its method is individualized decision-making. Research’s goal is to contribute to generalizable knowledge and research is conducted using formal protocols that describe its objectives and procedures.² For example, a research study may have restrictive inclusion and exclusion criteria for participants in order to increase the ability of the study to draw scientifically valid conclusions. A clinician may, however, recommend a treatment to a patient who would not have been eligible for the study because the clinician believes...


the treatment will benefit the patient. The clinician will subsequently make recommendations about whether to modify or discontinue the treatment based on the patient’s response to it.

18. In clinical practice guidelines, the quality of evidence has been defined as “the extent to which one can be confident that an estimate of effect is correct.” Quality of evidence is based on 4 factors: study design, study quality, consistency, and directness. The Grades of Recommendation Assessment, Development and Evaluation (GRADE) system, one widely used method of grading the quality of the evidence and the strength of recommendations, distinguishes 4 levels of evidence: “high,” “moderate,” “low,” and “very-low.” These levels are relative to one another and “low” does not necessarily mean poor or inadequate. As discussed below, a recommendation in a clinical practice guideline may be based on “low” or “very low” quality evidence, not just “high” or “moderate” quality evidence.

19. With respect to study design, randomized trials generally provide “high” quality evidence. In a randomized trial, participants are randomly assigned to a treatment or a comparison group. The major benefit of a randomized trial is that it decreases the likelihood that any

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differences in the outcomes between the groups is the result of baseline differences between the
groups rather than the result of the intervention.  

20. By comparison, observational studies generally constitute “low” quality evidence. Observational studies include cross-sectional and longitudinal studies. In cross-sectional studies, investigators collect data at a single point in time. Cross-sectional design permits investigators to examine potential associations between factors, but it cannot prove one factor caused the other. An example of a cross-sectional study related to gender-affirming medical care is Jack L. Turban and colleagues’ analysis of data from the 2015 United States (US) Transgender Survey. The survey asked transgender adults, who were recruited through community outreach, about their demographics, past gender-affirming medical care, family support, and mental health outcomes. The investigators found those who received pubertal suppression had lower odds of lifetime suicidal ideation compared to those who wanted treatment with pubertal suppression but did not receive it. In longitudinal studies, researchers follow individuals over time, making continuous or repeated measures. Examples of longitudinal studies include the studies of the associations between gender-affirming medical care and psychological outcomes discussed below.

21. The labels “high” and “low” quality evidence can be misleading if the latter is used in the colloquial sense of poor or inadequate. While randomized controlled trials are described in

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10 See, for example, de Vries AL, Steensma TD, Doreleijers TA, Cohen-Kettenis PT. Puberty suppression in adolescents with gender identity disorder: A prospective follow-up study. J Sex
the medical literature as “high” quality evidence and observational studies as “low” quality evidence, randomized controlled trials may not be feasible or ethical, may have intrinsic methodological limitations, or may be unavailable in some contexts. “Low” quality evidence can be sufficient to justify treatment recommendations.¹¹

22. At times, it may be unethical to conduct randomized trials. For randomized trials to be ethical, clinical equipoise must exist; there must be uncertainty about whether the efficacy of the intervention or the control is greater. Otherwise, it would be unethical to knowingly expose trial participants to an inferior intervention or control. Trials must also be feasible; it would also be unethical to expose individuals to the risks of trial participation without the benefit of the trial generating generalizable knowledge. A randomized trial that is unlikely to find enough people to participate because they believe they might be randomized to an inferior intervention would be unethical because it could not produce generalizable knowledge due to an inadequate sample size.¹²

23. Clinical research focusing on children is less likely to use randomized trials than is clinical research for adults. Potential reasons for this disparity include the low prevalence of childhood disease, small market share for therapeutic agents in children, low level of National Institutes of Health funding, and difficulty enrolling children in research.¹³

24. When making recommendations, the authors of guidelines consider a variety of

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¹³ Martinez-Castaldi C, Silverstein M, Baucher H. Child versus adult research: The gap in high
factors; the quality of the evidence is only one factor considered in making recommendations. Other considerations include the balance between desirable and undesirable outcomes, confidence and variability in patients’ values and preferences, and resource use.\textsuperscript{14} The GRADE system distinguishes “strong” and “weak” recommendations; if the authors are highly confident in the balance between desirable and undesirable consequences, they make a “strong” recommendation and, if they are less confident, a “weak” recommendation.\textsuperscript{15} The larger the differences between the desirable and undesirable consequences and the lesser the variability in patient values and preferences, the more likely a “strong” recommendation is warranted. “Low” quality evidence may be sufficient to make a “strong” recommendation.\textsuperscript{16}

25. Recommendations for pediatric care made by professional associations in guidelines are seldom based on well-designed and conducted randomized controlled trials due to their rarity. Instead, recommendations are frequently based on observational studies or, if such studies are unavailable, expert opinion. The medical use of the term “expert opinion” in this context refers to the consensus of experts when studies are not available.

26. For example, of the 130 recommendations in the American Heart Association’s guideline for Pediatric Basic and Advanced Life Support, only 1 (0.8\%) is based on “high-quality quality study design. \textit{Pediatrics.} 2008;122(1):52-57.


Evidence from more than 1 [randomized clinical trial]” and 3 (2.3%) on “moderate-quality evidence from 1 or more [randomized clinical trials].” The remainder of the recommendations were based on lower quality evidence. Among its 57 “strong” recommendations (both Class 1 and Class 3 Harm), 48 (84%) are based on “limited data” or “expert opinion.” Table 1 (Exhibit B).

Clinical Practice Guidelines for Gender-Affirming Medical Care for Minors

27. Gender-affirming medical care is not experimental; the level of evidence supporting clinical practice guidelines recommendations regarding gender-affirming medical care for adolescents is comparable to the level of evidence supporting many other pediatric medical treatments.

28. The ban’s legislative findings characterize gender-affirming medical care for minors as “experimental” and “not supported by high-quality, long-term medical studies.” 68-33-101(b). Gender-affirming care for minors is not experimental in the colloquial or technical senses. It is not new, novel, or unproven. The first reference to the use of puberty blockers for the treatment of gender dysphoria in the medical literature was in 1998, approximately 25 years ago. Prospective observational trials of puberty blockers began recruiting participants in 2000. Evidence for this this medical care will be discussed in greater detail below. Gender-affirming

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medical care is also not experimental in the technical sense; it is intended to benefit individual patients and is modified based on individual patients’ responses.\textsuperscript{20}

29. The Endocrine Society, an international medical organization of over 18,000 endocrinology researchers and clinicians, has published a clinical practice guideline for the treatment of gender-dysphoric/gender-incongruent persons, including pubertal suppression, sex hormone treatment, and surgery for gender confirmation.\textsuperscript{21} Gender-affirming medical care is also recommended by the World Professional Association for Transgender Health’s (WPATH’s) Standards of Care for the Health of Transgender and Gender Diverse People which is currently in its 8\textsuperscript{th} version (“SOC-8”).\textsuperscript{22} The treatments outlined in these guidelines are also endorsed by other medical professional associations including the American Academy of Family Physicians,\textsuperscript{23} the AAP,\textsuperscript{24} the American College of Obstetricians and Gynecologists,\textsuperscript{25} the American Medical

Association, the APA, the American Psychological Association (APA), and the Pediatric Endocrine Society.

30. The Endocrine Society clinical practice guideline includes 28 recommendations: 3 (11%) are based on “moderate,” and 19 (68%) are based on “low” or “very low” quality evidence. The remaining 6 (21%) recommendations are Ungraded Good Practice Statements. Table 2 (Exhibit C).

31. The quality of the evidence supporting these recommendations is similar to the quality of the evidence supporting the recommendations in other Endocrine Society clinical practice guidelines for the pediatric population. For example, none of the Endocrine Society’s 84 recommendations in its 2 other guidelines that focus on the pediatric population—guidelines on pediatric obesity and congenital adrenal hyperplasia—is based on “high” quality evidence.

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Twenty-four (29%) of the recommendations are based on “moderate,” and 49 (58%) on “low” or “very low” quality evidence. The remaining recommendations (11, 13%) are Ungraded Good Practice Statements.\(^\text{31}\) Table 2 (Exhibit C).

32. With respect to puberty-delaying medication, the Endocrine Society specifically “suggest[s] that adolescents who meet diagnostic criteria for [gender dysphoria]/gender incongruence, fulfill criteria for treatment, . . . and are requesting treatment should initially undergo treatment to suppress pubertal development.”\(^\text{32}\) The evidence for this recommendation includes a longitudinal study of a group of 70 transgender adolescents who were evaluated using objective measures prior to both pubertal suppression and sex hormone treatment. The mean length of time between the start of pubertal suppression and sex hormone treatment was 1.88 years and ranged from 0.42 to 5.06 years. The study showed statistically significant decreases in behavioral and emotional problems and depressive symptoms, and increases in general functioning.\(^\text{33}\)

33. This is the same level of evidence as supports the use of puberty blockers for the treatment of central precocious puberty which the ban permits. Central precocious puberty is the premature initiation of puberty, before 8 years of age in people assigned female at birth and before 9 in people assigned male, by the central nervous system. The potential negative effects of


Precocious puberty can include impairment of final adult height as well as antisocial behavior and lower academic achievement. There are no randomized trials evaluating the adult height of treated and untreated individuals. Most studies are observational and compare pretreatment predicted final height with actual final height. These studies have additional limitations including small sample sizes. This “low” quality evidence nonetheless is sufficient to support the use of GnRH agonists as treatment for central precocious puberty.\textsuperscript{34} The ban therefore subjects the use of puberty blockers to a double standard. There are no randomized clinical trials for the use of puberty blockers to treat precocious puberty or gender dysphoria, but the evidence is deemed sufficient for the former but not the latter.

34. The evidence supporting the guideline’s recommendations regarding gender-affirming hormone treatment in adolescents include Cohen-Kettenis and colleagues’ longer-term follow-up of individuals after pubertal suppression through sex hormone and gender-affirming surgical treatment. Participants’ mean age at their initial assessment was 13.6 years and their mean age at their final assessment was 20.7 years. The researchers report the resolution of gender dysphoria and improvement in psychological functioning.\textsuperscript{35}

35. As a result of these studies and healthcare providers’ subsequent experience, randomized, placebo-controlled trials (trials that compare pharmacological treatment to no


pharmacological treatment) of gender-affirming medical care are currently unethical. Potential investigators do not have equipoise between pharmacological treatment and no pharmacological treatment; they believe that pharmacological treatment is superior. It is also highly unlikely that a sufficient number of participants would enroll in randomized controlled trials for them to be informative.  

36. Even if such studies could be conducted ethically, they would provide a lower quality of evidence because of intrinsic limitations in their design. For example, it would be impossible to blind the investigators or the participants to whether the participants were receiving the active treatment or a placebo. They would know if participants were in the intervention or other control arm of the study due to the physical changes in their bodies, or the lack thereof, over time. This might bias their perception of the outcomes and lower the rating of the study’s quality.  

GENERALLY APPLICABLE PRINCIPLES OF INFORMED CONSENT APPLY TO PEDIATRIC GENDER-AFFIRMING MEDICAL CARE  

37. Before performing any medical intervention, a healthcare provider must generally obtain an adult patient’s informed consent. Informed consent is a process in which the provider discloses information, elicits the patient’s preferences, offers medical advice, and seeks explicit authorization. In order to participate in the informed consent process, a patient must have medical decision-making capacity. If an adult patient lacks capacity, a proxy decision maker is generally appointed. The healthcare provider’s disclosure should include the nature of the intervention and

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the reasons for it, as well as its potential benefits, risks, and alternatives, including the alternative
of not undergoing the intervention. The patient or the patient’s proxy must understand and
appreciate this information and express a decision. For the informed consent to be valid, the
authorization must be voluntary. Exceptions to the requirement to obtain informed consent exist,
such as in the case of an emergency.\(^{38}\)

38. Medical decision-making and informed consent in pediatrics is more complex than
in adult medicine because it involves both minor patients and their parents or legal guardians.
Parents and guardians are afforded substantial, but not unlimited, discretion in making medical
decisions for their minor children based on their assessment of the individual child’s best interest.
They generally care about their children and best understand their children’s unique needs.\(^{39}\)

39. Healthcare providers also have an ethical obligation to include children in medical
decision-making to the extent that it is developmentally appropriate. For example, a provider
examining a toddler for a possible ear infection should not ask a toddler for permission to look in
the child’s ear because the provider intends to look even if the child says no. The provider could,
however, ask the toddler which ear the child would like to have looked in first. As a minor becomes
older, the minor should participate more actively in medical decision-making and the minor’s
assent should be sought. In early adolescence, individuals typically have developed a sense of
identity, individual values and preferences, and are developing medical decision-making capacity.
Capacity entails the ability to (i) understand the indications and the potential benefits, risks, and
alternatives to a treatment, including declining treatment; (ii) appreciate the implications of a

\(^{38}\) Beauchamp TL, Childress JF. *Principles of Biomedical Ethics*. 6th ed. Oxford University
Press; 2009.

\(^{39}\) Diekema DS. Parental refusals of medical treatment: The harm principle as threshold for state
treatment decision for their own lives; (iii) evaluate the potential benefits and risks; and (iv) express a preference.40

40. The current treatment paradigm for treating gender dysphoria in minors is consistent with general ethical principles instantiated in the practices of informed consent and assent. The Endocrine Society clinical practice guideline extensively discusses the potential benefits, risks, and alternatives to treatment, and its recommendations regarding the timing of interventions are based in part on the treatment’s potential risks and the adolescent’s decision-making capacity. The guideline recommends that the informed consent process for puberty blockers and sex hormones include a discussion of the implications for fertility and options for fertility preservation. The Endocrine Society clinical practice guideline also advises delaying gender-affirming hormone treatment, which results in partly irreversible physical changes, until an adolescent is developmentally capable of providing informed consent.41

THE BAN MISCHARACTERIZES GENDER-AFFIRMING MEDICAL CARE, INCLUDING ITS BENEFITS, RISKS, AND ALTERNATIVES

41. The ban’s legislative findings inaccurately characterize gender-affirming medical care in several different ways. The legislative findings, for example, dismiss the potential medical benefits of gender-affirming care, exaggerate its potential risks, and ignore the substantial risks of failing to provide adequate treatment. The legislative findings also do not explain why parents or guardians should have their decision-making authority substituted by the government’s with respect to gender-affirming medical care.

The Ban Disregards the Benefits of Gender-Affirming Care

42. While the ban refers to medical procedures “performed for the purpose of enabling a minor to identify with, or live as, a purported identity inconsistent with the minor's sex or treating purported discomfort or distress from a discordance between the minor's sex and asserted identity,” 68-33-101, it is important to note that gender-affirming medical care is treatment for a serious medical condition - gender dysphoria. Gender dysphoria is a medical diagnosis contained in the APA's Diagnostic and Statistical Manual of Mental Disorders, 5th ed, Text Revision. It is “a marked incongruence between one's experienced/expressed gender and their assigned gender” which is "associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning."42

43. The potential benefits of gender-affirming medical care include improved physical and psychological outcomes. Starting pubertal suppression in early puberty prevents adolescents with gender dysphoria from developing secondary sex characteristics inconsistent with their gender identity, which can be extremely distressing for them, and that may be difficult, if not impossible, to eliminate once the characteristics have fully developed. Sex hormone therapy results in the development of secondary sex characteristics consistent with individuals' gender identity. Potential psychological benefits include increased quality of life and decreased depression, suicidal ideation and suicide attempts, and anxiety.43

The Ban Exaggerates the Risks of Gender-Affirming Medical Care

44. The legislative findings state that gender-affirming care for adolescents “can lead to the minor becoming irreversibly sterile, having increased risk of disease and illness, or suffering from adverse and sometimes fatal psychological consequences” and that “it likely that not all harmful effects associated with these types of medical procedures when performed on a minor are yet fully known.” 68-33-101(b). As with all medical treatments, gender-affirming medical care entails risks. But the legislative findings exaggerate its potential risks and attribute harms to it without any empirical support. The fact that gender-affirming medical care has risks does not distinguish it from other forms of treatment.

45. The findings overstate the potential effects of gender-affirming care on fertility. Puberty blockers do not, by themselves, permanently impair fertility. Children with central precocious puberty are routinely treated with puberty blockers and have typical fertility in adulthood.44 These medications are also used for fertility preservation in individuals being treated for cancer.45

46. While treatment for gender dysphoria with gender-affirming hormones may impair fertility, this is not universal and may also be reversible. There are transgender men who became pregnant while on or after discontinuing testosterone therapy.46 Transgender men and women are

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also capable of producing eggs and sperm respectively both during and after the discontinuation of gender-affirming hormone treatment.

47. Additionally, offering individuals considering gender-affirming medical care methods to potentially preserve their fertility is a component of the clinical practice guidelines discussed above.48

48. The risk of infertility is also not unique to treatment for gender dysphoria. For example, parents and legal guardians consent to the treatment of nonmalignant medical conditions for their minor children, including some rheumatologic disorders and hematologic conditions, which may impair fertility.49

49. The legislative findings also state that providing gender-affirming care for minors leads to an “increased risk of disease and illness, or suffering from adverse and sometimes fatal psychological consequences.” 68-33-101(b). While transgender adolescents have higher rates of depression, anxiety, suicidal ideation, and suicide attempts, there are no studies indicating that those higher rates are caused by, or exacerbated by, providing gender-affirming medical care.50 Rather, contributing factors include conflict between one’s appearance and identity, stigma, and

rejection. As discussed above, the available evidence indicates that gender-affirming care improves, rather than worsens, psychological outcomes.

50. Finally, not knowing all potential harmful effects associated with a medication is not a sufficient reason for the United States Food and Drug Administration (FDA) to not approve a medication, let alone a state to ban it. The FDA requires post-marketing surveillance of medications’ adverse effects because the clinical trials on which the approvals are based cannot identity all possible side effects.

51. The Ban Ignores the Risks of Harm From Lack of Treatment

51. In determining whether the benefits of treatment outweigh the risks, medical providers and patients must also consider the risks of failing to provide treatment. As stated above, prior to the initiation of gender-affirming medical care, many individuals with gender dysphoria have significant, unresolved symptoms that treatment improves. Without medical treatment, these symptoms would persist.

52. While the medical care ban’s legislative findings assert “a minor’s discordance can be resolved by less invasive approaches that are likely to result in better outcomes for the minor,” 68-33-101(c), I am unaware of such approaches or any evidence supporting such claim.

53. The Risks and Benefits of Gender-Affirming Medical Care are Comparable to Those of Other Medical Care to which Parents and Guardians May Consent

53. Medical care for minors can require weighing potential benefits and risks in the face of uncertainty. There is nothing unique about gender-affirming medical care that justifies

singling out this medical care for prohibition based on concern for adolescents’ inability to assent or parents or guardians’ inability to consent. Medical decisions regarding treatment for gender dysphoria should continue to be left to the discretion of adolescents, their parents or guardians, and their healthcare providers.

54. The potential risks of gender affirming medical care are comparable to the risks parents and adolescents are permitted to assume in numerous other treatment decisions, including decisions explicitly authorized by this legislation. Parents of children with some types of malignancies may choose treatments that may damage their children’s gonads and result in infertility. Individuals with some types of DSDs, such as complete androgen insensitivity syndrome, are treated with sex hormones, which have comparable risks to the use of these treatments in persons with gender dysphoria. And, parents of children with some types of DSDs may choose to have their children’s gonads removed due to the possible elevated risk of malignancy, which causes infertility. It is also my understanding that the medical care ban permits gender-affirming medical treatment of individuals with DSDs, which has similar risks to the use of this treatment in individuals who do not have DSDs. The types of risks present for breast reduction surgery, which may be performed for cosmetic reasons or to reduce physical discomfort, are similar to those of chest surgery to treat gender dysphoria.


Legislative Findings About Regret Do Not Support a Ban

55. The legislative findings state, “many individuals have expressed regret for medical procedures that were performed on or administered to them for such purposes when they were minors.” 68-33-101(g). The experience of regret as a result of any medical treatment is profoundly unfortunate, and individuals experiencing regret should be provided support and any additional treatment needed.

56. While there have been anecdotal reports of regret, the available studies report that rates of regret are very low. For example, Chantal M. Wiepjes and colleagues report that 0.6% of transgender women and 0.3% of transgender men who had their gonads removed experienced regret. 57 Similarly, R. Hall and colleagues report regret was specifically documented in 1.1% of adult gender-diverse patients. 58 Banning gender-affirming medical care to prevent regret in a small minority of patients would result in harm to the majority of patients who benefit. Support and services should nonetheless be provided to individuals who experience regret.

57. The potential for regret is also not unique to gender-affirming medical care. Ironically, at the same time that Tennessee prohibits gender-affirming medical care for minors in the name of protecting vulnerable children, the statute expressly allows doctors to perform these irreversible genital surgeries on infants and children with DSDs at ages when they are unable to meaningfully participate in medical decision-making. The evidence base for these surgeries is poor

and they are highly controversial when performed at such an early age.\textsuperscript{59} Parents of children who have undergone feminizing genitoplasty and hypospadias repair have experienced regret for their decisions.\textsuperscript{60} For example, Rachel S. Fisher and colleagues found that 38\% of caregivers of infants with congenital adrenal hyperplasia reported some level of regret about their child’s genital surgery.

**The Increased Prevalence of Gender-Affirming Care Does Not Support a Ban**

58. The legislative findings state that the gender-affirming medical care is being provided “with rapidly increasing frequency.” \textsuperscript{68-33-101(g).} The increased number of transgender individuals and those receiving medical treatment is likely to be multifactorial including increased social acceptance of transgender individuals and availability of gender-affirming medical care.\textsuperscript{61} Changes in demographics are not unique to gender dysphoria and have been seen in other conditions such as autism spectrum disorder and childhood-onset type 1 diabetes.\textsuperscript{62} These changes are a justification for further research on gender-affirming medical care rather than prohibiting these treatments and thereby preventing further research on them.


Treatment Protocols in Europe Do Not Support a Ban

59. The legislative findings also point to the actions of health authorities in Sweden, Finland, and the United Kingdom as support for the state’s decision to ban gender-affirming medical care. It is difficult to evaluate the actions of the Swedish and Finnish health authorities because all of the relevant material is not available in official English translations. The legislative findings characterize the authorities as conducting systematic reviews of the evidence and finding no evidence that the benefits of these procedures outweigh the risks. This claim confuses systematic reviews of the literature and clinical practice guidelines. While both ideally grade the quality of the evidence, only clinical practice guidelines make recommendations and grade their strength. Of the documents by European health authorities that do make treatment recommendations, none rate the quality of the evidence and the strength of the recommendations.

60. Critically, none of the European health authorities has prohibited gender-affirming medical care as does Tennessee. The authorities instead emphasize the importance of

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multidisciplinary evaluation and treatment, including psychological care, and the need for additional research. Even though Sweden has called for the provision of gender-affirming medical care within the research context, the Swedish National Board of Health and Welfare states that doing so “does not necessarily imply the use of randomized controlled trials,”64 acknowledging that other study designs are appropriate to evaluate gender-affirming medical care. The European documents do not support the claims that gender-affirming medical care should be banned.

THE MEDICAL CARE BAN UNDERMINES THE INTEGRITY OF THE MEDICAL PROFESSION

61. The legislative findings state, “[t]his state has a legitimate, substantial, and compelling interest in protecting the integrity of the medical profession,” 68-33-101(m), when in fact the ban violates the integrity of the medical profession and coerces medical professionals to violate their integrity and ethical duties.

62. The medical profession has processes by which it evaluates treatments and determines whether they are safe and effective. The ban intervenes in these processes replacing medical professionals judgement with the judgment of the legislature. The ban itself violates the integrity of the medical profession by defining a disease, gender dysphoria, as not a disease. 68-33-103(b)(2). Gender-affirming medical care is in fact “consistent with professional medical standards,” 68-33-101(c), and, as described above, it is endorsed by many medical professional associations.

63. Healthcare providers have an ethical obligation to promote their patients’ well-being and to protect them from harm. When providers believe that the potential benefits of gender-

affirming medical care outweigh the potential risks for a particular patient, prohibiting them from providing this treatment forces them to violate their ethical obligations to their patients or risk losing their licenses and incurring financial penalties.

CONCLUSION

64. Treating adolescents with gender dysphoria with gender-affirming medical care under clinical practice guidelines, like the Endocrine Society’s, is evidence-based; its potential benefits outweigh its potential risks for many patients; and these risks are well within the range of other medical decisions that adolescents and their parents or guardians have the discretion to make in consultation with their healthcare professionals.

65. Based on my research and experience as a pediatrician and bioethicist, there is no sound medical or ethical basis to prohibit healthcare professionals from providing gender-affirming medical care to minors. Doing so puts clinicians in the untenable position of having to harm their patients and violate their integrity and ethical obligations due to the threat of losing their licenses and incurring economic penalties.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on: April 13, 2023

ARMAND H. MATHENY ANOMMARIA, MD, PhD
Exhibit A
PERSONAL DATA
Armand H. Matheny Antommaria, MD, PhD, FAAP, HEC-C
Birth Place: Pittsburgh, Pennsylvania
Citizenship: United States of America

CONTACT INFORMATION
Address: 3333 Burnet Ave, ML 15006, Cincinnati, OH 45229
Telephone Number: (513) 636-4939
Electronic Mail Address: armand.antommaria@cchmc.org

EDUCATION
1983-1987 BSEE Valparaiso University, with High Distinction
Valparaiso, IN
1983-1987 BS Valparaiso University (Chemistry), with High Distinction
Valparaiso, IN
1987-1989 MD Washington University School of Medicine
1998-2000 Saint Louis, MO
1989-2000 PhD The University of Chicago Divinity School (Religious Ethics)
Chicago, IL
2000-2003 Resident University of Utah (Pediatrics)
Salt Lake City, UT
Salt Lake City, UT

BOARD CERTIFICATION
2019 Pediatric Hospital Medicine, American Board of Pediatrics
2019 Healthcare Ethics Consultant-Certified, Healthcare Ethics Consultation Certification
Commission
2004 General Pediatrics, American Board of Pediatrics

PROFESSIONAL LICENSES
2012-Present Doctor of Medicine, Ohio
2006-2010 Alternative Dispute Resolution Provider—Mediator, Utah
2001-2014 Physician and Surgeon, Utah
2001-2014 Physician and Surgeon Controlled Substance, Utah

PROFESSIONAL EXPERIENCE
Full Time Positions
2019-Present Professor
Cincinnati Children’s Hospital Medical Center, Cincinnati, OH
Department of Surgery
2019-Present  Professor of Clinical-Affiliated  
University of Cincinnati, Cincinnati, OH  
Department of Surgery

2017-Present  Professor  
Cincinnati Children’s Hospital Medical Center, Cincinnati, OH  
Division of Pediatric Hospital Medicine

2017-Present  Professor of Clinical-Affiliated  
University of Cincinnati, Cincinnati, OH  
Department of Pediatrics

2016-2017  Associate Professor of Clinical-Affiliated  
University of Cincinnati, Cincinnati, OH  
Department of Pediatrics

2012-2017  Associate Professor  
Cincinnati Children’s Hospital Medical Center, Cincinnati, OH  
Division of Pediatric Hospital Medicine

2012-Present  Lee Ault Carter Chair in Pediatric Ethics  
Cincinnati Children’s Hospital Medical Center

2012-2016  Associate Professor-Affiliated  
University of Cincinnati, Cincinnati, OH  
Department of Pediatrics

2010-2012  Associate Professor of Pediatrics (with Tenure)  
University of Utah School of Medicine, Salt Lake City, UT  
Divisions of Inpatient Medicine and Medical Ethics

2010-2012  Adjunct Associate Professor of Medicine  
University of Utah School of Medicine, Salt Lake City, UT  
Division of Medical Ethics and Humanities

2004-2010  Assistant Professor of Pediatrics (Tenure Track)  
University of Utah School of Medicine, Salt Lake City, UT  
Divisions of Inpatient Medicine and Medical Ethics

2004-2010  Adjunct Assistant Professor of Medicine  
University of Utah School of Medicine, Salt Lake City, UT  
Division of Medical Ethics and Humanities

2003-2004  Instructor of Pediatrics (Clinical Track)  
University of Utah School of Medicine, Salt Lake City, UT  
Divisions of Inpatient Medicine and Medical Ethics

2003-2004  Adjunct Instructor of Medicine  
University of Utah School of Medicine, Salt Lake City, UT  
Division of Medical Ethics

Part Time Positions
2022-Present  Expert Witness, Reports and Deposition  
Dekker, et al., v. Marstiller, et al., United States District Court for the Northern District of Florida, Case No. 4:22-cv-oo325-RH-MAF

2022- Present  Expert Witness, Report and Testimony  
2022-Present  **Expert Witness, Report and Testimony**
Jane Doe, et al., v. Greg Abbott, et al., District Court of Travis County, Texas
353rd Judicial District, Case No. D-1-GN-22-000977

2021-2022  **Expert Witness, Reports, Deposition, and Testimony**
Dylan Brandt, et al., v. Leslie Rutledge, et al., United States District Court,
Eastern District of Arkansas, Case No.: 5:21-CV-00450-JM-1

2021  **Consultant**
Proctor & Gamble, Cincinnati, OH

2019  **Consultant**
Sanofi Genzyme, Cambridge, MA

2018-Present  **Consultant**
Center for Conflict Resolution in Healthcare, Memphis, TN

2017-2020  **Consultant**
Amicus Therapeutics, Cranbury, NJ

2017  **Consultant**
Sarepta Therapeutics, Cambridge, MA

2014  **Consultant**
Genzyme, A Sanofi Company, Cambridge, MA

**Editorial Experience**

Editorial Board

2020-Present  **Pediatrics**, Associate Editor for Ethics Rounds and Member of the Executive
Editorial Board

2015-2020  **Journal of Clinical Ethics**

2009-2020  **Journal of Medical Humanities**

Guest Academic Editor

2017  **PLOS|ONE**

Ad Hoc Reviewer: Academic Medicine, Academic Pediatrics, AJOB Primary Research,
American Journal of Bioethics, American Journal of Law & Medicine, American Journal of
Medical Genetics, American Journal of Transplantation, BMC Medical Ethics, BMJ Open,
Canadian Journal of Bioethics, CHEST, Clinical Transplantation, European Journal of Human
Genetics, European Journal of Pediatrics, Frontiers in Genetics, Hospital Medicine,
International Journal of Health Policy and Management, International Journal of Nursing
Studies, Journal of Adolescent and Young Adult Oncology, Journal of Clinical Ethics, Journal of
of Healthcare Leadership, Journal of Hospital Medicine, Journal of the Kennedy Institute of
Ethics, Journal of Law, Medicine & Ethics, Journal of Medical Ethics, Journal of Medical
Humanities, Journal of Medicine and Life, Journal of Palliative Care, Journal of Pediatrics,
Journal of Pediatric Surgery, Mayo Clinic Proceedings, Medicine, Healthcare and Philosophy,
Molecular Diagnosis & Therapy, New England Journal of Medicine, Patient Preference and
Adherence, Pediatrics, Pediatrics in Review, Personalized Medicine, PLOS|ONE, Risk
Management and Healthcare Policy, Saudi Medical Journal, SSM - Qualitative Research in
Health, and Theoretical Medicine and Bioethics
SCHOLASTIC AND PROFESSIONAL HONORS

2021  *Hidden Gem Award*, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH
2019-2022  *Presidential Citation*, American Society for Bioethics and Humanities, Chicago, IL
2016  *Laura Mirkinson, MD, FAAP Lecturer*, Section on Hospital Medicine, American Academy of Pediatrics, Elk Grove Village, IL
2016, 2018  *Certificate of Excellence*, American Society for Bioethics and Humanities, Glenview, IL
2013, 2016  *Senior Resident Division Teaching Award*, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH
2012  *Role Model*, Quality Review Committee, Primary Children’s Medical Center, Salt Lake City, UT
2011  *Member*, Society for Pediatric Research, The Woodlands, TX
2011  *Presidential Citation*, American Society for Bioethics and Humanities, Glenview, IL
2009  *Role Model*, Quality Review Committee, Primary Children’s Medical Center, Salt Lake City, UT
2008  *Nominee*, Physician of the Year, Primary Children’s Medical Center, Salt Lake City, UT
2005-2006  *Fellow*, Medical Scholars Program, University of Utah School of Medicine, Salt Lake City, UT
1989-1992  *Fellow*, The Pew Program in Medicine, Arts, and the Social Sciences, University of Chicago, Chicago, IL

ADMINISTRATIVE EXPERIENCE

Admininistrative Duties

2019-Present  *Chair*, Oversight Committee, Cincinnati Fetal Center, Cincinnati, OH
2014-Present  *Chair*, Ethics Committee, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH
2012-Present  *Director*, Ethics Center, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH
2012-Present  *Chair*, Ethics Consultation Subcommittee, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH
2010  *Co-Chair*, Ethics Subcommittee, Work Group for Emergency Mass Critical Care in Pediatrics, Centers for Disease Control and Prevention, Atlanta, GA
2009  *Chair*, Ethics Working Group, H1N1 and Winter Surge, Primary Children’s Medical Center, Salt Lake City, UT
2005-2012  *Chair*, Ethics Committee, Primary Children’s Medical Center, Salt Lake City, UT
2005-2012  *Chair*, Ethics Consultation Subcommittee, Primary Children’s Medical Center, Salt Lake City, UT
2003-4  *Chair*, Clinical Pertinence Committee, Primary Children’s Medical Center, Salt Lake City, UT
**Professional & Scientific Committees**

**Committees**

**2021**  
*Member,* EMCO Capacity Collaboration, Ohio Hospital Association, Columbus, OH

**2020-2021**  
*Member,* Allocation of Scarce Resources Work Group, Ohio Hospital Association, Columbus, OH

**2020-Present**  
*Member,* Literature Selection Technical Review Committee, National Library of Medicine, Bethesda, MD

**2020**  
*Member,* Crisis Standards of Care Workgroup, The Health Collaborative, Cincinnati, OH

**2019-Present**  
*Member,* Healthcare Ethics Consultant Certification Commission, Oak Park, IL

**2019**  
*Member,* Expert Panel, Pediatric Oncology End-of-Life Care Quality Markers, Institute for Cancer Outcomes & Survivorship, University of Alabama at Birmingham, Birmingham, AL

**2018**  
*Member,* Resource Planning and Allocation Team Implementation Task Force, Ohio Department of Health, Columbus, OH

**2012-Present**  
*Member,* Gaucher Initiative Medical Expert Committee, Project HOPE, Millwood, VA

**2009-2014**  
*Member,* Clinical Ethics Consultation Affairs Committee, American Society for Bioethics and Humanities, Glenview, IL

**2005-2011**  
*Member,* Committee on Bioethics, American Academy of Pediatrics, Oak Park, IL

**Data Safety and Monitoring Boards**

**2019-Present**  
*Member,* Data and Safety Monitoring Board, Sickle Cell Domestic Trials, National Heart, Lung, and Blood Institute, Bethesda, MD

**2018-2019**  
*Member,* Standing Safety Committee for P-188-NF (Carmeseal-MD™) in Duchenne Muscular Dystrophy, Phrixus Pharmaceuticals, Inc., Ann Arbor, MI

**2017-Present**  
*Member,* Observational Study Monitoring Board, Sickle Cell Disease Observational Monitoring Board, National Heart, Lung, and Blood Institute, Bethesda, MD

**2016-2018**  
*Member,* Observational Study Monitoring Board, Long Term Effects of Hydroxyurea in Children with Sickle Cell Anemia, National Heart, Lung, and Blood Institute, Bethesda, MD

**Reviewer**

**2020-Present**  
*Abstract Reviewer,* American Society for Bioethics and Humanities Annual Meeting

**2020**  
*Grant Reviewer,* The Croatian Science Foundation, Hvatska zaklada za znanost (HRZZ)

**2018**  
*Book Proposal Reviewer,* Elsevier

**2018-2019**  
*Category Leader,* Religion, Culture, and Social Sciences, American Society for Bioethics and Humanities Annual Meeting

**2017**  
*Timekeeper,* American Society for Bioethics and Humanities Annual Meeting

**2017-Present**  
*Abstract Reviewer,* Pediatric Academic Societies Annual Meeting

**2016-2021**  
*Workshop Reviewer,* Pediatric Academic Societies Annual Meeting
2016  
*Grant Reviewer*, Innovation Research Incentives Scheme, The Netherlands Organisation for Health Research and Development

2016-2017  
*Abstract Reviewer*, American Society for Bioethics and Humanities Annual Meeting

2014, 2016  
*External Peer Reviewer*, PSI Foundation, Toronto, Ontario, Canada

2014  
*Member*, Scientific Committee, International Conference on Clinical Ethics and Consultation

2013  
*Abstract Reviewer*, American Society for Bioethics and Humanities Annual Meeting

2013  
*Reviewer*, Open Research Area Plus, Agence Nationale de la Research, Deutsche Forschungsgemeinschaft, Economic and Social Research Council, National Science Foundation, and Organization for Scientific Research

2011-2012  
*Abstract Reviewer*, Pediatric Academic Societies Annual Meeting

2011-2013  
*Workshop Reviewer*, Pediatric Academic Societies Annual Meeting

2011-2014  
*Abstract Reviewer*, Pediatric Hospital Medicine Annual Meeting

2011-2012  
*Religious Studies Subcommittee Leader*, Program Committee, American Society for Bioethics and Humanities Annual Meeting

2010  
*Abstract Reviewer*, American Society for Bioethics and Humanities Annual Meeting

**Other**

2021  
*Timekeeper*, American Society for Bioethics and Humanities Annual Meeting

2021  
*Mentor*, Early Career Advisor Professional Development Track, American Society for Bioethics and Humanities.

2021  
*Mentor*, Early Career Advisor Paper or Project Track, American Society for Bioethics and Humanities.

2109  
*Mentor*, Early Career Advising Program, American Society for Bioethics and Humanities.

2018  
*Passing Point Determination*, Healthcare Ethics Consultant-Certified Examination, Healthcare Ethics Consultant Certification Commission

2018  
*Member*, Examination Committee, Healthcare Ethics Consultant-Certified Examination, Healthcare Ethics Consultant Certification Commission

2018  
*Item Writer*, Healthcare Ethics Consultant-Certified Examination, Healthcare Ethics Consultant Certification Commission

**UNIVERSITY COMMUNITY ACTIVITIES**

**Cincinnati Children’s Hospital Medical Center**

2020-Present  
*Member*, Faculty Diversity and Inclusion Steering Committee

2020-Present  
*Member*, Medical Management of COVID-19 Committee

2020-2021  
*Member*, Caregiver Refusal Team

2020-2021  
*Member*, COVID-19 Vaccine Allocation Committee

2020  
*Member*, Personal Protective Equipment Subcommittee of the COVID-19 Steering Committee

2018-2019  
*Member*, Planning Committee, Center for Clinical & Translational Science & Training Research Ethics Conference

2017-Present  
*Member*, Donor Selection Committee
2017-2020  Member, Employee Emergency Fund Review Committee
2017  Member, Root Cause Analysis Team
2016-2017  Member, Planning Committee, Center for Clinical & Translational Science & Training Research Ethics Conference
2015-2019  Member, Destination Excellence Medical Advisory Committee
2015-Present  Member, Disorders of Sexual Development Case Review Committee
2015-2019  Member, Destination Excellence Case Review Committee
2014-2018  Member, Genomics Review Group, Institutional Review Board
2014-2017  Member, Center for Pediatric Genomics Leadership Committee
2013-2017  Member, Genetic Testing Subcommittee, Health Network
2013-2016  Member, Schwartz Center Rounds Planning Committee
2013-2014  Member, Genomics Ad Hoc Subcommittee, Board of Directors
2012-Present  Member, Cincinnati Fetal Center Oversight Committee
2012-Present  Member, Ethics Committee
2012-Present  Member, G-23
2012-2016  Member, Integrated Solid Organ Transplant Steering Committee

University of Utah
2009-2012  Member, Consolidated Hearing Committee

University of Utah School of Medicine
2010-2012  Member, Medical Ethics, Humanities, and Cultural Competence Thread Committee
2008-2010  Member, Fourth Year Curriculum Committee

University of Utah Department of Pediatrics
2010-2011  Member, Planning Committee, 25th Annual Biological Basis of Children’s Health Conference, “Sex, Gender, and Sexuality”
2009-2012  Member, Medical Executive Committee
2005-2012  Member, Retention, Promotion, and Tenure Committee
2004-2012  Interviewer, Residency Program
2003-2012  Member, Education Committee

Intermountain Healthcare
2009-2012  Member, System-Wide Bioethics Resource Service
2009-2012  Member, Pediatric Guidance Council

Primary Children’s Medical Center
2012-2012  Member, Shared Accountability Organization Steering Committee
2009  Member, H1N1 and Winter Surge Executive Planning Team
2005-2010  Member, Continuing Medical Education Committee
2005-2010  Member, Grand Rounds Planning Committee
2003-2012  Member, Ethics Committee

ACTIVE MEMBERSHIPS IN PROFESSIONAL SOCIETIES
2012-Present  Association of Bioethics Program Directors
2011-Present  Society for Pediatric Research
2000-Present  American Academy of Pediatrics
1999-Present  American Society of Bioethics and Humanities

**FUNDING**

**Past Grants**

Percent Effort: 9%
National Human Genome Research Institute
Grant Number: 1U01 HG008666-01
Role: Investigator

2015-2016  “Ethics of Informed Consent for Youth in Foster Care”
Direct Costs: $10,000
Ethics Grant, Center for Clinical and Translational Science and Training
University of Cincinnati Academic Health Center
Role: Co-Investigator

Direct Costs: $11,640
Center for Environmental Genetics
University of Cincinnati College of Medicine
Role: Investigator

Direct Costs: $4,434
Ethics Grant, Center for Clinical and Translational Science and Training,
University of Cincinnati Academic Health Center
Role: Principal Investigator

Percent Effort: 5%
National Human Genome Research Institute
Grant Number: 3U01HG006828-0251
Role: Investigator

2004-2005  "Potential Patients' Knowledge, Attitudes, and Beliefs Regarding Participating in Medical Education: Can They be Interpreted in Terms of Presumed Consent?"
Direct Costs: $8,000
Interdisciplinary Research in Applied Ethics and Human Values, University
Research Committee, University of Utah
Role: Principal Investigator
TEACHING RESPONSIBILITIES/ASSIGNMENTS

Course and Curriculum Development

2003-2012 Medical Ethics, Internal Medicine 7560, University of Utah School of Medicine, Taught 1 time per year, Taken by medical students, Enrollment 100

Course Lectures

2018, 2021 Introduction to Biotechnology, “Ethics and Biotechnology” and “Clinical Ethics,” BIOL 3027, University of Cincinnati, Taught 1 time per year, Taken by undergraduate students, Enrollment 25.

2018-Present Biomedical Ethics, “Conscientious Objection in Healthcare” and “Ethical Issues in the Care of Transgender Adolescents,” MEDS 4035 & MEDS 4036, University of Cincinnati College of Medicine, Taught 1 time per year, Taken by senior undergraduate students, Enrollment 52.


2014-Present Physicians and Society, “Transfusion and the Jehovah’s Witness Faith,” “Obesity Management: Ethics, Policy, and Physician Implicit Bias,” “Embryos and Ethics: The Ethics of Designer Babies,” “Ethics and Genetic Testing,” and “Ethics and Direct to Consumer Genetic Testing,” 26950112 and 26950116, University of Cincinnati School of Medicine, Taken by first and second year medical students, Enrollment 100.

2014-Present Ethical Issues in Health Care, “Ethical Issues in Managing Drug Shortages: The Macro, Meso, and Micro Levels,” HESA 583, College of Social Sciences, Health, and Education Health Services Administration, Xavier University, Taken by health services administration students, Enrollment 25.

2009 Physical Diagnosis II, Internal Medicine 7160, University of Utah School of Medicine, Taught 1 time per year, Taken by medical students, Enrollment 100

2003-2012 Medical Ethics, Internal Medicine 7560, University of Utah School of Medicine, Taught 1 time per year, Taken by fourth year medical students, Enrollment 100

Small Group Teaching

2018-Present Ethics in Research, GNTD 7003-001, University of Cincinnati School of Medicine, Taught 1 time per year, Taken by fellows, MS, and PhD students, Enrollment 110.

2007 Physical Diagnosis I, Internal Medicine 7150, University of Utah School of Medicine, Taught 1 time per year, Taken by medical students, Enrollment 100

2003-2012 Medical Ethics, Internal Medicine 7560, University of Utah School of Medicine, Taught 1 time per year, Taken by fourth medical students, Enrollment 100

2003 Pediatric Organ System, Pediatrics 7020, University of Utah School of Medicine, Taught 1 time per year, Taken by medical students, Enrollment 100

Graduate Student Committees

2018-2022 Chair, Scholarship Oversight Committee, William Sveen, Pediatric Critical Care Fellowship, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH

2018-2020 Member, Scholarship Oversight Committee, Anne Heueman, Genetic Counseling,
University of Cincinnati, Cincinnati, OH

2017-2019  Chair, Scholarship Oversight Committee, Bryana Rivers, Genetic Counseling, University of Cincinnati, Cincinnati, OH

2013-2015  Mentor, Sophia Hufnagel, Combined Pediatrics/Genetics Residency, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH

2013-2015  Co-Chair, Scholarship Oversight Committee, Andrea Murad, Genetic Counseling, University of Cincinnati, Cincinnati, OH

2013-2014  Member, Scholarship Oversight Committee, Grace Tran, Genetic Counseling, University of Cincinnati, Cincinnati, OH

2011-2012  Chair, Scholarship Oversight Committee, Kevin E. Nelson, MD, PhD, Pediatric Inpatient Medicine Fellowship, University of Utah, Salt Lake City, UT

Continuing Education Lectures

2008  Choosing Healthplans All Together (CHAT) Exercise Facilitator, 18th Annual Intermountain Medical Ethics Conference, “Setting Priorities for Healthcare in Utah: What Choices are We Ready to Make?,” Salt Lake City, Utah, October 3.

2007  Speaker, Infant Medical Surgical Unit, Primary Children’s Medical Center, “Withholding and Withdrawing Artificial Nutrition and Hydration: Can It Be Consistent With Care?,” Salt Lake City, Utah, September 6.


2006  Workshop Leader, Faculty Education Retreat, “Publications and Publishing in Medical Education,” University of Utah School of Medicine, Salt Lake City, Utah, September 15.


Other Educational Activities

2008  Instructor, Contemporary Ethical Issues in Medicine and Medical Research, Osher Lifelong Learning Institute, University of Utah, “Religion and Bioethics: Religiously Based Demands for and Refusals of Treatment,” Salt Lake City, Utah, February 7.


PEER-REVIEWED JOURNAL ARTICLES


NON PEER-REVIEWED JOURNAL ARTICLES


REVIEW ARTICLES

BOOKS

BOOK CHAPTERS


OTHER
Policy Statements and Technical Reports

42


Ethics Rounds


Continuing Medical Education

Editorials


Commentaries


Letters


Case Reports

Book Reviews


**Newspaper Articles**


**UNPUBLISHED POSTER PRESENTATIONS**


**ORAL PRESENTATIONS**

**Keynote/Plenary Lectures**

**International**


**National**


**Regional/Local**


4. 2019, *Speaker*, Evening Ethics, Program in Medical Ethics and Humanities, University of Utah School of Medicine, “Patients, Parents, and Professionals: Ethical Issues in the Treatment of Trans Adolescents,” Salt Lake City, Utah, December 4.


12. 2017, Speaker, Advances in Fetology 2017, “Ethics of Innovation and Research: Special Considerations in Fetal Therapy Centers,” Cincinnati, Ohio, October 27.
18. 2014, Panelist, Center for Clinical & Translational Science & Training, Secrets of the Dead: The Ethics of Sharing their Data, Cincinnati, Ohio, August 28.
22. 2011, Presenter, Fall Faculty Development Workshop, College of Social Work, University of Utah, “Teaching Ethics to Students in the Professions, “ Salt Lake City, Utah, November 14.
23. 2011, Speaker, 15th Annual Conference, Utah Chapter of the National Association of Pediatric Nurse Practitioners, “Ethical Issues in Pediatric Practice,” Salt Lake City, Utah, September 22.
24. 2011, Speaker, Code Silver! Active Shooter in the Hospital, Utah Hospitals & Health Systems Association, Salt Lake City, Utah, March 21.

Meeting Presentations

International

National
2. 2022, Panelist, American Society for Bioethics and Humanities Annual Meeting, Pediatric Ethics Affinity Group, “When Ethical Healthcare Is Prohibited By Law, How Do We Respond?” Portland, Oregon, October 27.
4. 2021, Panelist, Pediatric Endocrine Society Annual Meeting, Difference of Sex Development Special Interest Group, Virtual Conference, April 29.
5. 2020, Speaker, American Society for Bioethics and Humanities Annual Meeting, “Is This Child Dead? Controversies Regarding the Neurological Criteria for Death,” Virtual Conference, October 17.
7. 2020, Speaker, American Society for Bioethics and Humanities Annual Meeting, “K-12 Schools and Mandatory Public Health Programs During the COVID-19 Pandemic,” Virtual Conference, October 15.


Invited/Visiting Professor Presentations
2. 2010, Visiting Professor, Program in Bioethics and Humanities and Department of Pediatrics, “What to Do When Parents Want Everything Done: ‘Futility’ and Ethics Facilitation,” University of Iowa Carver College of Medicine, Iowa City, Iowa, September 10.
Grand Round Presentations

1. 2019, David Green Lectureship, “Establishing Goals of Care and Ethically Limiting Treatment,” Primary Children’s Hospital, Salt Lake City, Utah, December 5.
4. 2018, Bioethics, “Reversibility, Fertility, and Conflict: Ethical Issues in the Care of Transgender and Gender Nonconforming Children and Adolescents,” Cleveland Clinic, Cleveland, Ohio, April 9.
5. 2017, Heart Institute, “‘Have you ever thought about what you would want—if god forbid—you became sicker?: Talking with adult patients about advance directives,” Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, October 16.
6. 2017, Pediatrics, “Respectful, Effective Treatment of Jehovah’s Witnesses,” with Judith R. Ragsdale, PhD, MDiv and David Morales, MD, Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, March 14.
8. 2015, Pediatrics, “‘Nonbeneficial’ Treatment: What must providers offer and what can they withhold?,“ Greenville Health System, Greenville, South Carolina, May 10.
11. 2013, Heart Institute, “No Not Months. Twenty-Two Years-Old: Transiting Patients to an Adult Model of Care.” Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, October 21.
12. 2013, Division of Neonatology, “This Premature Infant Has a BRCA1 Mutation!?: Ethical Issues in Clinical Whole Exome Sequencing for Neonatologists.” Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, October 11.
13. 2013, Department of Pediatrics, “Adults are Not Large Children: Ethical Issues in Caring for Adults in Children’s Hospitals,” Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, February 26.
14. 2012, “Mandate or Moratorium?: Persisting Ethical Controversies in Donation after Circulatory Death,” Cedars-Sinai Medical Center, Los Angeles, California, May 16.
15. 2011, Division of Pediatric Neurology Friday Lecture Series, “Inducing or Treating ‘Seizures’ with Placebos: Is It Ever Ethical?,” University of Utah, Salt Lake City, Utah, October 7.
16. 2011, Department of Surgery, “DNR Orders in the OR and other Ethical Issues in Pediatric Surgery: Case Discussions,” Primary Children’s Medical Center, Salt Lake City, Utah, October 3.
17. 2009, Department of Pediatrics, “What to Do When Parents Want Everything Done: ‘Futility’ and Bioethical Mediation,” Primary Children’s Medical Center, Salt Lake City, Utah, September 17.
18. 2008, Division of Pulmonology and Critical Care, “Futility: May Clinicians Ever Unilaterally Withhold or Withdraw Medical Treatment?” Utah Valley Regional Medical Center, Provo, Utah, April 17.

**Outreach Presentations**

2. 2019, Speaker, Adult Forum, Indian Hill Church, “Medical Ethics,” Indian Hill, Ohio, March 24.

**Podcasts**

Exhibit B
# EXHIBIT B

## TABLE 1: Level (Quality) of Evidence and Class (Strength) of Recommendation¹ and in 2020 American Heart Association Guideline for Pediatric Basic and Advanced Life Support

<table>
<thead>
<tr>
<th>Level A</th>
<th>Level B-R (Randomized)</th>
<th>Level B-NR (Nonrandomized)</th>
<th>Level C-LD (Limited Data)</th>
<th>Level C-EO (Expert Opinion)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1 (Strong) Benefit &gt;&gt;&gt; Risk</td>
<td>Class 2a (Moderate) Benefit &gt;&gt; Risk</td>
<td>Class 2b (Weak) Benefit &gt;= Risk</td>
<td>Class 3 No Benefit (Moderate) Benefit = Risk</td>
<td>Class 3 Harm (Strong) Risk &gt; Benefit</td>
<td>Class 3 Harm (Strong) Risk &gt; Benefit</td>
</tr>
<tr>
<td>1 (0.8%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>1 (0.8%)</td>
</tr>
<tr>
<td>1 (0.8%)</td>
<td>2 (1.5%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>3 (2.3%)</td>
</tr>
<tr>
<td>5 (3.8%)</td>
<td>9 (6.9%)</td>
<td>3 (2.3%)</td>
<td>0 (0.0%)</td>
<td>2 (1.5%)</td>
<td>19 (14.6%)</td>
</tr>
<tr>
<td>24 (18.5%)</td>
<td>22 (16.9%)</td>
<td>21 (16.2%)</td>
<td>1 (0.8%)</td>
<td>2 (1.5%)</td>
<td>70 (53.8%)</td>
</tr>
<tr>
<td>22 (16.9%)</td>
<td>9 (6.9%)</td>
<td>6 (4.6%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>37 (28.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>53 (40.8%)</td>
<td>42 (32.3%)</td>
<td>30 (23.1%)</td>
<td>1 (0.8%)</td>
<td>4 (3.1%)</td>
</tr>
</tbody>
</table>

### 1. Level (Quality) of Evidence

**Level A**
- High-quality evidence from more than 1 [Randomized Controlled Trial ([RCT])]
- Meta-analyses of high-quality RCTs
- One or more RCTs corroborated by high-quality registry studies

**Level B-R (Randomized)**
- Moderate-quality evidence from 1 or more RCTs
- Meta-analyses of moderate-quality RCTs

**Level B-NR (Nonrandomized)**
- Moderate-quality evidence from 1 or more well-designed, well-executed nonrandomized studies, observational studies, or registry studies
- Meta-analyses of such studies

**Level C-LD (Limited Data)**
- Randomized or nonrandomized observational or registry studies with limitations of design or execution
- Meta-analyses of such studies
- Psychological or mechanistic studies in human subjects

**Level C-EO (Expert Opinion)**
- Consensus of expert opinion based on clinical experience

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Exhibit C
EXHIBIT C
TABLE 2: Strength of Recommendation and Quality of Evidence in Recommendations Made by the Endocrine Society

| Strength of the Recommendation/ Quality of the Evidence | Endocrine Treatment of Gender-Dysphoric/Gender-Incongruent Persons | Pediatric Obesity Assessment, Treatment, and Prevention | Congenital Adrenal Hyperplasia Due to Steroid 21-Hydroxylase Deficiency |
|--------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------|
| Strong|High | 0 (0) 2 | 0 (0) | 0 (0) |
| Strong|Moderate | 3 (11) | 4 (13) | 18 (33) |
| Strong|Low | 5 (18) | 6 (20) | 13 (25) |
| Strong|Very Low | 2 (7) | 1 (3) | 1 (2) |
| Weak|High | 0 (0) | 0 (0) | 0 (0) |
| Weak|Moderate | 0 (0) | 0 (0) | 2 (4) |
| Weak|Low | 9 (32) | 5 (17) | 4 (7) |
| Weak|Very Low | 3 (11) | 12 (40) | 7 (13) |
| Ungraded Good Practice Statement 3 | 6 (21) | 2 (7) | 9 (17) |
| Either Low or Very Low | 19 (68) | 24 (80) | 25 (46) |
| Total | 28 | 30 | 54 |

1 Quality of the Evidence
High: “Consistent evidence from well-performed RCTs [Randomized Controlled Trials] or exceptionally strong evidence from unbiased observational studies”
Moderate: “Evidence from RCTs with important limitations (inconsistent results, methodological flaws, indirect or imprecise evidence), or unusually strong evidence from unbiased observational studies”
Low: “Evidence for at least one critical outcomes from observational studies, from RCTs with serious flaws, or indirect evidence”
Very Low: “Evidence for at least one of the critical outcomes from unsystematic clinical observations or very indirect evidence”

2 n (%)
Ungraded Good Practice Statement: “Direct evidence for these statements was either unavailable or not systematically appraised and considered out of the scope of this guideline. The intention of these statements is to draw attention to these principles.” See Hembree WC, Cohen-Kettenis PT, Gooren L, et al. Endocrine treatment of gender-dysphoric/gender-incongruent persons: An Endocrine Society clinical practice guideline. J Clin Endocrinol Metab. 2017;102(11):3869-3903.

Guidelines: