

# PEDIATRIC ETHICS SCOPE

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THE JOURNAL OF PEDIATRIC BIOETHICS



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**F**or parents, the only way  
Is hard. We who give life  
give pain. There is no help.  
Yet we who give pain  
give love; by pain we learn  
the extremity of love.

I read of Abraham's sacrifice  
the Voice required of him,  
so that he led to the altar  
and the knife his only son.  
The beloved life was spared  
that time, but not the pain.  
It was the pain that was required.

I read of Christ crucified,  
the only begotten Son  
sacrificed to flesh and time  
and all our woe. He died  
and rose, but who does not tremble  
for his pain, his loneliness,  
and the darkness of the sixth hour?  
Unless we grieve like Mary  
at His grave, giving Him up  
as lost, no Easter morning comes.

And then I slept, and dreamed  
the life of my only son  
was required of me, and I  
must bring him to the edge  
of pain, not knowing why.  
I woke, and yet that pain  
was true. It brought his life  
to the full in me. I bore him  
suffering, with love like the sun,  
too bright, unsparing, whole.


The Way of Pain  
Wendell Berry (1998)



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# From the Editors

Since Pediatric Ethicscope's Fall 2017 launch, we have received manuscripts and inquiries from several dozen authors; many more have contacted us to be reviewers or subscribe. This issue includes more articles from authors farther afield than the last. With this both humbling and heartening response, we have redoubled our efforts to serve the nation's pediatric community with diverse, nuanced perspectives on issues of import in pediatric ethics. We encourage you to submit a manuscript or contact us to discuss an idea; each of the following articles was not too long ago just an outline, abstract, or idea.

We begin this issue with an analysis of the respective roles of diagnosis and prognosis vis-à-vis patient/family goals in Embracing Diagnostic Uncertainty. The authors use a case involving a newborn with an undiagnosed, severe neuromuscular condition to argue, among other things, the patient/family's goals should in some cases limit our use of diagnostic tests. The NICU setting is continued in Referral for Extracorporeal Life Support in Newborns With Hypoxic Ischemic Encephalopathy. The authors argue ECLS and therapeutic hypothermia are examples of life-sustaining therapies that require an ethical framework for shared decision-making with families and medical teams, and share their outreach education in palliative care and bioethics for community neonatal care providers. The Dialogue with the Ethicist column in this issue showcases Chris Feudtner's adroit analysis and eidetic character foils in service of a nuanced treatment of issues surrounding a particularly vexing case. Throughout the case discussion, Feudtner offers sage advice for those who perform ethics consultations and insights into the role of the clinical ethicist.

Transgressing Moral Imperatives is the result of a two-year research project into ethical stress, virtues, and values, assessing the aforementioned through the study of unprompted expressions in moral language following pediatric death. The study explored both the ethical issues addressed, and not addressed, with traditional ethics education; the latter consisted of two sub-themes: virtue conflicts and value conflicts—both explored in detail. Next, The Ethics of Disclosing and Discussing SUDEP with Families of Children Newly Diagnosed with Epilepsy addresses navigating a conflict that involves disclosure of information

inherently necessary for the patient/family to have in order to consent to the disclosure itself. The authors explore arguments to disclose, not to disclose, and to sometimes disclose the risk of SUDEP to families.

Douglas Diekema's Ethical Issues in Genetics Research begins a trio of research-oriented articles. Diekema argues that while issues in genetics research are not necessarily any different than other research ethics issues, they present in different ways and may be more challenging to manage, using the case of Arizona State University and the Havasupai Tribe as an example. Continuing the research theme, the longstanding recommendation against performing genetic tests on children that don't lead to curative therapeutic interventions comes under some challenge in Doctor, I Want BCRA Testing for My Girl. The author relays a case in which the recommendations of several medical societies conflicted with the particular circumstance before him. Ending the research ethics trio, and turning more philosophical, a role for double effect reasoning in the moral justification of pediatric experimentation is explored in The Inclusion of Children in Nontherapeutic Medical Research. Beginning with the arguments proffered by Paul Ramsey and Richard McCormick, a detailed analytical exegesis of the doctrine of double effect is presented along with an argument for its practical use when certain conditions are met.

Our Education in Ethics column presents the Children's Mercy Bioethics Center's Certificate Program in Pediatric Bioethics, a nine-month blended learning program that draws students from around the world. An overview of the program, its faculty, and its focus are presented, along with the perspective of a student from this year's class. The issue concludes with our Ethics in the Pediatric Literature section, and we would like to give special thanks to Dr. Brenda Mears, Chairperson of the American Academy of Pediatrics Section on Bioethics, who originally aggregated many of the resources we present.

Many of you have commented on the visual elements of the journal, which we feel aids the storytelling. We appreciate any and all feedback; send your comments to: [steti@childrensnational.org](mailto:steti@childrensnational.org),


Thank you for reading,



Dr. Tomas J. Silber, Editor-in-Chief



Mr. Stowe Locke Teti, Executive Editor



# Embracing Diagnostic Uncertainty



PEER REVIEWED

*Krishna Acharya, Joanne Lagatta, Steven Leuthner*

## ABSTRACT

A baby is born with severe muscle weakness, and is unable to breathe on his own. He is dependent on a ventilator. He does not respond to stimuli. He likely has a severe neuromuscular condition which cannot be cured. Doctors order diagnostic tests, but parents struggle with the thought of their child suffering while they wait for test results. Doctors revise their diagnostic strategy to provide a timely and meaningful prognosis in accordance with parental goals. This narrative discusses issues of diagnostic uncertainty and the value of relying on clinical gestalt when trying to prioritize medical tests for a sick patient.

THE NURSE CALLED ME to the bedside for the new admission. "The parents of the new baby are here, and they are really upset."

Great, I thought: angry parents.

I quickly reviewed the notes I had taken from the overnight fellow: This was a full-term male infant who had been transferred to our NICU for severe hypotonia

at one day of life for further evaluation. Mom had felt little fetal movement since 32 weeks and had polyhydramnios, suggesting that the baby was not swallowing the amniotic fluid in utero. Parents were both healthy, and had two other healthy children. Baby was delivered vaginally, and was apneic and hypotonic at birth. He was intubated at birth and transferred to the NICU. On exam, he was noted to be limp with limb contractures and a flat face. He had no reflexes.



He was placed on a ventilator. A brain and spine MRI were normal. Overnight, the on-call team had taken his breathing tube out as he was on the lowest ventilator support, but the tube had to be replaced within a few hours.

As I walked up to the family, I was already tired, dreading the conversation to be had with them. I introduced myself as the neonatology fellow who was assuming care of their baby, and explained the events of the night.

"J was taking a lot of breaths over the ventilator, and his carbon dioxide level was very low. A low carbon dioxide level when someone is on a ventilator often means that they may be ready to come off and breathe on their own. The overnight team wanted to give him a trial off the ventilator to see if he would be able to sustain his breathing. He had been breathing on his own, but after a few hours, he was tiring out and struggling to breathe, so they had to put the breathing tube back in."

Mom and dad looked tired, not unlike other parents in the NICU. They also seemed frustrated, and were trying to hold back tears.

"Why did they put the breathing tube back in?" Mom asked, without making eye contact. "If we knew he was going to get it back, we would have said no."

This was not what I had expected to hear. I had often been asked by the parents of a sick baby in the NICU if more could be done for their child. Often, I had sensed myself getting impatient when parents held on to the hope that their child would recover from an irreversible illness, against all medical judgment. I could understand why, in this case, parents would be upset that the intubation had been done, and they had only been informed about it after the fact. However, I had yet to hear a family ask me why we had intubated their child when it was medically necessary, only why we hadn't informed them about it sooner.

"I am sorry this happened without your knowledge, and that we did not communicate this with you," I said.

"He is not moving much. If he doesn't have something that can be treated or get better, we want to stop.

We don't want him to suffer," dad added. "We wish the doctor hadn't put the breathing tube in back in the delivery room. If he was destined to die, we wish it had happened then. That would have been shorter, and less painful, for him than all this stuff that he is going through now."

This was all new information to me. I had assumed that since the baby had been transferred for further diagnostic evaluation, his parents would want to pursue all possible medical interventions until the diagnosis was reached. Isn't that what most parents ask?

"I am so sorry. Our team was not aware about your feelings regarding continuation of intensive care. You are an integral part of all decision-making for J. We want to know what your goals for him are, so we can provide the best possible care for him. Could you tell me a little more about what you have been told and what your expectations are from us?"

"We were told during the pregnancy that since J is not moving a lot or swallowing amniotic fluid that he may not survive. We want to know if he has anything that can be treated or that will get better. If he is not going to get better from this, we want to take him off the ventilator and let him pass peacefully."

I reassured them that our team would do their best to give them more information about his condition, and we would work with them to figure out the best possible treatment course.

I scratched my head, thought of the differential diagnoses, trying (and failing) to remember the elements of the reflex arc, the neural pathway that runs from the nerves in the various parts of our body, to the muscles and all the way up through the spine to the brain. A baby could be floppy due to a problem in any one of the many junctions along this pathway. Whatever he has, it can't be good, I thought to myself.

I reviewed the case history with my attending, and explained my sense that this family was really struggling with the baby's condition, and wanted quick answers. In all honesty, we hadn't gotten off to a good start with these parents, and they were probably feeling like they wouldn't be included in the clinical decision-making. We agreed that we should promptly consult the neurology and genetics team, and then sit down with the family to discuss diagnostic options. In the

*"The parents of the new baby are here, and they are really upset."*



meantime, J's parents agreed that he should remain on the ventilator until we had a tentative plan of action. However, they made clear that they did not want him to be on long-term ventilation. Their goals were for him to be able to interact with others, to be able to do things other kids do, and to not be completely dependent on others for his care.

We consulted the neurologists. In their opinion, J likely had a congenital myopathy, but other diagnoses such as congenital muscular dystrophy, spinal muscular atrophy, congenital or transient myasthenia gravis and Prader-Willi syndrome were also possible. They agreed that J's presentation was severe, but they wanted to reserve prognostication until further testing was done. They recommended an electromyogram (EMG) and a muscle biopsy, as well as genetic testing for spinal muscular atrophy (SMA) and Prader-Willi syndrome, and acetylcholine receptor antibody testing for myasthenia gravis. We consulted the genetics service, who added X-linked myotubular myopathy to the differential diagnoses, a condition for which a new gene therapy in dogs has shown remarkable promise, but is still in experimental stages and not FDA approved for human use. A muscle biopsy would diagnose this condition.

Our team considered the following questions in ordering diagnostic tests: Which, among the conditions considered in the differential diagnoses, is treatable or reversible with time, or has a favorable prognosis? What is the likelihood that this baby, with his severe presentation, has this condition? Which tests are invasive and potentially avoidable?

Following discussion with the specialists and the family, we agreed that the only potentially treatable condition with a favorable prognosis was congenital myasthenia gravis. The test for this condition was

a. **Myasthenia gravis** is a chronic autoimmune neuromuscular disease affecting skeletal muscles responsible for both breathing and movement. The name myasthenia gravis means, "grave, or serious, muscle weakness." While there is no known cure, existing therapies can control symptoms, making possible a good quality of life. Lifespan is not affected by the disease.

b. **Prader-Willi syndrome** is a complex genetic condition characterized by weak muscle tone (hypotonia), feeding difficulties, poor growth, and delayed development during infancy, and increased appetite, obesity, and developmental delays later in life.

c. **Spinal muscular atrophy** is a rare neuromuscular disorder characterized by loss of motor neurons and progressive muscle wasting, often leading to early death. The disorder is caused by a genetic defect in the SMN1 gene, which encodes SMN, a protein widely expressed in all cells and necessary for survival of motor neurons.

d. **X-linked myotubular myopathy** is a condition affecting skeletal muscles that almost exclusively occurs in males. People with this condition have low muscle tone and muscle weakness. It is caused by mutations in the MTM1 gene.

ordered but results could take up to a week. An EMG was also done but results were inconclusive. Gene testing for Prader Willi and SMA was sent but would take weeks to return. We offered a muscle biopsy to the parents. In the meantime, J's clinical condition was unchanged, and he remained on the ventilator.

Nasogastric feeds were started, and parents were encouraged to hold and bond with him. Comfort measures were optimized, and the family was moved to a more private room.

As the days went by, we sensed the parents' frustration and sadness with their child's condition, and their struggle to make the best decision for their child. Although they were certain they did not want prolonged aggressive interventions for J if he had an incurable disease, they were conflicted about withdrawing life-sustaining interventions if there was a chance he could recover. Every day they would ask, "Do you think he is getting better?"

No, he was not getting better. His clinical exam was unchanged, and no one on the medical team thought he could survive without a long-term ventilator.

We reconsidered our diagnostic strategy: if their baby had myasthenia gravis, then the treatment for this condition would be pyridostigmine (an acetylcholine esterase inhibitor), which can be given through a feeding tube, and should show us some improvement in symptoms within a few hours of administration. Even though pyridostigmine challenge is not normally used in babies because of the difficulty in measuring neurologic exam changes, could we attempt it anyway to see if it would help this infant with independent respiratory effort and movement? This would provide an answer in a more time efficient manner for the only disorder with a favorable prognosis. The family agreed. A physical exam was performed by the neonatology and neurology team 3 hours after medication administration but showed no change. The parents also agreed that J was the same.

The next day, following this test, dad said to us, "We can't do this any longer. We want to take him off the ventilator. He still isn't moving or breathing on his own. He has had enough done to him already."

J was extubated in mom's arms soon after and died within minutes of this event. He was 7 days old.

*"We can't do this any longer. We want to take him off the ventilator."*

*“Diagnosis, however, is a means to optimizing prognosis, not an end in itself.”*

### Discussion

As physicians, we often feel obligated to discover a diagnosis before we can determine prognosis with any level of certainty. This is for good reason. Discovering a diagnosis allows us to offer appropriate therapies, and indicates a prognosis [1,2]. Indeed,

medical training is steeped in the art and science of discovering a diagnosis, and doctors are trained to first, recognize a disease, and then, to prescribe (or proscribe) treatment [3]. This obligation is particularly acute when withdrawing life-sustaining intervention, as in this case. If a patient has a diagnosis which can be treated with the expectation of a ‘good’ outcome, then failure to find the diagnosis and provide its treatment could prove catastrophic.

Diagnosis, however, is a means to optimizing prognosis, not an end in itself. Ethical decision making should be based on prognosis, not diagnosis. Determining a child’s best interests means helping a family determine the meaning of a prognosis given their values and perspectives. [4,5] In addition, many diagnostic tests are invasive and painful, results take a long time to return, and may not be completely definitive. Thus, the burdens and limitations of testing may outweigh the benefits of diagnostic clarity.

In most instances, the problem with centering our ethical decision making on a diagnosis is that each diagnosis contains a range of prognoses, which complicates decision-making about withdrawing intensive care intervention. In this case, the opposite was true. We had a range of diagnoses, but nearly all of them had a similar prognosis. The infant presented with a disease that was severe, began early on in life, and had an unrelenting clinical course. In such cases, a ‘diagnostic category’ (such as myopathy) and its prognosis were implied based on the severe clinical presentation. Indeed, pursuing invasive diagnostic tests for a condition with a predicted poor outcome arguably violates the ethical principle of nonmaleficence, because the potential harm involved

in diagnostic testing (for example, general anesthesia for a muscle biopsy) may outweigh the benefits of such testing (i.e. obtaining a diagnosis). [6] A baby who has severe hypotonia with minimal movement, has never independently breathed on his own, and has failed attempts at extubation multiple times, is certain to not survive without long-term ventilation. These predictions are true regardless of the exact neurologic condition. Is it then necessary to wait for diagnosis if the prognosis is clear? Shouldn’t the family’s need for certainty regarding prognosis weigh at least as heavily as the physician’s desire for diagnostic clarity?

In this case, the parents indicated they considered a need for long-term ventilation for their child to be an overly burdensome quality of life. This provided the meaning of the prognosis. They struggled with concerns of their infant suffering, yet also not wanting

to stop if there was a reversible process. Indeed, some families may not want to wait for the final diagnosis if all possibilities considered in the differential diagnoses have similarly poor prognostic outcomes, especially if the tests involved are invasive. Rather, they may be interested in ruling out any possible favorable diagnosis, so they can

make decisions about continuation versus withdrawal of care. In this case, the medical team and parents recognized that all that was needed to help make a decision was to rule out the one disorder, myasthenia gravis, because that condition alone would not require long-term ventilation. This was the only certainty the family needed. Once the baby did not respond to that one test, the prognosis and meaning of that prognosis for the parents became certain enough to make a clinical decision.

That doesn’t eliminate our obligation to continue searching for a final diagnosis for reasons other than describing the already certain prognosis. Confirming the diagnosis for the family allows the medical team a chance to continue supporting a family even after a patient’s demise, connecting them to family supports and ongoing research efforts, and helping to guide reproductive decisions in the future. The burdens of continued therapy, however, are not always worth



A clinician soothes an infant in a NICU incubator.

invasive measures while alive or waiting for final results before withdrawing intervention.

Physicians are trained to recognize patterns of diseases, consider possible diagnoses, achieve a diagnosis, and provide a prognosis. But, often we get too caught up in ordering one diagnostic test after another, checking off the boxes for the tests which we 'must' do, forgetting to ask ourselves what prognostic information the results would yield beyond what we already know from the patient. [7,8] Some clinicians are also reluctant to discuss prognosis with parents in cases of critical illness, where communication is essential. [9] Coupling a prognosis with an understanding of parental goals helps inform its meaning, thus guiding decisions. Often, our clinical gestalt about the big picture prognosis can provide information that is more meaningful to families than any test results, such as for a specific neuromuscular disease. There are degrees of uncertainty in almost everything we do in medicine, but some outcomes are less uncertain than others. When we explain the purpose of diagnostic tests in the context of our clinical impression in an open and honest way, we better support families in their decision-making for their loved ones.

## Denouement

The findings of J's autopsy were consistent with nemaline rod myopathy. Gene sequencing revealed

a mutation in the ACTA1 gene, which is associated with nemaline myopathy. The disease's severe form presents in the neonatal period with severe hypotonia, arthrogryposis, and respiratory insufficiency. No treatment is currently available. Results for SMA and Prader-Willi were negative.

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THE AUTHORS HAVE DISCLOSED NO  
CONFLICTS OF INTEREST.

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## Endnotes

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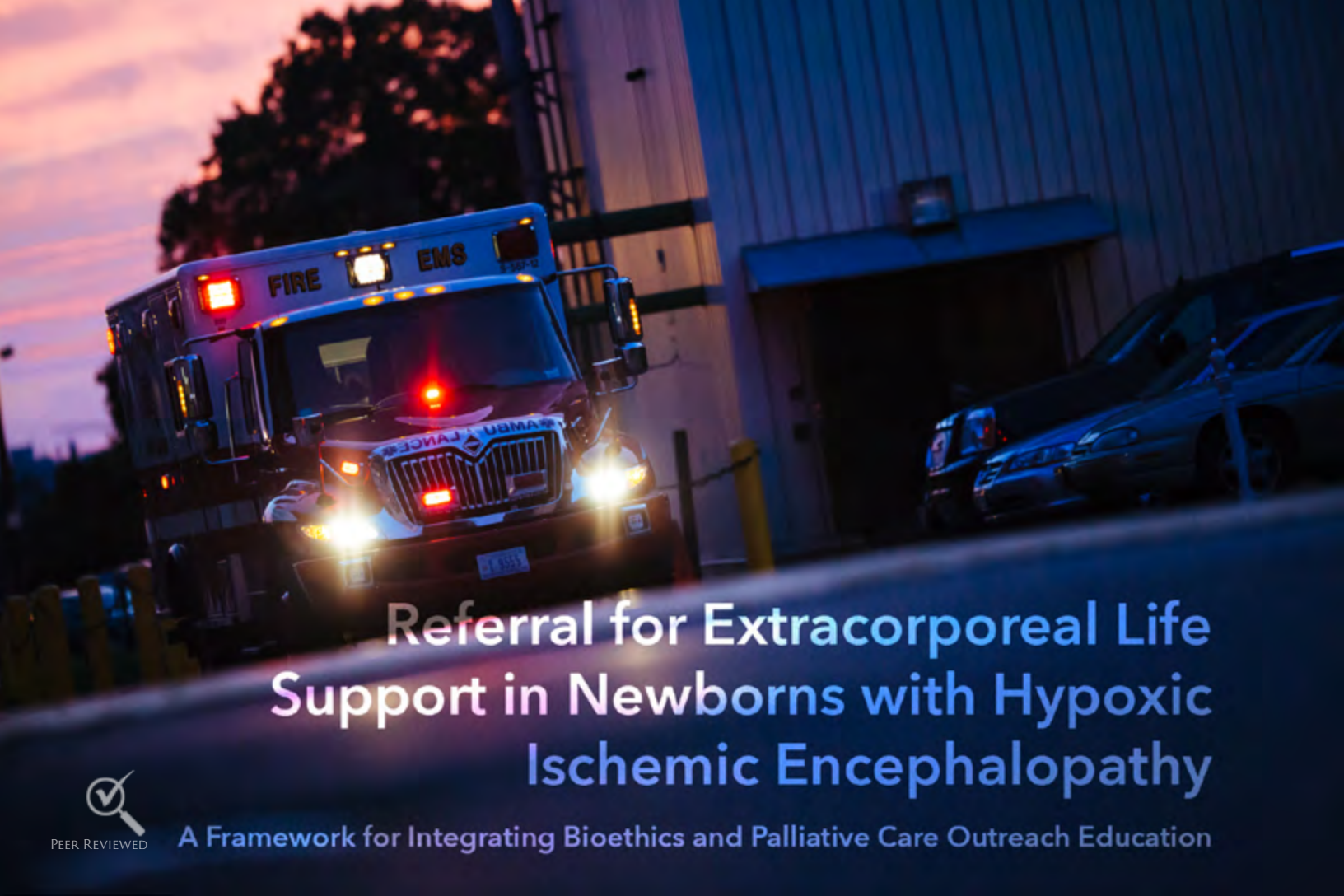
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# Referral for Extracorporeal Life Support in Newborns with Hypoxic Ischemic Encephalopathy



PEER REVIEWED

A Framework for Integrating Bioethics and Palliative Care Outreach Education

*Sirisha Perugu, John Patrick Cleary*

## ABSTRACT

Ethical concepts of beneficence, nonmaleficence, justice and respect for dignity can become complicated in modern neonatal critical care, especially since invasive medical therapies may unintentionally increase suffering. Bioethics can help bridge complex ethical concepts to family support and palliative care for babies with serious illnesses and requiring exceptional medical therapies. Neonatal Extracorporeal Life Support (ECLS) and therapeutic hypothermia are examples of life-sustaining innovative therapies that require an ethical framework for shared decision-making with families and medical teams. We suggest a way of structuring team education to benefit urgent ECLS decisions for newborns with moderate to severe hypoxic ischemic encephalopathy (HIE). Decision-making for the best interest of infants requires practitioners to rapidly apply ethically complex concepts. We review the present status of neonatal ECLS and therapeutic hypothermia along with describing our approach to include families in decision making for infants with respiratory failure and moderate to severe HIE.

## Introduction

BIOETHICS CAN BE USED as a structured approach to life, innovative therapies, and end-of-life care. Ethical concepts (autonomy, beneficence, nonmaleficence, justice and respect for dignity) can become challenging to apply in modern neonatal critical care. Though medical innovations can sustain infants with life-threatening illnesses, these invasive therapies may unintentionally increase suffering. Trying to decide if a potential life-sustaining therapy is harmful can be challenging. Neonatal respiratory failure and hypoxic ischemic encephalopathy (HIE) are common illnesses for which NICU teams might feel they are using medical technology effectively in one patient or pushing the limits of medical treatments in another.

Shared decision-making is key to family centered neonatal care and requires that parents and medical providers collaborate and communicate effectively to determine the best interest of infants. [1,2] Newborn infants must receive a therapy that is within standard of care. ECLS for Meconium Aspiration Syndrome failing maximal medical therapy or therapeutic hypothermia for acute, moderate HIE meet this criteria. However for certain critically ill newborns, decisions are outside a clear-cut risk-benefit assessment. Decision-making to place neonates with serious life-threatening problems such as respiratory failure and moderate to severe HIE on ECLS can be uncertain. Families and medical teams can have conflicts with decision-making steps and there is significant variability in how ECLS centers address these conflicts. [3] Convening an ethics committee consultation meeting for such acute situations in newborns, at our regional neonatal center is impractical. We suggest an integrated way of structuring bioethics and palliative care concepts in preparation for and carrying out urgent ECLS decision-making. Our framework of education extends from community physicians to unit based ECLS team members and, most importantly, to families. [4]

Concurrent palliative care and family support are important so that parents feel empowered to define a meaningful life for their baby and family. [5] Parents of newborns with severe brain injury have reported that communication with medical providers had fragmented information and lacked adequate counseling on comprehensive outcomes. [6] Advanced preparation and education in bioethics will enable medical teams to rapidly apply a deliberative approach to ethically complex concepts. We intend to demonstrate how ethically complex decision-making can be supported by education and preparation in key concepts in palliative care and bioethics (Table 1).

While doing so, we review the present status of ECLS and neuroprotection for newborns with respiratory failure and moderate to severe HIE.

## Ethical Dilemmas and Neonatal ECLS

Progress in ECLS has been balanced by ethical tension since its early use. When in 1975 Baby Esperanza named by her nurses after her mother fled the hospital was treated with ECLS for Meconium Aspiration Syndrome by Dr. Bartlett's team (Orange, CA), she became the first of many survivors. The name, Esperanza is translated into English as Hope. The decision to treat her on an experimental basis saved her and paved the way for more than thirty thousand infants to receive neonatal ECLS with improvement in survival from approximately 10% to 84%. [7] Despite initial success, complications were recognized, such as when preterm infants suffered serious intracranial hemorrhage during initial clinical use.

While neonates with respiratory failure previously represented the largest group of ECLS patients, ECLS is commonly avoided in this group today.



The CARDIOHELP system is an example of a portable extracorporeal membrane oxygenation machine, which can provide heart/ lung bypass in ambulances, helicopters, and during surgery.

## Outreach education in palliative care and bioethics for community neonatal care providers

### Initial steps in palliative care education

- Assess knowledge of palliative care, barriers in communication, and pain assessment and management.
- Self-paced online training modules (concepts in palliative care, pain management, and communication). Emphasize that palliative care can be provided in conjunction with curative therapies.
- General written guidelines based on the review of evidence based publications.
- Concepts for non-pharmacologic and pharmacologic options for compassionate end-of-life care.

### Outreach meetings for integrating bioethics and palliative care

- Palliative and ECLS leaders participate in quarterly morbidity and mortality conferences at community hospitals, and meetings with children's hospital transport team members.
- Include mentoring and small group discussions of ethical, cultural, and religious perspectives in a clinical case based format.
- Consistent neonatologist phone consultation prior to considering transfer.
- Debriefs to reinforce education surrounding actual cases both for children's hospital and community. Team members discuss ways to cope and support grieving families, honor the life of their baby.

### Annual full day conference

- Attended by children's hospital palliative care team, community NICU practitioners, and community hospice leads.
- Curriculum includes:
  1. Introduction to palliative care in the NICU.
  2. Role play for conducting conversations in important decision-making steps, i.e. goals of care, escalation and limitations in medically invasive therapies, end of life care, and components of allow for natural death orders.
  3. Options for pain treatment.
  4. Caring for caregivers.
  5. Understand discharge options, with/without assisted medical devices.

**Table 1: Outreach education in palliative care and bioethics for community neonatal care providers.**

Progress in perinatal care and therapies including inhaled nitric oxide, surfactant replacement, and high-frequency ventilation have reduced the need for ECLS in many neonates with respiratory failure and persistent pulmonary hypertension of the newborn (PPHN). [8,9] ECLS remains indicated for acute, severe, reversible respiratory failure that is refractory to maximal medical therapy. Though simple to state, defining when medical therapy has failed and when lung disease is reversible is not straightforward; concurrently, contraindications to ECLS must be weighed. ECLS is traditionally contraindicated with significant prematurity, i.e., <34 weeks post-menstrual age. [10] Late Preterm (34 to 36 6/7 post-menstrual age) infants are more likely to die or have serious neurological complications when placed on ECLS. Thus, the threshold to place an infant on ECLS is typically higher. Meanwhile,

successful cardiopulmonary bypass is increasingly common in preterm neonates, raising the question as to whether indications might change with time.

ECLS is no longer contraindicated for newborns with some genetic problems, such as trisomy 21. ECLS surrounding treatment of serious congenital heart disease such as Hypoplastic Left Heart Syndrome was once considered futile while now its use is common. Thus, conventional indications and limitations for ECLS are changing while the rates of neurodevelopmental impairment still remain significant among survivors.

Severe central nervous system injury has historically been a contraindication to ECLS and, by definition, neonates undergoing cooling are at risk for adverse neurodevelopmental outcome. Thus, concomitant HIE and qualifying for ECLS can create a grey zone dilemma. The degree of encephalopathy must be weighed in decision-making as research in newborn therapeutic hypothermia showed that babies with severe HIE benefit less than those with moderate encephalopathy. [11,12] While cooling has improved survival and outcome for moderate

encephalopathy, the benefit of cooling does not extend to non-acute injury. Thus, we suggest that the potential benefit of cooling should not automatically imply that all newborns with HIE and hypoxemic respiratory failure be placed on ECLS even though they meet ECLS qualifying criteria.

Should we worry that cooling makes ECLS more likely or that ECLS makes cooling more complicated? The answer is unknown. A meta-analysis of neonatal cooling trials indicated that while not statistically significant, there was a trend towards increased Persistent Pulmonary Hypertension among infants treated with hypothermia. [13]

When ECLS is initiated in a neonate receiving cooling for HIE, it is typical to complete 72 hours of



hypothermia. Individual centers report complications such as coagulopathy and pulmonary dysfunction with simultaneous cooling and ECLS. [14,15,16] The NEST trial, conducted in the United Kingdom illustrated that cooling all newborns receiving ECLS did not result in improved health or neurodevelopmental outcomes up to 2 years of age. [17] At some point, all ECLS teams will confront the critical decision of whether to offer ECLS to a baby who has suffered perinatal injury. [10]

### Importance of Outreach Education and Regionalized Neonatal Intensive Care

Neonates with life-threatening problems depend on caregivers to have both medical knowledge and bioethics expertise. Ethics and palliative care consultations typically function as distinct services in a children's hospital. [18] However, the majority of neonates with HIE have initial care at community hospitals. [19] Persistent pulmonary hypertension is a serious and common complication in babies with HIE. [20] Hence, preparation for clinically and ethically complex care must extend beyond children's hospitals and regional centers to community NICUs and transport teams. Regional NICUs should provide out-reach education both on medical indications to transport but also in initial support of families in informed decision making and occasionally to offer a comfort care approach at the birth hospital (Table 1).

While initial stabilization and a trial of conventional therapy should be instituted before consideration of ECLS [21], practitioners in different levels of NICUs must be aware of the safe application of therapies to avert ECLS. Ventilator support and vasopressor medicines have been available in diverse NICU hospital settings; in some, nitric oxide and therapeutic hypothermia have also moved beyond regional centers. The significant risks associated with transporting a neonate with severe PPHN and high level of illness should be balanced with the potential benefit of ECLS. Informed permission for transfer should occur after a detailed review of risks, benefits, and potential contraindications with the regional center.

In outreach education (Table 1) and specific patient care we encourage a structured approach informed by best ethics and palliative care practice themes (Figure 1). Our approach of prospectively teaching these best practice concepts in ethics and palliative care, was very well received by medical providers in community NICUs. Neonatal practitioners' comfort with complex topics was variable for specific cases and if there was any doubt regarding staying in outreach centers, babies were transferred to our regional NICU/

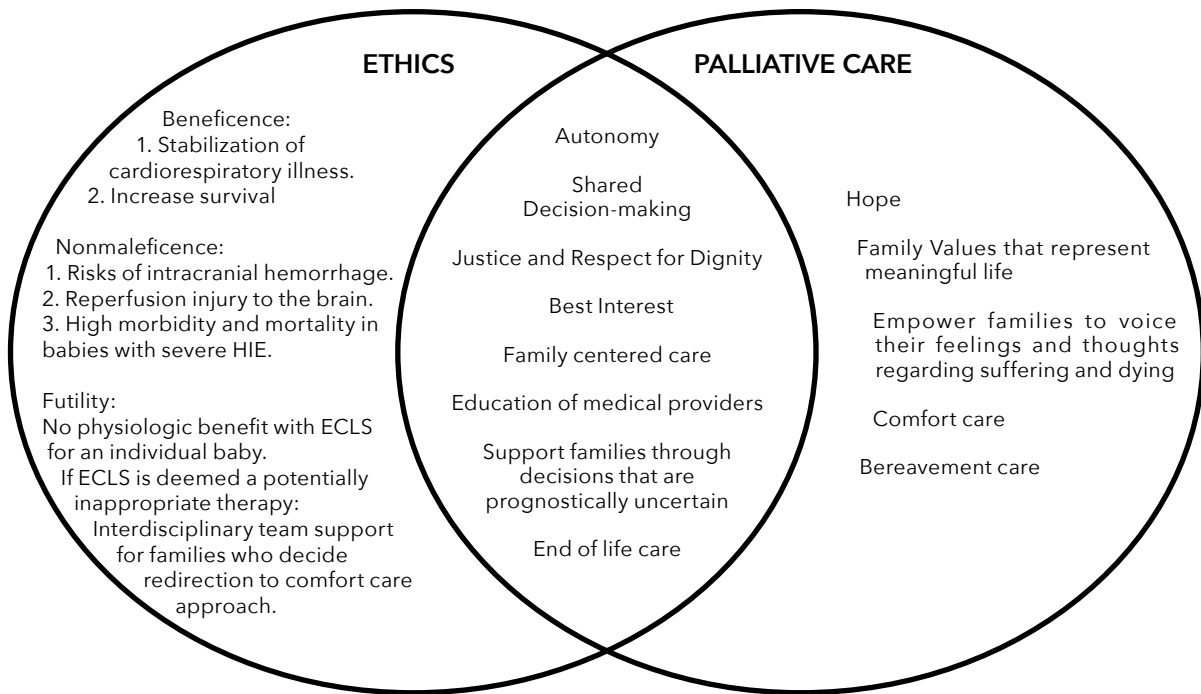


An ECLS system being used for extracorporeal carbon dioxide removal during open heart surgery.

ECLS center. Caregivers may have less experience applying the themes reviewed below to term babies with HIE but we believe most practitioners use a similar approach to caring for families delivering extremely preterm newborns.

### Family Centered Care and Shared Decision-Making

The family is the natural and fundamental group unit of society and is entitled to protection by society. [22] Medical teams must be prepared to explain treatment options and display respect for family values in the context of ECLS. Figure 1 shows key themes included in education and support of families. Families should feel supported and empowered when discussing treatment choices that may have uncertain outcomes. [5,6] Interdisciplinary NICU team support is recognized as a helpful resource for families of babies with encephalopathy. [6] In a study focused on families whose babies died in the NICU, parents identified important aspects of care including honesty, empowered decision-making, parental care, environment, faith/trust in nursing care,



**Figure 1: Integrating Ethics and Palliative Care Considerations for ECLS in babies with moderate-severe HIE**

physicians bearing witness and support from other medical providers. This study also highlighted that the positive quality of relationships, parents shared with their baby's health providers was vital. [23]

Establishing trusting relationships with the family and team is imperative. In some cases, not proceeding to ECLS is a decision that will appropriately lead to allowing for natural death. If there is significant uncertainty, or there is decision-making conflict at our center, ECLS is typically initiated and the process of shared decision-making continues.

### Potentially Inappropriate Therapies and Establishing Goals of Care

Shared decision-making in the context of ECLS can be challenging and requires nuanced discussion for the family to truly be included. The term "futile" is still utilized by many practitioners and implies that ECLS cannot accomplish the intended physiologic goal. While clinicians should not provide futile interventions, the term implies a certainty of outcome that is rarely present. We suggest that instead of futility, NICU practitioners might describe ECLS as potentially inappropriate and bring energy to clarify the families ethical perspective to justify placing a baby with severe HIE on ECLS or not.

Can ECLS be potentially inappropriate for a baby and her/his family? Individual moral traditions

and commitments can impact health providers' perspectives regarding the state of science and their definition of standard care. [24] ECLS may provide the immediate benefit of stabilizing a newborn's cardiorespiratory physiology, but at the same time, it can increase suffering or prolong the dying process if the baby has profound and irreversible brain injury. Parents considering decisions that can result in prolonging survival for a baby with severe neurodevelopmental impairment and potentially dependent on artificial life-support devices may worry, how they can best express their beliefs and family values regarding life and meaningful care. As expressed in the Nuffield bioethics report [25], value of human life and a trusting relationship for families to express their thoughts and feelings regarding best interests should be an integral component of shared decision-making.

Medical professionals have the fiduciary responsibility of acting in the child's best interests and not subject a patient to treatment that is non-beneficial. They should be skilled at recognizing whether families are appropriately weighing their child's best interest. The AAP committee on Bioethics reminds professionals that the state also has the societal interest in protecting the child from harm. [26] Thus in the context of ECLS for a baby at risk of severe neurodevelopmental problems, medical professionals and families can face conflicting paths in decision-making steps. Moral distress and conflicts regarding aggressive



A nurse checks information on ECLS monitors in a NICU.

interventions are increasingly recognized in critical care units. [27]

Every family's values and beliefs are unique, and the hope of recovery offered with cooling and ECLS may benefit a family trying to envision the future for their baby. The importance of conversations with families regarding treatments of minimal benefit and conflict resolution has steadily been underscored. [28] Key references include The American Thoracic Society and Society for Critical Care Medicine policy statement and five organization policy statements [2,29] regarding shared decision-making and responding to requests for potentially inappropriate treatment in intensive care units. These statements recommend a structured process based approach that encourages continued communication and negotiation during the conflict resolution process. ECLS decision-making in the NICU can result in irreversible outcomes for a baby and family. Convening a hospital ethics committee meeting urgently and/or deferring decisions on a dying baby while a hospital's ethics consultant operationalizes committee recommendations can be challenging. Importantly, specific strategies to optimize communication in ethical conflicts require

professionals who can provide emotional support and actively elicit and respect a family's values and partner in decision-making. We suggest that early involvement of NICU providers with palliative care expertise through proactive communication may prevent intractable treatment conflicts. Early and concurrent involvement of NICU providers with palliative care expertise may support the resources available for loving families to maintain hope and equanimity while making ethically complex decisions together. Palliative care that supports a baby and family can be considered as an appropriate goal of care.

### **Palliative Care for Critically ill Newborns**

Palliative care for newborns is an interdisciplinary practice that is dedicated to infants with life-threatening problems. A World Health Organization statement describes palliative care as "an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness through the prevention and relief of suffering by means of early identification and assessment and treatment of pain and other problems, physical, psychosocial and spiritual." Palliative care can



be provided concurrently while patients are receiving curative therapies at any time during an infant's disease trajectory. Pediatric palliative care experts have evaluated family perspectives on invasive therapies and decision making in children with life-threatening problems. The studies illustrate that families should have the prerogative to openly express their concerns regarding suffering, communication around symptom management, quality of life and end-of life care. [30,31]

NICUs can be nurturing yet often daunting environments for families and babies. Palliative care expertise can facilitate conversations regarding goals of care and reach unified goals for improving the quality of life of patients and families. [32,33] This can facilitate comfort with invasive therapies while helping families process uncertainty and respond to changing disease trajectories. Conversations with neonatal practitioners will include discussing the outcomes of severe HIE, potential ECLS complications, and treatment recommendations as clearly as possible. Palliative care expertise can advise a family to process their unique feelings regarding suffering, death and which values best clarify their vision of dignity and life. Families who make the informed decision for a comfort care approach and choose not to pursue ECLS should be advised as to what is likely to occur next. Teams should educate families about the normal process of dying and discuss that a baby may still breathe after withdrawal of artificial ventilation. The focused redirection to comfort care approach can support pain management, end of life care and family bereavement.

Palliative care practice and teaching should not be linked only to end-of-life care decisions in the NICU. In contrast to the reported experience of adult-oriented palliative care teams, many patients receiving pediatric palliative care are alive for more than a year after initiating some form of medical technology. [34] The NICU is a unique setting and models to best deliver palliative care are being explored. [35,36] Consultative/ Specialized models in children's hospitals usually have an interdisciplinary palliative care team that provides palliative care as a consult service in multiple locations including NICUs. Neonatal practitioners can consult this service for specific patients with complex medical or psychosocial palliative care needs.

Integrative models in the NICU operate with primary palliative care principles and interventions enmeshed into daily clinical care for all babies with life-threatening illnesses. This model serves to provide integrated, concurrent palliative care in the NICU for the identified infants and families. Prospectively, the team evaluates and identifies topics (for example-goals of care

communication, family conferences, specialized pain management, end of life care) for expanded palliative care support. In our practice, this model extends beyond the NICU to our community hospitals.

Our NICU developed a specialized palliative care team that operates through the integrative model and includes neonatologists, registered nurses, clinical social workers, respiratory therapists, clinical psychologist, occupational therapists, certified lactation specialists, spiritual care leads, community hospice representatives and care coordinators. Options for team member training include written materials, lectures, self-paced online learning modules, small group discussions, mentoring, role-playing, a certificate course, local workshops, national conference and seminars. Components of this education extend to referral hospitals through outreach education and an annual regional palliative care conference (Table 1). The team functions as an advanced care service for a range of ill neonates with complex medical and psychosocial problems and phone consultation support is provided to practitioners at community NICUs considering transfer of babies for ECLS or therapeutic hypothermia referral. The team impacts real-time ECLS decision-making by facilitating family centered communication and conflict resolution urgently (Figure 1). In individual cases we typically arrange transport if there is team or family discomfort. Palliative care expertise has reinforced family support and communication for complex decision-making in our regionalized neonatal health care system.

## Conclusions and Future Research

Tremendous strides have been made in the care of infants with serious illnesses and their families since the birth of Baby Esperanza and the life-saving use of ECLS. Quality patient care must be informed by the best science with regards to medications and technology, and include family centered care supported by bioethics and palliative care principles. We suggest that systems of care should integrate palliative care support into high risk neonatal services and we focused on ECLS in the setting of HIE for newborns to illustrate the value. Educational programs, relationship development, and clinical protocol development will improve the support of infants and families. The themes of family support and decision-making established in this population are transferable to care of the extremely preterm neonates, infants with congenital malformations and unexpected fetal loss.

Specific to ECLS, clinical tools on the ELSO (Extracorporeal Life Support Organization) registry such as Neo-rescuers [37] may aid in the prediction of risks of in-hospital death for newborns with respiratory failure prior to receiving ECLS. Neonates with severe HIE and respiratory failure can have renal injury and/or cardiac arrest that increase the likelihood of death so such tools may help estimate the predictive risk of such co-morbidities while weighing the potential benefits of ECLS. We reinforce the ethical analysis of risks and benefits during ECLS referral by discussing standard of medical care and potentially exceptional treatments for respiratory failure and hemodynamic instability for each baby and family. In our practice, neonates complete seventy-two hours of cooling on ECLS when standard indications for therapeutic hypothermia are present. We have made the decision to not initiate or discontinue ECLS and redirect to comfort care on an individualized basis for newborns with severe HIE while supporting and collaborating with parents. However, if there are decision-making conflicts and significant prognostic uncertainty for a baby with PPHN crisis receiving therapeutic hypothermia at our center, ECLS is typically initiated with concurrent palliative care team support.

Prospective family centered research trials for critically ill neonates may best define meaningful outcomes. Outcomes research should include not only survival and neurodevelopmental follow-up data but also an evaluation of impact of the illness on family function. Randomized control trials may not always be the answers to nuanced/urgent questions and we must reflect if these are generalizable for every baby or location. Partnering with families for education and quality improvement based research is critical. An integrated approach to research, education and clinical program leadership in neonatal palliative care can help practitioners understand the needs of families and thereby advocate for high quality initiatives within their health care system and the community.

ECLS referral decision-making support and education for ethically complex situations must extend beyond children's hospitals and regional centers to community NICUs and transport teams. Newborn infants with life-threatening problems need health care systems to uniquely incorporate bioethics, family centered care, and palliative care support. Family centered decision-making may help amplify the concept that science alone should not determine the ends to which scientific knowledge should be aimed. [38] Progress and growth supporting bioethics and palliative care should be as dynamic and meaningful as the life-sustaining innovations of ECLS and brain

cooling. Ultimately, parent perspectives will help us understand the repercussions of innovative therapies for each family's resilient and beloved newborn baby.

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THE AUTHORS HAVE DISCLOSED  
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# LEIKIN LECTURE GRAND ROUNDS

CHRIS FEUDTNER MD, PHD, MPH VISITED WASHINGTON, D.C. this past Spring to give the Sanford L. Leikin Lecture Memorial Lecture for Ethics in Pediatric Care at Children's National Medical Center. Following the lecture, he sat down with hospital staff, ethics committee members, and local ethicists to discuss a past case. This particular dialogue delves into a controversial case involving an 8-month-old baby boy born with Hypoplastic Left Heart (HLHS). The dialogue touches on disagreements with parents about tracheostomy, time-limited trials, and bias in ethics case presentations. Dr. Feudtner provided insight into practical matters of ethics consultation and remarked on his views of the role of the clinical ethicist, dealing with lack of consensus, clinical uncertainty, and moral uncertainty. The following is a transcription of the dialogue. PEDIATRIC ETHICSCOPE welcomes submission of materials for the Dialogue with the Ethicist section; see the For Authors section online for details.

## DIALOGUE WITH THE ETHICIST



## OPENING

The Dialogue includes: Chris Feudtner, the Senior Chaplain, the Ethics Program Director, nurse ethicist, and other members of the audience in attendance, including ethics consultants, ethicists from adult care institutions, physicians, nurses, and social workers. The Senior Chaplain begins the case presentation.

**Senior Chaplain:** My thought was we'd present pieces so we could have dialogue around different aspects of the case before we return to the end of the story.

A number of years ago now, we had a family here with an only child who had been the result of a significant number of IVF treatments. The parents were in their mid-30s, middle class, and had a lot of resources behind them, and a lot of support. The child was diagnosed in utero with Hypoplastic Left Heart Syndrome (HLHS) and the family was essentially told:

*"Standard of care is this surgery, and then this surgery, and then this surgery, and everything is going to be fine—"*

That was the way they entered into their relationship with their first-born son. He had the first procedure, he had the second procedure, and after the second procedure, he was simply unable to come off of the ventilator. He would run low-grade fevers, and was just not able to tolerate extubation; he would need to be back on for support in 12-24 hours. The team felt it was really important at this point to give him a tracheostomy and get him out of the hospital, so he would be able to begin to be home, and experience time at home.

The parents were adamantly opposed to a tracheostomy. They did not want him trached; they felt that was not what their faith supported, and it was not what they supported in terms of their core values. They talked frequently about how living on a ventilator with a trach was not what they wanted for him, and the team was unable to say with any certainty that he would ever be able to live without the trach. So, the family asked for a do-not-reintubate order, and that was the point at which the ethics consult was called.

So, that's the start. What are the questions, the thoughts, what are the problems you see?

**Chris Feudtner:** What are people curious about? And you did a great job at relaying that case.

**Audience question:** I'm curious about what in their faith—if he was allowed to have surgeries and hospitalizations—did the tracheostomy present a problem for, and was that a major point for them? Was that a key piece, or not a key piece?

**Ethics Program Director:** I met with this family and can explain what their thinking was. Actually, the family included the parents and the grandparents. Their thought was that this child was going through so much; we are ready to let him go. What they were really lobbying for was to allow the child to die, which if a tracheostomy were to be done, there really wouldn't be any reason for. And so, in their belief system, it was ok to end the intervention and let nature take its course.

**Senior Chaplain:** Essentially—that's true, but it was a little bit more complex. Their belief system was really about the fact that death was not the worst thing that could happen to someone; that God created us to be independent—in God's image, and likeness—to walk, breathe on our own, and do the things we are motivated to do, and make those kinds of choices.

They were very, very clear that they did not want him to die. But, if it was a choice between what they viewed as a natural death—because he couldn't sustain his own breathing—and being reintubated, they did not want him reintubated. They wanted him to be at home, where he could die naturally—what they believed was a 'natural' death.

**Audience question:** Was the trach going to be transitional? Would they eventually be able to remove it and close it so he could breathe on his own?

**Senior Chaplain:** The team said they could not guarantee that. They felt he might need to be trached for the rest of his life.

**Audience question:** Can you give more details on the clinical picture? What were the trajectories with, and without, the trach? And what age was the child?

**Senior Chaplain:** He was 8 months old.

**Nurse Ethicist:** That was part of the issue. Dr. Cohen, who is not here today, and I were the consult team that did the first ethics consult. And it was interesting, because I stopped in Kathleen's office to center myself, and she gave me one of her rocks, inscribed with the word, "courage." I put it in my pocket because it was a really difficult case. There were a lot of really high emotions going in. For our consults, we invite whoever



would like to come from the medical team. There must have been fifteen to twenty people in the room. I've never seen anything quite like it.

There was a lot of triangulation going on; forming camps or factions within the group. Not helpful behaviors. But when the consult was first called, the prognosis given was pretty grim; he would be on a ventilator for up to a year, and then transition, but there was no clear feeling whether he would ever transition off. I think one of the challenges of the case was that fact changed over time. The medical team seemed to get much more confident in his prognosis, as far as being able to get him off of the vent sooner. That uncertainty was one of the things that made it very difficult. I think we so often go into these things, and when they come to ethics, I don't know if the person calling the consult feels they need to "beef up" their side of the case; maybe the prognosis wasn't quite so grim. But that was one of the challenges we had.

**Question from audience:** Was a time trial discussed to see, especially if there was all this uncertainty, to see how he did on the trach for a certain number of months and then reassess?

**Senior Chaplain:** The team did offer that as an option, but the parents refused. They simply refused a tracheostomy. They did not want it for fear that it would be ongoing, recognizing the fact that this is the second surgery for Hypoplastic Left Heart, which is suppose to be the 'simple' one, the 'easy' one. They were projecting ahead as well, to the third, very difficult surgery. If he's having this much trouble now, what might it look like in a year, year-and-a-half when he has to have his third surgery, and do they really want to put him through all of that? He'd be spending his whole life in a hospital. That was one of the things they were struggling with as a family.

**Ethics Program Director:** This was a case that actually had two ethics consults. In the first ethics consult, there was support for the position of the parents, to allow for this to happen. But then, the child started to improve, and at some point in time, the improvement was quite remarkable. So, when the second ethics consult took place, it reversed the recommendation of the first one. Plus, there was quite a bit of disagreement. It's one of the most debated cases in our ethics committee history. Usually we get to a consensus, but in this one, not really—there were different opinions in the end. And because of that, and this very unusual situation, we thought this would be a good case for some commentary, questioning, and so on.

**Nurse Ethicist:** There was a lot of distress—I don't know if it was moral—but we were very distressed.

**Chris Feudtner:** So one of the things that I find interesting is how tracheostomy—whether to trach or not to trach—has become such a big moment in the care trajectory. Everybody is nodding—why? It's a fairly minor procedure, easily reversed. And yet, we've enshrined it as being one of the most nodal points in terms of whether we're going to go left or right. I don't know why that is; I think that part of it is that clinicians offer a time-limited trial, but the parents don't trust that it will be, that this is going to go on forever, that we'll have entered into a new level of support that will preclude withdrawal of ventilatory support, and they can't stomach that. We see this in a variety of different ways; we see this come down as it has in this case, where it's often right after the second stage. The second stage is where they get stuck, and they either get ill or they wind up having exactly this kind of scenario; less so than after stage three.

We'll talk about the trach, the promises of time-limited trials; a few other things might pop up here as well, including where we might want to start, which is bias in how cases are presented. So:

*"Ring, ring. Hi, Dr. Feudtner—"*

I know if I'm hearing *one* side of the story. Even if *you* called me [looking at an audience member], I'm thinking, "What's the *other* side of the story?"

I won't say that, but I've been burned so many times by believing what people tell me. Its not that they're creating falsehoods, its just that they give me *all* the evidence for *their* side of the case, or they have spun it to be much more dramatic and bad.

So, at dinner last night we were talking about this. If I get a call, and it's the NICU, and they say,

*"We have a case down here, its futile care—"*

Ok-50/50 the baby is actually going to go home alive, and pretty well. 'Futility,' is really one of my watchwords. But we've really only heard *one* side.

Now depending on how we do the consult, we may not go in and talk to the family. It will depend. In this case, it was definitely required, but if I'm hearing something

*“Everything’s good.  
Everything’s great.  
No problem.  
We have to  
withdraw.”*



else going on, maybe I'm going to have to work with the team instead. So what I will do at the beginning is say,

*"Is it ok if I pressure test this a little bit? I'm going to be annoying, but I'm going to push you. Why does the baby need to be on the ventilator again? Is it the pressures that are required for ventilation, or is it an oxygenation problem that's the heart?"*

Is it the heart or lungs—you don't need to answer that about this case. But I become very pushy, because I need to understand this. And often what I get is that the medical team isn't really sure. Now we talked a little bit about whether you have to know a ton of medicine to do this, and I don't know if I know a ton, but I think I know enough to ask some questions, but asking why—three levels of why:

*"Well, why is this?"*

*"Why is that?"*

*"Ok, so why?"*

Most often in the futility cases in the NICU, the answer is:

*"Well we don't know why, but its bad...I can tell you its really bad. I've been doing this for 30 years, and it's bad."*

*"Well, why is it bad?"*

*"I don't know, but its BAD."*

Ok, what that suggests to me is that there is a gap of uncertainty that is being filled with the adamancy of the position:

*"So why does the child need the trach?"*

*"Does the trach need to happen now?"*

*"If so, why?"*

And I'll come back to this because I think we actually delay putting trachs in—probably—although I'm not a big fan of trachs. But why now, why is this coming up now, and what would it look like if we go the other way? Could the parents possibly be right?

*"Again, I'm sorry to be annoying, but if they're saying that the trach is going to be forever, like when would it become too much?"*

So, immediately I start with the team to play devil's advocate. And I do it in order to not be thrown out of the room, like:

*"I'm sorry, I'm going to push on this..."*

I make it part of the meta-discussion about how I'm going to talk about the issue, how I'm going to conduct myself as the ethicist, to really expand our sense of knowledge about what's going on.

This talk right behind me, "Ethics as Conduct," how should we behave, how should we govern ourselves, the rules of the road, and what do we know. For most ethics consults, I do a lot of work up front cleaning up what we *think* we know, but we *don't*. We know one side, but not the other, or we *think* we know its really bad, but in fact we're just anxious because we don't know what it is, and its not behaving, its not getting any better, and therefore it's really bad.

Well, it's been really bad for eight months, so its probably not lethal—it may be lethal—but the kid's lived with it that length of time. I would have pushed on this at the beginning. I would have particularly pushed on why, in a child that wasn't being ventilated up to this point—did something really go wrong in the OR to break the kid's lungs?—Which is usually not the case. Is the heart egregiously failing? No. Then this is probably a bump in the road. Now again, I say that I would never present it to the parents as, "this is something that is surmountable." It may be a big bump—you don't want to go across it at 50 miles per hour, or you'll wreck the bottom of your car—but it is a surmountable problem.

The second thing is that I don't know a religious creed that says you're not allowed to have a piece of plastic in your chest. I'm also picking up on the—again in the safety of this room; I would never do this in front of parents—the inconsistency of the position. So:

*"I'm made in the lord's image, but I can have my heart completely redone, but now I'm getting to the point where it has to stop."*

There is something inconsistent, but it makes me think there may be something else that they were responding to, which may be they were willing to go down this road up to a point, but now, particularly the grandparents, are like:

*"This is getting crazier, and crazier, and crazier. You did all the IVF, you spent all that money, then the kid has that problem, and you're doing the second operation, and now*

*he has all these problems—where are you going to draw the line in the sand?”*

They have decided:

*“This is the line in the sand.”*

Which I get. But that’s different than immediately buying into it being a religious creed issue. How do we operate with integrity and tolerance, or respect, for different faiths? I think we are allowed to remain curious as to how faith dovetails with these other, very normal, psychological responses. We’re allowed to be curious, why now is creed, or doctrine, being brought in, when it was not being brought in earlier? The argument, or the response, may not be doctrinal; it may be that the psychology is what’s really driving things. So, we really need to understand where they might be coming from.

As soon as I heard IVF, I’m like ok—and again I’m going to say something—this is like a ‘number-two special,’ we see this all the time. And it’s in part the journey, and the sunk costs, and the mixed-up feelings that people have sort of muddled together of a deep desire to have a baby, but guilt, probably, about doing it:

*“We can’t stop now, but we have to stop now. This is a disaster but we have to keep going...”*

I’m getting tired even thinking about it. I’m going to walk into a room with *probably* a lot of that going on in there. What might be driving that? I’d be very curious if I were to talk to them:

*“I hear that you hate the thought of a trach...”*

And I’ll often do that. I’ll just jump to the clear, crystal extreme, like that:

*“You hate that idea. Can you help me understand why? I’m not going to try to talk you in or out of it—”*

Unless I really do think I’m going to try to talk them into it, then I may not make that promise. I have to be clear as to what my intention is. If the baby was sicker, I might say,

*“I just need to hear your point of view so I can understand it and I can communicate it to other people. I can’t tell you at the end of the day whether I’m going to agree with it or not, but I definitely want to understand it.”*

I would sit there and draw it out, more and more. I would also want to know:

*“Who else in your family is giving you input? Are all of you on the same page, or are there differences?”*

This could be really painful, particularly if the spouses are not like:

*“We can’t betray each other, we can’t throw one another under the bus.”*

I’d be exploring all of that. Why have they gotten to this point? I’m writing an essay right now for the newsletter section of *Hospice Palliative Medicine* called, “The Pain Point.” I go into rooms and situations like this, and I’m trying to identify: What is the point of maximum pain that they’re feeling? Meaning this response is probably being driven by something that they’re very afraid of. It’s the mirror image of the adamancy, most of the time, borne out of a deep fear, anxiety, dread.

And it can all be justified; I’m not saying that that’s a bad thing. Lord forbid, if I had a terrible illness, I do not want to die in an ICU. I’m both afraid of it, and frankly, I’ll flip off anyone who wants to take me in there to die. I’d be angry about it. So, it’s not that the pain point is necessarily a psychological excuse, but it helps clarify where people are coming from, what they are most intensely involved in, and it often goes undetected, or known vaguely, but not precisely. There may be more than one pain point. But this family had pain points.

**Ethics Program Director:** Oh yes. The way I understood it is the experience of a diminished life for their child was something very, very painful.

**Chris Feudtner:** And I would go there with them on that. Now, before I go any further, I’m also a little pissed with the people who said, “no big deal.” When the hell did a Hypoplastic Left Heart become no big deal?

**Senior Chaplain:** The parents were angry about that.

**Chris Feudtner:** They have every right to be angry about it; it’s a bill of goods they were sold. But I think it would have been appropriate to say,

*“You may be very surprised by what you may read to the contrary, about how well kids can do. But it is a slog to get there, and I can’t promise that outcome.”*

*“We did this... but we don’t want to own it.”*



Dr. Feudtner engages with audience members during the Dialogue with the Ethicist session.

A very close friend/colleague of mine and I talk about the *titration of worry*. In a typical ICU what you hear is:

*"Everything's good."*

*"Everything's great."*

*"No problem."*

*"We have to withdraw."*

**Audience:** [laughs]

**Chris Feudtner:** It gets a laugh, but it's like depressingly, "no problem, no problem, time to withdraw." So: one, people experience whiplash. They feel like all of the prior stuff was a falsehood, even if it wasn't officially stated, there was posturing to that effect. And the pain point for the team, now, is I think:

*"We know that we did this."*

And then we get sort of dysthymically confused and frustrated, that:

*"We did this, but we don't want to own it—"*

And now, instead of absorbing the fact that we could do better, titrating worry—what we're worried about, what we're hoping for, what are realistic expectations—we don't do that. Our dysthymia gets put on the parents, which is unfair. So, as much as I'm talking about the parents a lot, I want to make it clear that they're doing something that I completely *understand*. They're the novices in this, they're not supposed to be the pros. We're supposed to be the professionals who understand how you take people through a difficult, multistage process, foresee potential problems, tell them about them, and get them to realize that.

I'm still optimistic, although I don't know this child. It will depend in part whether there's been neurologic injury, but there could still be a fairly good life, maybe



not as long as we would like. Although there are other conditions, heart conditions that are far worse, those are not the poster children for bad heart conditions; Hypoplastic Left Heart is the poster child. Let me expand on that.

How long do you think it is, in terms of fifteen-year survival? What percentage of kids with Hypoplastic Left Heart who were born from 2000, now its 2017, are still alive? Is it 50%, 70%, 90%? They have rates of survivorship that are better, on par, with ALL. This is what a cardiologist at CHOP pointed out to me; why do we force it, if a kid comes in with ALL, a seven-year-old, who doesn't want treatment:

*"No, no, no—we're going to court."*

**Comment from audience:** That's exactly what the cardiologist said to me, and I don't know if it was this case, or a different case of Hypoplastic Left Heart when the parents were saying they didn't want to do anything. And he said that if you had a kid with ALL, you would force them into treatment.

**Chris Feudtner:** I think there is a point where you start to notice that you're treating similar issues in certain ways, very differently. And ALL is a lot of therapy, and a lot of long-term consequences, so it sort of bears scrutiny. Something about cutting people open versus pouring toxins in their veins—it's not that dissimilar. But we respond differently and I think it is interesting.

The key point, and we'll segue into VADs in a moment, is there are certain technologies and certain interventions that we have to watch. When I wrote an accompanying editorial about the "Ethics at the Edge of Therapeutic Evolution," I had to remain ultra-current; I couldn't use my knowledge of HLHS in the Norwood Era when I first started at CHOP. It was better than 20%, but it was still abysmal. It's not like that anymore. How many of you would like an implanted VAD?

**Audience:** [No response]

**Chris Feudtner:** Not one. The technology on VADs, talk about being ultra-current—you know this better than we do—

[Gesturing to an ethicist from an adult hospital]

In the adult world, I could have a VAD. We had a member of our staff who's had a VAD for 5 years, walking around going to work. Ok, I see some of you nodding. We just did a whole ethics committee

meeting with our Peds group, because we still think of the big, Berlin heart—the one you've got to have a pushcart to move around because your heart is externalized. Now, these are all internalized with a driver to the power source.

There is a general problem of making sure our ethics intuitions are actually current. And sometimes the providers' intuitions of:

*"We have to do this—"*

Fail to articulate that things have gotten *much* better. Sometimes that is a strategy to have; maybe there is a technological advance, or new data, and I'm five or ten years out-of-date in my mind. So, as I'm pressure testing, I might say,

*"Well, tell me what the survival statistics are, because maybe I'm outmoded."*

But there are people who don't survive, and to ever make the claim,

*"Everything is going to be fine!"*

Is to try to avoid having to walk that walk, avoiding having to be chronically worried:

*"'Cause I don't want to handle it, and I don't want to make the parents handle it—"*

Well, it's the reality if they have the problem. Plus, the parents will end up being worried no matter what people say. They'll just feel more isolated.

I don't know what I would have done, because there's always more to the story. But I have become more inclined to push for tracheostomies, for the following reasons. One, we've had kids languish in our ICU for months, intubated, going nowhere. So, if the parents said we want to do a compassionate extubation tomorrow, I would have been ok—I might have thought of doing that. But if their request is that they want him to continue to be intubated, and want a do not reintubate order, what they're also telling me is that they don't want to have to make the decision; they want an accident to occur. I would have immediately started to think:

*"I'm not sure we want it to play out that way..."*

*“He’s never been on ECMO, he’s cognitively fine as far as they know—we would have to reintubate.”*

Now, I would work very, very hard to not have to go to court and get a court order to put a trach in. But I would have started to try to position a deal with the parents to have the trach put in.

Duchenne; how many of you have had the problem of a young boy who does not want to get trached, who is sixteen to seventeen years old, and is brought to the emergency department with respiratory failure, and says,

*"Save me!"*

Does that make your head explode? Or are you calmer about that now?

[Looks to an audience member]

**Answer from audience:** I'm calmer about it now, but it used to bother me a lot.

**Chris Feudtner:** This is again, one of these interesting things about the trach. I think it's a natural notion, the non-intervention notion—the irreversibility of it as a life course. Trachs have their hazards, so I do think that people have to be told that they plug, they come out—it's something we do that can be helpful, but it really presents a new vulnerability.

**Comment from audience:** Can I add a point there? I think it also has something to do with identity, that there's something about losing the voice, which is so much a part of a person's identity, and that people don't react that way to g-tubes usually.

**Chris Feudtner:** I've had parents who thought a g-tube was a devastating thing. I think it is the same. But I do think the visibility of it plays a part. Head and neck cancer is treated differently, in terms of stigma, than things that are more disfiguring lower down; it's on display. With passing air valves, sometimes the kids can continue to talk. It will depend a little bit on the reason they need the respiratory support. I'm not a trach expert, but we have kids who can cap, or they can talk with a passing air valve. And I would be hopeful that this kid eventually could get put back together again. So, I'm not sure. I'm not king of the world; I can go in and try the best I can to make some kind of mediated deal.

But it may be those parents were walking a path, not fully aware of exactly how it would play out. I don't know what triggered their reactivity. There may be very conscientious objection to this. But I can tell you that if we hadn't gone on to the second stage, I've

learned to hit the pause button here. Because this can be a very meta-stable, and not really best for the kid, place to land: chronically intubated, no trach; you can't move forward, you can't move back, waiting for an accident to happen. We have this with kids that are marooned on ECMO occasionally, where:

*"We're just going to wait for the circuit to fail."*

Really? That's probably not the best solution to this problem. It's going to happen at the wrong time. If they're headed towards compassionate extubation, we can do a lot to support the child, to make the child as comfortable as possible and support the family in being there. If we're waiting for an accidental extubation with no reintubation, the kid may be alone; there'll be panic in the room—that's just not the way to handle that.

**Ethics Program Director:** Kathleen, perhaps you can give us the denouement, what happened?

**Senior Chaplain:** The parents were really arguing for a compassionate extubation. They did not want reintubation, and the team is saying:

*"He's never been on ECMO, he's cognitively fine as far as they know, we would have to reintubate."*

And the parents are saying,

*"No, we don't want to do that."*

And so, it got very ugly before it got better. I was not the ethics consultant, but I was the chaplain for the family, and so I spent a lot of time with them. And I had members of the care team coming by my office to say:

*"What can you do to change their mind? What can you do to change their mind? Can we get them to give up custody? Maybe they'll adopt him out?"*

When the fact was that they love him desperately; it's because they love him desperately that they were insisting.

**Chris Feudtner:** I have an idea:

*"You can go and get a job somewhere else—that's equally likely to happen. That way you won't have to deal with it."*

**Senior Chaplain:** Yes.

**Chris Feudtner:** And they'd be like:

*"No, I can't do that!"*

*"Well you're proposing something that's about as likely to happen."*

**Senior Chaplain:** So it was—it got very, very ugly for quite a while. One of the reasons I thought about bringing it here was what I perceived as a tremendous level of courage on the part of the parents to say:

*"You have to hear us. You have to listen to us about what our core values are, about who we are as a family, about what we want for our child. Listen to us."*

It wasn't necessarily about agreeing with them, it was:

*"Please listen to us, and acknowledge that we are not bad people, or bad parents. We are doing the best we can."*

**Chris Feudtner:** Ok. So, can I take that? Two things here are key. One, this was never about the piece of plastic, which is why I was skeptical at the beginning; it's usually not about the trach. The trach has become a Schelling point, a thing that is a social norm that we all gravitate toward in collective thought. Like we all think it's about the trach, but it's not actually about the trach. There's a backstory here that they either feel that they failed to advocate or that they've been bullied into things, and they have finally decided that they're going to stand up against this. And they've said,

*"This is the Maginot Line, we are not letting anybody cross it."*

That's different; then I'm not going to talk about the trach. I'm going to talk about:

*"How did we get here?" And what are realistic expectations? You've had a lot of people who have probably fed you a lot of very biased information. I apologize for that. I promise you that I'm going to try to be as straightforward as I can, I'll tell you exactly what I'm thinking, I'll tell you what I'm worried about, what I'm not worried about. But I need to hear from you."*

And, like in certain palliative care, you drain the swamp—you let them give you *all* of the stuff that

has bothered them. I have sat for an hour like that, listening to people complain. And then you get to the bottom and you have firm ground to start to work with.

Now there will be an issue that I want to go back to, because probably what they're also worrying about is not just:

*"You guys blew it, and I can't work with you anymore and we're drawing the line."*

But also, this feels like:

*"And we're worried, where does this go? And will we have control?"*

It's why people want the Hemlock Society to exist. I want to know—and I'd be this way, I'd want to have that vial there—not that I'm going to take it—but I want to know that if it gets bad I've got an exit strategy. And nobody has given them an exit strategy.

**Comment from audience:** How are they going to prevent getting to a place that's worse than death...

**Chris Feudtner:** Right. He's trached, and now he has a stroke:

*"We have to keep going."*

I would talk about how we can do compassionate extubations from a trach. What would that look like? What are you hoping for in terms of his capacity? Ok, he's eight months—I'm trying to visualize him at five years. Or, maybe even a year from now:

*"What do you see?"*

*"What do you hope for at the most, and—I'm going to do this if that's ok—lets back up, and imagine its worse than that; at what point do you think its been a terrible mistake? So, I can sort of understand what you're hoping for, and when this gets so bad that we would need to stop."*

And they may say,

*"We're already there."*

*“This is the Maginot Line, and we are not letting anybody cross it.”*



“No, no, no—  
we’re going  
to court.”

But my suspicion, having been down this path many times, is that they’re not there yet, but they’re just afraid that:

*“If I take one more step—give an inch, take a yard—they’re going to push me and I’m going to be completely stuck with a kid whose terribly suffering and I’ve been shackled.”*

Maybe the kid’s even in custody:

*“Shit, can they really do that to me? So, I’ve got to protect him now. Now is the time to take proactive action.”*

**Senior Chaplain:** Any other questions, or do you want the end? So, grace be to our cardiologist and intensivists, who really did sit down finally with these parents and heard the whole story, and really listened to it. They moved him—I don’t know what the reason was—moved him into an isolation room, extubated him, heard mom and dad say,

*“We love him desperately, we would love for him to be able to live. This is what we want for him.”*

They could articulate all those things you were just talking about. The team extubated him, and managed to keep him extubated without a trach, until he could go home. He went home without a ventilator, without a trach, only on what cardiology medicines he needed. He was significantly delayed because of his time in the hospital, but not cognitively impaired. At that particular point, mom and dad transferred his care to CHOP. About three years later, they were back here for a follow-up appointment. At that point, they had chosen not to go forward with the third surgery, but it was still on the table for discussion; they said,

*“We’ll see what happens. We’re just going to have to take every day as it comes, and kind of explore his quality of life; he’s beginning to become verbal, and he has to have some say in all of this. Maybe not at three, but we want him to be a participant in his own life.”*

I lost track of them after that; they’ve left the state. But it was the best of all possible endings to that story. A very, long, arduous, and difficult process with a lot of dissention, even in our committee, about whether or not it was ok to allow compassionate extubation for a child that would probably do alright, maybe,

with a trach. But was it also all right to allow a natural death process? I felt very strongly, given what I new of the parents and the family, that they were not hastily making this decision.

**Chris Feudtner:** Had they attempted extubation prior to the compassionate extubation?

**Senior Chaplain:** They had tried some extubations, with having to reintubate him within a space of 24-hours. It was an oxygenation problem, with a low-grade fever he was never able to get rid of. I don’t have all the medical details about how they finally were able to keep him extubated, but it took about another six weeks to finally get him stable enough to go home. But I think we learned a lot from that. The first reaction in some of the conversations with the team was saying,

*“We just need to get him trached and out of here. It’s better for him to be out of here.”*

Well, “trached and out of here,” reflected not communicating to the family very well:

*“That might be easy for you, but that’s not necessarily easy for us. And ‘out of here’? Well, we’re not sure that ‘out of here,’ is what we want for him.”*

And I think finally, with the Attending and family getting together, they had that conversation; what’s the best, what’s the worst, how do we get from here to here, and what does this middle ground look like. They did it.

**Chris Feudtner:** So what’s interesting, again, as the facts become clearer, is that the compassionate extubation sounds like it was a compassionate trial of extubation. And what I mean by that—its not the right term—but it wasn’t with sedation, the expectation was that he would survive—

**Senior Chaplain:** Right.

**Chris Feudtner:** And that he would have a slow dwindle, potentially needing to go back on, which immediately, again, I would have pressure tested:

*“What if we just accept O<sub>2</sub> sats in the 80s. Now it’s subpar, but do we accept that?”*

Again, the way it was framed, how did he fail the prior extubation attempts—is it that they nicked the diaphragm? He’s diaphragmatic, the diaphragm is not working well, and he’s got all this medical stuff—

**Senior Chaplain:** They did nick the diaphragm.

**Chris Feudtner:** And that's why, at the low-grade fevers he's got, problems with a little bit of consolidation at the bases, and his V/Q mismatch blah, blah—but unlikely to get worse—it is what it is, so he'll ride with a certain V/Q mismatch: we could provide him with some supplemental oxygen to help him get over that, or we could just tolerate it. The part that makes me the most concerned is whether his non-progression to the Glenn, to the Fontan, rather, whether that's actually helping him or not, and whether that's an anxiety-based decision.

**Senior Chaplain:** Right.

**Chris Feudtner:** I would have loved to talk to that family about whether their anxiety is holding them back or their residual anger. Yea, being stuck with just the Glenn...He's going to have a tough road ahead.

**Senior Chaplain:** And that was my last conversation with the family. They said they were moving somewhere else. I said,

*"Don't base your decision on the experiences you've had up to now. Talk about it with somebody who knows what they're doing, don't just let it go."*

**Chris Feudtner:** It could also be that there were technical reasons that his was a difficult chest to operate in, and they realized in the second stage that the third stage was going to be *much* more difficult. It might have been prudent to stop—otherwise that's a recipe for disaster. But if that's not the case—again we talk about the development of technology as being path dependent; why do we have a QWERTY keyboard? It's just how things evolved, and you then can't get out of that path, the cost is too high.

We all have path dependency in how we respond to our medical experiences, based on where we've been. In many ways, this story really boils down to that; to understanding where people have been is fundamental to understanding where they are, and where they want to go next, and what they're afraid of.

**Senior Chaplain:** The sideways, and the backwards story.

**Nurse Ethicist:** You know, what I often worry about and struggle with, and did in this case as well, is a lot of times when we're looking at what the ethically

permissible options in medicine are, we put a great deal of emphasis on that prognosis, those numbers—and I struggle balancing that with personal values, and these quality-of-life issues. It rose in this case as well. We can say they're going to live so long, but what is that going to look like? You know? How do you weigh—when you have so much uncertainty—how do you weight such value differences? Perhaps what we have to offer, what we feel is acceptable in treatment and not 'extraordinary' care, how do we weigh that with a situation like this; the family's values appear to be much different than what we think is acceptable in medicine?

**Chris Feudtner:** I think again, I may say some things that disappoint some of you. We have to understand that parents are entering into a high-pressure situation; we know there are a couple of things about human cognition, in general, that have to be taken into account. We'll have a hard time actually hearing probabilistic statements. It will tend to go zero or a hundred, all or none. It will be very hard to handle the 50/50 odds, or worse, even the 80/20 odds. When people are under stress, they very quickly will not be able to handle that.

As a consequence, people tend to have sort of reactive ways of handling the situation; they can catastrophize. When I hear people give me the quality-of-life spiel, what I'm keeping my eye out for is whether they are giving me what evidence suggests is realistically balanced outcome, or are they focusing on one end of the spectrum or the other. "Everything is going to be fine," makes me as worried as, "This is a total disaster." And I have to temper both of those.

I view myself as a counterweight to the condition of making decisions under stress. I'm not necessarily right, but I'm looking where people are going and I'm trying to provide a counterweight. If they're way too optimistic:

*"Everything is going to be fine, everything is going to be fine—"*

*"Well, the oncologist told you the cancer can't be cured, so..."*

I've got to be a counterweight and bring them back towards a more grim reality, but I also have to do that in the other direction. We had a child that was diagnosed with septo-optic dysplasia, you know, a little set of midline defects that can go from fairly mild to fairly profound. The baby was already suckling, an

MRI showed signs of septo-optic dysplasia, but the sella was intact, so it doesn't look like the pituitary has been eradicated. I can't remember all the details, but it looked like it was going to be on the milder phenotype. The parents typed in "septo-optic dysplasia," into the computer and said,

*"We don't want anything done. No feeding, nothing."*

Now the baby was already feeding, so it was a moot point by then; you're not allowed to *not* feed a baby, rule one. We also have issues in the state of Pennsylvania about tube feeding, but I don't want to get caught up in that. They were catastrophizing. They had three other kids, and, in fact, the father at one point said,

*"I have to protect the three of them..."*

Talking about the children, and the family. If there's any value in the Best Interests Standard, it's that I have to hear that—but *they're* not my patients; I cannot get caught up in this drama. I actually don't believe in *family-centered care*, I believe in *patient-centered care with family engagement*. That baby is my patient, and I want to work with the family; I'm not arrogant about what's best for this baby, but the baby is my patient. I'm worried about the siblings, but again, I think its catastrophizing to believe having a sibling who is handicapped will be a disaster for the others. I say this as a brother who had a sister with Down Syndrome—one of the great blessings of my life is to have Beth in it. So, I'm immediately picking up that this guy is catastrophizing.

This is a known problem, and I've seen this with both males and females. I need to be a counterweight, because what will happen is when people start to lean entirely on the prognosis, and ignore quality of life:

*"No, the survival statistics say everything will be fine—"*

Well, surviving, but with a lot of impairment. But it's the same at the other end, where it's all about quality of life and there's nothing about what the range of options are. So all I would say is be on guard for both of those scenarios, and think of our job as helping people center between those. So, I change like a chameleon in my role, depending on what I'm picking up regarding the cognitive tendencies at work. What I don't do, and is all too common, is lean in and doubling down on the quality-of-life issue. I have seen that not be helpful.

Our job as professionals is to hear, and definitely acknowledge what's going on, but not necessarily become caught up in an advocacy position that isn't balanced. We owe it to people to be able to say, as best we can,

*"Here is a balanced understanding of what is going on. Here is the range of options."*

That's what I think I owe people. I can definitely emote and relate to their concerns about suffering, but I can also see the smile. I walk into many rooms where people are saying,

*"The baby is suffering!"*

No:

*"The baby is not doing anything."*

**Audience:** [laughs]

**Chris Feudtner:** I've heard people say, after determinations of brain death that the baby is suffering. If there is any good news there, it's that the baby is not suffering; the person can't suffer anymore. There is this magnetic pull about the 'quality-of-life,' and all of that, but I pick up,

*"Ok, I'm being sucked into that angst; I fear it, I feel it, I'm willing to empathize with it, but I can't be sucked into it."*

I don't know if that helps, but we have to try to keep a balanced perspective.

**Ethics Program Director:** And in support of your positions, there are studies of adolescents with very serious chronic illnesses, prematurely born babies, etcetera, where they asked about quality of life to the impaired adolescent and to the parents, and asked nurses and doctors about their perceptions of the patient's quality of life. The nurses and doctors have very similar scores that are quite low. The kids themselves and their parents, but especially the kids, have a pretty deep appreciation that their quality of life is alright."

**Chris Feudtner:** In fact, the European studies, of which they have done many, the kid's reported quality of life is higher than the parent's.

**Ethics Program Director:** Yes

**Senior Chaplain:** Yes



**Chris Feudtner:** Again, you do have some of the spina bifida patients who really hate aspects of their disability, but as a general rule, one of my mantras is, “I don’t do drama,” and my team will be like:

*“Oh please! It’s just so terrible!”*

**Audience:** [laughs]

**Chris Feudtner:** I can’t get sucked into it. I can hear it; I can hear the pain, the prognostic issues probabilistically, but I can’t get sucked into it. I can’t over-identify with it, because I’m going to have to come back to the patient. I can’t get caught up in:

*“The mom is in prison, can only visit on every other Tuesday, she’s a terrible drug addict, and the baby is drug-exposed...”*

**Chris Feudtner:** Cause next thing you know, that drama has affected the way people are looking at the baby, who is actually better than billed.

One of the things this also raised is what do you do when the committee is split. Drive towards consensus like we prize it. And we often, like your committee, achieve it, although I always wonder if there are one or two people in the room who are like:

*“Am I the only one who doesn’t think that?”*

And is not quite willing to say,

*“I’m not comfortable with this.”*

What I think we probably have is aggregations of agreement that go from being strongly agreeing, to willing to go along with it. What you’ve described in this case is really bimodal, people who agreed, and people who disagreed because the choice was so stark:

*“We’re either going to remove that breathing tube, or we’re not.”*

I don’t know what the right answer is.

**Audience Member:** One thing we’re working on is putting together a regional committee composed of other ethics programs, between basically Baltimore and Northern Virginia, which would meet quarterly to discuss cases like this.

**Chris Feudtner:** Right—down in Florida they have a similar thing, a multi-hospital committee. I think that can be helpful to make sure you calibrated, to bring

your tougher cases. But let’s say even there it’s 50/50; does that tell us something about the ethics, or does it tell us—we were talking last night, about how so many of our consults are communication that just needs to be cleaned up—that there are occasionally cases like:

*“Wow—that is a very big trade-off.”*

No way to get around it. I was trying in my deal making; I’m always trying to get around the trade-off. The easiest way to solve a difficult problem is to avoid it.

**Audience:** [laughs]

**Chris Feudtner:** Make it into some other problem, and let that be the issue you can solve. But this remained a raw trade-off.

*“If it’s 50/50, should we not proceed?”*

It’s an interesting issue. Is there moral insight to realize:

*“Ok, this is a judgment call.”*

I’ve been very grateful about our committee being willing to have dissent, and just let it rest, because it captures something real about the situation, and so we don’t always press for consensus. At some places, they vote, but I don’t think that is a good idea.

So, we’ll come back to what my view of this is, but kudos for the mindfulness, for not trying to make something that’s not really there.

**Audience Member:** Could you talk a little bit more about this ICU attending who heard the parents, maybe was willing to settle for a lower oxygenation level, but really did something that was different than the ICU standard of care, which is to really demand a perfect extubation, and reintubate if the baby started to fail, but took a middle medical road, and maybe an ethical middle road—

**Chris Feudtner:** Right. So, what he did is interesting. He did a deal. He probably did it with his colleagues:

*“We’re going to tolerate lower oxygen sats. We’re going to alter the definition of what would trigger reintubation.”*

*“Did you sign off that the sat was 82 and not immediately hit the code button?”*

*“Thank you, at least I won’t have to wonder whether I have starved my baby.”*

We talk about thinking about your objectives and the options. And what I often talk about is that there are two options people have in mind, ‘do,’ or ‘don’t do,’ and I’m always trying to sneak another option in between. Always. The best solution to a tricky problem is to avoid it. So what he did,

probably, is he realized it’s not even what we’re talking about; his isn’t a compassionate extubation where I’m going to take the breathing tube out, the patient is going to be sedated, and die.

*This is a trial of extubation that we’re not going to let fail; and I bet you we can get this kid to go a long time, limping along. We’re going to have to just suffer the fact that this is not ‘optimal’ care, and we all live with that.”*

And probably his colleagues are:

[Makes a grumbling sound]

*“I can live with it.”*

They were grumpy, but they could live with it.

**Audience Member:** The conversation about guidelines is a little bit like this. So when do you accept as a clinician something that is not the highest standard of care?

**Chris Feudtner:** This is where, if we were involved, I’d be writing an ethics note that stated:

*“We have met with the team and the family, and we vary from post extubation guidelines. I give a ‘blessing’ on this variation.”*

And increasingly, were seeing this as a bigger and bigger issue of cover your ass, and also with nursing staff:

*“Did you sign off that the sat was 82 and not immediately hit the code button?”*

In a system that is becoming tighter, which is all for the good, I think guidelines are great—until they’re not. Your greatest strengths become your Achilles heel. As we get tighter about managing quality, we need to be able to mindfully introduce variance. So what they were doing here is they were saying,

*“We think he can fly at this height—not hitting the trees—but he’s not going to be that far*

*above them. But he can probably go a long time.”*

What I suspect this person did is that basically he negotiated a deal.

**Ethics Program Director:** And he didn’t do it on his own, because that was the second consult, where the proposal was:

*“Well, let’s do that, but reintubate if things go badly.”*

**Chris Feudtner:** He may have needed, and I’ve done this where I’m like:

*“I have to hope I’m really good at this.”*

And I would have said to the parents,

*“I’m going to work my tail off to ensure that reintubation is not required.”*

**Ethics Program Director:** Yes.

**Audience Member:** They weren’t saying they were taking the palliative approach, but the palliative literature is full of people who take them off of optimal therapies, and they do ok, for a while. Its kind of listening to both sides, I’m not sure what you’d call it.

**Chris Feudtner:** Yes. I think a lot about complex care, and this is more of what I think of in my complex care hat. In fragile systems, one of the things you don’t want to do is be a bull in a china shop. You want to make small maneuvers and let, almost trust, the stability of the system to recalibrate. I think this is not necessarily palliative, but it’s not afraid of being palliative.

**Audience Member:** Right

**Chris Feudtner:** It may have given him the longest life we could have hoped for:

*“We’re not putting him through the stage three; we’re not putting him through another operation. He’s not going to get a plug; he doesn’t have a trach in.”*

So, I have coached families, and then have guided them through:

*“Let’s just see if we can stay at 1000 feet above the ground—we’re not trying to fly high—but let’s see if we can go across the whole goddamn country like that. And lets keep our fingers crossed.”*

We can go a long time; there's not a rule that you have to be up high to go a long time. But let's get back to this issue of consensus. What this tells me is there is, amongst very informed, educated people, ethical uncertainty. So with apologies to everybody, we're handing this back to the parents. Because they are the ones, who, in this grey zone, we're going to empower to make that judgment call. I'm being a little bit cavalier here, but that's the direction we should go. This tells us this is a 'grey-zone' decision.

**Audience Member:** And I appreciate what you just said because I keep thinking about your talk about courage. And it seems to me that in the ultimate decision about this, the parents have the right to make this decision, morally and ethically.

And there is an imbalance in the courage required. There is a tremendous courage for the doctors to, in this case, take the risk to alter the procedures, hoping he will do all right with this extubation. But, there is, to my mind so much more courage required of parents who will be living this 24-hours a day for the next ten years, whatever decision they make. Whereas those of us who are in the medical field—I'm a social worker—it's a decision for the day, it's a decision while we're meeting with the committee about what to do in the next hour. But for the parents, there's a real imbalance in the courage required to live with whatever decision is reached.

**Chris Feudtner:** But I will throw in a bit of caution here, cause occasionally when I have pushed, particularly with the non-feeding of newborns, and then they have done well, or died of another reason, where parents say,

*"Thank you, at least I won't have to wonder whether I have starved my baby."*

When we go into the realm of what parents decide, I don't know. All I can try to do with the best integrity try to offer balanced, perspective, and advice; people can beat themselves up over anything—what mostly what I'm looking at is do they feel that they've done a good job as a parent? And if they feel they've been the best parent, on their own terms, if they can feel that in the face of this terrible challenge:

*"I did what I needed to do."*

Then I'm more in the zone you're going in. They will be able to live with what they did, because they felt that it was the right thing to do. Often in these catastrophes, they're spinning, and they don't know what the right

thing to do is. That's when I'm slowing things down, and maybe I need to be a counterweight.

**Audience Member:** With the issue of ethical uncertainty, part of what I want to know is, what is the nature of the uncertainty. What is the nature of the moral disagreement? Do we have folks who are in disagreement as to the range of ethically permissible options, or is it what's within the range of ethically preferable options? Because I think those are different kinds of disagreements. If you're talking about,

*"Well, this is ethically preferable—"*

*"No, this is ethically preferable..."*

But we are all in consensus that both options could be ethically permissible, in that they're not impermissible, then that's a different kind of debate than if some people are thinking,

*"This is ethically impermissible, to withhold LSTs because of X, Y, Z."*

I think it makes a difference with the moral distress and also when it comes to how you're going to make the recommendation. When you have divided ethicists, or a divided ethics committee, then part of the challenge is do we refrain from making a recommendation or do we lay out the ethically permissible options and let the medical team have at it, which would mean we're not functioning like normal clinical consultants. Is that the sort of thing we want to do or what moral language do we use in all of this.

Part of my concern is that if the default—and I understand the reasons you just said for giving the decision back to the parents—but my concern is that if you put that in a chart note, that sets up a default such that when there's moral disagreement, we're ultimately just going to put it back on the surrogates, when data shows that surrogates in ICU's experience post-traumatic stress, regardless of what decisions they end up making. They experience guilt for years—a lot of them. I'm not saying they shouldn't be making decisions, but it's part of the whole picture I think. If you say that ultimately the parents should make this decision, what kind of precedent does that make for subsequent clinical decisions for the child, and does that lend itself to premature closure for the team as well? The idea that this ethical messiness has been tied up with a bow and we're just going to empower the surrogates, and so we have a clean resolution that doesn't require further ethical cleanup, if that makes sense?



*“We’re not allowed to do this; we can’t do that, it’s impermissible”*

**Chris Feudtner:** There were a couple of different points you touched on. One, there is great ethical certainty if we’re 50/50, fabulous certainty about this being a hard issue. This has not been *under-thought*. If there had been consensus there would also

be certainty about both we know what to do, and we have agreement. But when we have really hashed it all the way out and we’re still in disagreement, there is certainty that this is indeed a judgment call or a tough issue. Now I think the response to that could be either:

*“That’s interesting; this is a true ethical dilemma. Oye, such is life—”*

**Audience:** [Laughs]

**Chris Feudtner:** Or:

*“We’re still uncertain, because I don’t know which way to go.”*

**Chris Feudtner:** What I’m pointing out is that the word ‘uncertainty’ could be used to describe different states. We could be, we don’t know what to do—I’m going to present a case:

*“It’s about a boy. What should we do?”*

Well, I don’t know what you’re talking about; you haven’t given me enough details. I don’t know the information. I don’t even know what the intervention is. That would be ‘uncertainty’ because we don’t have any intuition—we don’t even know what you’re talking about—let alone what we should do. That’s what we typically use the word ‘uncertainty’ for. After a very mature, thoughtful discussion, we’ve come to the point where we’re at a 50/50, I *know* that this is a really tough trade-off, and I’m certain about that.

Now if you’re action-oriented and you need to know whether to go left or right, that doesn’t count as ‘certainty’ because you haven’t told me what to do yet. But to me, and this is the insight; this *is* a form of analytic certainty. If I give you a coin, what’s the probability that if I flip it, that it will land heads?

*“Well, it’s uncertain.”*

Well, actually it’s very certain; it’s a 0.5% chance—I just can’t tell you whether it will be heads or tails. It’s truly a balanced coin. So, think a little bit about what

we really mean when we say there’s ‘uncertainty.’ What you did say, though, is that we’re still in a state of disagreement.

You talked about ‘permissible’ about ‘preferable.’ There are definitely things that are impermissible; if it’s flagrantly illegal, we can’t euthanize people, but I’m very reluctant to start letting things become permissible ethically or impermissible, because its often used as a power play. So the people in this:

*“It’s impermissible to do a compassionate extubation.”*

And lets make this case like the boy has seizures, etcetera. A lot of palliative care has been pushing back on:

*“We’re not allowed to do this; we can’t do that, it’s impermissible—”*

I tend to take it more like what we’re talking about when we talk about permissible with a little ‘p.’ Its just not something that we would let go on, and its likely to be a case that would it would be a variant of that. I have to admit that I try not to talk about what’s permissible and impermissible, unless its egregious, and we would not do that. I use it very sparingly. Instead, I use:

*“What are the arguments for and against?”*

The last point I hear you talking about was that if we give it back to the parents—the parent’s have already said that they want to extubate. They’re not sitting on the horns of a dilemma. I would not inflict that kind of decision on them, like:

*“Dude, I’m just a used car salesman. You either take the Ford or the Toyota. Your choice.”*

I don’t believe in shared decision-making, or decision-making support, if you’re truly struggling. But if you say,

*“I want the Ford.”*

*“Nah, I want you to buy the Toyota.”*

*“I want the Ford.”*

And then I have everyone:

*“Which one should he buy?”*

*“I don’t know, 50/50”*

Then I'll say,

*"You're allowed to have the Ford."*

That's different than abandonment in the face of decision-making. They had already pushed their stack. I don't think this is the problem, that I do agree with you entirely about, where it's like:

*"Here's what we can do for you..."*

The Chinese menu:

*"Do you want intubation, intubation plus or minus a trach, an inflatable cuff—we also have on offer, to do it with or without vecuronium—"*

Like crazy, hyper stuff—what kind of resuscitation do you want—that's too far afield. Most people in the literature say they want support. They want to be heard, and they want to feel like they participated in the decision. Clearly, these parents in this situation felt like:

*Ok, I've been heard, I participated in this, and this clinician is going in this with us."*

So I think this was, frankly, very, very good shared decision-making—again, not knowing the details. Those are some of the thoughts I would have in response to what you're describing.

Also, I don't worry too much about precedent. I do think about it, but again, if I'm using the Best Interests Standard, I'm taking care of *this* patient right now; I'm not taking care of the next one who's likely to come down the pike. And the slippery slope argument, which is sort of what you're making, is an interesting argument because it only actually functions where:

*"The right thing to would be to give you this medicine, but I'm worried about the next patient. If I were to give it to you when it would be wrong for him, that would be inconsistent. So I'm not going to give it to you because I'm worried about the next one—which means that I'm not taking the best care of you that I can."*

The slippery slope argument is not a Best Interests Standard. The Best Interests Standard is that I look at you and do the right thing for you. Now, we're not opening Pandora's box here; this was a very particular case, which very likely will not apply to the next case that just randomly shows up.

END

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## Transgressing Moral Imperatives: Ethical Stress, Virtues and Values Conflict in Pediatric Death

*Stephanie Kukora, Naomi Laventhal, Patricia Keefer, Janice Firn*

**Background:** Care providers of critically ill pediatric patients encounter ethically complex and morally distressing situations in their practice. Though many providers receive an introduction to ethics during training, their retention and application of ethical principles to daily clinical practice may be limited. Furthermore, current approaches to clinical ethics consultation focus on specific problems of individual patients, and may not meet the emotional and debriefing needs of providers.

**Objectives:** To identify whether providers remark on ethical conflicts or note moral distress without being specifically prompted, when asked to share thoughts/comments/questions about a recent in hospital pediatric death, and to characterize the nature of these conflicts and distress.

**Methods:** Constructivist thematic analysis of survey free-text responses from providers involved in a deceased patient's care in the 24 hours prior to the patient's death.

**Results:** There were 307 (35%) free-text responses in 879 completed surveys (33% total response rate), regarding the deaths of 138 pediatric patients (81% of in-hospital pediatric deaths that occurred) between November 2014 and May 2016. Diverse provider roles were represented, and patients died in multiple hospital units. Two main themes were identified: Ethical issues addressed with traditional ethics education, and ethical issues not addressed with traditional ethics education, which consisted of two sub-themes: virtue conflicts and value conflicts.

**Discussion/Conclusion:** Many providers experience ethical conflicts with pediatric end of life care but may not be able or willing to share these candidly. Targeted education to assist hospital staff in identifying and resolving ethical conflicts encountered in pediatric end-of-life care, and further ethical support for providers to share or debrief safely, without criticism or negative repercussions, may be warranted.



## Background

ETHICALLY CHALLENGING SITUATIONS arise in providing care for critically ill and dying patients. [1] While death occurs far less frequently among neonatal and pediatric patients than adult patients, the emotional impact of witnessing the death of a patient is greatly amplified if that patient is an infant or child. [2] Providers who participate in caring for these patients and their families may suffer psychological harm stemming from moral dilemmas and distress (Table 1). [3] The consequences of repeated exposure to these types of ethical stressors can lead to significant burnout [4,5] and compassion fatigue [5,6], affecting not only the mental health of the provider, but also compromising the care they give to patients. [7]

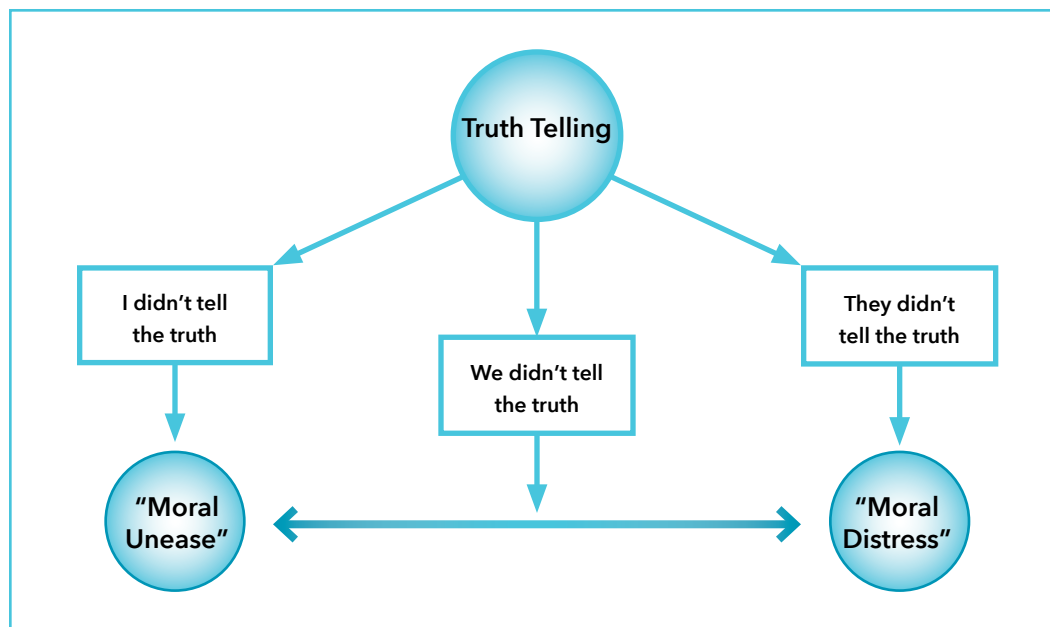
Hospital Institutional Ethics Committees (IECs) provide ethics support at an institutional level, and should, in principle, reinforce basic ethics education provided in most training programs for health professions. Their role includes resolving conflicts surrounding patient treatment decisions through clinical case consultation, offering a forum for discussion of policies involving institutional ethics, and providing education about ethical concepts to their health care communities. [8] Though requesting clinical ethics consultation is encouraged for any patient, family member, or provider on the care team who is perplexed by an ethically complicated scenario, not all such cases are examined by formal clinical consultation. In the pediatric population, ethics consultations are often called for cases with prolonged hospitalizations or illness, particularly when values differences exist between the patient/family and medical team. [9-12] Patients with acute clinical worsening or unexpected death, resulting in shorter duration of illness or hospitalization may create ethical stress but not receive formal ethics consultation for practical reasons. For example, a pediatric patient arriving to the emergency department may die following a prolonged resuscitation attempt and cause providers to raise ethical questions about whether heroic interventions were in the patient's best interest

or merely caused suffering. Such a brief course and subsequent demise, however, would likely prohibit sufficient opportunity for the ethics committee to be consulted and provide recommendations on ethical decision-making in this context.

Similarly, cases in which values differences occur amongst providers on the medical team, rather than between the team and patient/family, also cause ethical distress but may not always be raised to the level of formal ethics consultation. [13] Providers with lower hierarchical privilege, particularly nurses, may be reluctant to or face repercussions for requesting clinical ethics consultation. [14] Education and empowerment of these providers is likely insufficient to overcome the systematic barriers that impede them from requesting clinical ethics consultation as a tactic to mitigate their distress. [15]

Definitions from the Literature	
<b>Moral Dilemma</b>	A moral dilemma occurs when an individual is uncertain regarding the "right" course of action because she is torn between competing ethical principles. <sup>3</sup>
<b>Moral Distress</b>	Moral distress occurs when the individual faces a challenge in personal moral integrity; that person is certain of the right course to take, but this course is impeded. <sup>3</sup>
<b>Virtues</b>	Virtues are positive character traits that human beings need in order to live life at its best, and make their possessor a "good" human being. <sup>50,51</sup>
<b>Values</b>	Values are beliefs that a specific mode of conduct or end-state of existence is preferable to opposite or converse; they are prescriptive or proscriptive beliefs acted upon by preference. <sup>67</sup>
<b>Values Self-Awareness</b>	Values Self-Awareness is a provider's ability to reflect and articulate on value judgements implicit in their own practice patterns, such as self-identification of a systematic preference for less intensive versus more intensive therapies in the face of poor prognosis. <sup>68</sup>
<b>Coping</b>	Coping is the cognitive and behavioral efforts made by individuals to reduce, tolerate, or manage stressful events. These cognitive and behavioral efforts either do (adaptive coping) or do not (maladaptive coping) provide adjustment to the environment or situation. <sup>69</sup>
<b>Inter-professional Teams</b>	Interprofessional teams involve providers from different health and/or social professions who share a team identity and work closely together in an integrated and interdependent manner to solve problems and deliver services; they differ from multidisciplinary teams in that team members are composed from different professions such as medicine, nursing and social work rather than from different academic disciplines (psychology, sociology, mathematics). <sup>70</sup>
Definitions arising from Data	
<b>Moral Unease</b>	Moral unease occurs when a provider experiences ethical stress arising from virtues conflicts.
<b>Virtues Conflict</b>	Virtues conflict occurs when the right course of action is unclear because of the personal perception that two virtues are competing.
<b>Values Conflict</b>	Values conflict is a disagreement with care provided based on personal perceptions of whether such care was in the patient's best interest.

**Table 1. Key Terms**



**Figure 1. Virtue Conflicts**

When consulted, IECs advise clinical care teams regarding the ethical permissibility of possible care options and assist in identification of value conflicts in the setting of a specific patient or scenario. Traditional consultation models rely on medical providers, patients, or patient surrogates/family members advocating for the patient requesting IEC involvement. However, this excludes cases not identified as warranting consultation. This model is not well suited to address general concerns by teams or individuals about recurring ethical issues, or to offer a forum for staff experiencing personal moral distress, [16,17] particularly those with lower hierarchical privilege on the team. Traditional ethics education focusing on knowledge and application of bioethical principles to resolve conflicts does not address personal ethical struggles, such as values conflicts and moral distress. [18]

Providers may receive an introduction to clinical ethics during their training, however, limited clinical experience may hinder their ability to integrate this information and apply it to daily practice. [19] Though IECs are tasked with the responsibility of ethics education for hospitals, current guidelines do not recommend strategies for imparting role-specific ethical knowledge to providers. [8] Additionally, debate exists regarding how to ensure appropriate understanding and situational application of ethical concepts to all providers within a healthcare system. [20-29] Although moral distress is a specific focus of increasing empirical investigation, particularly among inpatient hospital nurses, [16-18] the effectiveness and impact of routine, training-program-based ethics

education, as well as IEC provided ethics education, is not well informed by empirical evidence. Little is known about the nature and frequency of ethical stress encountered by interprofessional (Table 1) health care providers in the care of dying children, as many of these cases, for the reasons noted above, do not rise to the level of IEC involvement.

Survey studies have sought to quantify and characterize the frequency and severity of moral distress experienced by providers caring for critically ill and dying infants and children. [30-33] Others have correlated moral distress with knowledge of guidelines [34] and outcomes. [35] Several qualitative studies [36-43] have explored ethical issues related to pediatric death but are limited by a small sample size, few include interprofessional providers [36,38,40], and most have asked providers to recall a clinical situation of their choice in which they experienced moral distress/challenging situations [36-39] or cared for a dying patient. [41,42] Few have examined whether respondents comment on ethical issues without specific prompting [40,43] only one has inquired about individual patient deaths. [40]

To increase the body of evidence around the incidence moral distress among care providers, we sought to identify whether providers described ethical conflicts or note moral distress without being specifically prompted to do so, when invited to share thoughts and/or comments about the recent in-hospital death of a pediatric patient for whom they personally provided care in the preceding 24 hours. We also aimed to characterize the nature of these conflicts and distress

if found, to further inform targeted ethics education and clinical support for interprofessional healthcare providers of pediatric end-of-life care, based on ethics-related provider experiences at the bedside of dying children.

## Methods

Constructivist thematic analysis of free-text survey responses was used to explore whether providers remarked on ethical conflicts or noted moral distress without prompting after the death of a patient for whom they had provided care. This project was exempt from review by the Michigan Medicine institutional review board (HUM00116059) as part of an ongoing quality improvement effort.

## Sample and Recruitment

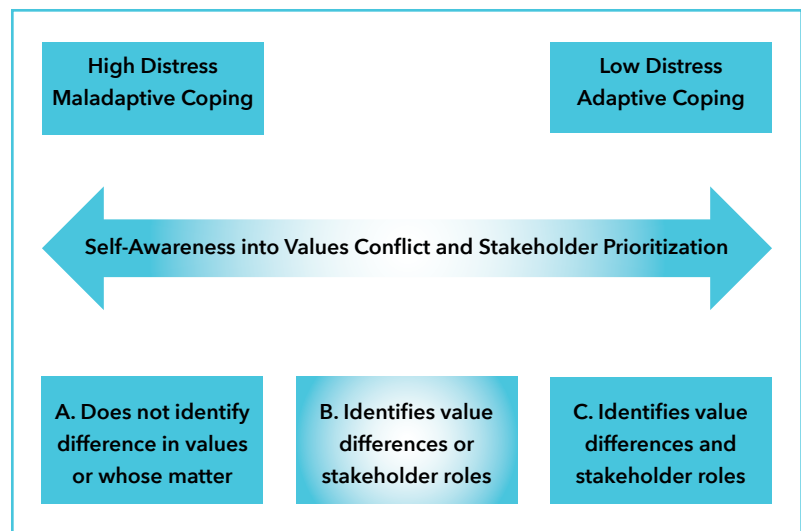
Survey respondents were interprofessional care providers at a 348-bed pediatric academic medical center in the state of Michigan. All providers (n=2701) who cared for a patient less than 18 years of age within the 24-hour period leading up to his or her death were identified via the electronic medical record. Participation was voluntary; responses were anonymous as to specific participant identity, although the survey did request information about role on the provider team and unit in which care was provided.

## Data Collection

An electronic survey via Qualtrics [44] software was emailed to each provider within one week of the death between October 2014 and May of 2016. The survey, developed by the institutional Pediatric Palliative Care Team, requested demographic information, information about the case, whether the death occurred following active resuscitation efforts or comfort care, provider role and unit, and provider level training and years of professional experience. A free-text response box was provided at the conclusion of the survey, inviting participants to “share thoughts, comments, or questions” about their experience with that particular patient’s death, but did not specifically inquire about ethical stress. Prior to distribution, the survey was reviewed for face and content validity, and was piloted for feasibility. No changes were made to the survey following a successful pilot study.

## Analysis

De-identified quantitative survey response data were imported into Excel (PK) and descriptive statistics were completed (SK). Free text responses were



**Figure 2. Adaptive versus Maladaptive Coping**

analyzed and tracked in Dedoose [45] to enhance trustworthiness and credibility of the data. [46,47] Inductive, constructivist thematic analysis with line by line coding [41] was performed by SK, who developed the codes and themes in discussion with JF, PK, NL using an iterative process to challenge identified themes, and allow for on-going reconceptualization of themes. A constructivist approach “assumes the relativism of multiple social realities, recognizes the mutual creation of knowledge by the viewer and viewed, and aims toward an interpretive understanding of participants’ meanings.” [48] Throughout the process reflexivity was used to challenge preconceived ideas and enhance rigor. [49] Themes were considered robust when coherent, consistent, and distinctive. [49]

## Results:

### Participant Characteristics

There were 880 surveys completed out of 2701 emailed to providers identified by the medical record as having participated in a pediatric patient’s care in the 24 hours preceding that patient’s death (33% total response rate). At least one completed survey was returned for 167 of the 168 deaths occurring between November 2014 and May 2016 (99.4% of deaths). There were 306 (35% of completed surveys) free-text responses, and at least one free text comment was made regarding the deaths of 138 pediatric patients (81% of in-hospital pediatric deaths that occurred in that time period). Fifty-two respondents described ethical challenges surrounding their patients’ deaths, corresponding to 17% of those providing free-text responses and 6% of all survey respondents. Comments regarding ethical conflict were identified for 38 unique patient deaths (23% of all pediatric deaths) with 2 patients receiving comments from 3 individuals and 8 receiving



**Table 2. Units of Responses**

Unit	All Surveys (n=880)		All Free-Text (n=306)		Ethics Free-Text (n=51)	
Pediatric Intensive Care Unit	333	38%	120	39%	25	49%
Children's Emergency Services	15	2%	4	1%	0	0%
Pediatric Cardio-Thoracic Unit	196	22%	66	22%	10	20%
Hematology/ Oncology Unit	14	2%	4	1%	0	0%
Operating Room	17	2%	4	1%	1	2%
Newborn Stabilization Area	16	2%	6	2%	1	2%
Neonatal Intensive Care Unit	265	30%	93	30%	12	24%
Labor and Delivery Unit	24	3%	9	3%	2	4%

**Table 3. Respondent Roles**

	All Surveys (n=880)		All Free-Text (n=306)		Ethics Free-Text (n=51)	
Nurse	210	24%	101	33%	23	45%
Physician	309	35%	88	29%	10	20%
Respiratory Therapist	120	14%	31	10%	12	23%
Physician Assistant/Nurse Practitioner	32	4%	14	5%	3	6%
Social Worker	79	9%	25	8%	2	4%
Spiritual Care Provider	56	6%	12	4%	0	0%
Other (ECMO* technician, Child Life provider, Physical or Occupational Therapist, etc.)	74	8%	35	11%	1	2%

\* Extra Corporeal Membrane Oxygenation

comments from two. Diverse provider roles were represented (Table 2), caring for patients who died in multiple hospital units (Table 3).

### Themes

Constructivist thematic analysis identified two main themes: Ethical issues addressed with traditional ethics education and ethical issues not addressed with traditional ethics education, which consisted of two sub-themes, virtue conflicts and value conflicts. Themes are described below supported by quotations (Tables 4-6).

#### Ethical Issues Addressed with Traditional Ethics Education (Table 4)

A number of respondents discussed personal ethical struggles pertaining to their role as a provider in the patient's end-of-life care. One described concerns about their own moral culpability in discontinuing life-sustaining interventions in a patient whose condition was stable on these care modalities. This respondent expressed discomfort with uncertainty of outcomes/prognosis, including futility, and the gravity of making irreversible decisions, but did not indicate that such a

course of action was in conflict with their personal values. Similarly, multiple respondents expressed concerns about inadvertently hastening the patient's death when administering medications intended to alleviate suffering.

#### Ethical Issues Not Addressed with Traditional Ethics Education: Virtues Conflicts (Figure 1)

Respondents also described ethical struggles involving virtues conflicts, specifically honesty versus compassion when it comes to truth-telling with families at the end of life. Virtues are positive character traits that makes their possessor a "good" human being, but at times, two or more virtues may oppose or contradict each other (Table 1). [50,51] Experiences with truth-telling varied with the perceived level of personal responsibility on the part of the respondent. We sub-categorized these by whether the responsibility to be truthful belonged to other members of the care team (They Didn't Tell the Truth), belonged exclusively to the respondent

(I Didn't Tell the Truth), or was shared between the respondent and others (We Didn't Tell the Truth, Figure 1). Respondents who did not have authority about what was communicated reported ethical tension with their roles in the patient's care which is consistent with traditional moral distress<sup>3</sup> their discomfort arose from being complicit with an action they found morally wrong but were unable to correct. Other respondents, who felt personal responsibility for the communication, chose not to be truthful in their situations despite having the ability to take this course of action and expressed feeling troubled by their choice. We identified this phenomenon as "moral unease."

#### They Didn't Tell the Truth: Honesty as a team, without personal responsibility (Table 5)

Several respondents described situations in which they perceived other members of the care team not being honest with the family, particularly regarding a poor prognosis or likely death of a child. In these responses, respondents reported ethical conflict consistent with moral distress, as they felt that something morally "wrong" was happening, but

felt unable to personally rectify the situation. Often these responses correlated truth-telling with its effect on patient care. Respondents noted that others' failure to be honest negatively impacted the quality of the patients' death by delaying provision of comfort measures, or deterring parents' presence at the bedside. No responses described failure to tell the truth by other members of the care team as being compassionate or having a positive impact on the patient's death.

#### **I Didn't Tell the Truth: Honesty as an individual provider (Table 5)**

Several respondents noted that while providing end-of-life care they had not been honest when speaking to families. Some felt uncomfortable engaging in a conversation about a child's worsening clinical condition. Though it is possible this discomfort stemmed from lack of experience in having difficult conversations, or hierarchical considerations in which they did not feel that the disclosure of bad news was within their purview, it seemed, at least in part, these respondents chose to withhold information when they had the ability to be truthful. In these responses, the decision to withhold information seemed to be made in an effort to be compassionate to the family of the dying child. When ethical stress about personal responsibility in truth-telling was present, multiple respondents described feeling "unprepared" to answer questions posed by the patients' families, suggesting difficulty navigating ethically stressful situations based on virtues conflicts, struggling to reconcile their perceived inability to be both truthful and compassionate in these end-of-life scenarios.

#### **We Didn't Tell the Truth: Shared personal responsibility of an individual as part of the team (Table 5)**

Some of the responses described clinical scenarios in which the respondent shared personal responsibility for truth-telling with other care providers on the team, but that the truth was not honestly disclosed by any care team member. These responses portrayed the experiences negatively, and noted feeling "sneaky" and "underhanded," or having the perception of collusion between care-team members. A few respondents described withholding the truth as a burdensome experience; they reported that being

**Table 4. Ethical issues experienced by providers addressed with current ethics education**

<p>"The patient in this case was discharged home a few days earlier to hospice care. When I assumed care of the patient, he had been partially resuscitated with the family asking to quickly "end his suffering." As the lone provider, I struggled with ethical and legal issues surrounding removing a chronically vented patient from his home ventilator when he was not actively dying."</p> <p>—Attending Physician, Patient 179</p>
<p>"One area I would appreciate more information on is the use of sedation before death. I believe she was on midazolam and fentanyl drips prior to death, and she also had PRN fentanyl available. I had a hard time being able to recognize when she needed PRNs. Normally, even on a sedated, intubated patient, I can tell by their movement or changes in vital signs if a PRN is needed. Since her neuro status was questionable and her body was dying, should I have been able to see those same signs or should I be more proactive with giving PRNs?"</p> <p>—Bedside Nurse, Patient 209</p>
<p>"One of the PICU nurses asked me if it's okay to keep giving more PRNs (Morphine/Ativan) even if it resulted in respiratory depression (we compassionately extubated)."</p> <p>—Senior Resident, Patient 115</p>
<p>"I was most uncomfortable with the plan as far as adequate orders for sedation/comfort. For example, the orders were written for sedation every hour prn for comfort and the patient needed sedation more often than that every hour. I was told by the physicians to keep him comfortable. I felt like I was functioning outside of the order parameters in order to keep the patient comfortable."</p> <p>—Bedside Nurse, Patient 179</p>

part of the team knowing something the family did not know trapped them into keeping a secret. Like those who individually had not been truthful, these respondents had the ability to be honest with families; they chose not to do so, and expressed ethical stress in these encounters. There was an additional component of moral distress in two scenarios: those who felt powerless to divulge information to families, as it was not appropriate given their role on the care team, and those that did not have the information necessary to be fully honest.

#### **Ethical Issues Not Addressed with Traditional Ethics Education: Values Conflicts**

Many respondents described ethical distress surrounding the death of their pediatric patient stemming from values conflicts about the goals and level of care provided. Ethical shared decision-making supports that in situations of uncertainty, such as end-of-life care provision, medical decisions should be based on the patient's or family's values, not personal values of the providers. [52] In all cases in which a values conflict was described, respondents expressed an opinion that care was inappropriately aggressive at the end-of-life (Table 6). There were no responses in which respondents lamented that they were ethically distressed by having to be complicit in a premature transition to comfort goals that was maligned with their personal values.

**Table 5. Virtues Conflicts**

<b>"They Didn't Tell the Truth"</b>	
"It was painful to watch the medical team give the family slight hope, and then take it away when the patient coded. The parents were appropriately in shock and seemed to be absorbing the uncertainty of the plan in place for the child. Various care providers would tell parents options even though they were sure it would end in the death of the child. It may have been helpful if these other interventions were not spoken about because they seemed to keep giving family hope. I was not present for the end result, so I am unsure of if the parents decided to stop or the medical team did. Overall, this was a stressful and devastating situation for the parents to be in."	—Social Worker, Patient 206
"Severity of the situation was not relayed to the family adequately. The denial of the medical staff and the family prevented the parents from being at the bedside at the time of death."	—Nurse Practitioner, Patient 196
"I asked mom on Thursday night whether [the patient] had ever discussed her wishes 'should the worst happen'. She said that [the patient] stated days prior that she never knew she could die from this. Mom stated they all had a very positive outlook. I asked whether she and her husband had discussed it. She said 'no, because there's always another step we can take.' I feel that we weren't forthcoming about the direction that Brooke was headed. I think a lot of false hope was given to this family. We could have done a much better job preparing them for her death."	—Bedside Nurse, Patient 130
<b>"I Didn't Tell the Truth"</b>	
"While I was bagging up the patient before my shift change, the mother asked me if this was normal. At that time, the baby's condition was worsening, with my personal thought that it was on a downhill slide, but I just told her that I was trying to maintain sat[uration]s while the nurse was doing some other things. I did not feel prepared in my response and I felt like I was lying to her."	—Respiratory Therapist, Patient 140
"I would like to be better prepared with an answer when the parent asks if I think they are doing the right thing by letting the child die."	—Respiratory Therapist, Patient 128
<b>"We Didn't Tell the Truth"</b>	
"I felt like the mother had walked into a snare when she entered the room not knowing what everyone else knew."	—Bedside Nurse, Patient 161
"The charge nurse suddenly came to our computer area and told us that the patient had arrested in the OR....From the time the parents entered the room, and the time the surgeon and anesthesiologist joined them in the room, was more than 30 minutes. The patient's mother was very distraught knowing that the case had not gone as planned. She asked me several times if the patient had passed but I did not feel to be in the place to break this news to them. Not many words were said between us except individual prayers. I held her and comforted her to the best of my ability. As a mother, I felt her pain. I was very upset at the amount of time it took for the surgeon to reveal that their daughter had passed away and had no knowledge."	—Nurse Practitioner, Patient 195

In responses which described values conflicts without identifying the source of distress, respondents voiced their disagreement with interventions that they did not believe conveyed therapeutic benefit to the patient, but failed to acknowledge that there may be differences in opinion regarding the futility of these interventions (Figure 2 Box A). Likewise, they did not identify that other stakeholders, including other care team members, and especially parents, may have had differing, valid opinions on care goals, and that decision-making should be more strongly influenced by these opinions instead of their own. Strong emotional language in these responses emphasized the deep, personal impact that the perceived inappropriate care had on these respondents (Table 6). Other responses demonstrated some, but incomplete, self-awareness into the values conflicts underlying their ethical stress (Figure 2 Box B). These respondents identified that they were faced with an ethical issue, and/or identified that values differences existed, but did not accurately acknowledge whose values should have been given precedence in decision-making (Table 6). Finally, there were respondents who identified values differences and appropriately identified the priority of stakeholder values in decision-making (Figure 2 Box C). These responses often contained indicators of adaptive coping and acceptance of the outcome (Table 6).

## Discussion

Responses depicting values conflicts fell across a spectrum, with poor self-awareness into the nature of the values conflict or poor/incomplete identification of stakeholders correlating with maladaptive coping (Table 1), and good self-awareness (Table 1) and identification of these determinants correlating with adaptive coping (Figure 2).

To our knowledge, our study of unprompted free-text survey responses is the first to empirically study the incidence of moral distress and ethical conflicts in end-of-life care for specific pediatric patients by interprofessional providers. Many interprofessional providers experience ethical conflicts with pediatric end-of-life care but may not be willing, or have



opportunity, to share their concerns candidly. Though comments specifically describing ethical stress were provided by a minority of survey respondents, more than one quarter of the deaths in this time period had at least one provider comment on an ethical issue encountered in providing end-of-life care for that patient. These findings are consistent with previous survey and qualitative studies that note ethical stress occurs in these clinical situations, but not with overwhelming frequency. [30-33]

Our findings expand on the growing body of evidence around the incidence of moral distress among care providers in two important ways. First, this study quantifies the incidence of provider-focused ethical phenomena within an interprofessional care team; second, it offers novel and informative categorization of ethics-related provider experiences at the bedside of dying children.

Responses described several types of ethical stress, some of which are addressed in current models of ethics education[20-29] focusing on application of bioethical principles and knowledge of pertinent guidelines. Previous studies have demonstrated these situations are distressing to providers, and that knowledge deficits of existing guidelines are contributory. [34] Only a few respondents described scenarios of common ethical conflicts for which clear ethical guidance exists. This finding suggests that our current educational efforts to empower providers, as well as ethics committee support, have likely aided most providers in ethically challenging situations that have precedence set for how to resolve them. While profession-specific ethics education exists,

**Table 6. Values Conflicts**

<b>Lack of self-awareness, maladaptive coping</b>	
"I feel very strongly that the decision to perform surgery on this baby, when we knew that there was nothing we could do to save the baby in the long term was very detrimental to this baby and the family....Also, the time that we took to perform surgery was time that was taken away from this family. This baby could have been held longer by her parents...I always struggle with death on our unit, but this one has hurt my soul because I feel like this baby and family deserved better."	—Bedside Nurse, Patient 184
"The transition to comfort care and eventual withdraw of mechanical support was delayed by family and their "advocates" placing the care team...in a very uncomfortable position...of having to continue futile support for a patient who was already brain dead."	—Attending Physician, Patient 158
"The struggle for us as the nurses is seeing this baby get sicker and sicker and knowing she is uncomfortable and most likely will not make it. We at times feel that the doctors aren't having early enough conversations with the parents that are "blunt" enough. This baby could have passed away in a more comfortable way, not liters of fluid positive so her parents couldn't recognize her and post multiple line placements/attempts. I know we do an amazing job of giving patients a second chance and saving them, but sometimes we wait too long before ending care."	—Bedside Nurse, Patient 209
<b>Incomplete self-awareness, more adaptive coping</b>	
"I felt this family was having a hard time making the decision to stop care, and I felt we could have done a better job of directing them towards the best interest of the patient instead of mostly leaving it in their hands."	—Respiratory Therapist, Patient 132
"Although I feel we should have never intubated this infant, but the infant's trial of therapy allowed the dad to see the infant before it passed away."	—Nurse Practitioner, Patient 226
<b>Good self-awareness, adaptive coping</b>	
"Child arrested about 12H prior to demise and was placed on VA ECMO. She had survived multiple episodes of ECMO in the past, but there were clinical reasons to suspect that she would not recover this time...Her family was able to understand that this time was different, and were able to reconcile themselves to her demise. While ECMO was medically futile in this case (and this was arguably predictable prior to her arrest), the psychosocial benefits to the family were substantial."	—Attending Physician, Pt 122
"I initially had negative feelings about the decision to resuscitate the infant per the parents' wishes. It seemed clear that the baby would not survive and aggressive interventions seemed harmful. However, resuscitating the baby allowed the mother to spend time with her and father time to get to the hospital to spend time with her as well. As they were able to meet and hold her, they decided not to proceed with aggressive intervention as well and actually remove the endotracheal tube. In the end, resuscitating her was the right thing to do because it allowed family time to bond with her and come to terms with her death."	—Senior Resident, Patient 226
"From what I heard in report, the patient's pupils were fixed and dilated at the outside hospital. I don't really understand why she was transferred to our hospital if she had already experienced brain death. It seems unfair to put our staff through that kind of emotional stress when we couldn't even do anything to save the patient. The only thing I can think of is that they were trying to buy time for the family to come see her. I would want the same if it were my loved one, but even so, it's extremely difficult as a health care professional to feel completely useless, especially in such an unexpected death."	—Bedside Nurse, Patient 108

and limited interprofessional classroom ethics courses are available to some, expansion of existing ethics education models to include interprofessional providers in the clinical setting is vital, as unaddressed ethical issues negatively affect patients, families, and providers. [53-56]

The classroom setting alone is insufficient to meet this need as learners often struggle to apply classroom knowledge to problems in the clinical setting; [24] ethics education is most effective when is tailored to the interprofessional teams' education needs within the clinical context. [57-59] One mechanism that may allow for real-time embedded interprofessional ethics education within the clinical setting is the concept of preventative ethics rounds. [29,60] Preventative ethics rounds serve to help interprofessional teams anticipate, navigate and mitigate potential ethical conflicts and tensions before they become crises necessitating formal ethics consultation; they do so by:

1. Providing support for specific patient care situations
2. Giving a space for interprofessional team members to better understand each other's professional obligations, and
3. Providing a space for education in moral reasoning and engaging in reflective practice. [23,25,29,60,61]

In our study, we also identified two sources of ethical stress that could be positively impacted from a preventative ethics approach. First, respondents specifically revealed ethical stress in experiences surrounding truth telling. Interestingly, when respondents perceived other members of the medical team were not honest, they identified this non-disclosure of truth as harmful to the patient/family. When respondents reported ethical stress about not being truthful themselves, however, it appeared that they were struggling to find a balance between being honest and being compassionate. We specifically identify this ethical stress as arising from virtues conflict (Table 1). Though from the responses it appears these providers concluded that in their specific situations disclosure of the truth would have been more harmful than beneficial, the experience of being untruthful was distressing, and they commented about it without being prompted. The cause of this disparity in how respondents perceive truth telling based on their role and responsibility in the situation is unclear. Whether it stems from differences in the

type or importance of information being withheld, or difficulty with perspective taking by the provider to understand that others who do not disclose the truth may be experiencing virtues conflict, was not discernible from the comments; we think this deserves further investigation. Likewise, ethical stress experienced by providers arising from virtues conflicts, which we have termed "moral unease," to facilitate further study, has not been well characterized in the literature, though we think that this phenomenon warrants further scrutiny to determine its impact on compassion fatigue and burnout among providers.

Current models of ethics education describe the importance of a provider being honest as key to facilitating patient autonomy. These are grounded in the premise that honest disclosure of medical information, supports patients making informed decisions about their health. While being truthful in the medical context is often consistent with the ethical course of action, there may be specific situations in which disclosure of truth might be harmful. An approach to ethics education that imparts moral reasoning may guide providers in how to deliver difficult information honestly and compassionately, such as weighing the dangers of not being truthful (personal virtues compromise, potential breach of trust with parents) against those of telling the truth (upsetting fragile parents, not being able to give whole story, breaking trust of team). Novel education approaches, such as team simulation exercises and use of structured debriefs [29] following sensitive or difficult discussions might be helpful to strengthening providers' skills in the domain of truth telling. Narrative medicine, which has been proposed as a model for imparting empathy, reflection, and professionalism to medical providers, [62] may also serve a role in assisting providers in growing in self-awareness, gaining perspective, and navigating complex situations surrounding truth-telling in pediatric end-of-life care.

Second, values conflicts (Table 1) accounted for most of the ethical stress reported. Our findings are similar to previous studies which have noted that providers perceive care decisions at end-of-life to be more aggressive than they believe is in the child's best interest. [40-42] Our study results offer a more structured framework with which to analyze values differences. We noted varying levels of self-awareness in respondents' understanding that values differences were the source of their distress. Individuals who appeared to be better at identifying values differences exemplified more adaptive coping. Respondents who did not identify the presence of values conflict often attributed medical decision-making with which



Nearly one-quarter of respondents described experiences of ethical distress following the death of a patient, and much of what was described was not addressed by traditional ethics education, suggesting the use of targeted education, perhaps through preventative ethics rounds or narrative ethics techniques.

they did not agree to failure of physicians to educate families. The assumption that not adequately informed parent would make choices differing from their own often resulted in misclassification of the conflict as a truth-telling failure on the part of others. These individuals used very emotional language in their responses, likely related to moral emotions, or the guilt, anger, resentment, or indignation an individual's experience when they perceive that they or someone they care about has been wronged, offended, slighted, or harmed. [63] Though the respondents in these situations may not have accurately assessed the medical situation or context for decision-making, their narrative is influenced by this perspective. Conflicts arising from these values differences cannot be resolved without acknowledgment of the providers' experience and perspective.

## Conclusion

By showing that at least one provider described experiences with ethical distress without being specifically prompted for nearly one quarter of in-hospital pediatric deaths, and that much of the described distress is not often addressed by traditional clinical ethics education, our results suggest that targeted education, such as the use of preventative ethics rounds, or the use of narrative medicine, to assist staff in identifying and resolving ethical conflicts encountered in pediatric end-of-life care may be

helpful. Though the ethics committee can assist in resolving moral dilemmas and identifying values conflicts when consulted, consultation might not occur until the situation has deteriorated considerably, and might not occur at all, if there is no clear disagreement between the patient's parents and the team. Additional approaches to eliciting and assisting all providers on the care team with ethical stress in pediatric end-of-life care should be pursued to address this problem. Team debriefing with an ethics expert after a patients' death may assist in identifying conflicting values and lead to philosophical discussion on responsibility/roles of stakeholders in healthcare decision-making. Debriefing could also assist providers expanding their perceptions of a complicated medical situation from alternate perspectives to reduce moral emotions [63] and foster empathy, as well as provide safe space to discuss concerns without criticism or repercussions.

## Strengths and Limitations

We recognize the limitations of our study. Although our institution is a large regional tertiary referral center, limitation to a single center potentially reduces generalizability to other providers participating in pediatric end-of-life care. In qualitative research, however, validity is determined more through transferability of perceptions and experiences to other settings than generalizability to a population. [64] The ethical stress described by our respondents is similar

in frequency to what has been reported in previous survey and qualitative studies; despite being obtained in a single center, our results are likely applicable to other pediatric centers that provide end-of-life care, and may be useful in informing educational efforts in those institutions. We acknowledge the possibility of selection bias, attributable to low overall survey response rate, or the minority of participants providing free-text comments. However, our total response rate for the survey was similar to what has been previously reported, [65,66] and the majority of pediatric deaths in this time period were captured with at least one completed survey and free text response. Though free-text responses lack the depth that full qualitative interviews provide, they have utility in identifying important issues not directly queried by close-ended survey questions, as well as informing future research. [64,66] The open-ended format of the free-response question gave respondents the opportunity to discuss a subject of their choosing, rather than prescribed topics serving the investigators' aims, and allowed points to be raised that would otherwise not have been addressed. The free-text responses varied between respondents in length and quality; though only 51 respondents commented on ethical stress, the concerns they discussed were likely applicable to others. Respondents who have difficulty expressing themselves in writing, have limited time to complete the survey, or do not have a more neutral or positive experience are less likely to comment. [66] This may have introduced bias, as respondents who are more articulate, have more time to respond, have a particularly strong opinion may be overrepresented. Another potential source of bias is that providers were able to complete a survey for each patient's death in which they provided end-of-life care. De-identification of the survey responses limited our ability to identify whether the same provider completed the survey on multiple patients.

### Future Directions/Implications for Practice

Based on these findings, additional exploration of the ethical challenges faced by pediatric providers during end-of-life care is needed. Further inquiry of all members of the interprofessional care team, as well as of patients' families, will better inform educational efforts for providers and improve patient care in these medically, emotionally, and ethically complex cases. Further investigation of the frequency and nature of ethical concerns and ethical stress following pediatric death, as well as the consequences for providers of experiencing it, is warranted. Trial and evaluation of prospective, interprofessional ethics education and support in high mortality pediatric inpatient units may

also be valuable in identifying ways to mitigate ethical stress for providers of pediatric end-of-life care.

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# The Ethics of Disclosing and Discussing SUDEP with Families of Children Newly Diagnosed with Epilepsy



PEER REVIEWED

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## ABSTRACT

In newly diagnosed pediatric epilepsy patients, the decision to discuss sudden unexplained death in epilepsy (SUDEP) presents a complicated ethical picture with potentially conflicting principles. The neurologist must decide how to disclose and discuss the problem of SUDEP, balancing the desire to help families by empowering them, without doing harm by overwhelming them with fear during the very real world situation of a clinic visit rife with diagnostic unknowns and parental anxiety. Three approaches to the problem are presented and analyzed: First, withhold discussion of SUDEP with newly diagnosed patients (reserve the discussion for when it may become applicable based on the appearance of risk factors). Second, selectively disclose SUDEP with newly diagnosed patients. Third, disclose SUDEP to all newly diagnosed patients. These three approaches and arguments made in support of each presented, followed by a proposed reconciliation by means of ethical reasoning.

### Clinical Scenario:

*Mia is a developmentally normal 9-year-old girl. She has been previously healthy, but is being referred for evaluation by her pediatrician following two separate, generalized tonic-clonic seizures. The seizures occurred approximately five months apart, and were reportedly unprovoked. Mia and her parents are being seen for the first time by a pediatric neurologist. Mia's neurological examination is normal, and the neurologist notes Mia's EEG and brain MRI are normal as well. When the diagnosis of epilepsy and its prognosis are discussed, Mia's mother asks the neurologist if her child could die from a seizure.*

### Introduction

THIS COMMON SCENARIO, specifically in the newly diagnosed pediatric epilepsy patient, depicts a complicated ethical picture with potentially conflicting principles. The essence is that the neurologist must decide, during the very real world situation of a clinic visit surrounded with diagnostic unknowns and parental anxiety, how to disclose and discuss the problem of sudden unexplained death in epilepsy (SUDEP). Neurologists need to balance the desire to help families by empowering them but without doing harm by overwhelming them with fear.

### Principles

Several ethical principles are applicable to analyze this scenario, although they do not necessarily solve the dilemma. When considering beneficence and nonmaleficence, the physician must consider the autonomy of the patient/family to make their own decisions about applying their own ethical values compared to the possible paternalism of the neurologist potentially making the decision that he/she believes is in the patient's and family's best interest.

### Ethical Conflict

There is a tension in this clinical scenario between beneficence and nonmaleficence. This is furthermore complicated by the inability to obtain true informed consent because the conflict involves disclosure of information that would be inherently needed for the patient to consent. Consequently, the neurologist is forced to use perceptions and assumptions about how the patient and family would exercise their autonomy in this situation.

### Analysis

Epilepsy is defined as the predisposition to have unprovoked seizures and occurs in approximately 1% of children. Epilepsy is considered a heterogeneous condition, with many causes, outcomes, and comorbidities, and is often now referred to as the epilepsies (England et al., 2013). There is a wide range of developmental levels, from entirely typically functioning individuals to those with disabilities, which are predominantly related to the underlying cause of the epilepsy. Mortality is increased in persons with epilepsy, and SUDEP is the most common cause of premature mortality in this patient population.

SUDEP describes the syndrome of death in a person with epilepsy without clear etiology, including trauma, drowning, and status epilepticus. The pathophysiology appears multifactorial, with potential cardiac and respiratory components and often associated with the underlying disorder. For example, certain genetic

epilepsies, e.g. sodium channelopathy in Dravet syndrome (severe myoclonic epilepsy of infancy), have particularly high rates of SUDEP. The risk of SUDEP in children with epilepsy is approximately 1 in 4500 per year, and in adults 1 in 1000 (Harden et al., 2017). These statistics are on the basis of large scale populations and do not necessarily apply to individual patients that fall into specific subgroups of epilepsy, from those essentially unaffected by SUDEP, e.g. typical childhood absence epilepsy, to the channelopathies, epileptic encephalopathies, or presence of escalating nocturnal convulsive seizures that are associated with very high risk. In observed cases, the terminal event is typically preceded by a seizure (Sweinsson et al., 2018). Other common circumstances are nocturnal timing with the patient found in the prone position and in unsupervised settings.

*“...the conflict involves disclosure of information that would be inherently needed for the patient to consent.”*



While a dispassionate discussion of ethical principles may be applied to this situation, the reality is this is ethically and emotionally charged in real practice. A survey of American and Canadian adult and child neurologists published in 2014 revealed that neurologists felt that patients and families responded to a conversation about SUDEP with anxiety or distress over 60% of the time (Friedman et al., 2014). Appreciation and relief were perceived far less often. Thus, neurologists have shared the impression that disclosing and discussing SUDEP can produce negative consequences in patients and families. This has been our experience as well.

The question arises whether it is possible for a patient or family to provide an informed decision concerning whether or not they would like to hear about SUDEP. This seems different as an a priori decision, in comparison to families reporting post facto that they would have preferred to know in advance about this possibility, although an ability to potentially prevent this problem would supersede concerns about disclosure. The objective of obtaining informed consent cannot be completed because the neurologist would first have to explain or discuss the concept in order to achieve this. Some neurologists may attempt to circumvent the details of the topic and ask patients something along the lines of, "Would you like to discuss rare but severe potential complications associated with epilepsy?" However, a lack of details in asking the family questions would limit the family's ability to provide truly informed consent.

### **Navigating the Conundrum**

It appears there are at least three approaches to this situation:

1. Withhold discussion of SUDEP for the newly diagnosed patient (and, by implication, reserve the discussion for when it may become applicable based on the appearance of risk factors, e.g. escalating seizure frequency, presence of nocturnal convulsive seizures, diagnosis of high risk condition, etc.);
2. Selective disclosure of SUDEP in the newly diagnosed patient;
3. Disclosure of SUDEP to all newly diagnosed patients.

Each of these scenarios may have merit and has been applied by neurologists in our experience. Each

presents its own challenges. There is the additional concern whether the child should be informed, or whether to discuss this with the parents/guardians and allow them to decide how and when to include the child in this discussion. It is not uncommon for families to report grave concerns about the child hearing about various aspects of epilepsy care, from the possibility of having surgery to the phenomenon of SUDEP.

### **Approach 1: Withhold discussion of SUDEP for the newly diagnosed patient**

Barriers that have reportedly prevented SUDEP disclosure are the notions that certain patients are not at much greater risk than the general population, there is no proven way to prevent it, and furthermore that knowledge of this could be detrimental to the patient's mood or quality of life (Friedman et al 2014). Other potential reasons are the rarity of the event, so that the risks of discussion outweigh the potential benefits, in addition to lack of time or resources for a proper discussion, and lack of an opportunity to form a trusting relationship at the point of the clinical interface in the newly diagnosed patient.

Some of these concerns are overlapping. Are the risks of awareness outweighed by the potential benefit of knowing the information in the patient at very low or essentially no increased risk? Logistical issues are challenging, despite their seeming banality. Neurologists are faced with greater patients to see more patients in less time and there may be pressing issues of more relevance to that particular patient, e.g. safety rules for children living with epilepsy, rescue therapy indications and procedures, compliance with medication and follow-up, diagnostic testing, etc. A lack of evidence, to date, that SUDEP is actually preventable leads to the question whether the patient or family benefit from knowing about it.

### **Approach 2: Selective Discussion of SUDEP**

In the case of a newly diagnosed patient, it is rarely possible to have identified whether that patient is at a high-risk category, much less have had the opportunity to develop a trusting relationship with the neurologist. On the other hand, a highly mobile population as well as rapid and sometimes unanticipated changes in insurance plans lead to the realization that there may be only a few opportunities, much less a single one, for the neurologist to interact with the patient and family. Neurologists have expressed the decision to invoke SUDEP in the case of a patient showing poor medication adherence in an effort to provide a rationale if not motivation to improve compliance.

In this scenario, the initial potential psychological harm of creating fear and sense of loss of control would potentially be superseded by the potential long-term benefit of improved seizure control, and hence decreased risk of SUDEP. Here each patient is analyzed on a case-by-case basis with the ultimate decision based on a combination of patient and parent factors and the clinical course of the patient, where there is a perception of more benefit than harm from the conversation. Yet, this invites the paternalism of the neurologist in gauging the response of the particular patient or family. Alternatively, in the case of newly diagnosed childhood absence epilepsy, with the presence of only absence/petit mal seizures and without convulsive events, it would be irrelevant to raise the prospect of SUDEP. It is more likely that positive change would be effected by devoting time discussing seat belt use, pedestrian safety, avoiding smoking, or even healthy dietary habits than discussing SUDEP. A counterargument could be made, however, that children with absence epilepsy are at risk for development of convulsive seizures, in which case there is at least some elevated risk of SUDEP. Then there is the problem of whether to disclose SUDEP in the patients with the benign focal epilepsy syndromes of childhood, such as benign Rolandic epilepsy. In such cases, the risk of SUDEP is considered infinitesimally small, yet there have been reported cases in children with these diagnoses (Doumlele et al., 2017). Thus, it appears to be uncertain whether any epilepsy patients are actually immune from SUDEP.

### **Approach 3: Disclosure of SUDEP to All Newly Diagnosed Patients**

SUDEP disclosure is recommended as a practice guideline for patients with epilepsy (Harden et al., 2017). The issue at hand is disclosure in the *newly diagnosed* patient and family, who are grappling with a new diagnosis and acceptance of a condition that is generally treated with daily medication on a long-term basis and a sense of uncertainty given the inherent unpredictability of the course of epilepsy. Patient survey data indicate that parents of affected children, both high and low risk, prefer to have had the discussion despite an increase in initial anxiety (RamachandranNair et al., 2013). It is possible that neurologists are projecting their own opinions when deciding that this disclosure creates excessive harm. A qualitative study of young adults with epilepsy reported that > 80% supported uniform disclosure (Tonberg et al., 2015), and that this may lead to behavioral changes including improved medication adherence.

In the case of the new onset pediatric epilepsy patient, the patient lacks the ethical maturity and legal status to make decisions independently and must yield to his or her parents or guardians as surrogate decision-makers. The physician is well served by the traits of humility, honesty, and compassion to balance and contrast the autonomy of the patient and parents versus a paternalistic assessment of beneficence and nonmaleficence. While it may appear overly paternalistic to enact a unilateral decision to avoid SUDEP disclosure to “protect” families, there are many items that are not disclosed to patients during the course of a clinic visit, especially a first time visit. It is logistically impossible to cover every possible diagnostic, therapeutic, and outcome scenario in every clinical setting. This includes rare events in particular, e.g. esoteric, rarely reported reactions to medications that are being prescribed. It is conceivable that clinicians are concerned about such current matters as the now ubiquitous patient ratings, with the proliferation of patient satisfaction surveys both by the Internet and hospitals. It certainly seems plausible that such rankings may suffer by raising such an emotionally laden and possibly unexpected topic. There should be a certain threshold level of risk to warrant such discussion in a clinical setting. Patient or family autonomy is difficult to exercise in this setting because the neurologist must make the decision about SUDEP disclosure and discussion. The principle of nonmaleficence suggests refraining from disclosure due to the discomfort, anxiety, or fear it could produce. Yet, there is the contrasting matter of whether there are indeed actionable items that patients and families could undertake to mitigate their own level of risk. While not proven, there is a rational basis to believe that patients at high risk can mitigate this by avoiding when possible a prone sleep position, use a lattice pillow that allows rebreathing through expandable material, or wear a seizure detection device (Liebenthal et al 2014). Furthermore, it seems plausible that achieving improved seizure control, whether with increased medication adherence or even earlier use of epilepsy surgery when applicable, could reduce the risk of SUDEP and serve as a rationale for early SUDEP disclosure.

Preservation of patient/family autonomy presents unique challenges in this situation. Families cannot be easily given sufficient information to decide without essentially providing the disclosure information of this highly charged topic. Yet, it is considered preferable for families to learn of this information from their physician as compared to online browsing. Analysis using focus groups and detailed interviews to explore

parental views led to the parents' preference for disclosure by pediatric neurologists as a face to face exposure, mostly at the time of epilepsy diagnosis, and with the parent deciding whether the child is present (RamachandranNair et al., 2013). These factors were cited despite the emotions reported of feeling overwhelmed and anxious following the discussion. Whether this Canadian study is generalizable warrants further study, as there may be other factors depending upon patient heterogeneity, including region, urban vs. rural location, parental education and background, socioeconomic status, family history of epilepsy, type of epilepsy, and patient's risk categorization of SUDEP.

### **The Argument to Withhold Discussion of SUDEP**

Logistical and emotional barriers exist that prevent a productive discussion of SUDEP. In a survey of American and Canadian adult and child neurologists, respondents mentioned several barriers, including the patient being at low risk, no proven way to prevent SUDEP, concern that it would negatively affect patients, not yet established a trusting relationship with the patient, in sufficient time in clinic, and lack of adequate, high-yield information (Friedman et al., 2014).

The inability to prevent SUDEP, especially in the new onset patient with minimal if any risk of the occurrence, leaves neurologists wondering why or how the patient or family may benefit from knowing about it. An additional counter-incentive is that the discussion may not be feasible given the strict amounts of time allowed for visits in some clinics. There is also a knowledge and resource gap. Survey data demonstrates that neurologists who treat more patients with epilepsy per year are more likely to discuss SUDEP compared to neurologists who treated fewer epilepsy patients (Friedman et al., 2014). Actual realization of more consistent SUDEP disclosure will likely require a culture shift that ensures adequate knowledge of SUDEP and its risk factors among neurologists as well as clinical management support to facilitate and encourage such discussions. This should arguably include research demonstrating that truly no harm, or the most minimal amount, is committed in the process of the SUDEP discussion.

### **The Argument to Discuss SUDEP Selectively**

It would seem reasonable to initiate the SUDEP discussion in patients showing several risk factors for SUDEP, in contrast to the clinical scenario provided

at the outset of this discussion. An example of the benefit of the discussion would be the circumstance of escalating seizures associated with poor medication compliance. Thus, disclosure would depend on assessment of risk factors as well as the level of family, and potentially patient, ability to cope with the information. Research is needed to create a list of variables to identify patients and families when exercising a selective approach to the SUDEP discussion.

### **The Argument to Discuss SUDEP with All Patients and Families with Epilepsy**

In the tragic instances of families having gone through a SUDEP experience, the argument has been compellingly made that it is far better to have understood this is a possibility as compared to learning about it in the aftermath of a devastating event (Stevenson and Stanton, 2014; Gayatri et al., 2010). The issue arises whether this applies a priori to the new onset patient and family. Yet, neurologists may

be exhibiting overly paternalistic bias when deciding to withhold the discussion for fear of malfeasance, and thus the argument exists to discuss this universally at the time of diagnosis. In that case, it becomes the province of the clinician to gauge the risk of that particular patient and couch the discussion accordingly.

Overall, universal discussion of SUDEP may be beneficial because some evidence suggests that

families and young adult patients want to hear about it (even if they do initially feel stress or apprehension), may "discover" it on the Internet (or elsewhere), and deserve a full understanding of the disease process. Some potentially modifiable risk factors for SUDEP may be important for patients and families to know to help reduce mortality (medication compliance, prone sleeping position), especially once the rationale is understood.

### **Reconciling the Different Arguments**

Differing viewpoints have been published regarding the universal disclosure of SUDEP in neurological practice (Brodie and Holmes, 2008). At least in Australian law, neurologists are not found negligent for avoiding a discussion of SUDEP (Beran, 2014). Yet, the ethical dilemma is in a state of flux, and new information is emerging about risk factors, potential interventions, and family reactions. It is plausible that

*“The frequency of this situation belies its ethical complexity and difficulty in actual clinical practice.”*

the discussion could lead to more harm than benefit, but it is also recognized that patients have ready access to information on SUDEP, and discovering its existence on the Internet seems less preferable than a guided discussion. The burden of initiating the discussion falls on the physician, who is more likely to raise this than families, even for those that are interested if not gravely concerned about it. There has been an increasing call for physicians to educate about risks in low-incidence adverse outcomes (Palmboom et al., 2007).

More studies and information on physician and patient/family communication about SUDEP is likely to occur over the next decade, and it would behoove the practicing neurologist to keep several ethical questions in mind. Scientific research may be highly focused on answering specific research questions, but the practitioner must decide on the applicability of those questions on the situation at hand. Does the study population match the patient and family in question? Is the discussion feasible in the current clinical environment, or is it better suited for a follow-up visit, the time of which to be determined based on issues such as the clinical course, diagnostic findings, and compliance factors? If research demonstrates that a plurality of patients and families would prefer to hear the information, does the clinician apply a rule of disclosure to the newly diagnosed patient universally without concern for other factors, from risk stratification to a family's level of tolerance, adaptability, and coping? The practicing neurologist can keep several ethical principles in mind to assimilate the ever-increasing new information and decide how best to approach this:

#### **Beneficence vs. Nonmaleficence**

Trying to maximize the patient's benefit and minimize harm comes naturally to most physicians. It may be helpful to remember that patients are heterogeneous, and keeping the individual patient's personal and social setting in context could guide the most appropriate action in a particular situation.

#### **Autonomy vs. Paternalism**

For children, parents act as the surrogate decision makers. As children age, they begin to gain comfort in the process of assent and then should be able to consent upon reaching the legal age of majority. Parents and doctors may both have their own personal biases separate from the patient. The physician must acknowledge and respect the autonomy of the parents to make those decisions for the patient, along with the patient's input if the patient is cognitively mature enough to participate in assent. However, the physician can also exercise judgment about what is necessarily

helpful or harmful for families and tailor the discussion to suit the patient's individual needs in the appropriate sociocultural context.

#### **Case Resolution**

In the case posed at the outset of this discussion, the mother has initiated a question relevant to mortality in a very low risk setting for SUDEP. It would be most appropriate to guide a calm and rational discussion defining SUDEP and couching it in terms of the risk for this child, which would at most be 1 in 4500 of occurrence, or in contrast, 1 in at least 4499 of not occurring. It is sometimes helpful to contextualize the answer, even stating the risk of SUDEP occurring is less than the risk of death from a car accident, yet we make the decision to drive as a way of life without dwelling on this decision to the point of distress. Following a clear discussion where all questions are addressed appropriately, Mia's parents report less anxiety now that they have better perspective.

#### **Conclusion**

The frequency of this situation belies its ethical complexity and difficulty in actual clinical practice. The SUDEP discussion is challenging, especially in newly diagnosed patients who have had neither a chance to adapt to the diagnosis or develop a sustained relationship with the neurologist. Neurologists should keep an open mind about the desires of patients and families, remembering that patients and families may make different choices than neurologists would and be respectful of their decisions. A balanced discussion of risk, while informing families about SUDEP, places the information in context and allows for the palatable disclosure that is an intrinsic component of clinical medicine.

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# Ethical Issues in Genetics Research

*Douglas S. Diekema*

CHILDREN ARE IMPORTANT PARTICIPANTS in genetic research, and IRBs are increasingly faced with the difficult questions that arise with research involving genetics, especially when children are involved. The human subjects issues raised by genetic research are not necessarily different from those raised by other kinds of research, but they present in different ways and may prove more challenging to manage. In one sense, the human genome is simply a rich database of personal information, similar to a patient's medical record. Issues of privacy, confidentiality, informed consent, and return of results remain the primary issues that IRBs must tackle when confronted with protocols involving genetic information.

To illustrate some of the complexities raised by genetic research, I would like to begin with a case study. Beginning in 1990, investigators at Arizona State University (ASU) collected more than 200 blood samples from members of the Havasupai tribe in an effort to describe genetic variants that might contribute to the increased incidence of diabetes among tribe members. [ ] Over the course of the following 10 years, those "banked" blood samples were also used by other investigators from a number of diverse disciplines to examine DNA variants linked to schizophrenia, alcoholism, metabolic disorders, and the geographic and anthropologic origins of the Havasupai people. [ ] This work resulted in more than 20 academic papers, including several that might be considered stigmatizing for members of the tribe (links to alcoholism and schizophrenia and one study that suggested high rates of inbreeding. [ , ] Particularly vexing to tribal leaders was a paper using DNA analysis to suggest that the Havasupai ancestors had crossed the Bering Strait and migrated from Asia. This "story" told by their blood directly contradicted the story told by tribe elders that taught that the Havasupai had originated in the canyon in which they lived and had been appointed as its guardian. [ ] The schizophrenia studies may have been performed despite knowing that such studies would offend the Havasupai. ASU Anthropology professor John Martin recruited Dr. Markow to do the genetic research.



When she asked if the project could be expanded to include schizophrenia, one of her research interests, he informed her the Havasupai would likely not be interested. According to court records, Markow nonetheless prepared a grant application to study schizophrenia, and the grant was approved. [5]

It is worth noting that most IRBs would have categorized all of the research involving blood samples collected from the Havasupai people as minimal risk, and while the original study required IRB review, it probably qualified for expedited review under the federal regulations. Furthermore, it is very possible that some or most of the follow-up studies could have been performed under an exempt determination, since they used existing specimens, as long as the data was recorded in such a manner that subjects could not be identified directly or through identifiers linked to the subjects.

Despite the “minimal risk” nature of the study, however, it raised significant ethical concerns. First, the original consent process was likely inadequate. [1,2,6] Whether those providing consent were meaningfully informed about how their blood would be used and that it would be banked is disputed. [5,6] Many tribe members had not graduated from high school and English was not their first language, raising questions about how well individuals understood what they were being asked. [7] It is doubtful that any of them understood the kind of information that might be obtained from DNA samples extracted from their blood. The consent process also did not cover the specific future uses of the blood samples, though it did refer to the intention “to study the causes of behavioral/medical disorders.” Second, while the study may have been considered minimal risk, published results did significant harm to the community and its members through stigma and the disruption of tribal beliefs. [8]

Defenders of the study point out that some of the research performed was important to understanding health problems that existed within the tribe, and that data from published surveys reveal that many people have no problem with their existing specimens being used for any scientific purpose. They also argue that setting too high a bar for consent to the use of DNA, tissue, blood, and data will ultimately interfere with important research. While that may all be true, it is also important that research be performed in a way that minimizes risk, and that responsibility is one of the primary roles of the IRB.

As IRBs consider protocols that involve the use of genetic information, they must be aware of the

potential issues that can arise in genetic research. While I do not have time and space to provide a comprehensive examination of these issues, I would like to highlight some of the important considerations that IRBs should be discussing.

## Family Studies

Family-based studies typically begin with identification of an index case. Enrollment of other family members is often of importance in addressing research questions, and it is usually accomplished through the assistance of the index case patient or the patient’s parent in contacting relatives or releasing contact information to investigators. Family studies pose risks of loss of privacy and coercion. The risk to privacy is more likely and potentially more harmful than in other kinds of studies, since enrollment of family members may lead to unwanted disclosure of personal information about one family member to others within the family. For rare disorders, especially those with recognizable manifestations, just the publication of a family pedigree may increase the identifiability of family members to others. Finally, in genetic studies it is not uncommon for matters unrelated to the disease under study to be inadvertently discovered and disclosed—for example, the disclosure of misassigned paternity.

Family members may also find the recruitment process intrusive and awkward. Because recruitment often involves identifiable family members, the potential for coercion becomes a real possibility. Family members already enrolled in the study may wish to ensure full participation of all family members and pressure relatives to enroll, or may allow the researcher to contact relatives they know to be reluctant to participate. It may be difficult in some families to assure that the identity of those members who choose not to participate remain unknown to the rest of the family. Learning that some members did not participate may cause strain on what had previously been good relationships within the family, with the dissent of individuals being perceived as a sign of disloyalty or lack of concern. Minors, in particular, may feel less free to dissent in the face of family or parental pressure. [9]

## Large Population Studies and Data/Tissue Banks

Several ethical concerns exist for participants enrolled in large population studies, and these studies must include appropriate procedures for informed consent and privacy protection. The value of large data



The Havasupai people became aware of the genetics research being done with their blood when Carletta Tilousi, a member of the Havasupai tribe and former Arizona State University student, attended a presentation by one of Dr. Markow's students. Tilousi has been active in defending tribal rights and played a pivotal role in the lawsuit that followed.

repositories is that they allow the linkage of genetic data with other health-related data in an ongoing manner. When these repositories are created, the specific questions they might be used to address are frequently unknown or undefined and will evolve with time. Obtaining consent that allows participants to understand how their data will be used can be extremely difficult, as illustrated by the Havasupai studies.

Two general approaches to informed consent have been suggested for the banking of genetic samples for future use: periodic re-consent and "blanket consent." Periodic re-consent allows the participant or her surrogate to be updated regarding specific uses of the data within the database as they arise. This process has the further advantage of allowing pediatric patients to participate more fully in the assent and consent process, as they grow older, and to provide a legally valid consent upon reaching the age of consent. Periodic consent is most practicable in situations where the research plan involves the ongoing collection of additional data from enrolled participants. For data repositories derived from large numbers of participants where

ongoing collection is not occurring, periodic consent poses significant disadvantages because of the administrative burdens and costs involved in tracking and contacting participants for a re-consent conference. Thus, blanket consent, where the participants are informed that potential future uses of their specimens and data may encompass a broad array of topics and studies that cannot be further specified has become more commonly used. IRBs must

*“while the study may have been considered minimal risk, published results did significant harm...”*

be aware that while this method may be the only practicable way to allow the use of repository data in some cases, it must rely on less than fully informed consent from participants.<sup>[10]</sup> The nature of this problem was vividly illustrated by the studies performed using Havasupai blood. Mello and Wolf have suggested a model of blanket consent called “tiered” consent which allows participants

to choose from several options at the time samples are collected. This would allow a participant to decide whether to provide general permission for any future use, permission only for future uses related to the original study topic, or a requirement that the participant be re-approached for specific consent for any future use different from the original study or study topic.<sup>[11]</sup> In any case, any form of broad consent should



include as much detail as possible about potential future research or commercial use, the possible risks that may arise from any future research, and the mechanism for review of any future research use. [12] Importantly, blanket or tiered consent from parents on behalf of minors poses a very difficult problem in that the consent effectively “expires” when the child turns 18. Certainly for data that remains identifiable, a mechanism for obtaining the consent of minors when they become legal adults must be considered. For participants who cannot be reached after turning 18, it may be reasonable to seek a waiver of consent from the institutional review board. [13]

The protection of data confidentiality is essential for large data sets. The information in data sets containing linked records that combine genome sequence data, health records, demographics, and other potentially sensitive information must be carefully protected from unauthorized disclosures, and IRBs should assure that the protections are adequate.

When sufficient information is collected, identification may be possible from the combination of data elements describing a particular research participant, even when identifiers are appropriately coded and protected. [14] If substantial amounts of individual genome sequence are included in a database, a participant could theoretically be identifiable on the basis of the sequence data alone, through matching with a second comparative sample. While the extent of risk for these kinds of potential disclosures currently seems quite small, the risk could increase in the future. Consent forms should include these risks, and participants enrolled as minors should be informed about these possibilities and potential risks when they become adults. IRBs should carefully consider whether participants will be allowed to have their samples and data withdrawn from a repository. If possible, there should be a mechanism for withdrawal, and when not possible, the consent form should clearly state that this is not an option.

## Socially Identifiable Populations

The research studies performed with specimens collected from the Havasupai tribe members illustrate risks inherent in studying members from small, readily identifiable populations. These unique risks include:

1. Research findings may create unintended harms to the ethnic, religious, and social well-being of individuals within socially identifiable or isolated communities. Studies suggesting

higher rates of inbreeding and exploring the geographic origins are two examples of this kind of potential harm.

2. Research involving socially identifiable populations creates the potential for individual and group stigma: Genetic studies that identify genetic predispositions in a certain ethnic group, for example, may reinforce negative stereotypes, create misconceptions about people belonging to those groups, and impact marital, adoption, and child-custody opportunities. This is particularly true for genetic risks related to psychiatric problems or undesirable and criminal behaviors.
3. Individuals belonging to a group with a predisposition to certain genetic traits may be discriminated against because of group membership, leading others to attribute certain traits to the individual simply because of their membership in the group
4. Study findings that identify genetic predispositions within the community, particularly if they represent stigmatizing conditions can lead to intra-community discord over participation in or support for the research by select members within the group.

Research performed on readily identifiable populations can cause significant harm both to that population and individuals who belong to that population. Traditional forms of individual consent fail to protect against many of these harms, in part because of the focus on individual risks and benefits. Research designed to answer questions about readily identifiable populations should trigger a review of potential group harms, and strongly consider involvement of community members or leadership in the review of these projects.

## Return of Results of Genetic Studies

The return of results obtained in a research study is a contentious issue, especially when children are involved. [15,16,17,18] IRBs must consider these issues prospectively and assist investigators in creating a plan for return of genetic (and other) results. The return of results is complicated by the fact that many genetic results are of uncertain significance, involve probabilistic determinations of risk, and may not be

clinically actionable. The issues to be considered in creating a plan for return of results include:

- ▶ Return of results should be strongly considered if results are scientifically valid and reliable, have health implications for the individual, and could inform the use of some intervention that might improve the health outcome of the individual.
- ▶ For any result that is clinically actionable, the result should be confirmed in a lab that is CLIA certified prior to release of results to a patient or parent.
- ▶ In situations where family members or the research participant may also be affected by a clinically actionable health condition, the investigator should inform the participant of this fact and advise them to relay the information to those family members with the recommendation that they also get tested.
- ▶ Individual results not scientifically validated or replicated should not be released to participants.
- ▶ Results that do not have health implications, or would not inform the use of some intervention to improve the health outcome of the individual, require more careful consideration by IRBs regarding if, and how, results will be released to participants. This is particularly true when the participants are children. In situations involving children, disclosure of results that do not lead to changes in the care of the child potentially interfere with that child's future right to decide about what they wish to know. As a general rule, individual results should be shared with a young child's parent only when they are scientifically valid and reliable, have health implications for the child, and could inform the use of some intervention that might improve the health outcome of the child. Older adolescents may be capable of sufficient understanding that exceptions can be made to this rule with the assent of the adolescent.

The process of sharing genetic results with participants in the research should involve professionals with the necessary expertise required to adequately communicate the meaning of the results and any health implications. [19]

The process of sharing genetic results with participants from cultures that differ from those of

the investigators should include a consideration of whether those cultural differences might have implications for obtaining consent, handling sensitive or taboo subjects, and honoring family structures and dynamics. Consultation with representatives of such communities may be appropriate when creating a process for disclosure of genetic results. [20]

IRBs should review and approve any plan to return results to participants. [21]

- ▶ The consent form should be very clear about any plan for return of results (or intent not to return them)
- ▶ A mechanism should exist for reviewing whether unanticipated results of potential medical importance should be shared with participants. The focus of these decisions should be on the welfare of the participant

## Conclusion

None of the ethical concerns that arise in pediatric genetic research are unique. However, certain concerns are more common in genetic research because of the study designs used for gene discovery. In addition, the power often accorded to genetic information in our society generates additional concern when a research study involves collection of genetic information. Issues of privacy, confidentiality, informed consent, and return of results represent the primary ethical concerns that IRBs and investigators must struggle with in designing and reviewing studies involving the use of genetic information.

The Havasupai tribe remained largely unaware of how their blood samples were being used until Carletta Tilousi, a member of the tribe who was a student at Arizona State University, attended a research presentation and asked whether permission had been obtained to use the blood samples for purposes other than diabetes research. [22] Ultimately, a lawsuit was filed against the university. The case was eventually settled and included monetary compensation, an apology, and the return of blood samples so that they could be properly buried. Carletta Tilousi told Amy Harmon of *The New York Times* in 2010:

*"I'm not against scientific research. I just want it to be done right. They used our blood for all these studies, people got degrees and grants, and they never asked our permission."* [23]

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# Doctor, I want BRCA testing for my girl

Ethical and clinical aspects of BRCA 1 / 2 mutations testing in children and adolescents

*Tomas Jose Silber*

## ABSTRACT

In 1995, two professional medical societies concluded genetic studies in minors should not be done unless those studies contribute to diagnosis of a treatable disease. The American Academy of Pediatrics reached the same conclusion in 2001, and reiterated it in 2013. However, a new phenomenon is currently emerging: many young women with positive BRCA mothers are requesting the test, and positions have softened with the recognition that some exceptions can be justified. One such case is presented and discussed. The value of testing minors for the mutation will be considered in light of the value to BRCA positive parents and the professionals they see, perhaps eventually providing a more solid basis to the current majority recommendations, or leading to their modification.

## Introduction

HEREDITARY GENETIC MUTATIONS predisposing to breast cancer were identified by the end of the 20<sup>th</sup> century. [1] Females with a BRCA 1 / 2 mutation have a 37% to 85% risk of developing breast cancer and a 15% to 41% lifetime risk for developing ovarian cancer. [2]

BRCA 1 / 2 mutations occur only in 10% of women with breast or ovarian cancer. [3] Hence, the vast majority of women with a family history of breast cancer will not have such mutations. Nevertheless, it is only natural for these women to be concerned about the possibility of having a hereditary predisposition to breast cancer.



Those women who are eventually found to have the BRCA 1 or BRCA 2 mutation, if they have children, daughters in particular may subsequently develop a growing concern about whether or not their children too are carriers of the mutation. Like their BRCA 1/2 positive parent, both sons and daughters with the mutation have a 50% chance of transmitting it to their own offspring. Eventually, girls with the mutation may have to consider the possibility of having prophylactic oophorectomy and mastectomies. The case for sons with BRCA 1/2 mutation is different, as prophylactic prostatectomy is not recommended and, while they are also at risk of breast cancer, breast palpation in males is easily accessible.

Information about the consequences of learning about having a BRCA mutation in adult women reveals their ability to adapt to a painful reality. [4,5] A longitudinal study clearly showed that adult women at risk clearly benefit from the test. [6] It is therefore important to let mothers with familial breast cancer know that they could benefit substantially from genetic counseling, and share their concerns with the medical professional who knows them best. As time goes by, not unexpectedly, many mothers with BRCA 1/2 mutation will be getting restless and so distraught about their daughters future, that they will reach the point of soliciting tested for the mutations on behalf of their minor daughters.

### Case Presentation

To illustrate the special ethical concerns involved in the testing for BRCA 1/2 mutation in adolescence, I will present a case of my practice of adolescent medicine that I will never forget:

Ruth, a sick-looking, 50-year-old divorced teacher, took her 16 year-old daughter to my office and stated: "I want you to keep seeing Jean when I'm not here anymore." With that, I saw mother and daughter separately, which is my practice on a first visit. The poor woman then revealed to me that she had a BRCA 1 mutation, was diagnosed with metastatic breast cancer, and had little time left to live. She was now attuned to the task of dealing with the educational, medical, and financial needs of her only daughter. Within that context, she asked me what I thought about Jean, her 15-year-old daughter, getting the genetic test. I explained to her the reasons for not doing the testing, such as: it has no practical or advisable application during adolescence, and that it would take away from her daughter the possibility of making a free and autonomous decision as an adult, condemning Jean to possess a knowledge

that perhaps she neither wanted, nor for which she might have been prepared. I informed her that not only were these my thoughts, but that they were also the recommendations of most medical societies. After a thoughtful conversation Ruth nodded, and the visit ended with Jean's physical and the application of her last HPV vaccine.

Two months later Ruth requested another office visit. Now Ruth was very weak, dyspneic, and exhausted. Again, she requested that Jean be tested. After she saw my reluctance, she became weepy and crestfallen. Following a moment of poignant silence, with the scarce strength she had left she passionately told me:

*Dr X, I think all the time about everything we talked about-the test for Jean-and I have even talked about it with Jean's estranged, alcoholic father. We decided together to talk with Jean about it. As a matter of fact, we talked a lot. Jean knows that I will soon die, and I keep thinking of the possibility that in some distant future, she may receive the bad news of having the BRCA 1 mutation like me-and that by then I will no longer be there to console, guide, and support her. I worry all the time about how bad she would feel without me, and I beg you to order the study.*

I then asked Jean to join us. She faced me and with a trembling voice, said, "Doctor, I know what my mother has been asking you. I also want to take the test."

Before narrating my response to this poignant request and its aftermath, I will present a brief review of the issues involved in the predictive genetic testing of minors, familial communication about BRCA 1/2, what little is known about the response to learning about carrying the mutation in young adults, the closest comparable group to adolescents, and the recommendations from scientific groups and academic societies on the genetic testing of minors.

An alert: there is a scientific fact about the interpretation of genetic screening that needs to be understood by both professionals and parents before addressing the issue of a BRCA 1/2 genetic studies during childhood or adolescence. It is the fact that while the intention of testing is to end uncertainty, sometimes that will not be possible to achieve because the test results can be indeterminate, with genetic variants not classified and of unknown prognosis. [7]

## BRCA 1/2 genetic testing of minors

There is consensus that for adult women with a history of breast cancer in their family, the request for a genetic evaluation is reasonable and advisable, especially for high-risk groups such as Jews of Ashkenazi origin. This consensus does not extend to underage daughters. Genetic counseling is recommended for those adult patients because it can contribute to informed decision-making. Ideally, this should educate patients in advance to the potential benefits, risks, and limitations of the genetic test. All this is stressful for any adult, and it does not require much imagination to intuit how difficult it would be for adolescents to integrate the same information as they begin their development towards becoming young women.

Often the maternal concern about whether to request the study for a minor does not even reach the doctor: the existence of hereditary breast and ovarian cancers is known by most of the population, and many respond to the invitation to “take the test” promoted commercially. This tendency to bypass clinicians is certainly facilitated by the Internet. Moreover, the recent decision of the United States Supreme Court against allowing the patenting of genes will most likely lead to further decrease the cost of the genetic studies, making BRCA 1/2 testing more and more accessible without a physician’s input. [8]

Fortunately, many of the mothers who have the mutation still ask for a professional’s opinion about the BRCA 1/2 test for their teenage daughters, and even their young girls. The physician nevertheless now must also be proactive, and be prepared to anticipate the independent maternal explorations of the issue, as well as the questions that may arise.

What follows is a review of: a) studies of breast cancer related communications between mothers and daughters, with emphasis on BRCA disclosure; b) the scant research of the consequences of learning about being a BRCA 1/2 mutation carrier in young adults; and c) information about the various medical societies position on testing minors for BRCA 1/2, expressing various viewpoints that can inform the medical practitioner. [9,10,11,12,13,14]

## Familial Communication

Both the sons and daughters of a father or mother with the mutation BRCA1 or BRCA2 have a 50% risk of having inherited the mutation, which raises the issue of when and how parents communicate their history to their offspring. To begin with, it is of interest to note that a component of the maternal motivation to

get tested is often a concern about their daughters’ possible inheritance of a predisposition to cancer. [15,16] A few studies have examined various aspects of familial communication about the mutation. [17,18,19,20,21,22,23,24,25,26,27] Most parents thought it would be possible to transmit the information in a positive way. However there was also a degree of ambivalence, given that many doubted that it was appropriate to talk about it with their children. The researchers concluded that couples receiving information about hereditary cancers do not have sufficient support to help them communicate the genetic risk to their asymptomatic daughters, and that it would be useful to include such a service at the time of the genetic study.

The consequences of learning about having a BRCA 1/2 mutation in adolescence. As a clinician considering the appropriateness of testing adolescents, I think of the following theoretical consequences:

- ▶ As adolescents process information about carrying the mutation, they may begin early in life to have the disquieting experience of “The Sword of Damocles,” a debilitating anticipatory anxiety and uncertainty long before the danger of cancer becomes real.
- ▶ The emotional burden of knowing one is a carrier may perhaps be overwhelming for many, for example the youthful enthusiasm about developing breasts and feeling their erotic power, could be dampened or suppressed by thoughts of potential surgery, mutilation, and death.
- ▶ The knowledge could affect self-esteem as they may view themselves as carrying a dark secret, or worse, of being defective.

Challenging this view is a proposal that if this information were provided to children, it would become a natural part of their identity without the upheaval that this would create in adolescence and later in life. [28]

The truth is that there is not much evidence-based knowledge about the potential risks and/or benefits of adolescent testing for BRCA 1/2. [29] There are no studies of children and adolescents who undergo BRCA testing, but there are studies about adolescents who learn about the BRCA 1/2 mutations of their mothers. A prototypical study addressing specifically what happens to children who have a BRCA 1/2 mutation parent, is the multicenter study, Lessons in Epidemiology and Genetics of Adult Cancer in Youth

(LEGACY) showing that already 38% of children 10 to 13 year-old girls thought that they were at risk for breast cancer and had a higher level of breast cancer specific distress than their peers. [30]

A medical note of caution: a cohort study suggests that exposure to mammography irradiation done before age 30 is associated with an increased risk of breast cancer. [30] Thus, the researchers recommended the use of magnetic resonance imaging (MRI) for young women with the BRCA1/BRCA2 mutation. This study awaits replication. In the meantime, the recommendations of the American Cancer Society on the use of MRI continue to stand. [31]

It has also been proposed that those women diagnosed with breast cancer at a very young age would benefit from a genetic study that should include BRCA1/2 and TP53, for the possibility of diagnosing the Li-Freeman syndrome. [32]

### **The consequences of learning about having a BRCA 1/2 mutation in young adults**

A new phenomenon is currently emerging: many young women with positive BRCA mothers are requesting the test. [33,34,35,36,37,38,39] The lack of information on the outcome of disclosure to teenagers inclines towards studying the experience of these young adults. Although one cannot extrapolate their experience to that of a teenager, it may provide approximate information about what a mature adolescent's response might be like. Here are some facts:

A study of women between the ages of 18 and 25, found that there are a variety of pathways that lead young woman to the genetic counselor. The researchers noticed for instance that in many cases it was family pressure that had led them to the interview, raising the possibility of interference with autonomous decision-making. [33]

In a survey of women and men of reproductive age, with the mutation, but without cancer, (n = 605), one third responded that when planning a pregnancy they would be willing to request a preimplantation genetic diagnosis, and half were willing to undergo a prenatal diagnosis, yet only a little more than 10% would be willing to abort a fetus with the mutation. Most respondents thought the information about the possibility of a genetic preimplantation diagnosis, and of a prenatal study, should be compulsory information when the results of the genetic study are received. [37] This suggests that a portion of the population would

consider doing the genetic study of their sons and daughters even before they were born.

To understand the experiences of young adults with the mutation, a qualitative investigation analyzed detailed interviews (n = 32) and found that some were already contemplating mastectomy before the age of 25 and all counted on the emotional support and financial assistance of their parents. [35] The researchers' conclusion was that young adults had the ability to choose to take the test autonomously, to fully understand and act on the basis of genetic information, and to make autonomous decisions.

Another qualitative study of 18 to 39 year olds with the mutation (n = 44) showed that those who were not married were anxious about disclosure of their condition to a boyfriend, those who already had children saw as their priority to stay alive for them, and those who had no children expressed an urgent desire to have them. [36] Unfortunately, some of these women were already diagnosed with cancer (the youngest was 24 years old). The knowledge of the mutation influenced their decision to have a bilateral mastectomy. The researcher's conclusion was that it is necessary for clinicians to be alert to the psychosocial dimension, especially as it relates to couple relationships and to reproduction.

Researchers at the National Cancer Institute also conducted an investigation to improve knowledge about the experience of women diagnosed with the mutation at an early age. They found that the relationship between risk perception and decision-making were strongly influenced by non-oncological components. This related to how they were fulfilling the tasks of young adulthood, such as differentiating from the family of origin, becoming a couple, and forming a family. [34] The conclusion was that understanding of these underlying dynamics can help professionals provide appropriate counseling and support to the high-risk young women struggling to maintain a balance between the legitimate need to reduce risk and the desire to lead a normal life.

Other studies confirmed the wide range of young women's concerns and interests. These include themes ranging from concerns regarding the use of contraceptives to the future use of preimplantation genetic study. [38,39]

The conclusion of all researchers was that counseling by competent professionals can be helpful to provide young women with information appropriate to their age and needs.



The private sector response to the growing public interest in “at home” genetic testing has been swift. Numerous companies now offer at-home testing, as illustrated by the selection of examples above. Such products raise the further ethical issue of interpretation of results, which in the health care setting typically involve a genetics counselor or geneticist.

### Recommendations on genetic testing of minors

Medical organizations have paid attention to this issue. The first to do so, in 1995, was the American Society of Human Genetics and the American College of Medical Genetics, categorically opposing genetic studies in minors unless they contribute to diagnosis of a treatable disease that may occur before obtaining the age of majority. [9] The American Academy of Pediatrics in 2001 reached the same conclusion. [10] In 2009, considerations were published from the European perspective. [11] More recently, in 2013, the American Academy of Pediatrics (AAP) and the American College of Medical Genetics and Genomics have published their recommendations regarding the ethics of genetic tests of minors and reiterated that they recommend testing only when this can be beneficial for children during their childhood or adolescence. [12] This position was softened with recognition that some exceptions to this rule can be

justified. [12] A strong dissenting view was developed in 2013 by the American College of Medical Genetics (ACMG), recommending instead to disclose incidental findings in clinical exome and genome sequencing. [14] In 2013, the ACMG Policy Statement was addressed in a technical report. [13]

### Discussion

Considering everything reviewed so far, it should be noted that there are no studies of children and adolescents who were tested for the mutation, probably due to professional opposition to such testing. However, since many children, like my patient Jean, do get tested, it is desirable to pursue prospective studies of those adolescents that undergo genetic testing—despite the recommendations against this, and compare them to a control group that postpones the study until adulthood. The data obtained could be of great value to BRCA positive



parents and the professionals they see, and eventually will either provide a more solid basis to the current majority recommendations, or in effect, lead to their modification. In the meantime, some reassuring data suggest that adolescents who receive genetic risk information suffer less damage than anticipated, have considerable resilience, and possess the ability to incorporate such risks into their self-concept and life plans. [40]

I propose that while the recommendations against testing minors should stand until more is known, it is nevertheless possible to consider ethically permissible the genetic predictive study of minors under certain conditions, for instance, if the circumstances point to the decision being congruent with the “best interest of the child.” [41] This implies that parents could consider not only the medical aspect, but also the possible psychosocial benefits for both the girl and the family. This recognition of the possibility of extending the considerations beyond the medical indications recognizes the deference traditionally given to the parents to determine how they raise their children. [42]

The American Society for Human Genetics, contemplating this possibility, in its guide states that when there are doubts about the benefit of the genetic study, it is acceptable under certain circumstances to do the study in adolescents with decision-making capacity. [9] However, there needs to be an ethical justification as being “a substantial psychosocial benefit for the competent adolescent.” [9] Others also recommend taking into account the parental opinion and contribution to decision-making. [43] The opinion of pediatric ethicists about prospective genetic study of adolescents is divided, with the majority inclined to recommend the postponement until adulthood, but some clear dissent has been voiced. [14] Increasingly parents and providers of medical care for adolescents are contemplating the possibility that BRCA testing should be available to mature adolescents. [44,45,46]

It is possible that over time this debate will be a moot point, as the advancements of comprehensive genomic testing may make the current standards unsustainable. [47] There is also incongruence about telling asymptomatic children of the risk of adult onset disease in the family, but not testing for it. [48] Analytical reviews of the ethical arguments in the debate describe them as unpersuasive in the absence of evidence. [49,50]

Finally, it is important to remember to ask for the adolescent’s assent. Predictive genetic studies of adolescents who would not develop the disease

during their adolescence fall within the category of elective procedures. Therefore, testing requires not only the permission of the parents but also of the assent of the adolescent. If an adolescent is not interested in having a genetic study for a disease that will take decades to present, that decision should be accepted as definitive, and the genetic diagnostic testing should not proceed.

## Dénouement

Mother, daughter, and I talked some more and concluded that in Jane’s case, the benefit of the potential counseling and maternal support was greater than the possible damage caused by a premature revelation of the risk of hereditary cancer. Jean proceeded to take the test, and it was negative for the BRCA mutations. Two weeks later, her mother died. The last time I saw Jean was during a break in her studies (genetics), when she came to see me for her first gynecological exam. When she left she said, “Thanks for listening.”

## Conclusion

Clinicians confronting a situation like the one I experienced with Jean need to balance their knowledge of the family with the recommendations of the professional associations, including the knowledge of their weakness and contradictions. This also requires one to stay attuned to the information generated by ongoing research. My own assessment is that we are condemned to think through our own decisions and recommendations. Here is what I offer:

1. Today, there are numerous families with a member with hereditary cancer who obtain genetic studies for their adolescent daughters directly, without the intervention of a physician. Whenever clinicians first learn about a parent with a BRCA mutation, they need to speak proactively about the subject of the children, focusing on the issue of whether, when and how to best manage the revelation. This includes the information that screening mammography in BRCA 1/2 needs to be started at age 25.
2. In all cases, regardless of whether or not the genetic study of the young person is done, the psychosocial and familiar aspect of the situation should be explored, and counseling provided taking into account the process of adolescent development

3. Professionals need to be aware of most academic and professional recommendations about predictive genetic tests for adolescents with possible late-onset diseases (after adolescence is completed), which express opposition to such studies. Parents should also be told about the reasons for these recommendations: removing the child from the possibility of making an autonomous decision when reaching adulthood (foreclosed future), and the possibility of emotional harm for those adolescents who may not be prepared for such potentially devastating information.
4. However, any parental request for testing must be listened to carefully because there may indeed be situations that might actually justify an exception to the rule. Moreover, whenever the daughter is a mature adolescent and requests the genetic study, this should carry additional weight in favor of screening.
5. Finally, if the teenager does not want to have the study that the parents request, she must have the final word, and her decision must

be complied with. Professionals should give their unequivocal support to an adolescent's decision not to be tested in such situations.

Note: Genetic testing for breast cancer predisposition gene mutations has now expanded well beyond BRCA1 and BRCA 2. This was not addressed in this article, as it was not germane to the particular consultation described.

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THE AUTHOR HAS DISCLOSED NO  
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# The Inclusion Of Children In Non-therapeutic Medical Research:

A Role For Double Effect Reasoning In The Moral  
Justification Of Pediatric Experimentation

*Peter A. DePergola II*

## ABSTRACT

Since Henry Beecher's 1966 revelation of the scandal at the Willowbrook School, the ethics of biomedical research involving pediatric subjects has never been the same. Throughout history, that conversation has moved from access to protection only to return to access once more. The clear and fruitful debate between Paul Ramsey and Richard McCormick in the 1970s was a forceful step toward punctuating that conversation. Today, we require a vision still more careful and rational, combining the best of prudent restriction and sensible permission to combat issues surrounding the moral licitness of proxy consent to experimentation, the qualification of pediatric assent to participation in research, and the quantification of risks and benefits in the clinical context. To that end, this essay aims to posit the argument that there indeed exists a role, in certain cases, for double effect reasoning as a method by which to justify non-therapeutic pediatric research. Double effect reasoning in the research context may lend insight into the benefits of fostering within the moral philosophical tradition a refined understanding of what constitutes as morally normative for children in the experimentation situation.



## I. Introduction

BIOETHICAL DEBATES OVER THE INCLUSION of children in non-therapeutic medical research are often preceded by the actual events that stimulate them. When reported, however, the implications of such events are typically distorted out of context regarding how and when it may be morally permissible to include children in experimentation. Rational analysis is inevitably forced to the background while the astonishing abuses assume front row [1]. Prima facie, abuses frequently spark the emotional response that most, if not all, related research must be prohibited. The argument usually takes some manifestation of this form: Children are unable to consent, and thus fully understand the implications of the risks (and lack of benefits) involved in sacrificing themselves for the “greater good”; therefore, experimentation on those who cannot consent to it, especially if it is non-therapeutic in nature, should be morally prohibited.

In the latter half the twentieth century, one landmark abuse, exposed by Henry Beecher, took command of the debate over how to justify the inclusion of children in medical research. The scandal concerned the hepatitis experiments at the Willowbrook State School. [2] Some seven years earlier, Beecher contended that “there is no justification . . . for risking an injury to an individual for the possible benefit to other people. . . . The individual must not be subordinated to the community. The community exists for man.” [3] Beecher’s response to the research conducted at the Willowbrook School sparked a decade-long debate over the moral licitness of the research strategies applied in the study [4] Saul Krugman, the study’s primary investigator, found his means and intentions beneficent. Since all children at Willowbrook would eventually contract hepatitis within the institution, a controlled study producing an effective vaccine would, in the end, prove of direct benefit to those experimented upon.

Retrospective elation, however, does not de facto solve moral problems. [1] Beecher would go on to argue—deontologically—on behalf the intrinsic rightness of actions in themselves: “An experiment is ethical or not at its inception; it does not become ethical post hoc—ends do not justify the means.” [5] The differences in moral philosophy between Beecher and Krugman underscore the nature of the paradox that concerns us here: how to improve pediatric medical care by studying the course of disease for the purpose of warding off morbidity in the effort to promote health and well-being while simultaneously protecting the fragile moral status of inevitably vulnerable children.

[6] The question is thus raised over whether children, as persons incapable of giving consent, should ever be involved in biomedical research, particularly when the research is non-therapeutic in nature. In the middle and latter half of the 1970s, this question was explicitly addressed in an eminently rational debate between two bioethicists, Princeton’s Paul Ramsey and Georgetown’s Richard McCormick.

That debate, and the need for a nuanced justification of pediatric experimentation, frames the nucleus of this essay, which moves in six parts. First, it will address the nature of pediatric research. Here, I will cite the history, in a broad and incomplete sweep, of pediatric research to date, along with its movements from access to protection and from protection back to access. Second, it will address the nature of non-therapeutic research with children. Here, I will underscore the terms and conditions elemental to pediatric experimentation, along with the ethical revisions it would do well to assimilate. Third, it will address informed consent as a particular moral issue of primary significance in the debate. Here, I will touch upon the ethics of proxy consent, along with the notions of pediatric assent and dissent.

Fourth, it will synopsise the argument put forth by Paul Ramsey against pediatric experimentation. Here, I will emphasize the concept of the human person as end, along with the ethics of protection over progress inherent to his argument. Fifth, it will synopsise the argument put forth by Richard McCormick in favor of pediatric experimentation. Here, I will accent the concept of natural law, along with the ethics of “ought” as presumed consent inherent to his argument. Sixth, it will propose a corrective vision and moral justification of pediatric experimentation. Here, I will utilize the theoretical conception of the principle of double effect, along with its fourfold conditions as applied to pediatric experimentation, to make the argument. Finally, this essay will conclude by having successfully posited the argument that there indeed exists a role, in certain cases, for double effect reasoning as a method by which to justify non-therapeutic pediatric research.

## II. Pediatric Research

The modern history of medical experimentation in the United States begins undoubtedly with Henry Beecher’s 1966 *New England Journal of Medicine* article “Ethics and Clinical Research.” [7,8] Prior to 1966, children were experimented upon by virtue of convenience. Researchers would often select their own children, servants, or slaves to serve as



subjects. Children were also recruited from outside institutions, and came “cheaply,” as it were, because they were viewed as expendable, commodious, and lacking essential value. Hence, in the century prior to 1966, the role of children in medical research can aptly be described as one of explicit child abuse. Beecher’s expressed concerns led to the subsequent introduction of additional regulations by the 1970s, where still more regulations were developed to assist in protecting the vulnerable state of children in medical research. These last safeguards were designed with the intention of completely casting out the inclusion of children in medical research. [9]

Four of Beecher’s twenty-two published cases in 1966 involved gross abuses in children. [10,11,12,13] In 1970, he would publish *Research and the Individual*, a further comprehensive and systematic critique of the research practices at the time [9<sup>17</sup>—a critique that called, as he wrote, for a “pressing need for a philosopher’s approach, but only by one so wise that he can competently resolve the enormous complexities of the problems involved.” [14] Such an

approach would be provided by theological ethicist Paul Ramsey. In the same year, Ramsey published an account of his take on the ethical problems facing biomedicine. [9<sup>17</sup>] Noting that the task of ethics in medicine “is to reconcile the welfare of the individual with the welfare of humankind,” since “both must be served,” [15] Ramsey’s research took on a life of its own [16] Ramsey’s position, as we will see, was heavily grounded in the necessity of consent as a safeguard by which moral licitness would be achieved in biomedical interventions. [17]

Also, in 1970, the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research was established to examine contemporary issues surrounding the protection of human subjects in research. [9<sup>19</sup>] The Commission, noting Ramsey’s position, invoked the philosophical positions of others, most notably moral theologian Richard McCormick, to refute it. That debate will be addressed in depth at a later point. McCormick, as we will see, would take a natural law approach to combat his friend and fellow scholar, arguing in essence that,

in the pediatric context, parental consent on behalf of children involved in medical research “is morally valid precisely insofar as it is a reasonable presumption of the child’s wishes,” [18] because there are “certain identifiable values that we *ought* to support, attempt to realize, and never directly suppress because they are definitive of our flourishing and well-being.” [18<sup>12</sup>]

The National Commission would produce over twenty reports in the 1970s, relying heavily on the *Belmont Report* for support. Based on the National Commission’s report a year earlier regarding research involving children, the Department of Health, Education, and Welfare would, in 1978 and 1979, propose regulations for pediatric research, the details of which would eventually be finalized in the early 1980s by the Department of Health and Human Services. Although in favor of pediatric research, the Commission noted the vulnerability of children, arising out of their immaturity and dependence, and this notion called for strict criteria to guide the research. Minimally, they were six fold [19]. Depending on the level and prospective risk of harm, additional criteria were added. By the early 1990s, however, the move from access to protection began to move, albeit slightly, back to access with the support of multiple government agencies. [9<sup>23-24</sup>]

The return to access was the result of at least two factors: (i) the concern that children were being prescribed drugs that had never been tested on pediatric populations, and (ii) the response of the Food and Drug Administration (FDA) to the “politicization,” as Lainie Friedman Ross calls it, “of drug testing and approval by AIDS activists.” [9<sup>24</sup>] In June 1996, the American Academy of Pediatrics and National Institute of Child Health and Human Development hosted a conference regarding the inclusion of children in clinical research. It brought to light that more than eighty percent of medication prescribed to children had never been tested on pediatric populations. By April 1999, the FDA-enforced Pediatric Rule mandated that new drugs be the product of adequately conducted pediatric studies. Because of the eventual success enjoyed by the Food and Drug Administration Modernization Act, passed by Congress in 1997, the Rule was never enforced. By January 2002, the Act was extended for five years. In March 2004, the Institute of Medicine, charged with the task of providing further ethical guidance on the matter of pediatric research by the Best Pharmaceuticals for Children Act of 2002, released its report. In short, it noted that in several cases, ethical standards unavoidably serve as impediments to otherwise desirable and useful research. [9<sup>24-27</sup>]

### III. Non-therapeutic Research with Children

Non-therapeutic research studies are Phase I clinical trials that do not offer the prospect of direct benefit to the subject involved. [20] If the trial foresees direct benefit, then the research is permitted on the conditions that (i) the risk is justified by the relationship it shares with the weighed (prospective) benefits, and (ii) the relationship is proportional (i.e., favorable) to the available medical alternatives to which participatory subjects are availed. If, however, the research does not offer the prospect of direct benefit (i.e., is non-therapeutic), then the research is permitted on the conditions that (i) the risks are minimal at most; (ii) the transcendence of minimal risk is minor, such that the study is (a) likely to produce knowledge that can be generalized concerning the subject’s condition, or (b) exposes the subject to medical, social, psychological, or educational environments that would ordinarily be tolerated or expected; or (iii) the research is not otherwise justifiable but provides an opportunity to understand, prevent, or eliminate serious biomedical problems affecting the well-being of the subject (and similar subjects) and is approved by a committee convened on behalf of the Department of Health and Human Services. [9<sup>104</sup>]

The primary moral concern for those who advocate careful access rather than stringent protection is whether the study in question is absolutely necessary or even desirable. As Priscilla Alderson and Virginia Morrow note, “‘harm’ is [so] often invisible and elusive, complicated by different estimations . . . [and] viewpoints . . . that the need . . . for ethical controls seems obvious.” [21] Since the safety and efficacy of new drugs are at times not established in pediatric populations, phase I and II research prove necessary yet remain above the threshold of minimal risk for subjects. To approve such research, the Institutional Review Board (IRB) must deem the risk in phase I trials justifiable on the condition that it seems likely to promise direct benefit. However, this is morally problematic for at least three reasons. First, this claim flies in the face of the notion that research does not intend to provide benefit. Second, it overstates the potential for a directly beneficial result. Third and finally, it allows parental consent to override pediatric dissent. [9<sup>109-10</sup>]

Since non-therapeutic research focuses on aspirational, not direct, benefits, several considerations must be taken into account before proceeding with pediatric experimentation. The first is an adequate sense of risk, cost, harm, and benefit. “Calculating” risks and benefits can be, as noted above, highly subjective; therefore, the assignment of clear definitions is essential. [22]

Second, one must determine the probability of each—the direct and indirect benefits and risks. Ascertaining the level of severity is also vital to determining the moral permissibility of foreseen risks involved in non-therapeutic research. [23] Third, the “general welfare” of child subjects also necessitates thorough revision. Because the literature concerning the abuse of children in medical research often contrasts the right of children to be protected with their simultaneous right to be included in valuable research, pediatric research and researchers are often deterred, and children are usurped of their right to be heard through it. [21<sup>23-30</sup>] Fourth and finally, the notion of intent must be taken into account. If researchers’ intentions are relevant, then phase I studies would be permitted on grounds that they offer direct therapeutic benefit even while the particular trial lacks therapeutic intent. [24]

#### IV. Informed Consent

Informed consent is the centerpiece of contemporary bioethics [25], and it has served as its backbone since the Beecher exposé. The first principle of the 1946 Nuremberg Code [9<sup>87</sup>], its primary moral purpose is to protect human persons from being abused, and the primary justification for seeking it within the research context are for autonomic and welfarist reasons. [26] Despite its rich history, proxy consent remained unaddressed until the 1964 Declaration of Helsinki, and it lacked finalization until 1983. Contemporarily, most research involving children requires proxy consent. Spelled out in the Common Rule of the federal regulations for the protection of human subjects are the guidelines by which parents are able to provide consent. If the research is therapeutic in nature, the IRB allows consent by one parent; if, however, the research is non-therapeutic (and is above the threshold of minimal risk), the Common Rule demands consent by both parents. These regulations also require ample effort is made to obtain the pediatric subject’s assent to the research—a positive complicity to participate, and not simply the failure to object to participation in experimentation. [9<sup>87-88</sup>]

Proxy consent in the research context is both complex and complicated. [27] The justification of proxy consent

is that it is given with the intention of protecting and preserving the best interests of the pediatric subject. Some modern philosophers, such as Ross, contend that proxy consent can be justified on the basis that parents have a right to raise their children according to their own system of values, and indeed have a legitimate moral interest in doing so. Parental authority has also been invoked to defend proxy consent in that parents, as heads of idiosyncratic families, enjoy the free right to decide what will become of its incompetent members. In these modern contentions, the logic is found in the dual effort to serve the subject and the parents, rather than the subject alone. [9<sup>88-89</sup>]

The notions of pediatric assent and dissent are no less complex and complicated. Unlike proxy consent, which is respected to the degree that it attempts to protect the child, assent is by nature preferential; that is, it is expressive of a positive agreement to be the means by which another’s needs are served. It is

helpful to understand pediatric assent as complimentary of both the respect due to the child’s current choices as well as the respect due to the kind of person—morally—the child is becoming. Understood this way, it is reasonable for parents to suspend a child’s immediate autonomy (i.e., current choices) in order to preserve and promote the autonomy to be sustained over a lifetime. [21<sup>95</sup>] At present, a child’s dissent to participation

in research can never be overridden by proxy consent. Respecting pediatric dissent protects children against the perception of parents. Hence, the virtue of the assent/dissent clause ensures that the child is treated with respect and dignity. [21<sup>96-98</sup>]

*“A parent’s decisive concern for the care and protection of the child... is simply the minimum claim of childhood upon the adult community...”*  
—Paul Ramsey

#### V. The Argument Against Pediatric Experimentation: Paul Ramsey

The strongest and most comprehensive argument against pediatric experimentation belongs to Paul Ramsey. His primary thesis is such: Research that does not directly benefit the child subject (i.e., is non-therapeutic) is always morally illicit. He bases this thesis on the general standpoint that experimental research should never be performed on someone who is unable to consent to it. As the argument goes, since children are incapable of consenting to inclusion in research that, by nature, does not promise direct



benefit, it can never be morally justified. On the contrary, only directly beneficial research, upon the consent of parents, can be permitted. [28]

In his text *The Patient as Person*, Ramsey writes:

*A parent's decisive concern is for the care and protection of the child, to whom he owes the highest fiduciary loyalty, even when he also appreciated the benefits to come to others from the investigation and might submit his own person to experiment in order to obtain them. This is simply the minimum claim of childhood upon the adult community, whose members may make themselves joint adventurers or partners in the enterprise of medical advancement at cost to themselves if they will. [15<sup>25</sup>]*

Here, Ramsey distinguishes between what he terms "beneficial research"—the consent to which expresses a parental fiduciary duty—and "non-beneficial research"—the consent to which is a breach of the aforementioned duty. However, he finds more than the potential exposure to risk unacceptable. For Ramsey, proxy consent to non-therapeutic research is an annulment of our right as human persons to determine for ourselves not simply the extent to which we will share ourselves in experimentation with others, but the time and nature of such sharing. [30]

Thus, treating others as means to an end—and not, therefore, as ends in themselves, as the Kantian contention that grounds the philosophy goes—is morally problematic for Ramsey: "where there is no possible relation to the child's recovery, a child is not to be made a mere object in medical experimentation." [15<sup>12</sup>] Here, Ramsey is concerned with both the potential risk of harm as well as the violation of personal autonomy. He asserts that the moral obligation to avoid evil in the context of biomedicine outweighs any obligation to do good, and he uses this argument, based on the philosophical stance of Hans Jonas, as yet another support for his position. [29] Still, it is essentially the use of human persons as means rather than ends that is the primary foundation of Ramsey's emphatic rejection of non-therapeutic research.

Ramsey's argument against pediatric experimentation is intended, in the first place, to protect subjects who are both vulnerable to being harmed by wrongful treatment and unable to consent to it. In this sense, his position must be commended. However, there are multiple objections to his general argument that are worthy of note. First, the important distinction must be made between those who refuse to consent and those who do not qualify to consent in a fully informed manner. All would agree that it is morally impermissible to force children to participate in studies of which they want no part, particularly if participation does not promise direct benefit. However, it seems increasingly the case that, when capable, most children are willingly included in medical research and, hence, have given their assent to participate. [30<sup>96</sup>]

Second, Ramsey fails to include in his argument the frequently low level of risk included in pediatric research. Since not much more risk is posed to children in medical research than exists in their everyday lives, his conclusion lacks strength in assuming the widespread prevalence of risk in all pediatric medical research. In fact, taken to the limit, Ramsey's conclusions would omit potential studies that are only observational in nature and actually pose no risk at all. In this sense, it is much too restrictive. [30<sup>96-97</sup>]

*"...there are things we ought to do for others simply because we are members of the human community..."*

—Richard McCormick

Third, Ramsey's position is based on the false premise that research intended to directly benefit the subject—which he finds licit—and research intended to serve as the basis for developing further knowledge are mutually exclusive methodological approaches. Since most research does not fit easily into either category, and since it is frequently the case that, regardless of prediction, research is uncertain to benefit the subjects involved, the prospect of direct benefit can hardly be ruled out from the beginning of "non-therapeutic" studies. Chronic disease research is one such example that poses, at best, a chance of benefit by virtue of participation. Moreover, there are multiple ways of interpreting "benefit," and a mere biophysiological interpretation is too narrow to be considered reasonable [30<sup>97</sup>].

The conceptual collapse of therapeutic and non-therapeutic research [30] sheds light on Ramsey's

shortsightedness in terms of the breadth and depth of the meaning he attributes to “research.” By definition, research is employed to gain greater knowledge into the as yet unknown. In contrast, therapy is, by definition, employed to directly benefit the individual and lacks, therefore, the potential to be generally applied in other contexts. Ramsey’s concept of “therapeutic research” thus confuses two very different concepts, and such lack of clarity proves dangerous. One such danger is that if we follow Ramsey’s language (narrowly but not unreasonably) at the cost of his logic, one could never, in any circumstance, engage in “research” (e.g., the collection and subsequent interpretation of data) on the basis that it does not, of itself, provide therapy. [28<sup>97-98</sup>]

In another essay, Ramsey contends that even if pediatric experimentation would promote fidelity to the beckons of morality, “it is better to leave [this] research imperative in incorrigible conflict with the principle that protects the individual human person from being used for research purposes without either his expressed or correctly construed consent.” [15<sup>21</sup>] Both doing and failing to do such research is, for Ramsey, immoral, but he maintains that one must “sin bravely” by coming down on the side of preventing individual harm (by avoiding participation in research) rather than on the side of promoting societal welfare (by participating in research). However, a calculation that terminally falls on the side of preventing research is unnecessary. When minimal risk is involved, the moral calculus might reasonably be shifted to the promotion of research. [28<sup>98-99</sup>]

To be sure, children in non-therapeutic research are treated as means, but not merely as such, because the researcher is unable to use the child as she or he wishes. It is far from clear that the inclusion of children in experimental studies in which minimal risk is involved while substantial benefit stands to be gained by others is obviously immoral. Since many adults feel obliged to serve others at the cost of minimal risk or inconvenience to self, it seems unreasonable to attribute an unduly sense of selfishness to children by virtue of age and legal status. Children certainly depend on adults for protection, but their inclusion in research seems to violate neither their dependence nor their rights unless the methods employed are foreseen to cause disproportionate harm. [28<sup>98-99</sup>]

## VI. The Argument in Favor of Pediatric Experimentation Richard McCormick

The strongest and most comprehensive argument in favor of pediatric experimentation belongs to

Richard McCormick. His essential thesis is such: Children are obliged to participate in medical research because they “ought” to do something that expresses fundamental values inherent to human nature and promotes the purposes of human life and flourishing. Here, McCormick utilizes a natural law framework to ground his argument. When the research in question promises direct benefit to the subject, then consent is clearly seen to be in accord with the values inherent to human nature in that it promotes general well being. Similarly, in non-therapeutic research it is reasonable to presume, according to McCormick, that the child would consent; in light of the implicit normative ideal of health rooted in fundamental human values, contributing to the health of others would normally compel the child to do as she or he ought: participate in research and thereby promote the health of others. In other words, when the cost (i.e., risk) to the subject is minimal, consent to participation can be presumed because that is what the subject ought to do. [28<sup>100</sup>]

Since children, like all societal members, ought to benefit others by their actions and would willingly do so if they had the proper moral worldview, it is appropriate to include them in research so long as there exists only minimal risk. By assuming this, McCormick does not intend to argue that someone would actually act in a particular way, but only that consent may be presumed (on behalf of the child who is incapable of giving it) because the act itself is morally right. Since proxy consent is given in the therapeutic context on grounds that there exists promise of direct benefit to the health of the child subject, it can be similarly given in the non-therapeutic context because it is based on a pediatric obligation. McCormick notes:

*... there are things we ought to do for others simply because we are members of the human community. . . . If it can be argued that it is good for all of us to share in these experiments, and hence that we ought to do so (social justice), then a presumption of consent where children are involved is reasonable and proxy consent becomes legitimate [31].*

To summarize McCormick, then: parents are the consensual vehicles by which children rightly choose what they ought, if they were so situated as to know. [28<sup>100-01</sup>]

McCormick’s argument in favor of pediatric experimentation is intended, in the first place, to promote individual and social well-being by encouraging children—through passive (parental)

presumption and active (pediatric) assent—to participate in relatively harmless activities that are part and parcel of living a life of justice and, hence, service to others. In this sense, his position must be commended. However, there are multiple objections to his general argument that are worthy of note.

One problem, regarding the issue of presuming children ought to consent, has two parts. The first is that it claims to be embedded in a natural law argument, which is often the victim of sharp critique. Since natural law arguments rarely are framed by a general understanding of human value or purposes to which individuals should be committed (e.g., health, happiness, etc.), it does not necessarily follow that all human persons ought to want the same things, never mind directly promote them. Because all individuals do not and, moreover, probably should not, want the same things, the natural law foundation of McCormick's argument seems deficient, which potentially renders his entire position on pediatric experimentation normless. [28<sup>101</sup>]

The second part of the problem, much more glaringly evident, is the idea that anyone can validly presume what another is obliged to participate in and, hence, consent to. There are countless activities that adults probably ought to participate in but fail to consent to. The entire notion of obtaining consent is founded upon protecting autonomy. What is consensually appealing for one person will not be for another. Respecting persons is respecting their right to determine what is appropriate and what is not, and this is grounded in the vast differences that exist between what persons count as valuable. Even if a third party could objectively prove that something is morally binding, a value-laden personal commitment to it cannot be forced. Consent is expressive of such a commitment, and absent of this consent cannot be licitly presumed. [28<sup>102</sup>]

Following from the logic above is a second general objection to McCormick's argument. Since it is clear that we could not typically, if ever, validly presume consent on the part of a competent adult person merely because we think she or he ought to do something, how could we possibly make the positive argument for children to do so? As Ramsey contends, McCormick's position "amounts to the destruction of the protections consent-language was designed to afford." [29] Only rarely can consent be presumed, and it seems illogical, if not impossible, to do so on behalf of the child subject. In brief, then, McCormick's largest argumentative flaw seems to be at the heart of his logic, namely, that pediatric consent can be validly

presumed. [28<sup>102</sup>] Ramsey goes on to comment that if McCormick's proposal is adopted and subsequently standardized, then:

*... anyone—and not only children—may legitimately be entered into human experimentation without his will or unwillingly. . . . If a child may be treated as an adult who would will what he should, then any other nonvolunteer may be treated simply as a child who . . . would will what he should. Any non-volunteer may be treated as a child who does not will as he ought. [32]*

Ramsey's idea is that if consent can be presumed by virtue of what a third party has determined another ought to do, then (i) there exists no difference in principle between presuming consent in pediatric or adult populations, and (ii) the lack of such a difference in principle would make conscription in adults morally licit. Since McCormick agrees with adult conscription, Ramsey's contention does not represent a direct objection from McCormick's point of view. However, the point here is about consent, not conscription. McCormick's thesis is that consent can be presumed if the activity in question is deemed something one ought to do, but consent is exactly what cannot be logically presumed. As history has proven, failing to solicit subjects' consent has resulted in many moral pandemics. [28<sup>102-03</sup>]

A third problematic piece of McCormick's argument is that it is not explicitly clear, according to his logic, that consent actually needs to be a relevant consideration. If it is the "ought" that justifies the child's participation in a certain activity, then consent is superfluous. In this line of thinking, proxy consent neither validates nor invalidates the inclusion of the child and is truly irrelevant to the justification of non-therapeutic pediatric research. In other words, the two levels of argument employed by McCormick to justify pediatric experimentation include (i) natural law and (ii) consent by third parties. However, if we take the natural law approach as McCormick intends to employ it and find it justified, it de facto undermines the consent model by making it gratuitous. To restate: if we are obliged to do as we ought (natural law), it is essentially irrelevant whether we agree to do it (consent). [28<sup>103-04</sup>]

It is worth mentioning here that there exists an alternative interpretation of McCormick's argument, one perhaps more charitable and logically tidy. In later writings, McCormick appears to be anchored in the conclusion that human persons, as members of society, have a minimal moral obligation to serve

their fellow members. Social circumstances, imposed from without, rather than from something inherent to human nature, create these obligations. One such obligation is submitting oneself to minimal risk for the benefit of biomedical and behavioral research, the result of which is socially productive. These social obligations imply that children, like all others, *should* be willing to participate in research. Parents, then, are free to consent to pediatric participation whenever the child *should* be willing to be included if the child *could* understand the implications and give informed consent. This alternative interpretation makes proxy consent a safeguard by which children are protected, though it continues to play a relatively expendable justificatory role. On this interpretation, McCormick's position seems to be one of "presumed duty" rather than "presumed consent." If this is correct, it becomes more appealing. [28<sup>104</sup>]

## VII. Corrective Vision: A Role for Double Effect Reasoning

Although numerous positions have been put forth to nuance the arguments of Paul Ramsey and Richard McCormick, there is still room, I think, for a corrective vision that includes an application, perhaps atypical, of the principle of double effect to justify pediatric experimentation in some cases where risk is minimal (or nonexistent). [33] To be sure, the role of double effect reasoning provides neither a direct nor an exhaustive answer to perhaps the most pressing moral concern in this context: the licitness of proxy consent to non-therapeutic medical research. However, double effect reasoning may provide inroads to new ways of considering this issue.

The principle of double effect, first introduced by Thomas Aquinas some seven centuries ago [34], is the method most often invoked to justify or refute practices that pose poor consequences no matter the action taken. [35] Acknowledging the complex dilemmas confronted in biomedicine, the principle's inauguration was a concrete response to the question of whether it was morally licit to perform an action that posed polarized consequences. [36] In essence, the principle of double effect can be understood as a theoretical model and method of evaluating distinctions between two effects of an action, one right and intended, the other wrong and unintended but foreseen. The action that is right and intended can be performed in spite of the wrong and unintended but foreseen effect, if four conditions are met. [37,38]

The first condition is that the nature of the action in itself must be morally right or indifferent. Put

negatively, the action must not be intrinsically morally wrong. [37<sup>45</sup>, 38] This first condition is deontological: circumstances and consequences aside, the action, *in itself*, must be morally right or indifferent; it must not be *intrinsically* morally wrong. As such, this condition serves as the fundamental framework for all further moral deliberation. The principle of double effect contends that if the action in itself is wrong, one need not proceed. Viewing the moral picture deontologically--and, perhaps to a fault at times, physicalistically--the question raised is whether the action is in-and-of-itself, objectively wrong. Thus, the answer to the question is clear: the action is either morally right or morally wrong, and that answer is, as noted above, independent of all other considerations. [36<sup>109</sup>]

The second condition is that the wrong effect must not cause, or be the means of achieving, the right effect. [37<sup>45</sup>, 38] This condition regards causality; the link between right and wrong actions must not begin with the wrong and end with the right. Three scenarios are possible:

1. The action causes the right effect, which in turn causes the wrong effect;
2. The action causes both the right effect and the wrong effect without either having directly caused the other; or
3. The action causes the wrong effect, which in turn causes the right effect.

The principle of double effect contends here that the first two scenarios are morally permissible, while the third is not, and cannot be justified morally. Since the second condition relies so heavily on how the action is intrinsically specified, it is essentially reducible to the first condition. The language used to describe the action in itself, then, is of immediate relevance. The first and second conditions ensure that neither the consequences nor the intentions might themselves be used to justify the means employed if the action is considered to be *de facto* wrong. [36<sup>109-10</sup>]

The third condition is that the right effect must be directly *intended*. Put negatively, the wrong effect, though foreseen and tolerated, must *not* be directly intended (and pursued as an end in itself). [37<sup>45</sup>, 38] All ethicists--proportionalists, consequentialists, and deontologists alike--accept this third condition. It essentially posits that the moral agent must not *intend* the wrong effect as an end to be pursued in-itself, but rather as a foreseeable and merely tolerated indirect



effect, in the effort to directly and intentionally achieve the right effect. *Intentionality* is a complex issue that cannot be addressed in full here. However, it is worthy of note that the moral philosophical tradition has never proposed the negative connotation of the third condition to mean that the wrong effect must not be intended either as an end in itself, or as a means to that end. Rather, the principle of double effect only purports this connotation to mean that the wrong effect must not be intended as an end to be pursued in itself. Otherwise, the principle of double effect is rendered widely unhelpful, if useful at all. The concept of intentionality inherent to this third condition makes clear that people ought not want to intend the wrong effects. [36<sup>110-11</sup>]

The fourth and final condition is that the rationale for permitting the right and intended action must justifiably outweigh the wrong and unintended consequences. In other words, there must exist proportionate reasons for permitting the wrong effect to occur that serve as the impetus for acting rather than refraining from acting. [37<sup>45</sup>,38] This condition attempts to locate proportionality in the mist of conflicting moral duties, and subsequently serves as an intellectual moral barometer that endeavors to preserve and promote right actions and minimize and reject wrong actions. It should be understood not merely as a reminder that only the most serious of reasons can justify permitting foreseen wrong effects, but as a mandate ensuring all other morally justifiable options are exhausted beforehand. [39]

Some authors have observed the principle of double effect is essentially reducible to its fourth condition, and that the use of proportionate reason, referred to theoretically as proportionalism [40], effectually makes the principle redundant. Others disagree, contending that the fourth condition, and the principle of double effect generally, can only be applied in a system of moral thought that regards some actions as intrinsically right or wrong (e.g., deontology), thereby asserting the necessity of the principle's first condition.

For our purposes here, the latter logic will be adopted. This is not meant as an implicit comment on the philosophical legitimacy of the concept "intrinsic." It is also not meant as an implicit comment on the validity of the former observation, the moral licitness of proportionalism, or the reducibility of the first three conditions to the fourth. Rather, it is simply an attempt to remain in accord with the principle of double effect, defined and understood conventionally, as a concrete theoretical method of justifying moral solutions in cases that pose polarizing consequences by virtue of the actions inherent to them, one right and the other wrong. [38<sup>301-2</sup>]

In light of the aforementioned, the first task in the context of pediatric experimentation is to determine the nature of the action in itself, and subsequently define it as indifferent, intrinsically right, or intrinsically wrong.



Drug testing in developing countries is another area of ethical concern involving therapeutic versus non-therapeutic research in pediatrics.

The action in question has at least two parts that must be analyzed: (i) proxy consent to experimentation and (ii) the inclusion of children in non-therapeutic research. Proxy consent is justified in many contexts, including scenarios in which persons other than the child are directly benefited while the child is, at best, indirectly benefited. Consider a simple example that will elucidate both parts of the action in question (i.e., proxy consent and pediatric inclusion): the

(dual) parental decision to keep an otherwise healthy child with a very mild temperature home from school on the basis that they do not want the child potentially spreading illness. In this case, the child—who does not give assent to being kept home due to the need to take a scheduled exam, the desire to be with friends, and because of the relatively asymptomatic nature of the slight temperature—*may* be promised indirect benefit (if only biophysiological) by virtue of proxy consent while it is directly promised (even if only potentially) to the other children at school (including faculty members).

Generally, we think nothing of this direct benefit to others needing to be justified, even at the cost—defined academically, emotionally, or otherwise—to

the child who, according to this calculation, is (at most) the indirect beneficiary. Yet, this is precisely the logic, however seemingly dissimilar, employed to justify or refute non-therapeutic pediatric research. Proxy rationale in this case is that they (the parents) will not send their child to school because they do not want the child to potentially spread illness to *other children*, not necessarily—and, in some scenarios, at best indirectly—because it might prevent the *child* from developing exacerbated symptoms that would be against *the child's* best interests. In this perspective, it seems only reasonable to define the nature of proxy consent to experimentation and the inclusion of children in non-therapeutic research when assent is given and potential risk minimal (or nonexistent) [41] as at least indifferent in itself if not intrinsically morally right in some contexts.

The second task is to determine if the right effect is caused by means of the wrong effect. In the context of pediatric experimentation, this essentially asks: Is participation in research that does not necessarily attribute direct benefit (i.e., is non-therapeutic) to the willing pediatric subject, but which potentially promises immense direct benefit to society (the right effect) caused by means of the potential minimal (or nonexistent) risk to which the child subject is exposed (the wrong effect)? Three scenarios are possible in our context:

4. Participation in non-therapeutic research directly effects social benefit, which in turn indirectly effects exposure to potential minimal (or nonexistent) risk;
5. Participation in non-therapeutic research indirectly effects both exposure to potential minimal (or nonexistent) risk and social benefit without either having directly effected the other; or
6. Participation in non-therapeutic research directly effects exposure to potential minimal (or nonexistent) risk, which in turn indirectly effects social benefit.

The first and second scenarios are morally justifiable while the third cannot be justified morally. The distinction between the notions of 'direct' and 'indirect' is of immediate relevance here. Technically, these terms can only be applied to actions post facto, that is, after they have been analyzed by the principle of double effect. If the principle defines the wrong action as 'indirect,' it is accepted as morally permissible. If, however, the principle defines the wrong action as

'direct,' it is rejected as morally impermissible. This distinction allows one to designate some actions as intrinsically morally impermissible but their indirect counterparts as (or at least potentially as) intrinsically morally permissible. The idea that actions are, or may be, right is based on the ability of the direct/indirect distinction to pass the first two conditions of the principle of double effect. [36<sup>111-12</sup>] In our context, it is the initial active willingness (i.e., assent) to participate in research that directly effects the exposure to risk by which social benefit becomes possible. In other words, exposure to potential minimal (or nonexistent) risk is the indirect effect of such assensual participation in experimentation. Outside the context of willing participation, risk itself effects nothing in particular. Thus, the first scenario above fits best. At worst, the second scenario, which is likewise morally justifiable, can be assumed.

The third task is of pivotal importance in determining the moral licitness of particular direct actions and foreseen and tolerated indirect effects. As noted above, this level of reasoning regards the notion that the right effect must be directly intended and, hence, that the wrong effect, though foreseen and tolerated, must not be directly intended as an end to be pursued in itself. According to the principle, morality mandates that right actions must be directly intended while wrong actions, though perhaps foreseen and tolerated in a limited sense, must be directly rejected. This level is essentially the logical purpose and moral binding of the principle of double effect. Applied in our context, there are at least two primary sets of intentions that must be addressed: (i) that of the parents in providing consent to participation in non-therapeutic research and (ii) that of the child subject in assenting to the aforementioned course of action.

Since we can safely assume that most parents have the best interests of their children in mind when making decisions, it is relatively simple to contend that, with proxy consent, parents directly intend the right effect of potentially benefiting society in immense fashion by allowing pediatric participation while foreseeing and tolerating the indirect and wrong effect of exposure to potential minimal (or nonexistent) risk their child may endure. Since we can also safely assume that no child would directly will her or his own harm, particularly when the potential benefit to be gleaned is essentially nonexistent, it is relatively simple to content that, with pediatric assent, children directly intend the right effect of potentially benefiting society and the well-being of other children—say, for example, a friend or family member who is ill and in need of a cure for a disease that has yet to be studied in depth—in

immense fashion while foreseeing (inasmuch as they are warned) and tolerating (insofar as they are capable) the indirect and wrong effect of enduring potential minimal (or nonexistent) risk. One such risk could be the exposure to three venipunctures over the period of one year. Clearly, neither the parents nor the child directly intend the venipunctures—which, in many cases, can hardly be calculated as a risk and, at most, might be considered minimally harmful—but the benefit to society (perhaps a friend or family member) that might potentially result from them.

The fourth and final task concerns the notion of proportionate reason, which is essential to the moral analysis of human action. Again, this level of reasoning primarily contends that the rationale for permitting the right and intended action must justifiably outweigh the wrong and unintended consequences of the indirect effect. Put simply, there must exist proportionate reasons for tolerating the wrong effect to occur when the right effect is pursued as an end. In the absence of compelling proportionate reasons to justify the tolerance of wrong effects, the right action and its effect, no matter how good, cannot be deemed morally licit in the full sense. At least three tiers of inquiry are operative within the fourth condition of the principle of double effect:

1. Definitional,
2. Criterial, and
3. Modal

On the *definitional* level, proportionate reason refers to a specific value, not a method by which to justify an action for any reason whatsoever. As is often confused, proportionate reason does *not* indicate that the best method of justification is a cost-benefit analysis. Determining proportion is not analogous to solving a mathematical equation. To consider proportion, as such, inevitably leads to an essentially stringent consequentialist and utilitarian idea of the notion; this essay rejects such an interpretation. The appropriate notion of proportion as intended and employed by the fourth condition of the principle of double effect is the essence of what gives an action genuine moral meaning: the relationship shared between the means and the end. In this sense, proportion truly defines what a person is doing in a given instance as it relates

to the specific value and the foreseen wrong effects that will inevitably arise trying to achieve the right effect. [42,43]

On the *criterial* level, proportionate reason guides in the discernment of whether a proper relationship exists between the specific value and the other elements of the action. There are three primary criteria inherent to the existence of proportionate reason in a given instance. The first is the means employed to achieve the value will not cause more harm than is necessary to do so. This criterion ensures that the particular value being pursued as an end must at least be equal to the value being sacrificed. The second criterion is there exists no less harmful way at present to protect the value than the means immediately proposed to do so. This criterion demands that one exhaust all other options in the effort to arrive at the least harmful means of protecting the value, realizing

*“...there indeed exists a role, in certain cases, for double effect reasoning as a method by which to justify non-therapeutic pediatric research.”*

that this determination may be required to adapt to changing circumstances in the future. The third and final criterion is the means employed to achieve the value will not logically *undermine* it. This criterion suggests, for example, that it is morally and logically illicit to obtain medication essential to the survival of one patient by indiscriminately stealing it from another patient whose life similarly depends on its providence. [42<sup>273-75</sup>]

On the *modal* level, proportionate reason enjoys epistemological safeguards, concretely manifested as “modes of knowing.” These modes provide the necessary certainty required to ascertain whether proportionate reasons do, in fact, exist in a given moral scenario. The first way of knowing whether there exists a proper relationship between the specific value pursued as an end and the other elements of an action, is experience. This mode informs our future decisions with insights gleaned from the past. To again invoke the example above, one can deduce from experience that stealing from others undermines their well-being and the social relationships they foster. This makes stealing medication counterproductive and, hence, disproportionate. The second way of knowing whether a proper relationship exists is through one’s own sense of outrage or intuition that some actions are intrinsically disproportionate. Nonconsensual, excessive, harmful experimentation on intellectually challenged persons is one such example that would

fall under this second mode. The third and final way of knowing is through the method of trial and error. This mode is particularly applicable to areas where experience is as yet limited but would reasonably benefit from cautious steps toward advancement, such as genetic modification in humans. [42<sup>275-76</sup>]

Applied in our context, the aforementioned definitional, criterial, and modal tiers provide insight into the moral licitness of tolerating the wrong effect, exposure to potential minimal (or nonexistent) risk endured by the child, in the circumstances of proxy consent to experimentation and the inclusion of children in non-therapeutic research when assent is given and potential risk minimal (or nonexistent). On the definitional level, both proxy consent and pediatric assent are safeguarding tools by which social benefit from non-therapeutic research can be drawn. By virtue of the proper relationship that exists between the value sought and the foreseen, indirect, and unintended effect of exposure to potential minimal (or nonexistent) risk, both proxy consent and pediatric assent can be deemed proportionate. In other words, a proportionate reason exists for tolerating the wrong effect in the endeavor to directly achieve the right effect.

On the criterial level, the means used (i.e., exposure to potential minimal (or nonexistent) risk—e.g., a venipuncture) do not cause more harm than is necessary to achieve the value (i.e., social benefit). Similarly, due to the presumption one must make that non-therapeutic research trials in pediatric populations have prospectively exhausted all other morally and medically acceptable options, there exists no less harmful way to protect the value of benefiting society than by proxy consent and pediatric assent to participation in experimentation. Finally, willing participation in non-therapeutic research compliments the value being sought. Used as a last resort in assensual pediatric populations with proxy consent, participation in experimentation embodies both justice and charity by serving others who are incapable of serving themselves, the product of which may well prove therapeutic—understood multitudinously—to the subject.

On the modal level, we are able to ascertain from experience both that pediatric participation in non-therapeutic research has been and continues to be consonant with medicine's healing role, and that this action can be defended as morally licit, if not explicitly encouraged, when risk is minimal (or nonexistent). Further, proxy consent to experimentation and pediatric inclusion when assent is given and potential

risk minimal (or nonexistent) does not invoke a sense of outrage or intuition that the actions involved are morally disproportionate and thus illicit. If anything, the opposite senses are invoked—that of subjective harmony and objective contentedness that the right and the good are proportionately accomplished. Finally, by way of trial and error (with the methods employed in such a scenario) we are able to determine the actions involved are morally licit—on the basis of experience and with the intuition of having achieved the value with proportionate means. Thus, they will continue to be deemed as such in similar future circumstances.

Within the context of proxy consent to experimentation and the inclusion of children in non-therapeutic research when assent is given and potential risk minimal (or nonexistent), then, exist several proportionate reasons for tolerating the wrong, indirect, and unintended effect of pediatric exposure to potential minimal (or nonexistent) risk in the effort to achieve the right, direct, and intended effect of immense social benefit. Thus, it can be morally justified. The fulfillment of the four conditions ("tasks," as I have called them) concludes the necessary criteria for determining the moral licitness of actions according to the principle of double effect. As such, we are able to confidently conclude that the action of pediatric experimentation is morally licit, if not explicitly encouraged, according to the principle's reasoning, given proxy consent, pediatric assent, and exposure to potential risk minimal (or nonexistent).

## VIII. Conclusion

Since Henry Beecher's 1966 revelation of the scandal at the Willowbrook School, the conversation concerning the ethics of biomedical research, particularly including pediatric subjects, has never been the same. Throughout history, that conversation has moved from access to protection only to return to access once more. The clear and fruitful debate between Paul Ramsey and Richard McCormick in the 1970s was a forceful step toward punctuating that conversation. [44,45] Yet, today we require a vision still more careful and rational, combining the best of prudent restriction and sensible permission to combat issues surrounding the moral licitness of proxy consent to experimentation, the qualification of pediatric assent to participation in research, and the quantification of risks and benefits in the clinical context. [1<sup>S14</sup>]

The aim of this essay has been to provide that corrective vision by positing the argument that there indeed exists a role, in certain cases, for double effect



reasoning as a method by which to justify non-therapeutic pediatric research. To this end, it has been successful. The implications here are significant. Double effect reasoning in the research context may lend insight into the benefits of fostering within the moral philosophical tradition a refined understanding of what constitutes as morally normative for children in the experimentation situation. If nothing else, I have called in this essay for a reconsideration of that understanding.

## Correspondence

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THE AUTHOR HAS DISCLOSED  
NO CONFLICTS OF INTEREST.

## Endnotes

- 1 Jonsen AR. Non-therapeutic Research with Children: The Ramsey versus McCormick Debate. *J. Pediatr.* 2006; 149:S12.
- 2 This is case study 16 in: Beecher HK. Ethics and Clinical Research. *New Engl J Med.* 1966; 274:1354-60.
- 3 Beecher HK. Experimentation in Man. *JAMA.* January 31, 1959; 169:461-478.
- 4 Robinson WM, Unruh BT. The Hepatitis Experiments at the Willowbrook State School. In: *The Oxford Textbook of Clinical Research Ethics.* eds. Emanuel EJ et al. New York, NY: Oxford University Press; 2008:80.
- 5 Beecher HK. Ethics and Clinical Research. *New Engl J Med.* 1966; 274(24):1354-60.
- 6 For a perceptive analysis of the nature of vulnerability in research, see Ganguli-Mitra A, and Biller-Andorno N. Vulnerability in Healthcare and Research Ethics. In: Chadwick R, ten Have H, and Meslin EM, eds. *The SAGE Handbook of Health Care Ethics: Core and Emerging*

*Issues.* Thousand Oaks, CA: SAGE Publications; 2011:239-50.

- 7 Other scholarship might indicate the beginning of this history some twenty years earlier, with the Nuremberg Trials and the ethical principles they produced. See Ross, LF. *Children in Medical Research: Access Versus Protection.* New York: Oxford University Press; 2006:12.
- 8 In agreement with Ross, David Rothman notes that "neither the horrors described at Nuremberg nor the ethical principles that emerged from it had a significant impact on the American research establishment" since they failed to seem "directly relevant to the American scene." See Rothman DJ. *Strangers at the Bedside: A History of How Law and Bioethics Transformed Medical Decision Making.* New York: Basic Books; 2003:62.
- 9 Ross, LF. *Children in Medical Research: Access Versus Protection.* New York: Oxford University Press; 2006:12.
- 10 The first, concerning the hepatotoxicity of the drug TriA, is case study 4 in Beecher, Ethics and Clinical Research.
- 11 The second, concerning an unnecessary thymectomy as part of surgery for congenital heart disease, is case study 6 in Beecher, Ethics and Clinical Research.
- 12 The third, concerning the aforementioned hepatitis experiments at the Willowbrook School, is case study 16 in Beecher, Ethics and Clinical Research.
- 13 The fourth, concerning the ureteral catheterization and subsequent radiography of newborns, is case study 22 in Beecher, Ethics and Clinical Research.
- 14 Beecher HK. *Research and the Individual.* Boston MA: Little, Brown and Company; 1970:10.
- 15 Ramsey P. *The Patient as Person.* New Haven, CT: Yale University Press; 1970: xi.
- 16 Ramsey would find in biomedical scenarios dilemmas that would force one to choose between knowledge and morality "in opposition to our long-standing prejudice that the two must go together," and would go on to argue that medical ethics necessitated "a determination of the rightness or wrongness of the action and not only of the good to be obtained. . . . Medical ethics is not solely a benefit-producing ethics even in regard to the individual patient, since he would not always be helped without his will." See Ramsey, *The Patient as Person*, xiv-xv and 2, respectively.
- 17 Ramsey believed the patient's "will" was expressed only by a freely and fully informed consent. In absence of consent, there was an absence of will, and hence an absence of the partnership between researcher and subject demanded in the research context. Ramsey would describe consent as "a canon of loyalty expressive of faithfulness-claims of persons in medical intervention" by which would be placed "an independent moral limit upon the fashion in which the rest of mankind can be made the ultimate beneficiary of the procedures." See Ramsey, *The Patient as Person*, 10 and 2, respectively.
- 18 McCormick RA. Proxy consent in the experimentation situation. *Perspect. Biol Med.* Autumn 1974; 18(1):9.
- 19 The first three ensured that the research be scientifically sound, conducted first on animals and subsequently adults prior to children and ultimately infants, and that the risks be minimized as much as possible in both design and implementation. The final three ensured the protection of privacy and confidentiality, the equitable selection of subjects, and that the child assent, if able, to the treatment that parents or guardians must ultimately consent to. See Ross, *Children in Medical Research*, 23-24.
- 20 Subpart D of the Code of Federal Regulations 45 part 46 differentiates between research that offers and does not offer the prospect of direct benefit to the subject. See Ross, *Children in Medical Research*, 104.
- 21 Alderson P, Morrow V. *The Ethics of Research with Children and Young People: A Practical Handbook.* 2nd ed. Los Angeles: SAGE Publications; 2011:23-24.
- 22 The analogy often employed to weigh benefits and risks is "cost-benefit analysis." This must be rejected. As I note in a later section, determining proportion is not analogous to solving a mathematical equation. For an astute refutation of "cost-benefit analysis" as a licit

Notes continued on page 88.



# EDUCATION IN ETHICS





## CHILDREN'S MERCY BIOETHICS CENTER CERTIFICATE PROGRAM IN PEDIATRIC BIOETHICS

*Ethicscope Editorial Group; Vanessa S Watkins, John Lantos*

### ABSTRACT

The Children's Mercy Bioethics Center (CMBC) Certificate Program in Pediatric Bioethics is a nine-month blended learning program that combines in-person intensive education with on-line distance-learning. The program begins with a three-day, in-person session in Kansas City, progresses to on-line discussions, written assignments, and a series of interactive webinars. Students then return to Kansas City to present their capstone projects. It is currently the only certificate program in pediatric ethics, and draws students worldwide.

THE ETHICAL ISSUES IN PEDIATRICS can vary considerably from those in adult medicine. Thus, ethics education generalized for adult care is not necessarily relevant to the specific issues that arise in pediatric settings. The Children's Mercy Bioethics Center's Certificate Program in Pediatric Bioethics is the only program in the world that focuses exclusively on pediatrics

The Children's Mercy Bioethics Center (CMBC) Certificate Program in Pediatric Bioethics is a unique nine-month intensive program. It is designed to enable students to participate almost entirely on-line. Students need only be on-site at Children's Mercy Kansas City twice; first, at the beginning of the program for the introductory three-day session, and then at the end of the program for the closing three-day session and presentation of their Capstone projects.

The program enables busy health professionals to participate from home where they can continue to meet their ongoing professional and other obligations. As a result, the program draws students from around the world. Most of the on-line components are asynchronous; students needn't log on at the same time as others. Instead, they decide, based on their own schedules, when to do readings and to join on-line discussions. Self-direction is crucial.

The opening session is designed to introduce students to ethical issues in clinical ethics, research ethics, and health policy ethics. For each of those categories, an archetypal case is presented, including the historical context from which it arose, competing views of how

the issue should be resolved, and analysis of how the case has affected current issues. Reading assignments are multidisciplinary, drawing on the legal, ethical, and policy literature. The capstone project allows each student to dive deeply into a particular topic. During the closing session, each student presents their capstone project to the class, furthering the cross-pollination of ideas and opportunities for collaboration and networking.

Between the opening and closing sessions, the coursework includes both required and suggested readings. The readings are generally limited to approximately thirty pages. The suggested readings are designed so that students can begin amassing pediatric bioethics libraries of their own for course reference and later use. Students also read two or three books each year.

The program draws faculty from throughout the larger Children's Mercy/ University of Missouri-Kansas City School of Medicine community and program alumni from across the globe, but the core faculty members are:

- ▶ John D. Lantos MD, Director of Pediatric Bioethics and Professor of Pediatrics at the University of Missouri-Kansas City School of Medicine.
- ▶ Brian S. Carter MD, Neonatologist, Pediatric Bioethicist, and Professor of Pediatrics at University of Missouri-Kansas City School of Medicine (Program Faculty Co-Director)

- ▶ Jeremy Garrett PhD, Associate Professor of Pediatrics and Adjunct Associate Professor of Philosophy at the University of Missouri-Kansas City School of Medicine (Program Director, Student Research)
- ▶ Angie Knackstedt, RN-BC, BSN, Health Literacy and Bioethics Clinical Coordinator (Program Faculty Co-Director)

The administrative director is Vanessa S. Watkins, MPH, FACHE, CHES. Jennifer Pearl is the Bioethics Program Office Manager.

Core Faculty moderate weekly activities and affiliated faculty with clinical expertise in each week's topic also join the discussions. Students are required to post at least two well-thought responses each week.

Each class includes students of different professional disciplines and from many cultures. The CMBC offers scholarships for students from low and middle-income countries. The CMBC also offers a scholarship program

for nurse leaders who are nominated by their Chief Nursing Officer or Deans. Students and faculty alike are thus able to, learn from and challenge others with divergent backgrounds, experiences, and professions.

The faculty introduces the capstone project up early in the program. Students have project mentors, who supply deadlines for the different stages of project—one each for preliminary ideas, outlines, abstracts, and rough drafts. Projects can be any of the following:

- ▶ A narrative piece with a pediatric focus
- ▶ A case analysis that would be suitable for an ethics consultation in a children's hospital
- ▶ A research project with a focus on an pediatric ethical issue
- ▶ A paper about a specific pediatric bioethics topic
- ▶ A clinical application in response to an ethical issue.



A student presents her capstone project to the class during the closing weekend of the Children's Mercy Bioethics Center Certificate Program in Pediatric Bioethics.

The CMBC hosts approximately ten webinars and three or more program-specific mid-year webinars. Students attend (or watch the recording of) webinars. Past years' webinars are archived on our website. Webinars feature speakers drawn nationally and internationally, speaking on topics such as: "Transgender children and the right to transition" (Maura Priest PhD, 2017-18), "What would you do if this were your child, Doc?" (Larry Churchill PhD, 2016-17), "Tracheostomies in children with profound disabilities—Navigating family and professional values" (Benjamin Wilfond MD, 2015-16), and "Changes in care for dying children: Where have we been? Where are we going?" (Myra Bluebond-Langer PhD, 2013-14).

Upon completion, students receive a certificate of completion and continued access to webinars, readings, and on-line discussions.

On-line learning environments are best when they support exploratory and dialogical learning that engages learners in activities that require collaboration, communication, social interaction, reflection, evaluation, and self-directed learning. The program has grown steadily since its inception in 2011-12. The program now caps enrollment at 35 and has a waiting list each year. For more information, visit: <https://www.childrensmercy.org/bioethics/certificate-program/>.





Faculty and staff of the Children's Mercy Bioethics Center. From left: John Lantos, Jennifer Pearl, Jeremy Garrett, Vanessa Watkins, Brian Carter, Angie Knackstedt.

### Affiliations

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### A Student's Perspective

It can be easy to sit with people who have the same point of view and discuss ethical issues, knowing one won't be pushed too hard to defend one's position; it is something altogether different to have those discussions with people who not only have a range of educational and professional backgrounds, but are from different cultures and different parts of the world. The faculty at the CMBC encourage students to share their own points of view and defend them among such a group. As a student in this year's class, I have found this to be the most valuable aspect of the weekly online discussions.

While I can sit here in Washington, D.C. and read an article, or chapter of book, and discuss it with those around me, through the Children's Mercy program,

I am exposed and can respond to the thoughts expressed by doctors, nurses, social workers, child life specialists, and others from around the world. These perspectives are illuminated by what they do, and where they are from.

This heterogeneous group has forced me to look at many ethical issues differently; from perspectives that I would not ordinarily have had a chance to consider. When one sits on an ethics committee at a particular institution, it can become easy to start thinking along the same lines as one's colleagues; one can sometimes tell what a colleague is thinking or going to say before they utter a word because they are known to us. In this class, we not only respond to each week's topic or readings but to each other, pushing one-another to think differently, as we are pushed to do likewise.

The Kansas City Children's Mercy program successfully sparks dialogue between people who wouldn't ordinarily come in contact with one another. The core faculty brings perspectives shaped by years of teaching, and students are exposed to the thoughts and ideas raised by previous classes as well as their own. I found this to be one of the most important, and unexpected aspects of the class.

Matthew Schlageter, Staff Chaplain  
Children's National Health System



**Continued from page 83:**  
*Inclusion of Children in  
 Nontherapeutic Medical Research*

## Endnotes

moral tool, see Gula RM. *Reason Informed by Faith: Foundations of a Catholic Morality*. Mahwah, NJ: Paulist Press; 1989:272-73. See also Walter JJ. "Proportionate Reason and Its Three Levels of Inquiry: Structuring the Ongoing Debate." *Louvain Studies* 1984; 10:30.

23 Risk can also manifest itself in less noticeable ways, such as distress and humiliation. See Alderson and Morrow, *The Ethics of Research with Children and Young People*, 27.

24 Ross, *Children in Medical Research*, 110-11. See especially at 111: "[The focus on direct secondary therapeutic intent] contrasts with research in which the experimental intervention offers the prospect of direct benefit and whose study design is therapeutic (e.g., phase III trials comparing an experimental drug against standard therapy). Secondary direct benefits are obtained from receiving the experimental intervention even though the study was not designed to promote this benefit in contract with the indirect (or collateral) benefits that may accrue from being in the experiment, regardless of whether one receives the experimental intervention. Secondary direct benefits are therapeutic; indirect (or collateral) benefits may or may not be."

25 For a fine analysis of the criteria, standards, and moral justification of informed consent in the research context, see Brock, DW. Philosophical Justifications of Informed Consent in Research. In: Emanuel EJ et al., eds. *The Oxford Textbook of Clinical Research Ethics*. New York: Oxford University Press; 2008:607-10.

26 Árnason V, Li H, Cong Y. Informed Consent. In: Chadwick R, ten Have H, Meslin EM, eds. *The SAGE Handbook of Health Care Ethics: Core and Emerging Issues*. Thousand Oaks, CA: SAGE Publications; 2011:106.

27 For an insightful understanding of the problems posed by parental consent, including an indication of why parents often respond negatively to the idea of pediatric research, see Alderson and Morrow, *The Ethics of Research with Children and Young People*, 107-08.

28 National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. *Report and Recommendations: Research Involving Children*. Washington, DC: U.S. Government Printing Office, DHEW Publication 1977(OS):95

29 Ramsey P, Children as Research Subjects: A Reply. *Hastings Cent Rep* 1977; 7(2):40-42.

30 This conceptual collapse by subjects is often referred to as "therapeutic misconception," most succinctly described as the illicit notion that decisions about one's treatment while a subject in research will be based on one's idiosyncratic medical condition and needs. For a keen analysis of the ethical implications of therapeutic misconception, see Appelbaum, PS, Lidz, CW. The Therapeutic Misconception. In: Emanuel, EJ et al., eds. *The Oxford Textbook of Clinical Research Ethics*. New York: Oxford University Press, 2008:633-44.

31 McCormick RA. Experimentation on the Fetus: Policy Proposals. A Report Submitted to the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. In: *Appendix: Research on the Fetus*, 5-3-5-4. Washington, DC: U.S. Government Printing Office, DHEW Publication; 1976(OS):76-128. For a more robust explanation of this argument, see McCormick RA. Proxy Consent in the Experimentation Situation. *Perspect Biol Med* 1974; 18(1):2-20.

32 Ramsey P. The Enforcement of Morals: Non-therapeutic Research on Children. *Hastings Cent Rep* 1976; 6(4):24.

33 As I write this essay, I am yet to cross such a justification in the pertinent literature.

34 See Aquinas T. *Summa Theologica: Complete English Edition in Five Volumes*. Vol. 2. Translated by Fathers of the English Dominican Province. Westminster, MD: Christian Classics; 1981:2:II-II, q. 64, a. 1.

35 However unconventional the application here, the dual poor consequences include (i) exposure to potential minimal (or nonexistent) risk through participation and (ii) failure to promise potentially immense social benefit through lack of participation.

36 Kelly DF. *Contemporary Catholic Health Care Ethics*.

Washington, DC: Georgetown University Press; 2004:108.

37 Williams G. The Principle of Double Effect and Terminal Sedation. *Med Law Rev* 2001; 9:41.

38 Keenan JF. The Function of the Principle of Double Effect. *Theological Studies* 1993; 54:300.

39 Magill G. Threat of Imminent Death in Pregnancy: A Role for Double-Effect Reasoning. *Theological Studies* 2011; 72:872.

40 For a superb defense of the promise of proportionalist theory, see Vacek EV. Proportionalism: One View of the Debate. *Theological Studies* 1985; 46:287-313.

41 "Minimal risk" is a relative concept of enormous importance that can neither be defined nor exhausted in this brief essay. Hence, it will remain explicitly unaddressed and open to interpretation.

42 Gula RM. *Reason Informed by Faith: Foundations of a Catholic Morality*. Mahwah, NJ: Paulist Press; 1989: 272-73.

43 Walter JJ. "Proportionate Reason and Its Three Levels of Inquiry: Structuring the Ongoing Debate." *Louvain Studies* 1984; 10:30.

44 For three other fine analyses of this debate, see May WE. "Proxy Consent to Human Experimentation." *Linacre Q* 1976; 43(2):73-84; Byrne RH. Non-Therapeutic Experimentation on Children: Moral Issues. *Linacre Q* 1979; 46(1):43-49; and Dilanni A. Volunteering Children for Medical Experiments. *Linacre Q* 1989; 56(1):30-38.

45 For a moral theological analysis of this debate, see Bolster, MC. Children as Experimental Subjects: A Review of Ethical and Theological Issues. *Linacre Q* 1998; 65 (2):6-32.



A digest of resources specifically relevant to pediatric bioethics and pediatric clinical ethics. The links to articles, books, and other materials below are selected by our editors based on the materials' potential interest to our readers. These materials represent a sampling of what is being published in the field, not a ranking or endorsement of these over others we may not have seen. We would like to give a special thanks to Dr. Brenda Mears, Chairperson of the American Academy of Pediatrics Section on Bioethics, who originally aggregated many of these resources.

## **Access to Care**

Polzin-Rosenburg N. One ventilator too few? Hastings Center Report. 2018; 48(2): 3-4. <https://onlinelibrary.wiley.com/doi/abs/10.1002/hast.830?af=R&>

## **Advance Directives & Advance Care Planning**

Advance directives and Dr Seuss. <http://medicalfutility.blogspot.com/2018/04/dr-seuss-does-advance-directives-tim.html>

## **Altruism/ Volunteerism/ NGO /Service**

Buth P, de Gryse B, Healy S, et al. 'He who helps the guilty, shares the crime'? INGOs, moral narcissism and complicity in wrongdoing. Journal of Medical Ethics. 2018; 44:299-304. <http://jme.bmj.com/content/44/5/299>

## **Animals**

Arnason G. The ethical justification for the use of non-human primates in research: the Weatherall report revisited. Journal of Medical Ethics. 2018; 44:328-331. <http://jme.bmj.com/content/44/5/328>

Arnason G. Objections still fail: a response to Faria.

Journal of Medical Ethics. 2018; 44:334-335. <http://jme.bmj.com/content/44/5/334>

Faria C. A flimsy case for the use of non-human primates in research: a reply to Arnason. Journal of Medical Ethics. 2018; 44:332-333. <http://jme.bmj.com/content/44/5/332>

Neuhaus CP Ethical issues when modelling brain disorders in non-human primates. Journal of Medical Ethics. 2018; 44:323-327. <http://jme.bmj.com/content/44/5/323>

## **Best Interests**

Wade DT Using best interests meetings for people in a prolonged disorder of consciousness to improve clinical and ethical management. Journal of Medical Ethics. 2018; 44:336-342. <http://jme.bmj.com/content/44/5/336>

## **Competence**

Scholten M, Gather J. Adverse consequences of article 12 of the UN Convention on the Rights of Persons with Disabilities for persons with mental disabilities and an alternative way forward.

Journal of Medical Ethics. 2018;44:226-233. <http://jme.bmj.com/content/44/4/226>

## **Confidentiality/ HIPAA/ Privacy/ Medical Records**

Bozzo A. A challenge to unqualified medical confidentiality. Journal of Medical Ethics. 2018; 44:248-252. <http://jme.bmj.com/content/44/4/248>

Collection of dna from those who have been arrested. <http://www.latimes.com/local/lanow/la-me-ln-dna-supreme-court-20180402-story.html>

## **Conflict of Interests**

Wiersma M, Kerridge I, Lipworth W. Dangers of neglecting non-financial conflicts of interest in health and medicine. Journal of Medical Ethics. 2018; 44:319-322. <http://jme.bmj.com/content/44/5/319>

## **Conscience & Conscientious Objection**

Conscientious objection and withdrawal of life support in Britain. <https://www.bioedge.org/bioethics/>



conscientious-objection-and-withdrawal-of-life-support/12583

Exemptions from required influenza vaccination for religious reasons.

<https://www.eeoc.gov/eeoc/newsroom/release/1-12-18.cfm>

### **Disability/ Birth Defects/ Eugenics**

Lombardo PA. A child's right to be well born: venereal disease and the eugenic marriage laws, 1913-1935. *Perspectives in Biology and Medicine*. 2017; 60(2): 211-232. <https://muse.jhu.edu/article/678435>

### **Drugs/ Pharmacology/ Pharmacists**

Chapman AR, Carter A, et al. Ethical guidelines for genetic research on alcohol addiction and its applications. *Kennedy Institute of Ethics Journal*. 2018; 28(1): 1-22. <https://muse.jhu.edu/article/689952>

Symons X. Does the doctrine of double effect apply to the prescription of barbiturates? Syme vs the Medical Board of Australia. *Journal of Medical Ethics*. 2018; 44:266-269. <http://jme.bmj.com/content/44/4/266>

Drug pricing. <https://www.usatoday.com/story/opinion/2018/04/11/drug-companies-arent-using-tax-windfall-cut-prescription-prices-column/499230002/>

Name brands and samples of generic drugs: Drug company 'shenanigans' to block generics come under federal scrutiny. <https://www.nytimes.com/2018/04/14/us/politics/drug-companies-generic.html>

"Injecting drugs can ruin a heart. How many second chances should a user get?"

<https://www.nytimes.com/2018/04/29/health/drugs-opioids-addiction-heart-endocarditis.html>

### **Duty/ Virtues/ "First Do No Harm"/ Truth-telling**

Adler AC; Litman RS. When Should Trainees Call for Help With Invasive Procedures? *Pediatrics*. 2017; 139(6).

<http://pediatrics.aappublications.org/content/pediatrics/early/2017/05/06/peds.2016-3673.full.pdf>

Hospitals and prices: Medicare requiring hospitals to post prices online. <https://www.medicalbag.com/business/medicare-requirement-posted-procedure-prices/article/761270/>

Simkulet W. At odds with the truth. *Journal of Medical Ethics*. Published Online First: 18 April 2018. doi: 10.1136/medethics-2018-104833 <http://jme.bmj.com/content/early/2018/04/17/medethics-2018-104833>

### **End-of-Life Care/ Dying/ Futility / Palliative Sedation**

Dyer C. Children's hospital must be allowed to withdraw life support from Alfie Evans, court rules. *BMJ* 2018;361:k1773. <https://www.bmj.com/content/361/bmj.k1773>

Dyer C. Alfie Evans case: Proposed law aims to prevent conflicts between parents and doctors. *BMJ* 2018;361:k1895 <https://www.bmj.com/content/361/bmj.k1895>

Living and Dying: a Love Story. On the Charlie and Francie case: <https://sharewisdom.tv/living-dying-love-story-documentary/>

Truog RD. Defining Death—Making Sense of the Case of Jahi McMath. *JAMA*. 2018. Published online April 9, 2018. <https://jamanetwork.com/journals/jama/fullarticle/2678247>

### **Enhancement/ Modifications/ Regeneration/ Technology /Life Extension**

Minerva F, Giubilini A. From assistive to enhancing technology: should the treatment-enhancement distinction apply to future assistive and augmenting technologies? *Journal of Medical Ethics*. 2018; 44:244-247. <http://jme.bmj.com/content/44/4/244>

Roache R. What sort of person could have a radically extended lifespan? *Journal of Medical Ethics*. 2018; 44:217-218. <http://jme.bmj.com/content/44/4/217>

Sauchelli A. Life-extending enhancements and the narrative approach to personal identity. *Journal of Medical Ethics*. 2018; 44:219-225. <http://jme.bmj.com/content/44/4/219>

### **Euthanasia/Suicide/ Physician-Assisted Suicide/ Infanticide/ Minimally Conscious/ Persistent Vegetative State / Brain Death**

Daskal S. Support for voluntary euthanasia with no logical slippery slope to non-voluntary euthanasia. *Kennedy Institute of Ethics Journal* 2018; 28(1): 23-48. <https://muse.jhu.edu/article/689953>

### **Gender Disorder/ Intersex/ Transgender/ LGBT**

The Paul E. v Courtney F. case: Free speech, parental rights, and children with gender dysphoria. Arizona appellate decision rejecting a court's assignment of a treating therapist, and rejecting



a gag order that limited parents' discussions with the child. <http://reason.com/volokh/2018/04/07/free-speech-rights-parental-rights-and-c>

See also:

Volokh E. Parent-Child Speech and Child Custody Speech Restrictions. NYU Law Review. 2006; 81(2): 631-733. <http://www2.law.ucla.edu/volokh/custody.pdf>

Genital surgeries on intersex infants. <https://www.palmcenter.org/wp-content/uploads/2017/06/Re-Thinking-Genital-Surgeries-1.pdf>

### **Genetics: crispr / Gene Editing**

Plomin R. The New Genetics of Intelligence. Nature Reviews Genetics 2018; 19:148-159. Published online 1/8/18. <https://www.nature.com/articles/nrg.2017.104>

### **Infectious Disease/ Vaccinations/ Epidemics**

Deem MJ, Navin MC, Lantos JD. Considering whether the dismissal of vaccine-refusing families is fair to other clinicians. JAMA Pediatr. 2018. Published online April 30, 2018. <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2678194>

Jamrozik E. How to hold an ethical pox party. Journal of Medical Ethics. 2018; 4:257-261. <http://jme.bmj.com/content/44/4/257>

### **Legal**

Baby powder and mesothelioma. <https://www.bloomberg.com/news/articles/2018-04-05/j-j-ordered-to-pay-37-million-over-banker-s-talc-cancer-claims>

The Lanier hip lawsuit. <https://www.wsj.com/articles/hip-suit-needs-lawyer-replacement-1524870271>

The Rinat Dray case: New York hospital's secret policy led to woman being given C-section against her will. <https://www.theguardian.com/us-news/2017/oct/05/new-york-staten-island-university-hospital-c-section-ethics-medicine>

On threats to Judge Karen McDonald from those opposed to vaccination. <http://www.freep.com/story/news/2017/10/31/mcdonald-judge-vaccine/814029001/>

### **Misconduct Concerns**

Czech H. Hans Asperger, National Socialism, and "race hygiene" in Nazi-era Vienna. Molecular Autism Brain, Cognition and Behavior. 2018;9:29. <https://doi.org/10.1186/s13229-018-0208-6> <https://molecularautism.biomedcentral.com/articles/10.1186/s13229-018-0208-6>

'Asperger syndrome' now has a different meaning. <https://www.bioedge.org/bioethics/a-different-meaning-for-asperger-syndrome/12662>

William Halford and a vaccine. <https://www.cnn.com/2018/04/23/health/fda-halford-herpes-vaccine-research/index.html>

Medical heroes who also behave badly. <https://www.bioedge.org/bioethics/what-do-you-do-when-a-medical-hero-is-also-a-villain/12669>

### **Neonatology and Fetal Issues**

Antiel RM, Curlin FA, Lantos JD, et al. Attitudes of paediatric and obstetric specialists towards prenatal surgery for lethal and non-lethal conditions. Journal of Medical Ethics. 2018; 44:234-238.

<http://jme.bmj.com/content/44/4/234>

Wilkinson D; Skene L; De Crespigny L; Savulescu J. Protecting Future Children from In-Utero Harm. Bioethics. Jul 2016; 30(6):425-32. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4913745/>

### **Newborn Screening/ Prenatal Screening**

Kater-Kuipers A, de Beaufort ID, Galjaard RH, et al. Ethics of routine: a critical analysis of the concept of 'routinisation' in prenatal screening. Journal of Medical Ethics. 2018; Published Online First: 25 April 2018. doi: 10.1136/medethics-2017-104729 <http://jme.bmj.com/content/early/2018/04/24/medethics-2017-104729>

### **Nutrition/ Eating Disorders**

Martucci J, Barnhill A. Examining the use of 'natural' in breastfeeding promotion: ethical and practical concerns. Journal of Medical Ethics. Published Online First: 21 April 2018. doi: 10.1136/medethics-2017-104455 <http://jme.bmj.com/content/early/2018/04/21/medethics-2017-104455>

### **Professionalism**

On reporting impaired physicians: Would You Report an Impaired Physician? Many Doctors Won't. <https://www.medscape.com/viewarticle/893556>

### **Public Health/ Bioterrorism & Biopiracy/ Violence/ Disasters**

Jamrozik E, Selgelid MJ. Ethics, health policy, and Zika: From emergency to global epidemic? Journal of Medical Ethics. 2018; 44:343-348. <http://jme.bmj.com/content/44/5/343>

**Rationing/ Denial of Coverage/ QULY's/ Allocation/ Proportional Shortfall**

Altmann S. Against proportional shortfall as a priority-setting principle. *Journal of Medical Ethics*. 2018; 44:305-309. <http://jme.bmj.com/content/44/5/305>

**Reproduction/ Contraception/ Assisted Reproduction/ Abortion**

A baby with a disease gene or no baby at all: Genetic testing of embryos creates an ethical morass. <https://www.statnews.com/2017/10/23/ivf-embryo-genetic-testing/>

Grandparents using embryos & surrogacy. <https://www.bioedge.org/bioethics/in-post-one-child-policy-china-posthumous-conception-is-a-matter-of-despera/12654>

Parks JA, Murphy TF. So not mothers: responsibility for surrogate orphans. *Journal of Medical Ethics*. Published Online First: 12 April 2018. doi: 10.1136/medethics-2017-104331 <http://jme.bmj.com/content/early/2018/04/12/medethics-2017-104331>

**Research**

Horn AR, et al. An ethical analysis of the SUPPORT Trial: addressing challenges posed by a pragmatic comparative effectiveness randomized controlled trial. *Kennedy Institute of Ethics Journal*. 2018; 28(1): 85-118. <https://muse.jhu.edu/article/689955>

On minibrains. <https://www.npr.org/sections/health-shots/2018/04/25/605331749/tiny-lab-grown-brains-raise-big-ethical-questions>

**Transplants/ Transfusions/ Tissue Donations**

Albertsen A Deemed consent: assessing the new opt-out approach to organ procurement in Wales. *Journal of Medical Ethics*. 2018;44: 314-318. <http://jme.bmj.com/content/44/5/314>

Durand CM, et al. The drug overdose epidemic and deceased-donor transplantation in the united states: a national registry study. *Annals of Internal Medicine*. 2018. Published online 4/18. <https://annals.org/aim/article-abstract/2678899/>

'Kidney for sale': Iran has a legal market for the organs, but the system doesn't always work. <http://www.latimes.com/world/middleeast/la-fg-iran-kidney-20171015-story.html>

Koplin J. Choice, pressure and markets in kidneys. *Journal of Medical Ethics*. 2018;44:310-313. <http://jme.bmj.com/content/44/5/310>

Special Report: U.S. company makes a fortune selling bodies donated to science. <https://www.reuters.com/article/us-usa-bodies-science-specialreport/special-report-u-s-company-makes-a-fortune-selling-bodies-donated-to-science-idUSKBN1CV1J7>

The Anthony Dickerson case: 2-year-old denied kidney transplant from 100% match dad due to probation violation. <http://www.11alive.com/news/health/kidney-transplant-for-2-year-old-is-on-hold-due-to-red-tape/481407415>

Wendler D, Shah NN, Pulsipher MA, Fry T, Grady C. Research involving pediatric stem cell donors: A way forward.

*Clinical Trials*. June 2016; 13(3):304-10. <http://journals.sagepub.com/doi/abs/10.1177/1740774515627156>

**Miscellaneous Web links on history, movies, television, media, and arts.**

The Kennedy Institute of Ethics has a list of movies at <https://highschoolbioethics.georgetown.edu/bibliographies/BioethicsMoviesTableMay2015.pdf>

The Scottish Council on Human Bioethics also maintains a list. <http://www.schb.org.uk/films/>

**Books--novels and other books not specifically for physicians****Ethics - General Philosophy, Ethical Codes, etc.**

Tessman L. When Doing the Right Thing is Impossible, Oxford University Press, 2017. ISBN-10: 0190657588. [https://www.amazon.com/Doing-Right-Impossible-Philosophy-Action/dp/0190657588/ref=sr\\_1\\_1?s=books&ie=UTF8&qid=1525101257&sr=1-1&keywords=when+doing+the+right+thing+is+impossible&dpID=41gX9yGv2wL&preST=\\_SY291\\_BO1,204,203,200\\_QL40\\_&dpSrc=srch](https://www.amazon.com/Doing-Right-Impossible-Philosophy-Action/dp/0190657588/ref=sr_1_1?s=books&ie=UTF8&qid=1525101257&sr=1-1&keywords=when+doing+the+right+thing+is+impossible&dpID=41gX9yGv2wL&preST=_SY291_BO1,204,203,200_QL40_&dpSrc=srch)

Discussed in: Harbin A. When Doing the Right Thing is Impossible by Lisa Tessman (review) *Kennedy Institute of Ethics Journal*. 2018; 28(1): E15-E20. <https://muse.jhu.edu/article/689958>

**Books--of general medical interest Decision Making/ Uncertainty/ Nudges**

Cohen IG, et al. *Nudging Health: Health Law and Behavioral Economics* 1st Edition. 2016. Baltimore, MD. Johns Hopkins University Press. ISBN-10:

1421421011 [https://www.amazon.com/Nudging-Health-Law-Behavioral-Economics/dp/1421421011/ref=sr\\_1\\_1?ie=UTF8&qid=1522101824&sr=8-1&keywords=nudging+health&dpID=41CITIDj6AL&preST=\\_SY291\\_BO1,204,203,200\\_QL40\\_&dpSrc=srch](https://www.amazon.com/Nudging-Health-Law-Behavioral-Economics/dp/1421421011/ref=sr_1_1?ie=UTF8&qid=1522101824&sr=8-1&keywords=nudging+health&dpID=41CITIDj6AL&preST=_SY291_BO1,204,203,200_QL40_&dpSrc=srch)

Discussed in:  
Cohen S. On Nudging Health. Hastings Center Report. 2018; 48(1): 45-46. <https://onlinelibrary.wiley.com/toc/1552146x/48/1>

### **Social/Cultural Issues**

Callahan D. The Five Horsemen of the Modern World: Climate, Food, Water, Disease, and Obesity. Columbia University Press. 2016. ISBN-10: 0231170025 [https://www.amazon.com/Five-Horsemen-](https://www.amazon.com/Five-Horsemen-Modern-World-Climate/dp/0231170025)

[Modern-World-Climate/dp/0231170025](https://www.amazon.com/Five-Horsemen-Modern-World-Climate/dp/0231170025)

Reviewed in:  
Smith DH. A Modern, Rational Jeremiad. Hastings Center Report. 2017; 47(5): 45-47. <http://onlinelibrary.wiley.com/doi/10.1002/hast.770/abstract>

### **Books—of interest to pediatricians Decision Making/ Uncertainty/ Nudges**

Fleischman A. Pediatric Ethics: Protecting the Interests of Children. Oxford University Press. 2016; .. ISBN-10: 0199354472 <https://www.amazon.com/Pediatric-Ethics-Protecting-Interests-Children/dp/0199354472>

Reviewed in:

Benedetti DJ. Shared Decision-Making in Pediatrics: Honoring Multiple Voices. Hastings Center Report. 2017; 47(4): 46-47. <http://onlinelibrary.wiley.com/doi/10.1002/hast.742/full>

### **Family/ Clans/ Tribes**

Adams SL. Mad Mothers, Bad Mothers, and What a “Good” Mother Would Do: The Ethics of Ambivalence, Columbia University Press, 2014. ISBN-10: 0231166745 <https://www.amazon.com/Mothers-What-Good-Mother-Would/dp/0231166745/>

