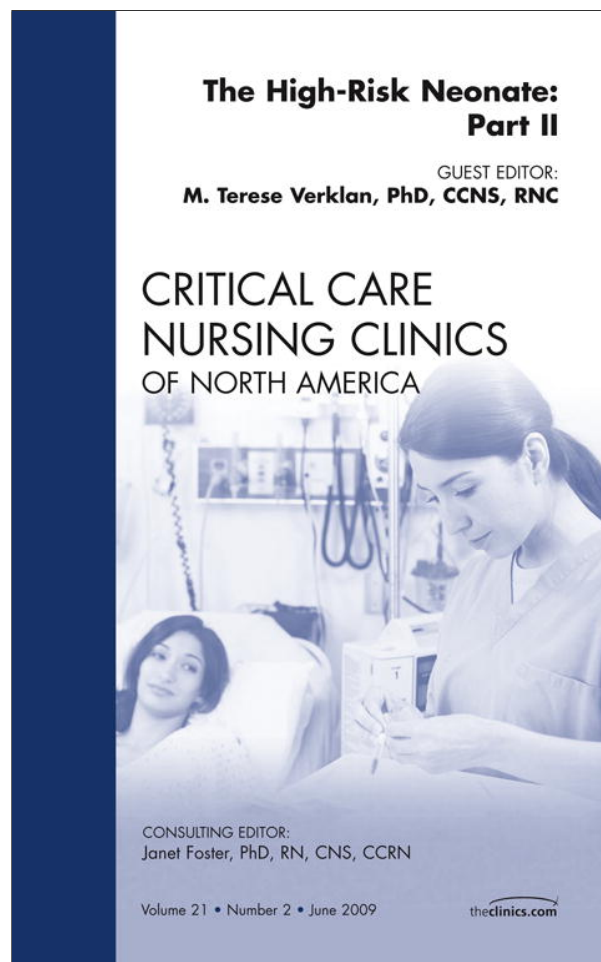


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# When the Fetus is Alive but the Mother is Not: Critical Care Somatic Support as an Accepted Model of Care in the Twenty-First Century?

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## KEYWORDS

- Brain death • Pregnant • Somatic support
- Post-mortem cesarean section • Death with dignity

Advances in technology continue to create both opportunities and dilemmas in maternal/child nursing. The use of ventilator support, circulatory management, and artificial nutrition and hydration normally are used temporarily to allow a critically ill mother or infant to recover. The critical care nurse is able to manage artificially activities normally regulated by the healthy brain. If the brain does not recover and is deemed to be dead, technological therapeutics still can maintain the somatic activities. The debate as to whether any brain-dead person's body should be maintained to allow organ harvest has concluded in general acceptance of the practice, often allowing a few hours or days of life support while donation recipients are located. When tragedy strikes a pregnant woman, ending in her brain death, and she is used as a "harvest organ" for the developing fetus, the situation becomes more complex. This article describes the dilemma in which critical care and maternal/child nurses question whether a woman should be maintained on life support for periods up to 5 months or longer. Nurses are asking for guidance in understanding whether they should be providing life-extending therapeutics that may allow fetal development and birth from a mother who has died. Cases involving this ethical dilemma are increasing with increasing knowledge about how to maintain a body somatically after death.

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## TERMS

In this article, the following definitions are used:

**Pregnant woman:** a woman who is known or not known to be pregnant with a live fetus at the time of a life-limiting event

**Brain-dead:** the cessation of activity of the brain resulting from cerebral neurologic catastrophe as measured by (1) neuroimaging evidence, (2) exclusion of a confounding medical condition, (3) absence of drug intoxication, and (4) core temperature higher than 32°C and evidenced by coma, the absence of brain-stem reflexes, and apnea<sup>1</sup>

**Brain-dead pregnant woman (BDPW):** a pregnant woman who has been determined to be brain dead. (Other terms used to describe the pregnant brain-dead woman in the literature include postmortem or perimortem pregnancy, cadaveric pregnancy, maternal organism, and posthumous motherhood. Although there is additional literature that describes the pregnant woman in a persistent vegetative state and the cognitively unaware pregnant woman, this article discusses only cases involving a BDPW. It has been estimated that 1060 pregnant women suffer brain death annually worldwide.)<sup>2</sup>

**Somatic support:** the physiologic support of the body to maintain heartbeat and respiration

## STATISTICS

Worldwide, there are approximately 22 published reports of BDPW who were maintained on technological life support to allow fetal development. These reports come from Brazil,<sup>2</sup> Germany,<sup>3,4</sup> Ireland,<sup>5,6</sup> New Zealand,<sup>7</sup> France,<sup>8</sup> Finland,<sup>9</sup> Korea,<sup>10</sup> Spain,<sup>11</sup> and the United States.<sup>12–21</sup> Causes of the brain death found in the literature included stroke, ruptured arterial-venous malformation, closed head injury, meningitis, intercranial mass lesion, melanoma, motor vehicle accident, firearm accident, and cocaine abuse. In all but two cases, the fetus was brought to a state of viability and lived after birth. In two cases,<sup>3,11</sup> the maternal pathophysiology was too extensive for the BDPW to be maintained on life support, and the fetus miscarried. Vives and colleagues<sup>11</sup> from Spain stated that they published their unsuccessful case study to counteract the many published reports that they believed were biased in favor of those fetuses that lived.

## DECISION MAKING

When a pregnant woman seems to be dying, every effort, of course, is made to save her life. The use of cardiopulmonary resuscitation, uterus emptying, and crash cesarean section as resuscitation has been discussed elsewhere.<sup>22</sup> When the woman cannot be saved and is deemed to be brain dead, Mallampalli and Guy<sup>16</sup> stated that one of three choices must be made: (1) to attempt to immediately deliver the fetus dependent upon the level of viability; (2) to continue full support of the woman's body to allow the fetus to mature; or (3) to discontinue mechanical support and allow the woman who has died to have technologies ended; the fetus will expire also.

The earliest gestational age at which fetal support in a BDPW was attempted was 13 weeks' gestation;<sup>3</sup> this fetus was miscarried shortly after support was attempted. Suddaby and colleagues<sup>20</sup> report a live birth with support beginning at 15 weeks' and continuing to 32 weeks' gestation. Others report extending somatic support for BDPW

ranging from 16 to 36 weeks' gestation and achieving live birth outcomes. The longest sustained BDPW found in the literature occurred in 1989; Bernstein and colleagues<sup>12</sup> maintained this woman for 107 days after diagnosis of brain death at 15 weeks' gestation.

### MEDICAL AND NURSING CARE NEEDS

The care needed to support a BDPW somatically is similar to that needed for any person maintained on life support with the additional focus of ensuring adequate blood flow through the placenta. Before making a decision to continue the pregnancy, one would assess whether the fetus has a chance for healthy survival and whether additional family members desiring to raise the fetus/newborn exist. Feldman and colleagues<sup>14</sup> recommend ruling out any chromosomal abnormalities, neural tube defects, or congenital fetal anomalies.

This care would need to be undertaken in a hospital with high-level ICUs to sustain the woman and the neonate, if born, and well-trained antepartum, postpartum, and neonatal staff members. Somatic support of the woman would take place in an ICU with full capabilities for ventilation and resuscitation, access to an operating room, and a neonatal ICU. **Table 1** summarizes the somatic support necessary as delineated by Mallampalli and Guy,<sup>16</sup> Mallampalli, Powner, and Gardner,<sup>17</sup> and Powner and Bernstein.<sup>18</sup> In addition to physiologic support, Milliez and Cayol<sup>8</sup> discuss the need for dignity and compassion. **Table 2** describes ongoing support for the developing fetus.

### ETHICAL DELIBERATIONS

The ethical ramifications of this situation are vast. These questions relate to the woman, the fetus, the family, and the nursing staff. The ethical questions involve basic definitions of what is life and what is death and who is alive and who is dead. Ethical questions place Kant's admonition not to use a person as a means to an end against the dictum of Mill's utilitarianism dictum to maximize happiness for the most people.

#### *Ethical Issues Related to the Mother*

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Among the ethical questions related to the mother are

- Should the BDPW be treated with life-extending technology as if alive?
- Is it ethical to provide treatment to her body without consent?
- Does attending prenatal care visits constitute the acceptance of treatment on behalf of a fetus?
- If she had written an advance directive that asked for "no heroics," would this directive be overridden?
- Does filling out a card for organ donation constitute acceptance of life-extending therapies?
- Can keeping the fetus alive be likened to organ donation?
- Who is the appropriate surrogate decision maker for the BDPW?
- What if there is conflict about the decision?

Sperling,<sup>23</sup> in a 50-page legal and ethical brief, attempted to answer these questions. He reported complications, contradictions, and complexities in the ethics and the law. The authors suggest these questions be answered on a case-by-case basis, with inclusion of the hospital ethics committee.

<b>Table 1 Needs of the woman's body</b>	
Homeostasis	Intravenous fluids, crystalloids and colloids Central lines Maintenance of pH regulation
Blood pressure maintenance	Inotropics Vasopressors with caution
Nutrition <sup>a</sup>	Nitrogen and fats by enteral or parental administration Albumin Vitamins, folic acid, and trace elements Iron and iodine Daily weights, for attempted weight gain of 25–35 pounds
Positioning and skin	Left lateral Frequent turning and skin care Special mattress Heel and elbow protectors Prophylactic heparin
Suppression of diabetes insipidus	Desmopressin Salt regulation
Endocrine replacement	Thyroid hormone Corticosteroids Insulin for euglycemia
Respirations	Mechanical ventilation, PaCO <sub>2</sub> 30–35 PaO <sub>2</sub> 105
Temperature regulation	Warming blankets as needed for hypothermia Prevention of hyperthermia
Infection protection	Antibiotics Frequent cultures for gram-negative, gram-positive, and fungal pathogens Strict infection control
Antibody suppression if Rh negative	Rhogam
Control of uterine contractions	Tocolytics
Organ donation	Contact with United Network for Organ Sharing and Transplantation ( <a href="http://www.unos.com">www.unos.com</a> ) if woman was designated donor or family wishes to donate other organs
Family issues	Weekly progress reports and family conferences. Pastoral care, social support, religious service (as culturally appropriate) at time of somatic support removal.

<sup>a</sup> See Ref.<sup>9</sup> for a complete discussion.

### ***Ethical Issues Related to the Fetus***

The status of the fetus also entails multiple ethical questions.

If the woman is dead, is her fetus alive?

Should the care providers be concerned with bringing the fetus to viability and birth as if it were an individual with the right to treatment?

Should weeks to months of extensive medical care and costs be devoted to obtain this individual life?

Table 2 Needs of the fetus	
Assessment of fetal development	Measurement of fetal heart rate Non stress tests Biophysical profile Ultrasound measurements Amniocentesis
Lung development	Betamethasone Surfactant testing
Ability to deliver	Emergency cesarean section set-up
Time of delivery	Baptism or religious blessings at time of birth as desired by family

Is this care an experimental treatment to which neither the woman nor the fetus can or has consented?

Does maintenance of life support on behalf of the fetus violate a woman's right to die with dignity?

The case studies from around the world tend to reflect the religious climate of the country in which the study was conducted. In an article from Ireland,<sup>6</sup> for example, the fetus's right to life is expressed. In a legal brief from New Zealand,<sup>7</sup> a more secular country, limitations on the legal rights of the fetus are defined. All authors seem to agree that this procedure would be considered experimental in nature.

### ***Ethical Issues Related to the Family***

If no family steps forward, the woman probably would be allowed to die with dignity. If a family or loved ones do exist and are present in a timely manner, they will be asked their opinions on life-sustaining events. One hopes there will be no disagreements among family members reminiscent of the Terri Schiavo<sup>24</sup> case. (In the Schiavo case, the parents of Mrs. Schiavo wanted to continue her somatic support with artificial feeding while she was in a persistent vegetative state, and her husband wished to remove the feeding tube and allow her to die with dignity, as he stated was her expressed wish. This disagreement caused widespread judicial and ethical debate throughout the world.)

If the father of the fetus is identifiable and involved, he most likely would have input in the decision making. Hales<sup>25</sup> has written about such fathers' rights in pregnancy-related decision making. On the other hand, feminist scholars would want what is best for the woman and her interests. Purdy,<sup>26</sup> Sherwin,<sup>27</sup> and Lindemann<sup>28</sup> have written in opposition to using the woman as a "fetal container" and in support of her being allowed to die with dignity.

In the excitement over "saving" the fetus, questions must be answered to ascertain whether the family truly is prepared to care for an infant whose condition cannot be assured and who will not have a mother. Family counseling is needed, and there must be no shame for families who recognize that an already stressed grandmother or father with many other responsibilities may not be able to accept an additional burden, and that the living children may suffer neglect or other consequences by privileging the fetus.

### ***Ethical Issues Related to the Nursing Staff***

Nurses and other members of the caregiving team may experience multiple and conflicting feelings. Although caring for the BDPW may seem altruistic and the ethical

thing to do, in reality, caring for the brain-dead patient for extensive periods has not previously been done. A search of the Cumulative Index to Nursing and Allied Health Literature database revealed no nursing articles on caring for the BDPW and only two articles written in the past 10 years on caring for the brain-dead organ donor. Day<sup>29</sup> interviewed nine critical care nurses who maintained brain-dead organ donors. The nurses interviewed reported difficulty in changing from caring for a living patient to caring for a patient determined to be brain dead. This situation filled the nurses with ambiguity. The nurses turned their caring nursing activities to caring for the families while providing physiologic maintenance to the brain-dead patients. Sadala and Mendes<sup>30</sup> from Brazil asked 18 critical care nurses about their feelings when caring for brain-dead organ donors. These nurses referred to the donor as “a dead person, but a special dead person because the heart is beating.” These authors also reported the nurses’ feelings of ambiguity in caring for a patient “who is neither a person nor a thing” and in trying to identify the object of their nursing. In both studies nurses described the need to detach from thinking about the donor and to focus instead on the family and the potential donation. Sadala and Mendez<sup>30</sup> wrote that helping nurses believe that something positive comes out of the process is essential.

The feelings of nurses caring for a BDPW probably are similar to, or even more intense than, those described by Sadala and Mendez.<sup>30</sup> The extensive periods needed to bring the fetus to viability (as compared with the limited transience of brain death for organ donation) may cause nurses significant moral distress. Caring for the brain-dead physical body for long periods may be frightening or distasteful. Loczin,<sup>31</sup> a nursing expert who has written a text on the meaning of technology in nursing, has stated:

*Technology and competence enhance effective caring, yet it is being observed that technology also impedes care by alienating and dehumanizing both the nurse and the patient, particularly when technological competence is not skillfully blended with sensitivity to the needs and responses of the patient.*

He continues:

*Central to this ... is the view that persons are not human bodies identified only as objects, but rather they are individuals who possess values of dignity and autonomy and who strive to live their hopes, dreams, and aspirations as persons.*

Locsin’s text, published in 2005, does not address the influence of technology on care of the dead person who can no longer express his or her needs or hopes and dreams. Perhaps keeping the fetus alive is the family members’ assumption of these dreams.

No position statement or guidance for nurses on the BDPW issue was found in a review of material from the Association of Women’s Health, Obstetric and Neonatal Nursing, the American Operating Room Nurses, the American Association of Critical Care Nurses, or the National Association of Neonatal Nurses. The American Nurses Association had no position statement, but the Provision One of the Code of Ethics for Nurses<sup>32</sup> may give some assistance:

*The nurse, in all professional relationships, practices with compassion and respect for the inherent dignity, worth, and uniqueness of every individual, unrestricted by considerations of social or economic status, personal attributes, or the nature of health problems.*

Thus the American Nurses Association would support the nurse who wished to consider the brain-dead person as a unique individual and worthy of nursing care.

Yet a nurse would have to agree voluntarily to provide this type of care for the BDPW. As Sadala and Mendes wrote, the nurse would have to find positive meaning in the actions. If nurse feels that providing this care would create a value conflict, and that keeping a body alive for the sake of another is not right, conscientious objection<sup>33</sup> would be appropriate.

### CARE IN THE ICU

If a BDPW is accepted in a critical care unit for somatic support, collaboration between the obstetric nurses and intensive care nurses will be ongoing. The obstetric nurses will come to the ICU daily (or more often) to do the non-stress testing, to palpate the abdomen for evidence of uterine rigidity or contractions, and to detect active fetal movement. The ICU nurses will be doing overall assessment and would note any perineal leaking, bleeding, or abnormal discharge. Fungal infections may occur, and rupture of membranes may manifest only as a slight but persistent leak of fluid. A change in the color of discharge to pink-tinged or an increased discharge of mucus may indicate cervical effacement and impending labor. Having the obstetric nurse there to evaluate and teach ICU nurses about subtle signs of change (such as sudden periodic spikes in maternal heart rate caused by contractions) enhances the ICU nurses' observation skills and care. The manner of delivery is a scheduled cesarean section when fetal lung maturity is established, but cervical dilation and vaginal delivery have occurred in a comatose, brain-injured woman being given somatic support for an extended period.<sup>34</sup>

As the fetus develops, three-dimensional color Doppler examinations are ongoing. Although the nurses may not bond to the BDPW, all concerned may develop an attachment to the fetus. As the day for delivery of the fetus approaches, new psychologic issues of separation and closure may arise, quite different from the experience ICU nurses have with the shorter-term stays of critically ill patients. These nurses will need leadership support, pastoral care, or psychiatry support services.

It is important to have a close working relationship between the intensive care and maternal/child nurses. Although the maternal/child team may be excited about participating in bringing the fetus to life, the intensive care nurses have provided long-term care for a brain-dead person who is decompensating. When the maternal/child team's job is about to begin, the intensive care nurses' job will come to an end. Weekly meetings that include both teams and that show respect for the difficult work of the ICU nurses are essential. All involved will experience a roller coaster of emotions.

Another group of nurses who may need support are the operating room nurses who care for the woman (and neonate) during and after the cesarean section. When and how the ventilator is removed has not been described in the literature. Shrader<sup>19</sup> has described the removal of life support from a BDPW as "dying more than one death." Nurses participating in these actions also need leadership support and critical incident debriefing. Future research will require both qualitative and quantitative assessment and analyses of both nurses' and physicians' experiences surrounding this still rare, but growing, phenomenon. A memorial service for the mother might help all staff process what they have experienced.

### FINANCIAL ISSUES

The cost of maintaining a brain-dead person on life support depends on the number of days spent in the ICU. One might consider that every day (after viability) that the fetus is in utero is a day in which fetal development occurs and represents 1 day less that the

fetus would have to be in the neonatal ICU. Those concerned with social justice and health care for all children might question this type of financial effort on behalf of one child. It is uncertain if government or private insurance would pay for this type of extended care. The cost-benefit analysis of maintaining somatic functioning in a brain-dead woman is increasingly weighed against the overall unavailability of ICU beds, the scarcity of other resources and nursing staff, and limited access to health care in general.

## RECOMMENDATIONS

The ethical debate over BDPW seems to the authors to be one of a personal nature. One must decide on two issues: (1) is there is a inherent wrongness in using a BDPW as an incubator for the fetus; and (2) is the fetus healthy enough and gestationally mature enough that trying to save it will not be distasteful to the care providers? Classical ethical principles do not seem to work: neither the woman nor the fetus has autonomy, neither can give informed consent, and neither can refuse treatment. Some may find beneficence (doing the good thing) in trying to save a fetus; others may state that this attempt is the most maleficent (doing harm as a result of trying to do good) and worst thing they have ever heard of. It seems that if a family wishes to take this course, if the fetus is healthy, if the facility is willing to absorb the cost for the long-term care, and if there are physicians and nurses who wish to participate, then the attempt might be made. Any person who finds this attempt distasteful would have the option of not serving on the team.

It also seems that more guidance from pregnant women is needed. The movement to increase the use of the advance directive is widespread, encouraged mostly for older adults who have chronic conditions to make their wishes known should they become incapacitated. The Five Wishes document is an outstanding version of the Advance Directive.<sup>35</sup> Catlin<sup>36</sup> has suggested that this document be extended for a pregnant woman to state her desires in advance on how she wishes fetal emergencies, such as extremely premature labor, to be handled. In her work, Catlin refers only to directives for what the healthy woman would want should the fetus or newborn have a life-limiting condition. Neither form of directive mentions a pregnant woman's directives for her fetus should she die during the pregnancy. No legal document has asked the pregnant woman what she would want done with her fetus upon her incapacitation. Now that the technology for somatic support exists, it is essential to add this feature to the advance directive of any woman of childbearing age and perhaps to include it in the standard prenatal interview.

Thirty-five years ago, Willard Gaylin,<sup>37</sup> the co-founder of the Hastings Ethics Center, predicted that this type of technological maintenance of somatic functioning would occur. He wrote a fascinating science fiction-type scenario describing the brain-dead cadaver being kept alive as a source of transplant organs and biologic resources, but even he did not predict the gestation of a fetus in a brain-dead mother. Now nurses are being asked to care in ways not envisaged in their training. A nurse must make an individual decision that best fits his or her values, share these values in a professional manner, and then walk forward into the twenty-first century.

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## REFERENCES

1. American Academy of Neurology. Practice parameters for determining brain death in adults. The quality standards subcommittee of the American Academy of Neurology. *Neurology* 1995;45(5):1012–4.
2. Souza JP, Olivera-Neto A, Surita FG, et al. The prolongation of somatic support in a pregnant woman with brain-death: a case report. *Reprod Health* 2006;3:3.
3. Anstotz C. Should a brain-dead pregnant woman carry her child to full term? The case of the “Erlanger baby”. *Bioethics* 1993;7(4):340–50.
4. Wuermeling HB. Brain-death and pregnancy. *Forensic Sci Int* 1994;69(3):243–5.
5. Farragher R, Marsh B, Laffey IG. Maternal brain death—an Irish perspective. *Ir J Med Sci* 2005;174(4):55–9.
6. Lane A, Westbrook A, Grady D, et al. Maternal brain death: medical, ethical and legal issues. *Intensive Care Med* 2004;30:1484–6.
7. Peart NS, Campbell AV, Manara AR, et al. Maintaining pregnancy following loss of capacity. *Med Law Rev* 2000;8:275–99.
8. Milliez J, Cayol V. Palliative care with pregnant women. *Best Pract Res Clin Obstet Gynaecol* 2001;15(2):323–31.
9. Nuutinen LS, Alahuhta SM, Heikkinen JE. Nutrition during ten-week life support with successful fetal outcome in a case with fatal maternal brain damage. *JPEN J Parenter Enteral Nutr* 1989;13(4):432–5.
10. Sim KB. Maternal persistent vegetative state with successful fetal outcome. *J Korean Med Sci* 2001;16:669–72.
11. Vives A, Carmona F, Zabala E, et al. Maternal brain death during pregnancy. *Int J Gynaecol Obstet* 1996;52:67–9.
12. Bernstein IM, Watson M, Simmons GM, et al. Maternal brain death and prolonged fetal survival. *Obstet Gynecol* 1989;74(3, Part 2):S437–9.
13. Bush M, Nagy S, Berkowitz RL, et al. Pregnancy in a persistent vegetative state: case report, comparison to brain death, and review of the literature. *Obstet Gynecol Surv* 2003;58(11):738–48.
14. Feldman DM, Borgida AF, Rodis JF, et al. Irreversible maternal brain injury during pregnancy: a case report and review of the literature. *Obstet Gynecol Surv* 2000;55(11):708–14.
15. Lewis DD, Vidovich RR. Organ recovery following childbirth by a brain-dead mother: a case report. *J Transpl Coord* 1997;7(3):103–5.
16. Mallampalli A, Guy E. Cardiac arrest in pregnancy and somatic support after brain death. *Crit Care Med* 2005;33(10):S325–31.
17. Mallampalli A, Powner DJ, Gardner M. Cardiopulmonary resuscitation and somatic support of the pregnant patient. *Crit Care Clin* 2004;20:747–61.
18. Powner DJ, Bernstein IM. Extended somatic support for pregnant women after brain death. *Crit Care Med* 2003;31(4):1241–9.
19. Shrader D. On dying more than one death. February. *Hastings Cent Rep* 1986; February:12–7.
20. Suddaby EC, Schaeffer MJ, Brigham LE, et al. Analysis of organ donors in the peripartum period. *J Transpl Coord* 1999;8(1):35–9.
21. Yeung P Jr, Mcmanus C, Tchabo JG. Extended somatic support for a pregnant woman with brain death from metastatic malignant melanoma: a case report. *J Matern Fetal Neonatal Med* 2008;21(7):509–11.
22. Katz V, Balderston K, Defreest M. Perimortem cesarean delivery: were our assumptions correct. *Am J Obstet Gynecol* 2005;192:1916–21.
23. Sperling D. Maternal brain death. *Am J Law Med* 2004;30:453–500.

24. Caplan AL, McCartney JJ, Sisti DA, editors. *The case of Terri Schiavo: ethics at the end of life*. Amherst (NY): Prometheus Books; 2006.
25. Hales S. In: Humber JM, Almeder RF, editors. *Reproduction, technology, and rights*. New Jersey: Human Press; 1996.
26. Purdy LM. Are pregnant women fetal containers? *Bioethics* 2007;4(4):273–91.
27. Sherwin S. *No longer patient: feminist ethics and health care*. Philadelphia: Temple University Press; 1992.
28. Lindemann-Nelson H. The architect and the bee: reflections on postmortem pregnancy. *Bioethics* 1994;8(3):247–67.
29. Day LJ. How nurses shift from care of a brain-injured patient to maintenance of a brain-dead organ donor. *Am J Crit Care* 2001;10(5):306–12.
30. Sadala MLA, Mendes HWB. Caring for organ donors: the intensive care unit nurses' view. *Qual Health Res* 2000;10(6):788–805.
31. Loczin RC. *Technological competency as caring in nursing*. Indianapolis (IN): Sigma Theta Tau; 2005.
32. Fowler MDM, editor. *Guide to the code of ethics for nurses*. Silver Springs (MD): American Nurses Association; 2008.
33. Catlin AJ, Armigo C, Volat D, et al. Conscientious objection: a possible nursing response to care at the end of life which is harmful, causes suffering, or torture. *Neonatal Netw* 2008;27(2):101–6, 107–8.
34. Sampson MB, Petersen LP. Post-traumatic coma during pregnancy. *Obstet Gynecol* 1979;53(3 Suppl):2S–3S.
35. *Aging with Dignity. Five wishes document*. Available at: <http://www.agingwithdignity.org/5wishes.html>. Accessed August 11, 2008.
36. Catlin A. Thinking outside the box: prenatal care and the call for a prenatal advance directive. *J Perinat Neonatal Nurs* 2005;19(2):169–76.
37. Gaylin W. Harvesting the dead. *Harpers* 1974;249(1492):23–30.