Chapter 1
Ethics: A Historical Perspective

Tessy A. Thomas and Perry Ann Reed

Since the beginning of time, human civilization has been influenced by culture, religion, science, politics, and philosophy. In the quest for reason, ancient Greek society encouraged the pursuit of higher knowledge to understand the complex relationships and behaviors of humans to self, others, God, and/or gods. The Greek physician and teacher, Hippocrates of Kos (460–370 B.C.), is universally regarded by historians to be the "father of Western medicine" [1]. Though not much is specifically known about Hippocrates' life, his philosophical and clinical tenets have been widely accepted as the foundation for the way Western medicine is practiced today. Hippocrates advocated for examining the patient, observing for clinical signs, and making rational conclusions that guide both diagnosis and treatment of the patient [1, 2]. Over 60 essays and texts are attributed to him and comprise what is called the *Hippocratic Corpus* [1]. The literary source of the *Hippocratic Corpus* writings remains debated, with some arguing that many of the works were written and published after Hippocrates' lifetime [2]. Within this collection of works, Hippocrates is credited with being the first to conceptualize medicine as a profession; in so doing, he identified the unique relationship physicians have with the patient, other physicians, and society at large. What is documented includes not only specific observations on various clinical diseases but also perspectives and reflections on the conduct and duties of the physician [2]. The famous maxim "First, do no harm" (a phrase translated into Latin as *Primum non nocere*) is often mistakenly believed to be written by Hippocrates himself [1–3]. The actual origin of this renowned phrase remains unknown [3].

T. A. Thomas
Center for Translational Bioethics and Healthcare Policy, Geisinger Research Unit, Danville, PA, USA

P. A. Reed (✉)
Children's Administration, WakeMed Health and Hospitals, Raleigh, NC, USA

K. A. Mazur, S. L. Berg (eds.), *Ethical Issues in Pediatric Hematology/Oncology*,
https://doi.org/10.1007/978-3-030-22684-8_1

Nevertheless, the closest text highlighting this moral principle, authored by Hippocrates, advises physicians: "As to diseases, make a habit of two things—to help, or at least to do no harm" [2, 3].

The most famous work included in the Hippocratic Corpus is the *Hippocratic Oath.* Though historians argue that the oath was probably written hundreds of years after Hippocrates time, it still remains a classical declaration of the standard moral code of conduct for medical physicians [2, 3]. The basic tenets of the oath are integrated within its four parts: (1) preamble, the invocation of gods as witnesses for the oath; (2) covenant, the declaration of one's duties to the profession; (3) code, the statement of one's duties to patients; and (4) peroration, which affirms one's status after abiding by the oath [3, 4]. Additionally, evoked within the oath is the moral vision for physicians: (1) of beneficence (to do good) to patients, (2) to maintain confidentiality, (3) to teach the art of medicine, (4) not to assist suicide, and (5) to know one's limitations [3, 4]. This oath is the first evidence of any ethical and legal medical writings regarding euthanasia, patient confidentiality, abortion, code of practice as an entity, physician competence, individual responsibilities, clinical ability, and reasonable judgment in the best interest of patients [5, 6].

Historically, the first recorded administration of the Hippocratic Oath in a medical school setting was at the University of Wittenberg in Germany in 1508, and the oath did not become a standard part of a formal medical school graduation until 1804, when it was incorporated into the commencement ceremony at Montpellier, France [7]. The Hippocratic Oath continues to be pledged by medical students 2,500 years later, but the classical account has been modernized into different versions to reflect changing values and practices within an evolving complex society.

The Hippocratic Oath

I swear by Apollo Physician and Asclepius and Hygieia and Panaceia and all the gods and goddesses, making them my witnesses, that I will fulfill according to my ability and judgment this oath and this covenant:

- To hold him who has taught me this art as equal to my parents and to live my life in partnership with him, and if he is in need of money to give him a share of mine, and to regard his offspring as equal to my brothers in male lineage and to teach them this art—if they desire to learn it—without fee and covenant; to give a share of precepts and oral instruction and all the other learning to my sons and to the sons of him who has instructed me and to pupils who have signed the covenant and have taken an oath according to the medical law, but no one else.

I will apply dietetic measures for the benefit of the sick according to my ability and judgment; I will keep them from harm and injustice.

I will neither give a deadly drug to anybody who asked for it, nor will I make a suggestion to this effect. Similarly I will not give to a woman an abortive remedy. In purity and holiness I will guard my life and my art.

I will not use the knife, not even on sufferers from stone, but will withdraw in favor of such men as are engaged in this work.

Whatever houses I may visit, I will come for the benefit of the sick, remaining free of all intentional injustice, of all mischief and in particular of sexual relations with both female and male persons, be they free or slaves.

What I may see or hear in the course of the treatment or even outside of the treatment in regard to the life of men, which on no account one must spread abroad, I will keep to myself, holding such things shameful to be spoken about.

If I fulfill this oath and do not violate it, may it be granted to me to enjoy life and art, being honored with fame among all men for all time to come; if I transgress it and swear falsely, may the opposite of all this be my lot.

Translation from Greek by Ludwig Edelstein [3].

Hippocrates was not the only ancient Greek thinker of his time to philosophize about morals and values. Socrates (469–399 B.C.), Plato (427–347 B.C.), and Aristotle (384–322 B.C.) are considered the leading founders of the science of virtue-based ethics [8]. Aristotle was the first to use and then apply the term *ethics.* He included this word in the title of his works: *Nicomachean Ethics* and the *Eudemian Ethics* [9, 10]. *Ethics originated from* Greek and later Latin contexts of the word *ethos*, which denotes moral philosophy and appeal to moral character or custom [11]. Socrates, Plato, and Aristotle elucidated the concept of moral virtue and defined social versus individual good and which principles should govern a person's behavior, character, or activity [8]. Aristotle argued in Book II of the *Nicomachean Ethics* that the purpose of ethics is not to merely know what is good but to become good. Aristotle envisioned a virtuous moral agent, such as a physician, as someone who has ideal character traits [8, 12]. He believed a virtue was a characteristic between two opposing vices, "the mean by reference to two vices: the one of excess and the other of deficiency" [8, 13]. For example, "Courage—lies between foolhardiness and cowardice. Compassion—lies between callousness and indulgence" [13]. The ancient Greek philosophers did not explicitly provide an all-inclusive list of ideal virtues for which someone to strive. However, in Book IV of the *Republic*, Plato discussed four virtues that hold both the ideal state and the ideal moral agent together, prudence, justice, temperance, and courage, which are now considered the cardinal virtues [12, 14, 15]. These virtues are also often translated in contemporary times to mean wisdom, fairness, restraint, and fortitude, respectively [12].

Virtue-based ethics, defining the kind of moral agent/person one should be, dominated Eastern and Western ethics tradition up until the early eighteenth century [14]. In the late 1700s, two British physicians—John Gregory and Thomas Percival—advocated for surgeons and medical physicians to be considered under one profession. As one profession, physicians and surgeons could advocate and

uphold common goals. Gregory and Percival identified three shared moral and scientific obligations:

> First, physicians and surgeons should commit to becoming and remaining scientifically and clinically competent, by practicing, doing research, and teaching on the basis of Baconian "experience"-based medicine. Second, physicians and surgeons should protect and promote the patient's health-related interests as their primary concern and keep their economic and other forms of self-interest systematically secondary. Finally, physicians and surgeons should maintain and strengthen medicine as a public trust that exists for the benefit of future patients and not as a merchant guild that exists to protect the economic, political, and social interests of its privileged members [16].

In 1794, Percival was the first person to introduce the term "medical ethics." In his book entitled *Medical Ethics*, he centered on the behavior of doctors with each other and on the professionalism of the vocation within the context of society at large [15]. This early code of interactive behavior among clinicians was a key step in differentiating between the professional and personal belief systems that guided physician ethics. While Percival's code was not well received in his home country of Great Britain, it was fundamental to the creation of the first American Medical Association (AMA) Code of Ethics in 1847 [15].

During the eighteenth and nineteenth century, two main universal theories—*deontology and utilitarianism*—began to framework the discourse of ethical reasoning when faced with any ethical conflict. These theories focused on identifying the one rule of right moral action. Immanuel Kant is the philosopher credited with being the father of deontology (*deon* meaning duty or obligation) [15]. Deontology focuses on the moral dimensions of an action and not merely on the consequences. The decisions of deontology may be appropriate for an individual but not necessarily for the greater good of society. For Kant, understanding the motivations for action or inaction was of primary concern. Through his *Categorical Imperative*, Kant argued that regardless of the consequences (ends), actions should be guided by moral obligation to duties. Commonly phrased, this means "the end can never justify the means" [15]. Therefore, harm is always unacceptable irrespective of its consequences [17]. The physician-patient relationship is by nature deontological since the medical profession's oaths and traditions place duty to patient first with the primary goal of strengthening the fiduciary relationship between physician and patient [17, 18]. When this deontological practice is broken, the risk for medical negligence arises [17]. Similarly, the utilitarian philosophy also attempted to universalize ethical reasoning when faced with any ethical conflict. Instead of focusing on the motivations of actions and moral obligation to duties, however, utilitarianism claims that an action is right if it maximizes the greatest possible good for the larger whole and not just the individual [18–19]. English philosophers Jeremy Bentham and John Stuart Mill theorized that consequences of an action justified the means of the action [18–19]. Thus, utilitarianism is a form of consequentialism. The right or wrongness of an action is solely dependent upon the ends. Thus, it may be said that in utilitarianism, "the ends do justify the means" [17–19]. Within medicine, an example of utilitarianism is allocation and rationing of resources for all patients—i.e., short-

ened length of appointment times—when the resources (physicians) are finite and the patients in need are many [18]. One criticism of utilitarianism is that what creates the greatest happiness for the greatest number of people is not necessarily morally right [17–19].

In 1927, the term "bioethics" was coined by Fritz Jahr to mean the ethics of medical and biological research. Jahr proposed a "bioethical imperative" which "extended Kant's moral imperative to all forms of life" [20]. Current scholars have broadened Jahr's initial conception of bioethics to encompass the further study of its intersections with medical, legal, research, technological, political, social, religious, cultural, philosophical, economical, and historical perspectives. The true birthplace of bioethics as a field is hard to pinpoint, however. Prominent bioethicist Arthur Caplan, PhD, states that in his view, bioethics "began in response to scandal and uncertainty" [21]. Some argue that the 1932 Tuskegee Study, which continued until the 1970s—involving the study of untreated poor rural black men with syphilis—was the first major medical scandal [21]. Other scholars attribute bioethics' origin to the end of WWII when the Nuremberg war tribunals were conducted [21]. The trials included judgments against Nazi physicians who participated in the tragic war crimes of the Holocaust. In 1947, the Nuremberg Code, a set of judicial documents that emerged from the trials, set forth basic principles for ethical medical human experimentation [15]. In 1948, the Declaration of Geneva further outlined physicians' ethical duties regarding clinical research [21]. Modified from the Nuremberg Code, the World Medical Association in 1964 issued the Declaration of Helsinki, which is now considered the keystone for ethical principles regarding human medical research and protection of human rights adopted by the medical community at large [15].

Other scholars suggest that bioethics as a field fully emerged in the 1960s when advancements in life-sustaining technologies and allocation of limited resources such as heart-lung machines, kidney dialysis machines, ventilators, organ transplantation surgeries, and dedicated intensive care units became possible [15, 21]. The interface of technology, public policy, research, clinical medicine, and societal values thus demanded scholarly discourse. The common language for medical ethics and bioethics discourse has always been rooted in philosophy. As philosophers, theologians, lawyers, physicians, scientists, and lay members of society negotiated medical ethical dilemmas and challenges, the need for practical guidance and commonly shared ethical frameworks evolved. Additionally, since people are rarely pure theorists, American philosophers Tom Beauchamp, PhD, and James Childress, PhD, advocated in the late 1970s for a pragmatic principle-based approach (principlism) to moral reasoning and reflection. In their updated book, *Principles of Biomedical Ethics*, Beauchamp and Childress list respect for autonomy (self-determination), beneficence (doing good), non-maleficence (avoiding harm), and justice (fair distribution) as the four main principles of bioethics and the foundations for ethical assessments and evaluations for current-day ethical dilemmas [22]. It is important to note that the four principles are non-hierarchical; nevertheless, it is crucial to consider each principle and determine which one may carry more weight when reasoning through a particular situation.

Respect for Autonomy

Autonomy stems from its Greek definition to mean "self-rule" and "self-determination" [22]. The principle of autonomy assumes that an individual is free from the control of others and has cognitive capacity to make decisions for him- or herself. This self-rule applies to body and mind. Respect for the principle of autonomy refers to healthcare providers having a duty to protect the patient's ability to make informed decisions about care and to honor decisions made by the patient or the patient's representative. It is the principle supporting the practice of the tort doctrine of informed consent. Key considerations associated with informed consent include legal competency to give consent, ability to apply free power of choice, and adequate understanding of risks and benefits of treatment options.

Informed consent requires that the patient clearly understands the decision he or she is making and the potential risks and benefits of the decision. A patient who does not demonstrate the ability to understand the issue may be unable to exercise autonomy, and a substitute decision-maker may need to be identified. The practical reality for healthcare professionals is that some patients make decisions that contradict the judgment of the physician. For example, patients of free will and decision-making capacity may elect to leave the hospital against medical advice. Nonetheless, physicians are obliged to create the necessary conditions to promote autonomous choice. Physicians then educate and counsel patients when their choices seem harmful to their overall well-being. In addition, respect for autonomy, according to Beauchamp and Childress, includes respect for confidentiality and privacy. In essence, the respect for autonomy also extends to the privacy of information regarding a person's identity, family, health status, and medical treatments. When a person chooses to disclose some of his personal private information, he expects that what is said and done will be kept confidential [23].

Beneficence and Non-maleficence

Beneficence is the principle that healthcare professionals have a duty to (1) do good, (2) act in the best interest of their patient, and (3) act in the best interest of the society overall. A physician is obliged by the principle of beneficence to provide and promote the highest standard of medical care to his or her patients. Non-maleficence is the negative-obligation-related principle referring to the healthcare professional's intentional duty to (1) do no harm to his patient and (2) do no harm to society overall. Non-maleficence is the overriding principle for any healthcare professional who accepts the responsibility of caring for a patient. The two principles focus on maximizing potential benefit while minimizing harm and risk to the patient. Essentially, the two principles establish the foundation for the risk/benefit analysis [22].

Justice

Justice usually signifies fairness or equality [22]. Considerations regarding justice involve distributing scarce resources, identifying competing needs, evaluating rights and obligations, and avoiding potential conflicts of interest. In bioethics, the ethical principle of justice encompasses concepts such as equal access to healthcare, provision of treatment and resources according to need, fair distribution of healthcare benefits and burdens, good stewardship of organizational and societal resources, and accountability [22]. National Medicaid and Medicare programs were borne out of the application of this principle. Respect for justice also demands that benefits and burdens of research participation be distributed equitably. For example, institutional review boards (IRBs) play a key role in ensuring that research subject selection is equitable.

In 1979, the Belmont Report published by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research summarized key ethical principles applicable to research involving people. In accordance with the principles outlined by Beauchamp and Childress, the Belmont Report's three basic principles are (1) respect for persons (autonomy), (2) beneficence, and (3) justice [24]. These principles underscore the practices of informed consent, analysis of risk and benefits, and selecting human research subjects [24]. While many believe informed consent is essential and necessary to ensuring that research is ethical, scholars continue to ask the question, what makes clinical research ethical? [25] Renowned ethicist Ezekiel Emanuel, MD, PhD, and colleagues proposed seven requirements that are both necessary and sufficient to make clinical research ethical. The seven specific requirements for research ethics are outlined in Table 1.1:

Table 1.1 Seven specific requirements for research ethics

Seven specific requirements for research ethics	Definitions
Social value	Value enhancements of health or knowledge must be derived from the research
Scientific validity	The research must be methodologically rigorous
Fair subject selection	Scientific objectives, not vulnerability or privilege, and the potential for and distribution of risks and benefits should determine communities selected as study sites and the inclusion criteria for individual subjects
Favorable risk/benefit ratio	Within the context of standard clinical practice and the research protocol, risks must be minimized, potential benefits must be enhanced, and the potential benefits to individuals and knowledge gained for society must outweigh the risks
Independent review	Unaffiliated individuals must review the research and approve, amend, or terminate it
Informed consent	Individuals should be informed about the research and provide their voluntary consent
Respect for enrolled subjects	Subjects should have their privacy protected, the opportunity to withdraw, and their Well-being monitored

Table adapted from reference Emanuel et al. [25]

The State of Medical Ethics Today: Practical Applications

The field of bioethics is ever-evolving, reflecting the complex changes within medicine, law, research, technology, and society. How do we then reason the right course of action? There is no absolute algorithm to follow, and a right answer or choice may not always be clear. Should we prioritize the needs of society or the individual? Should we framework decisions applying virtue-based ethics as the Greek philosophers before our time, or employ principlism as suggested by Beauchamp and Childress? It is not uncommon to have well-intentioned and reasonable people differ in their judgments even when considering various known principles and virtues [26]. In the clinical setting, two basic tools are exercised when an ethical issue arises: ethical analysis and argument.

> Ethical analysis requires us to be clear about concepts that we invoke and to use those concepts with a consistent meaning to give reasons for our judgments and behavior based on them. Ethical argument requires us to identify the implications of clear ethical concepts for how we should proceed. Simply listing disconnected ethical considerations does not count as argument. Nor does starting with conclusions and then going in search of supportive ethical considerations. Ethical arguments must use deliberative (evidence-based, rigorous, transparent, and accountable) clinical judgment [26].

Each healthcare organization may have its own paradigm for ethical analysis that adapts to the institutional specific culture, resources, legal precedents, and relevant ethical dilemmas. When faced with an ethical dilemma, consulting with institutional bioethics committees and medical ethicists may provide guidance for reframing the case and performing the subsequent ethical analysis and argument in a structured format. Additionally, referencing major professional and legal policies, oaths, codes, declarations, standards, and appeals may provide the initial framework to ground ethical analysis and initiate discourse to achieve consensus.

Pediatric-Related Ethics

Pediatricians face many ethical challenges that are similar to other specialties in medicine. Broadly, ethical issues relating to professionalism, application of justice to public health needs, use of life-sustaining technologies, and upholding fiduciary responsibilities within the physician-patient relationship are equally shared. However, the field of pediatrics is unique in that the shared decision-making and delivery of healthcare involves the intertwining relationship of three main stakeholders: the clinician, the patient (infant/child/adolescent), and the parents/family members. Therefore, the ethics of everyday pediatric clinical care encounters, the informed consent processes, end-of-life discussions and processes, pediatric research ethics, and pediatric-specific professionalism issues require additional considerations for balancing benefits and burdens, especially related to decision-making and determination of the patient's best interests.

Key controversies that brought attention to the need for understanding pediatric-specific ethical issues include the 1960s Willowbrook, NY, hepatitis experiments on children with intellectual challenges and the 1980s passage of the Baby Doe Law regarding the treatment of neonates and children [15, 21]. Unlike adult-focused bioethics, which highly values the respect for autonomy, pediatric-focused bioethics operates under the ethical belief that the neonatal and pediatric populations need additional protections due to their inherent vulnerable states. As ongoing changes occur in healthcare technologies, legal precedents, and research innovations, pediatric-specific decision-making also continues to evolve. The greater impetus to protect pediatric patients from harm is based on the fact that neonates and children do not have the decision-making capacity and developmental capability to make autonomous choices and decisions for themselves [27]. Thus, the decision-making process in pediatrics involves someone else other than the patient giving consent. The usual legal assumption is that parents have primary decision-making for their child and should be primarily providing medical consent [28, 29]. Parents have an inherent responsibility to protect their children, impart familial values, and foster familial bonds that develop a child's moral character [28]. And unlike adults, children cannot express their autonomy. Therefore, traditionally, a parent is expected to make decisions for his/her child in the child's best interest. Given the complexities of caring for the pediatric patient, three core concepts of pediatric ethics—(1) The Best Interest Standard of a Child, (2) Parental Surrogate Decision-Making, and (3) Informed Consent/Pediatric Assent—may comprise an ethical framework to guide pediatric healthcare professionals with clinical decision-making [29].

Best Interest Standard of a Child

According to the United Nations Rights of the Child Convention held in 1989, the Best Interest Standard of a Child was conceptualized as, "in all actions concerning children, whether undertaken by public or private social welfare institutions, courts of law, administrative authorities or legislative bodies, the best interests of the child shall be a primary consideration" [30]. Applying this standard promotes thoughtful risk assessment: maximizing benefit for the child and minimizing burden with the initialization or continuation of any medical interventions and courses of therapy. In 1995, the American Academy of Pediatrics (AAP) first recognized the Best Interest Standard of a Child as a core concept of pediatric ethics that should be prioritized in medical decision-making for children [29, 31]. Both healthcare professionals and parents have "beneficence-principle based prima facie obligations to protect and uphold the health-related interests of the child who is the patient" [29]. Therefore, "a child's health-related interests should be viewed independently of the child's relationship to others" [29]. Scholars have debated what specific explicit and implicit perspectives foster judgments upholding best interest standard given its highly subjective nature. Subsequently, it has been identified that the integration of biological, psychological, and social perspectives should be the primary drivers for

Table 1.2 Rights, needs, and capabilities of a child which should be promoted

Rights, needs, and capabilities of a child which should be promoted	Descriptive analysis content
1. Life	Have the right to a normal length of life
2. Health and healthcare	Have access to healthcare and protection from pain, injury, and illness
3. Basic needs	Be adequately nourished and sheltered
4. Protection from abuse and neglect	Be in a safe environment and protected from exploitation and physical/mental abuse
5. Emotional development	Be able to experience emotions
6. Play and pleasure	Play, rest, and enjoy recreational activities
7. Education and cognitive development	Have a diverse education with the ability to think, learn, imagine, and reason
8. Expression and communication	Develop and express thoughts and feelings
9. Interaction	Interact with and care for others and the world around them; develop consistent caregiver relationships
10. Parental relationship	Be able to interact and know their parents
11. Identity formation	Be protected from discrimination and have a connection to their culture
12. Sense of self	Have a sense of self and self-respect
13. Autonomy	To act intentionally with self-discipline, reflect on the meaning of life, and influence course of life

these judgments [29, 32]. Explicit viewpoints include those of the physicians, parents, and at times, the patients themselves. Influential implicit viewpoints include religion, finances, culture, extended family, and education. Recently, other scholars have advocated for a more precise picture of children's interests to broaden the framework away from a "single" best interest standard. For example, Janet Malek, PhD, proposed a series of 13 major interests of children and specific descriptive content that should guide and promote "best interest of child" clinical judgments. These equal priority rights, needs, and capabilities include the following elements outlined in Table 1.2 adapted from Malek's qualitative literature synthesis of a Best Interest Standard of a Child [33]:

This list proposes core elements that should be considered by healthcare professionals when making clinical judgments about the overall well-being of children. Promotion of this descriptive analysis of the basic rights, needs, and capabilities of a child may decrease the subjective aspects of defining the best interest for the child [33].

Informed Consent Process and Assent in Pediatrics

The current model for the informed consent process originates from ethical and legal theory. The legal aspects have roots in battery and medical malpractice case law [34]. The ethical foundation for the informed consent process is to protect,

promote, and incorporate the patient and/or family in medical decision-making based on the ethical principles of beneficence, justice, and respect for autonomy [34]. Obtaining informed consent or patient assent is not a one-time discrete event, but rather a process that requires ongoing communication, sharing of information, and education exchange with the physician and patient/family [31, 34]. In 1976, the American Academy of Pediatrics Committee on Bioethics first published policy statements regarding medical decision-making in pediatrics. Since that time, the standard of the medical and legal culture within the United States is to obtain informed permission from parents or legal guardians before any medical procedures and therapies are started on pediatric patients. Three different yet mutually linked major obligations that should be included in the informed consent decision-making process encompass the ethical concerns for truth-telling: (1) disclosing information about the nature of the illness, probability of success of proposed diagnostic steps/treatment, and potential risks/benefits/uncertainties with an option of no treatment, (2) assessing the patient's or surrogate's decision-making capacity, and (3) obtaining voluntary agreement with the plans before starting any interventions [34].

Only patients who have appropriate decisional capacity and meet legal requirements can give their informed consent for medical procedures and treatments [34]. The AAP policy statements acknowledge that the doctrine of "informed consent" has only limited *direct* application in pediatrics [31, 34]. Since many pediatric patients are not legally able to provide consent, parents or other surrogate decision-makers provide informed permission for diagnosis and treatment of children and assent of the child is obtained whenever appropriate [29, 31, 34]. Updated in 2016, the AAP policy statement on *Informed Consent in Decision-Making in Pediatric Practice* specifically addresses the following issues: (1) informed consent, (2) right to refuse treatment, (3) proxy consent, (4) parental permission and child assent, and (5) informed consent of adolescents [34]. The revised policy statement continues to endorse that pediatric patients should actively participate in decision-making appropriate with their development and encourages obtaining assent from children as young as 7 years of age to foster the moral growth and development of autonomy [34–38]. As children are increasingly capable of expressing mature judgments and decisions regarding their willingness to accept proposed medical care, they should be increasingly involved in decision-making [29, 31, 34]. The more "adult-like the child's decision-making process is, the greater ethical weight should be given to their preferences" per McCullough et al. [29]. Thus, healthcare professionals have an ethical obligation to advocate for the child's best interests *and* the child's preferences at this stage [29].

When parental surrogate decision-making is made by a person authorized by law for a child who does not have capacity to express their values and preferences and participate in the informed consent process, the ethical norm of the best interest standard alone should guide parental and surrogate decision-making [29]. Four main standards for the surrogate decision-making process in pediatrics have emerged within the literature and are recognized by the AAP Committee on Bioethics to encompass the pediatric patient's overall emotional, medical,

Table 1.3 The four standards and adapted definitions for surrogate decision-making

Best interest standard of surrogate decision-making
The surrogate makes decisions from medically reasonable options presented by physicians which maximize benefits and minimize harms to the patient, at the same time as keeping the holistic view of the patient's biopsychosocial interests a priority [29, 34].
Harm principle
Identify a harm threshold beyond which parental decisions will not be accepted, and outside intervention is necessary to protect the child [29]. Physicians have legal and moral obligations to ensure the child is not in significant risk for serious harm and have the responsibility to contest surrogate decision-making if beneficence of the child is jeopardized [29, 34].
Constrained parental autonomy
As long as the child's basic biopsychosocial needs are being met, parents have the right, though not absolute, to balance the best interests of the child with the family's overall reliable best interest, values, beliefs, and preferences [29, 34].
Shared, family-centered decision-making
A process for pediatric decision-making that values active collaboration among families, patients, and healthcare professionals [29, 34]. Evoking the ethical duties of veracity and fidelity, physicians have the responsibility to share "complete, honest and unbiased information with patient and their families on an ongoing basis and in ways they find useful and affirming" [39].

psychological, and social concerns in conjunction with the child's family goals, values, and religious and cultural beliefs [34]. The four standards and adapted definitions for surrogate decision-making outlined by the AAP are highlighted in Table 1.3:

Past, Present, and Future Pediatric Ethical Challenges and Controversies

Living at the interface of medical uncertainty, life-sustaining technological advances, research endeavors, varying legal/policy declarations, and changing societal values and family compositions requires healthcare professionals to adapt and evolve in response. What emerges during this time is a pervasiveness of ethical quandaries, a complex multitude of *ought* versus *should* inquiries. End-of-life decisions present especially complex pediatric medical ethical issues. In 1975, pediatrician Karen Teel appealed for "a system of advocacy which ensures that a child's rights are observed" [40]. On August 12, 1976, the *New England Journal of Medicine* published a "statement to guide a hospital in the process of decision making regarding the use of cardiopulmonary resuscitation" [41]. In subsequent years, the physician and parental role in decision-making and advocating for the child's right regarding the "code status" and appropriate medical interventions for critically and/or chronically ill pediatric patients became the central point of ethical debates [42]. Navigating end-of-life issues and reframing discussions regarding the appropriate and reasonable ways to care for the dying child or the child with a serious

life-limiting illness became the primary focus of medical ethicists and those who specialized in palliative care medicine [43]. These crucial medical and social paradigm shifts in the late 1970s and early 1980s stimulated the development of pediatric ethics consultation services across hospitals within the United States to support healthcare professionals in managing various clinical and research-based ethical issues within the pediatric population [44].

Communicating the reality about the death and dying process, particularly of and to a child, requires a robust skillset and specific training and continues to be a struggle for many healthcare professionals and parents today [43, 45]. Maximizing the effectiveness of prognostic communication requires "motivation […] and attention to the process of communication, where purpose represents the will and process the ability to communication" [45]. The American Academy of Pediatrics policy "Guidance on Forgoing Life-Sustaining Medical Treatment," updated in 2018, states that despite the prevailing notion that the best interest of the child is usually in favor of sustaining life, "in some circumstances, the balance of benefits and burdens to the child leads to an assessment that forgoing life-sustaining medical treatment is ethically supportable or advisable" [46]. The AAP promotes and advocates for multidisciplinary collaborative decision-making with families and patients in the context of applicable legal frameworks with specific institutional, regional, and national regulations and considerations [46]. The known untoward consequence of poor physician prognostic communication and failure to discuss the active death and dying process with patients and families has been associated with moral distress among various healthcare professionals including pediatric hematology/oncology nursing staff [47, 48]. As a result, experts in both palliative care and medical ethics can help foster a collaborative multidisciplinary approach for a shared decision-making process, improved communication skills, and illuminating the various perspectives of multiple stakeholders involved in the medical care and coordination of a child [43, 44, 46, 47].

Additionally, despite the ethical obligation for physicians to maintain truth-telling as a top priority virtue, some families, based on their cultural or religious values, may request physician nondisclosure of a serious illness to their child in order to limit the child's psychological or emotional distress. This predicament needs to be cautiously managed. Experts advise, "sometimes it is ethically permissible to defer to family values regarding nondisclosure of health information" [49]. To mitigate this conflict, "early setting of expectations and boundaries, as well as ongoing exploration of family and healthcare professional concerns," [49] is warranted. Additionally, given the difficulties and uncertainties with medical prognostication and the need of many families "to do everything possible" and have "more time" with their loved one, a *time-limited therapeutic trial* of medical interventions is sometimes offered. Time-limited trials explicitly set forth a timeframe in which the intervention's success will be judged, with the goal of the intervention determined and agreed upon between the healthcare professional team and the patient or surrogate decision-maker ahead of time [50]. The time-limited trial also provides the healthcare teams and family members involved an opportunity to adjust to the natural realities of the illness. This trial potentially provides a better understanding

of the benefits and harm of continuing the medical interventions for the patient and potential appropriateness of disclosure and may help establish new goals of care for the patient [49, 50].

In the future, we will continue to see the historical moral obligations be tested by everyday nuanced ethical challenges. Currently, shortages of life-saving medications, use and withdrawal of life-sustaining technologies, allocation of limited resources, inequality based on limited access to care, use of complementary medicines and therapies, etc. all raise serious ethical quandaries about fair allocation, risk/benefit ratio, beneficence, the best interest standard, and the collaborative decision-making process and demand sound ethical reasoning and shared consensus frameworks within pediatrics [51, 52]. For instance, in response to chemotherapy drug shortages, experts in the field of pediatric hematology/oncology integrated various ethical models and frameworks (such as justice principle and utilitarianism) for decision-making that explicitly prioritized "maximizing lives rather than life-years saved" for pediatric patients by (1) maximizing efficiency and minimizing waste, (2) identifying stakeholder responsibilities during a drug shortage, and (3) outlining specific allocation considerations [51]. This multi-institution collaborative publication illustrates one systematic ethically conscientious way healthcare professionals can continue to address the ethical challenges at the bedside today. Ethical principles and professional statements guiding the current practice of medicine will always be rooted in historical perspectives, philosophies, and frameworks which are built upon a rich tradition of prioritizing professional obligations to relieve suffering and promote well-being in a fiduciary relationship with the patient. The ongoing challenge for many hospital ethics committees, professional organizations, and social policies is to maintain a balance between offering general guidance and prescriptive recommendations, while respecting the individual professional judgments of healthcare professionals at the bedside and the requests of patients or surrogate decision-makers within the context of generalized ethical, legal, religious, and cultural frameworks. However, the unchanging variable for the pediatrician today, amidst all these challenges, is the intrinsic need to protect the child's rights and act in accord for the child's best interest. Thus, going forward, it is reasonable to expect that the ethical issues specific to pediatrics will remain especially valuable in the advancement, study, and practice of bioethics.

References

1. Yapijakis C. Hippocrates of Kos, the father of clinical medicine, and Asclepiades of Bithynia, the father of molecular medicine. In Vivo. 2009;23(4):507–14.
2. Jones WTE. Hippocrates collected works I. Cambridge Harvard University Press; 1868. Retrieved on March, 25, p. 2008. p. 23–29.
3. Edelstein L. The Hippocratic Oath: text, translation and interpretation. In: Temkin O, Temkin CL, editors. Ancient medicine: selected papers of Ludwig Edelstein. Baltimore: Johns Hopkins University Press; 1967. p. 3–64.

4. Gruenbaum SE, Jotkowitz AB. Content analysis of ethical codes written by medical students compared with other codes of medical ethics. Eur J Intern Med. 2009;20(5):e101–4.
5. Pellegrino ED, Veatch RM. Toward an expanded medical ethics: the Hippocratic ethic revisited. In: Cross cultural perspectives in medical ethics. Boston: Jones and Bartlett; 2000. p. 41–53.
6. Iniesta I. Hippocratic corpus. BMJ. 2011;342:688.
7. Nutton V. What's in an oath? J R Coll Physicians Lond. 1995;29(6):518–24.
8. Downs J. A brief history of ethics. In: Ethics in forensic science. Amsterdam: Academic Press; 2012. p. 1–26.
9. Crisp R (editor/translator). Nicomachean ethics. Cambridge: Cambridge University Press; 2000. https://doi.org/10.1017/CBO9780511802058.
10. Inwood B, Woolf R (editors/transslator). Eudemian ethics, (Cambridge texts in the history of philosophy). Cambridge: Cambridge University Press; 2013. https://doi.org/10.1017/CBO9781139043281.
11. Frede D. Plato's ethics: an overview. In: Zalta EN, editor. The stanford encyclopedia of philosophy (Winter 2017 ed.). URL https://plato.stanford.edu/archives/win2017/entries/plato-ethics/. Accessed: 5 May 2019.
12. White NP. A companion to plato's republic. Indianapolis: Hackett; 1979.
13. Gardiner P. A virtue ethics approach to moral dilemmas in medicine. J Med Ethics. 2003;29:297–302.
14. Pellegrino ED. The virtuous physician, and the ethics of medicine. In: Virtue and medicine. Dordrecht: Springer; 1985. p. 237–55.
15. Jonsen AR. A short history of medical ethics: Oxford University Press; 2000.
16. McCullough LB, Jones JW. Unravelling ethical challenges in surgery. Lancet. 2009;374(9695):1058–9.
17. Mandal J, Ponnambath DK, Parija SC. Utilitarian and deontological ethics in medicine. Trop Parasitol. 2016;6(1):5.
18. Garbutt G, Davies P. Should the practice of medicine be a deontological or utilitarian enterprise? J Med Ethics. 2011;37:267–70.
19. Mill JS, Bentham J. Utilitarianism and other essays. Penguin Classics: London; 1987.
20. Sass HM. Fritz Jahr's 1927 concept of bioethics. Kennedy Inst Ethics J. 2007;17(4):279–95.
21. Ravitsky V, Fiester A, Caplan AL e. The Penn Center guide to bioethics. New York: Springer; 2009. p. 5.
22. Beauchamp TL, Childress JF. Principles of biomedical ethics. 8th ed. New York: Oxford University Press; 2019, Chapters 4, 5, 6, 7.
23. Faden RR, Beauchamp TL. A history and theory of informed consent. New York: Oxford University Press; 1986.
24. US Department of Health and Human Services. The Belmont report. Office for Human Research Protections (OHRP); 1979. Retrieved 14 Apr 2017.
25. Emanuel EJ, Wendler D, Grady C. What makes clinical research ethical? JAMA. 2000;283(20):2701–11.
26. Chervenak F, McCullough L. Glob. libr. women's med., (ISSN: 1756–2228); 2015. https://doi.org/10.3843/GLOWM.10449.
27. Hester DM, Toby S. Ethical issues in pediatrics. In: Guidance for healthcare ethics committees. New York: Cambridge University Press; 2012. p. 114–21.
28. Nelson HL, Nelson JL. The patient in the family: an ethics of medicine and families. New York, NY: Routledge; 2014.
29. McCullough LB, Brothers KB, Chung WK, Joffe S, Koenig BA, Wilfond B, Yu JH. Professionally responsible disclosure of genomic sequencing results in pediatric practice. Pediatrics. 2015;136(4):e974.
30. United Nations. Convention on the rights of the child, Article 12; 1989. Retrieved from: http://www.ohchr.org/EN/ProfessionalInterest/Pages/CRC.aspx.

31. American Academy of Pediatrics, Committee on Bioethics. Informed consent, parental permission, and assent in pediatric practice. Committee on Bioethics, American Academy of Pediatrics. Pediatrics. 1995;95(2):314–7.
32. Engel G. The need for a new medical model: a challenge for biomedicine [Reproduced in Holistic Med. 1989;4:37–53]. Science. 1977;196(4286):129–36.
33. Malek J. What really is in a child's best interest? Toward a more precise picture of the interests of children. J Clin Ethics. 2009;20(2):175–82.
34. Katz AL, Webb SA, American Academy of Pediatrics Committee on Bioethics. Informed consent in decision-making in pediatric practice. Pediatrics. 2016;138(2):e1485.
35. Unguru Y, Coppes MJ, Kamani N. Rethinking pediatric assent: from requirement to ideal. Pediatr Clin N Am. 2008;55(1):211–22.
36. Miller VA, Drotar D, Kodish E. Children's competence for assent and consent: a review of empirical findings. Ethics Behav. 2004;14(3):255–95.
37. Ruhe KM, Wangmo T, Badarau DO, Elger BS, Niggli F. Decision-making capacity of children and adolescents—suggestions for advancing the concept's implementation in pediatric healthcare. Eur J Pediatr. 2015;174(6):775–82.
38. Pretzlaff RK. Should age be a deciding factor in ethical decision-making? Health Care Anal. 2005;13(2):119–28.
39. Committee on Hospital Care, American Academy of Pediatrics. Family-centered care and the pediatrician's role. Pediatrics. 2003;112(3 Pt 1):691.
40. Teel K. The physician's dilemma-a doctor's view: what the law should be. Bayl Law Rev. 1975;27:6.
41. Rabkin MT, Gillerman G, Rice NR. Orders not to resuscitate. N Engl J Med. 1976;295(7):364–6.
42. Burns JP, Truog RD. The DNR order after 40 years. N Engl J Med. 2016;375(6):504.
43. Feudtner C, Nathanson PG. Pediatric palliative care and pediatric medical ethics: opportunities and challenges. Pediatrics. 2014;133(Supplement 1):S1–7.
44. Lantos JD, Saleem S, Raza F, Syltern J, Khoo EJ, Iyengar A, Pais P, Chinnappa J, Lezama-Del PV, Kidszun A. Clinical ethics in pediatrics: an international perspective. J Clin Ethics. 2019;30(1):35–45.
45. Sisk BA, Mack JW. How should we enhance the process and purpose of prognostic communication in oncology? AMA J Ethics. 2018;20(8):757.
46. Weise KL, Okun AL, Carter BS, Christian CW, Committee on Bioethics and Committee on Child Abuse and Neglect. Guidance on forgoing life-sustaining medical treatment. Pediatrics. 2017;140(3):e1905.
47. Rushton CH, Reder E, Hall B, Comello K, Sellers DE, Hutton N. Interdisciplinary interventions to improve pediatric palliative care and reduce health care professional suffering. J Palliat Med. 2006;9(4):922–33.
48. Epstein E, Whitehead P, Prompahakul C, Thacker C, Hamric AB. Enhancing understanding of moral distress: the measure of moral distress for health care professionals. AJOB Empir Bioeth. 2019;10(2):113–24. https://doi.org/10.1080/23294515.2019.1586008.
49. Rosenberg AR, Starks H, Unguru Y, Feudtner C, Diekema D. Truth telling in the setting of cultural differences and incurable pediatric illness: a review. JAMA Pediatr. 2017;171(11):1113–9.
50. Shrime MG, Ferket BS, Scott DJ, Lee J, Barragan-Bradford D, Pollard T, Arabi YM, Al-Dorzi HM, Baron RM, Hunink MM, Celi LA. Time-limited trials of intensive care for critically ill patients with cancer: how long is long enough? JAMA Oncol. 2016;2(1):76–83.
51. Unguru Y, Fernandez CV, Bernhardt B, Berg S, Pyke-Grimm K, Woodman C, Joffe S. An ethical framework for allocating scarce life-saving chemotherapy and supportive care drugs for childhood cancer. J Natl Cancer Inst. 2016;108(6):djv392.
52. Porter AS, Kodish E. The ethics of using complementary medicine in pediatric oncology trials: reconciling challenges. J Law Med Ethics. 2018;46(1):64–71.