Sound ethical reasoning and moral judgment are essential to the work of a physician. Obstetricians make ethically complex decisions on a daily basis. Clinical medical ethics is a discipline that provides a structured approach for identifying, analyzing, and resolving ethical issues in clinical medicine. Obstetricians must become comfortable addressing the ethical issues involved in clinical obstetrics and therefore must have an understanding of the key elements of clinical medical ethics. Balancing the principles of medical ethics can guide clinicians toward solutions to ethical dilemmas encountered in the care of pregnant women. In situations that seem to pit the interests of pregnant women against the interests of their fetuses, clinicians must be prepared to identify the key issues and relevant ethical aspects in cases encountered to find a solution in the mother-fetus dyad. This article is not intended to turn the reader into an expert on medical ethics. The purpose of this article is to review the ethical foundations of clinical practice, recognize the ethical issues obstetricians face every day in caring for patients, and facilitate decision making. This article discusses the relevant ethical principles, identifies unique features of obstetric ethics, examines ethical principles as they apply to the mother and fetus, and thereby, provides a conceptual framework for considering ethical issues and facilitating decision making in clinical obstetrics.

**ETHICAL DIMENSIONS UNIQUE TO OBSTETRICS AND PERINATAL MEDICINE**

Obstetrical ethics can be considered a branch of medical ethics pertaining to the particular aspects and unique ethical issues specific to obstetrics. The obstetrician...
has two interwoven patients whose interests at times may be at odds. There is the uniqueness of pregnant patients and the essential tie between pregnant women and the developing fetuses. There is the vulnerability of patients undergoing various diagnostic, therapeutic, and surgical procedures. They are often under regional or general anesthesia during delivery or surgery, and this aspect of trust in their physician is one of the cornerstones of the doctor-patient relationship in obstetrics. The obstetrician, as in other surgical fields, must be able to develop patient trust rapidly over a short time, often meeting patients only once they are pregnant and without a preexisting or long-standing doctor-patient relationship.

Most ethical issues in obstetrics, emergent and non-emergent, revolve around the maternal-fetal relationship. With information and support, most pregnant women strive to improve their chance of having a healthy baby. There are situations where the interests of the mother do not correspond with fetal interests; therefore, the concept of the maternal-fetal conflict may arise.¹ At the center of the maternal-fetal conflict is the concept of the fetus as a patient and a pregnant woman’s autonomy. The ‘maternal-fetal conflict’ is often not a conflict between the mother and her fetus, but rather a conflict between the woman’s autonomy and the physician’s judgment of what is best for her fetus. The term maternal-fetal conflict implies divergent rather than shared interest of the pregnant woman and her fetus. In the vast majority of cases, the interests of the pregnant woman and fetus actually converge. Obstetrics, maternal-fetal medicine, and neonatology are rapidly evolving with new technologic advances and innovations, with patients often wanting ‘everything done’. With these new advances in treatment, new and unique aspects of obstetric ethics have evolved.

Although obstetricians deal with ethical issues on a daily basis, ethics education in obstetric training is currently inadequate. Professionalism is one of the core competencies as defined by the Accreditation Council for Graduate Medical Education that all residents must demonstrate. Ethics is at the center of professionalism and therefore ethics education is central to the competency. A recent study on ethics education by Grossman and Angelos revealed that over the last 35 years, published articles on ethics education in residency training in obstetrics and gynecology lagged significantly behind internal medicine, pediatrics, family medicine, general surgery, and psychiatry. Obstetrics and gynecology had less than eight such articles. The only field with a lower number of articles on ethics education than obstetrics and gynecology was radiology.² The principle goal of teaching clinical ethics is to improve the quality of patient care in both the process and medical outcome. There are two main reasons for teaching medical ethics. First, it provides students with essential and practical knowledge on issues that frequently arise in patient care and are necessary for appropriate medical decision making. These key issues include respect for autonomy; informed consent; truthful communication; end-of-life issues; and particular to obstetrics, beginning-of-life issues. Second, the key principles of medical ethics are essential aspects of the doctor-patient relationship that continue to be centrally important to medicine, delivering health care and improving cost effectiveness and quality of care (Mark Siegler, MD personal communication, Jan 2010). It is time to recognize the importance of ethics in obstetrics and gynecology and to take time to teach it.

ETHICAL FRAMEWORK: THE FOUR BASIC PRINCIPLES

There are four basic principles regarded as the cornerstones of medical ethics to guide medical decision making: beneficence, nonmaleficence, respect for autonomy, and justice.³ Beneficence requires acting for the benefit of others and obligates the physician to seek the greater balance of clinical good over harm for each patient.
Nonmaleficence is the duty to first do no harm, *primum non nocere*. The principle of justice concerns the fair distribution of health resources and the decision of who gets what treatment (fairness and equality). Respect for autonomy is central to clinical medicine. Autonomy is the “right to choose and follow one’s own plan of life and action.” It is the “personal rule of the self that is free both from controlling interferences from others and from limitations that prevent meaningful choice, such as inadequate understanding.” Respect for autonomy requires the physician to respect the patient’s values and beliefs and the patient’s decisions made in the informed consent process. Therefore, essential to patient autonomy is the process of informed consent.

Informed consent is the “willing acceptance of a medical intervention by a patient who has decisional capacity (the ability to make decisions) after disclosure by the physician of the nature of the intervention with its risks and benefits, as well as the alternatives with their risks and benefits.” It is a process of communication and negotiation between patient and physician that helps patients make a decision that is right for them. It is not signing a consent form; the signing of a consent form merely documents the informed consent process. A consent form may be legally necessary but it is not ethically or legally sufficient unless the informed consent process has occurred. Informed consent is a cornerstone of the ethical practice of medicine. It is integral to the principle of respect for autonomy. It requires communication and time, and patients should be given the full range of options.

There are three important elements of informed consent: (1) disclosure, which is communication that requires risk and benefit disclosure to satisfy what a reasonable person in the patient’s situation would want to know; (2) comprehension; and (3) free consent, which involves freedom of choice to voluntarily consent or decide not to consent. At the heart of medical ethics is the dynamic process of communication between doctor and patient. Communication should be truthful and based on facts. How much do patients really want to know? Should a physician tell the patient how poor the prognosis is and does telling eliminate hope? Should they be given detailed information and statistics if the numbers are bleak? Patients want necessary medical information and honest assessments of what to expect with clear acknowledgment of uncertainties. Recent studies demonstrate the limitations of obstetric estimation of neonatal outcome in extremely premature neonates. Predicting outcomes, survival, and morbidity are often uncertain, such as in cases of medical complications of pregnancy, extreme prematurity, certain fetal anomalies, preterm premature rupture of membranes, intrauterine growth restriction (IUGR), and intrauterine infection. Honesty is more important than protecting hope and not dwelling on negativity. Sir William Osler described clinical medicine as “a science of uncertainty and an art of probability.” The practice of medicine is not an exact science and part of the disclosure is to be honest about medical uncertainty. Medical knowledge has limitations and medical judgment is fallible. Truthful and open communication requires acknowledging uncertainty when it exists. It is the duty of the physician to teach the patient about her condition, including treatment risks, benefits and alternatives, the range of possible outcomes, including the possibility of undesired outcomes, and answer questions to ensure patients understand their medical condition and all the options. Only then can the patient make a meaningful decision to give her informed consent or decide not to consent. It is important to the communication process to keep it dynamic, revisit decisions, and allow for reconsideration, on the part of both patients and obstetricians.

According to Beauchamp and Childress, none of the four principles should be hierarchically ordered above the others. These four ethical principles are *prima facie*, binding, but not absolute or exceptionless. The resolution of an ethical issue should
be attained by balancing principles through compromise and negotiation. Balancing these principles provides a useful framework for understanding and resolving conflicts.

Reality mandates a practical paradigm for ethics case analysis to identify what is at issue and the best course of action. The commonly used method is the application and balancing of the ethical principles described earlier. Another method is the “4 boxes” approach developed by Jonsen, Siegler, and Winslade as a structured approach to ethics case analysis to work through difficult cases.\textsuperscript{6,10} Ethical dilemmas are framed as a case workup that takes into account four topics that are intrinsic to every clinical encounter: medical indications, patient preferences, quality of life, and contextual features. Using this approach, clinicians are able to identify the relevant issues and the best course of action. However, the “4 boxes” framework fails to take account of the uniqueness of pregnant patients, which would require subdividing two boxes (medical indications and quality of life) to consider fetal and maternal interests. For more on this method, the reader should refer to \textit{Clinical Ethics}.\textsuperscript{6,10}

In treating actual patients and applying the principles elaborated by Beauchamp and Childress, Mahowald has proposed the following maxims or prioritizing guidelines on how to apply the principles in specific ethical conflicts\textsuperscript{11}:

1. The interests of the patient count most (interests = autonomy + beneficence + nonmaleficence).
2. Respect for patient autonomy trumps beneficence and nonmaleficence.
3. The interests of others may outweigh respect for patient autonomy.
4. If harms and benefits are proportionate, nonmaleficence outweighs beneficence.

Maxim 3 refers to cases where the interests of the family or physicians may be more compelling. For example, if a patient requests treatment that is not medically indicated, the physician is not obligated to provide it. Maxim 4 takes into account that exceptions should consider benefits lost through the avoidance of harm. For example, whether an obstetrician should perform a cesarean section for the benefit of the fetus depends not only on the expected benefit to the fetus but also on the amount of risk the surgery involves for the pregnant woman.

**THE CONCEPT OF THE FETUS AS A PATIENT**

The concept of the fetus as a patient is an essential concept in perinatal medicine. Developments in fetal diagnosis and management to optimize fetal outcomes are now widely accepted and have promoted this concept. Chervenak and McCullough emphasize the two principles of beneficence and respect for autonomy as essential for understanding the ethical concept of the fetus as a patient.\textsuperscript{12–14} According to Chervenak and McCullough, the fetus is a patient “when it is presented to the physician and there exist medical interventions, whether diagnostic or therapeutic, that are reliably expected to result in a greater balance of clinical good over harm for the fetus and the child it is expected to become.”\textsuperscript{15} The previable fetus is not a patient independent of the pregnant woman’s autonomy. It is only a patient as a function of the pregnant woman’s autonomy. The pregnant woman is free to withhold, confer, or withdraw the patient status from her previable fetus according to her values and beliefs. In contrast, a viable fetus is a patient independent of the pregnant woman’s autonomy to confer this status. For the purpose of this discussion, viability occurs at approximately 23 weeks gestation and applies to the ability of the fetus to live \textit{ex utero}, with technologic support if needed, and subsequently become a child.\textsuperscript{14,15} Although the fetus can be a patient, the term ‘fetal rights’ has no meaning and no application in obstetrical ethics.\textsuperscript{12}
The principle of beneficence obligates the obstetrician to protect and promote the pregnant woman’s health-related interests. The principle of respect for autonomy obligates the physician to respect the woman’s right to choose what happens to her. The woman’s autonomous decisions are based on her own set of values and preferences. The fetus, however, “does not possess its own values and beliefs or a perspective on its interests; therefore, there is no autonomy-based obligation to the fetus.”\textsuperscript{12} There is, however, a beneficence-based obligation to the fetus. Chervenak and McCullough have identified principle-based obligations to the pregnant woman and the fetus. The physician has maternal autonomy-based and maternal beneficence-based obligations as well as fetal beneficence-based obligations. The pregnant woman’s autonomy has priority. The physician is equally obligated to promote the medical interests of the mother and fetus; however, if the medical interest of the woman and fetus are at odds (eg, severe preeclampsia at a gestational age of periviable or extreme prematurity) treatment of the one most at risk should be given priority.\textsuperscript{16} However, if maternal autonomy (part of her interests) is at odds with fetal interests, then her interests, which include her autonomy, still trump fetal interests even if the fetus is at increased risk. The most common ethical issues that arise in managing the medical complications of pregnancy require the physician to navigate these principles and obligations. The clinical consequences of the concept of the fetus as a patient are that the obstetrician must balance the autonomy-based and beneficence-based obligations to the pregnant woman with the beneficence-based obligations to the fetus.

**MATERNAL DECISION MAKING AND THE MATERNAL FETAL CONFLICT**

**Shared Decision Making**

In the past four decades medical ethics and decision making has undergone a rapid metamorphosis from beneficence-focused decision making to autonomy-focused decision making. Historically, medical decision making was based on paternalism, in which the physician determined what was in the patient’s best interest. This shift from physician paternalism to a paradigm of shared decision making evolved over the last four decades, and medical decisions are now based on patient autonomy, and respect for the patient’s wishes even when they conflict with doctor’s recommendations. The information, alternatives, and options are presented to the patient and the patient makes the ultimate decision.

The current model of shared decision making assumes a physician and patient work together as partners and have the same goals. This concept of a partnership is central to the doctor-patient relationship and is an accurate description of the vast majority of doctor-patient encounters. Potential barriers to successful shared decision making include failure to communicate, fear or pain, lack of trust, lack of shared goals, and decisional incapacity. Shared decision making is the ideal. It is a collaboration and negotiation in which physicians share medical knowledge and opinions and patients share goals, values, and preferences. The patient is the ultimate decision maker, with doctor serving as critical interpreter of information and reliable guide toward reasonable decisions. It is an exchange with the patient making the final decision.

Pregnant patients are very capable of making complex medical decisions when provided relevant medical information and guidance by physicians. With biomedical and technological advances and their application in perinatal medicine, there are new and expanding ethical challenges for obstetricians and patients. The first-trimester risk assessment currently offered to all pregnant women has demonstrated that pregnant women are capable of making complex and sophisticated decisions about risk-assessment information and subsequent decisions about invasive testing and
Pregnant women, given information and an appropriate informed consent process, would be expected to make similarly complex and sophisticated decisions about assessment of the fetus and other complex decisions during pregnancy.\textsuperscript{18}

**The Maternal-Fetal Conflict**

*Case one: A 39-year-old G1P0 at 30 weeks gestation with chronic hypertension, diabetes, end stage renal disease, and completely intact decisional capacity, is likely to die within 2 weeks from renal failure. She refuses life-saving dialysis or delivery at this time for what she repeatedly states are personal reasons. The patient has a blood pressure of 162/94, ultrasound estimated fetal weight less than fifth percentile, and an amniotic fluid index of 4.2 cm with elevated umbilical artery Doppler values.*

This is a case of treatment refusal of potentially life-sustaining treatment, for the mother and fetus, in a patient with decisional capacity. This case raises ethical concerns for respect for autonomy, informed consent, communication, the maternal-fetal conflict, and the physician’s obligations to the mother and the fetus. At issue is the maternal-fetal conflict that arises when a pregnant woman rejects medical advice or interventions necessary to avert fetal complications or death to herself or her fetus. That is, the conflict is between the physician’s recommendation and the pregnant woman’s autonomous decision to reject it. Does a clinician’s obligation of beneficence to the pregnant woman and her fetus outweigh the obligation to respect patient autonomy? Following the ethical principle of respect for autonomy, the pregnant patient’s decisions should be respected as long as she has decisional capacity to make informed medical decisions. The principles direct us to respect autonomy, but in this case it is difficult to do because her decision seems unfounded and harmful to herself and her fetus when there is good potential for survival for both. Also at issue in this case is beneficence and nonmaleficence. When it is treatable and the harm of not treating is great, the medical team feels uncomfortable. Is it ethical to examine her reasons for refusing even though she says they are personal? Yes, patient autonomy and informed consent are integral to patient choice. Therefore, it is essential to inquire about the reasons for her decision and ensure that her condition and range of options have been clearly explained, and that she comprehends these options and the risks and consequences to herself and her fetus. This inquiry is all part of respect for autonomy, the informed consent process, and shared decision making. In the context of this case, maternal autonomy trumps her medical interests and those of the fetus, despite how uncomfortable this makes the medical team.

Legal cases and decisions have revolved around refusal of treatment and the maternal-fetal conflict. In 1994, Mrs. Doe and her husband had religious objections to delivery by cesarean section that her doctors thought medically indicated because of IUGR and placental insufficiency. She was at 37-weeks gestation and clearly had decisional capacity. Doctors at St. Joseph Hospital in Chicago petitioned the Illinois courts to take wardship of the fetus to allow cesarean section. The appellate courts denied the petition, and the Illinois State Supreme Court denied review. She transferred to another hospital where the doctors agreed to respect this patient’s decision regarding mode of delivery. Her pregnancy continued and 2 weeks later she had a vaginal delivery of a healthy baby boy. The 1994 court ruling in this case rejected court-ordered interventions in pregnancy stating that “The woman’s decision, not the fetus’s interest is the only dispositive factor. A woman’s right to refuse invasive medical treatment, derived from her rights to privacy, bodily integrity and religious liberty is not diminished during pregnancy…. The potential impact upon the fetus is not legally relevant.”\textsuperscript{19} In this case and others, the courts now uphold maternal autonomy in the maternal-fetal conflict. The American College of Obstetrics and
Gynecology (ACOG) strongly opposes any coercive or legal approaches to the pregnant woman. When a pregnant woman’s health condition is deemed hazardous to the fetus, or when the fetal condition requires some type of medical intervention, a ‘maternal-fetal conflict’ may arise. This conflict is usually between the pregnant woman’s autonomous decisions, as determine by her, and the best interests of the fetus, as determined by her physician. The state of pregnancy does not deprive a woman of her right to decide what should happen to her body. Based on legal cases and precedent, the law recognizes the rights of all adults, pregnant or not, to informed consent and bodily integrity, regardless of the impact of the person’s decision on others. She has the right to refuse any lifestyle modification or medical intervention for the sake of the fetus. On the other hand, she also has a duty to promote the fetus’ best interests. That is, mother and physician have principle-based obligations to the pregnant patient and fetus. One must consider the best interests of the pregnant woman, which are both maternal autonomy-based obligations and maternal beneficence-based obligations of the physician. At the same time, one must consider the best interests of the fetus, which are fetal beneficence-based obligations of the pregnant woman and the fetal beneficence-based obligations of the physician. These types of maternal-fetal conflicts hinge on the pregnant woman’s autonomy, the physician’s autonomy, the physician’s duty of beneficence to the pregnant woman and her fetus, as well as the pregnant woman’s duty of beneficence to her fetus. For the pregnant woman, her duty of beneficence to the fetus may override her right to autonomy; however, the resolution of this conflict must be her choice. In the maternal-fetal conflict, the pregnant woman’s autonomy takes center stage. In the context of Case one, if decisional capacity is present, ethics demands respecting maternal autonomy and choices, even ‘bad’ choices. A pregnant woman’s autonomy and informed refusal should be respected.

SURROGATE DECISION MAKING

Case two: AB, a 28-year-old G2P1 at 20-weeks gestation with no prenatal care was brought into the emergency department (ED) by her boyfriend after “saying strange things and walking funny” for several days. The patient was confused and disoriented to person, place, and time, confabulated when questions were posed to her and exhibited new onset neurologic findings on physical examination. This patient’s history was significant for several prior visits to multiple emergency departments for nausea and vomiting during which she reported a 30-pound weight loss since being pregnant, had a normal mental status before this admission, and a history of hyperemesis in her prior pregnancy that resolved by 12 weeks. A diagnostic workup revealed findings consistent with Wernicke’s encephalopathy secondary to hyperemesis gravidarum, and that the patient did not have decisional capacity. The patient did not regain decisional capacity after inpatient treatment and the pregnancy continued. Who should make the medical decisions on this patient’s behalf because she now clearly lacks decisional capacity?

Case three: HN is a 30-year-old G2P1 at 25-weeks gestation in previously good health with an uncomplicated pregnancy who was admitted from the ED because of worsening shortness of breath, cough, fever, and malaise. A chest radiograph revealed bilateral nodular infiltrates. Within 24 hours of admission she developed pneumonia and subsequent respiratory failure and acute respiratory distress syndrome requiring mechanical ventilation. Over the next several days, laboratory tests confirmed H1N1 influenza, her respiratory status worsened, and the family and boyfriend were informed of her rapidly worsening condition, possible maternal and fetal outcomes including
death, and the urgent medical decisions that needed to be made for her and her fetus, including possible delivery.

These are two cases that illustrate the need for surrogate decision making on behalf of a pregnant patient. These cases raise issues of decisional capacity, surrogate decision making, autonomy, beneficence of mother and fetus, and beginning and end-of-life issues. Who should now make the medical decisions on this patient’s behalf? When a patient is mentally incapacitated and lacks decisional capacity, medical decisions must be made by a surrogate decision maker, an authorized person acting on the patient’s behalf. Decisional capacity is the ability to comprehend the nature and consequences of a medical decision and to reach and communicate an informed decision. A surrogate decision maker is an adult individual who has decisional capacity, is available, and is willing to make medical decisions on behalf of a patient who lacks decisional capacity.

In case two and three, the two most pressing relevant issues are who should now make the medical decisions on the patient’s behalf and on what information should they base those decisions. Traditionally, family members have been considered the natural surrogates. In recent years, many states have enacted legislative statutes that give specific authority to family members and rank them in priority. The durable power of attorney for health care statutes provides for a designated surrogate decision maker, and this person would supersede any other party, including immediate family members. The usual order of priority for determining who is appointed the surrogate would be

1. Patient’s legally appointed guardian or durable power of attorney for health care
designated surrogate, if there is one
2. Patient’s spouse
3. Any adult (18 years of age or older) son or daughter of the patient
4. Either parent of the patient
5. Adult brother or sister of the patient
6. Any adult grandchild of the patient
7. An adult close friend of the patient.

This priority list differs in various states and in some states this order is codified. The surrogate decision makers, as identified by the attending physician, are then authorized to make medical decisions for patients who lack decisional capacity, including decisions regarding whether to forgo life-sustaining treatment on behalf of patients without court involvement. In the case of the partner of the pregnant woman as a surrogate, it would depend on whether he is the spouse or boyfriend. If he is not the pregnant woman’s spouse, that would put him in the close-friend category.

Surrogate decision making on behalf of a pregnant patient is difficult and should strive to reach a decision that the patient would make if she had decisional capacity. The decisions of surrogates should be guided by the standards. First, when the patient’s preferences are known, surrogates should use knowledge of the patient’s preferences to make medical decisions on the patient’s behalf. Second, when the patient’s preferences are not known, the surrogate’s judgment must promote the best interests of the patient. When a surrogate relies on the patient’s known preferences, it is called a “substituted judgment” standard. This substituted judgment standard is used when the patient previously expressed their preferences explicitly, either in writing or verbally, or where the surrogate can reasonably infer the patient’s preferences based on past statements or actions. The goal is for the surrogate decision maker to use knowledge of these preferences in making medical decisions for patients. Courts typically apply this substituted judgment standard in cases where the patients’
preferences are known. When the patient has not specifically stated what she would want in the situation, the surrogate should use knowledge of the patient’s values and beliefs to make decisions for them. The goal of surrogate decision making is to reach a decision that the patient would reach. When asking the surrogate what he or she wants done, the question is not “what would you want?”, but rather “what would the patient want?” Obviously this situation becomes even more complex in the surrogate decision making on behalf of pregnant patients with the additional considerations for the interests of the fetus.

In life-threatening obstetric emergencies, patients are often unable to give informed consent or express their preferences because they are in shock, hemodynamically unstable, or unconscious. In these life-threatening emergency situations, no surrogate may be immediately available and the physician may presume that the patients would give consent if they were able to do so, because they would prefer life over death. This is called “implied consent,” which is really the physician presuming consent. The physician should presume consent when emergency action is necessary to preserve the patient’s life. Beneficence is the ethical principle justifying emergency treatment of incapacitated patients.

RETHINKING ETHICAL CONSIDERATIONS IN SCREENING AND PREDICTION OF PREECLAMPSIA

Preeclampsia (PE), a hypertensive complication in pregnancy with multisystem involvement, affects 3% to 5% of pregnant women and is associated with serious morbidity and mortality for mother and fetus. It is both a leading cause of maternal mortality, with more than 60,000 maternal deaths per year worldwide, and of premature birth. As of early 2010, the only effective treatment is delivery of the placenta. The pathogenesis of preeclampsia has been mysterious and elusive, though this past decade has witnessed significant advances in our understanding of the pathophysiology of preeclampsia. As discussed elsewhere in this issue, Karumanchi and colleagues have demonstrated that two antiangiogenic factors, soluble fms-like tyrosine kinase 1 and soluble endoglin, are overproduced by the placenta in women who develop preeclampsia. These proteins enter the maternal circulation, correlate with severity of disease, and appear responsible for several preeclampsia phenotypes. More importantly, their levels in the maternal circulation rise weeks to months before overt symptoms and disease, and thus they have become the object of study as biomarkers that screen for or predict preeclampsia.

Would it be beneficial to the mother and fetus to predict preeclampsia? Some investigators propose that reliable prediction of preeclampsia would allow closer prenatal monitoring, including referral to high-risk clinics; more aggressive intervention, such as restricting activity; and perhaps initiation of antihypertensive therapy and steroids to enhance fetal lung maturity when decisions of delivery to end the pregnancy are being considered. Reliable prediction would also permit preventive and treatment regimens that are currently unavailable. Although there is no definitive treatment of preeclampsia, exciting possibilities are under investigation. A reliable biomarker to predict preeclampsia would certainly be of merit in exploring the value of new therapeutic approaches and their use when and if developed. Although some reports are exciting and promising, no single screening test has yet proven accurate enough to meet the requirements of acceptable positive and negative likelihood ratios that would permit their use in clinical practice. Focus is therefore currently on combining tests for better prediction.
Because there is no known treatment for preeclampsia other than delivery of the placenta, the prediction of preeclampsia using angiogenic factors raises new ethical issues. To screen for a disease, the disease should have (1) an understood etiology, (2) early detection and treatment should lead to improvement of the condition, (3) early detection should not create undue anxiety, and (4) screening method should be acceptable to patients. A screening test should have use for all pregnant women; be rapid; noninvasive; inexpensive; easy to perform in early gestation; and have high sensitivity and high positive and low negative likelihood ratios, respectively, to reduce anxiety and prevent unnecessary interventions. In a recent study of first trimester screening of PE, Poon and colleagues evaluated 7797 women with singleton pregnancies during weeks 11 to 13, 157 developed preeclampsia, 34 before 34-weeks gestation. Screening by history alone would identify only 30% of cases destined to develop early PE. A multiple marker algorithm test was used to predict patients that developed early PE with resultant sensitivity of the prediction for early PE of 94.1% and specificity of 94.3%. The likelihood ratio for a positive test was 16.5 and for a negative test was 0.06, easily fulfilling the criteria of the World Health Organization for a clinical prediction test. These are remarkably good results. However, prospective observational studies are required to assess the effectiveness of early prediction and perform cost-benefit analyses. Also, the mortality and morbidity of PE is far greater in developing nations where these tests are not readily available and the costs appear prohibitive.

A screening test for the first trimester prediction of early preeclampsia raises several ethical issues. Although it may now be possible to identify women at risk for early disease, since there is currently no definitive prevention or treatment of PE, how does early detection improve outcomes or minimize maternal and fetal complications of early PE?

Case four: EH, a 38-year-old G2P0100 currently at 9-weeks gestation and with a history of severe preeclampsia with HELLP in her previous pregnancy necessitating delivery at 26 weeks, then suffered a cerebrovascular accident, was intubated in the medical intensive care unit for 4 days and her infant expired from complications of extreme prematurity. She now requests first-trimester prediction tests for preeclampsia stating that although she very much desires a child, she does not want to continue this pregnancy if she is going to have early PE again along with all its complications.

If first trimester screening for PE becomes available in the United States, would it be useful to offer it to all pregnant patients, only to patients with a history of early or severe PE, or not offer it all because currently PE has no prevention or treatment? Case four illustrates, that although the intended purpose of first-trimester screening for PE is to determine a population to be referred for high-risk care and improve pregnancy outcomes, some women might use it in decisions to terminate the pregnancy, creating additional ethical dilemmas. Should she be offered first-trimester screening because of her history of early PE? The real dilemma in this case is that women with histories defining high risk are not in need of a screening test as they would be referred automatically by history. However, because history alone is not that reliable, it would seem that universal screening may be useful. Other ethical issues raised include patient autonomy, informed consent, disclosure, and innovation. It is also misleading to suggest that a new screening test for the prediction of PE is an improvement when there is no evidence that it improves outcomes. If it were available, the obstetrician should inform her that this is a new and innovative technology with no current evidence to show the use of the test results in better care and outcomes than current management. There are many ethical considerations in this new forefront of developing a predictive test for PE.
There is a general assumption that knowledge is good. With regards to a screening test for preeclampsia, it would also be difficult for the obstetrician to counsel patients for a condition that cannot be prevented. If the screening test could predict the likelihood that the patient will get the disease, what would the patient and obstetrician do with that information? One must evaluate why knowing is valuable when assessing the ethical considerations and implications of acquiring knowledge about a disease in pregnancy from a screening test.

**MEDICAL FUTILITY**

Futility often comes up in the management of medical complications of pregnancy for mother and fetus, especially surrounding interventions for the fetus, extreme prematurity, fetal anomalies, and neonatal treatment. Patients often request physicians to “do everything” for the baby regardless of risks for themselves or the ability to achieve the desired goal. Futility is included briefly here to warn against the use of the term. The meaning of this term and its use in clinical medicine has been ambiguous and hotly debated. Medical futility has been the topic of many articles in the literature and debate continues. It is a moving target that is subjective, not objective. And although much of the literature is on futility in end-of-life decision making, obstetricians deal with beginning-of-life ethical decision making with inherent uniqueness and uncertainties. Lantos and colleagues, elegantly described the complexities of the illusion of futility and the obligations of physicians not to declare a situation futile and abandon one’s patient. Helft and colleagues, eloquently discuss the rise and fall of the futility movement and warn against using futility to swing the pendulum of decision making power back toward physicians. “Everything done” is often a misleading request or offer. When patients request “do everything” they usually mean do everything that is medically indicated. Physicians should discuss the patient’s status and explore their goals and then the interventions that are medically indicated. The ACOG has cautioned against defining medical interventions as futile. Invoking the term futility breaks down communication and patient care and should be avoided. Better to describe a treatment as medically or surgically inappropriate or not beneficial in meeting the desired goals. When there is a futility conflict regarding treatment options, the values of the patient and family and the default position of maintaining life ordinarily take priority. Doctors recognize situations in which interventions will not achieve the desired goal, and this should initiate the difficult task of discussing goals and realistic expectations with patients and explaining why it is believed further treatment will not attain the desired result. There is growing consensus that the use of the term medical futility may itself be futile.

**SUMMARY**

Balancing ethical principles in clinical practice is often challenging. Obstetrics is further confounded by the integrally intertwined maternal-fetal dyad, making it an especially complex discipline. This article presents an overview of the salient ethical principles relevant to issues encountered in obstetrics that can help clinicians simultaneously consider the interests of the pregnant patient and her fetus. Decisions in obstetrics should be guided by balancing the principles of beneficence, nonmaleficence, and respect for autonomy, which are the cornerstones of medical ethics, along with concepts presented here, including informed consent, truth telling, shared decision making, the maternal-fetal conflict, surrogate decision making, and the fetus as a patient. These guidelines provide an ethical framework for identifying, analyzing,
and resolving the complex ethical situations that arise in day-to-day clinical practice and promotes sound ethical judgment and medical decision making. The obstetrician who is familiar with the concepts of medical ethics will be able to apply these concepts, principles, and case precedents to ethical dilemmas in a structured approach to identify what is at issue and decide the best course of action to resolve real-life cases.

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Ethical Issues in Obstetrics 357