

# Fetal Research Under Fire: The Influence of Abortion Politics

By Rachel Benson Gold and Dorothy Lehrman

## Summary

Since 1973, fetal research has repeatedly been used as a weapon in the war against abortion, mirroring important research in seemingly endless controversy. Government funding of fetal research has been suspended several times: A 1974 moratorium was lifted in 1975 after regulations concerning such research were promulgated; in 1985, a moratorium was placed on some federally funded fetal research; and in 1988, the assistant secretary for health halted all federally funded research on fetal tissue transplantation while an outside advisory panel examined related ethical, legal and scientific issues. The panel deemed such research acceptable, while also recommending that safeguards be established to separate abortion from transplantation research and to prevent profiteering from or encouragement of abortion. Although the report was forwarded to the assistant secretary in January, the moratorium has not yet been lifted by the new administration.

## Introduction

Over the last several decades, scientists have added greatly to the store of knowledge about human disease and development and made many major advances—among them the treatment of Rh incompatibility and the development of the polio and rubella vaccines—as a result of the study of the human fetus and the use of fetal tissues. Recent research suggesting that transplants of fetal tissue may help in treating a variety of illnesses, from Par-

kinson's disease to diabetes, indicates that the need for fetal research undoubtedly will continue to grow.

Yet despite the obvious need for and the achievements of such studies, fetal research has been buffeted over the past 16 years by the political winds of the abortion controversy. Opponents of abortion seized upon fetal research as a political issue almost immediately after the 1973 Supreme Court decisions, and since then have repeatedly used it as a weapon in their war against abortion. In the process, they have succeeded in mirroring important research in seemingly endless controversy. Abortion foes in and out of government have worked to cut off or limit federal support for fetal research. Given the medical potential of such research, the withholding of government support represents a serious impediment to improving health.

## What Is Fetal Research?

Fetal research is an umbrella term encompassing several types of research activities, from studies on fetuses in utero to those using fetal tissue obtained from induced abortions. In utero research has been conducted for several decades and has led to major improvements in maternal and child health, such as the development of a vaccine to protect fetuses from Rh incompatibility (a condition that can cause miscarriage) and the development of several widely used techniques for diagnosing severe fetal defects.\*

As with most basic biomedical research in the United States, fetal research is fund-

ed in large part by the federal government, much of it through the National Institute of Child Health and Human Development (NICHD), one of the 13 research institutes of the National Institutes of Health (NIH). (Little is known about the extent of privately funded and conducted fetal research.) Today, most NICHD-funded fetal research "focuses on the well-being of the mother and the fetus and assesses complications that arise during pregnancy,"<sup>1</sup> involving pregnancies that are being carried to term and utilizing noninvasive techniques (such as sonography) that pose virtually no risk to the developing fetus.

Among the NICHD's major research projects conducted on fetuses in utero are studies examining the use of sonography and other measurement techniques to monitor blood flow through the umbilical cord, fetal cardiac activity and fetal lung maturation. In research studying pregnant women with hypertension, the most common medical complication of pregnancy and one that can lead to intrauterine growth retardation and prematurity, investigators are monitoring fetal movement and heart rates and using ultrasound to diagnose, prevent and manage such cases. Other research studies are examining the use of ultrasound to predict cases of idiopathic distress syndrome, a major cause of neonatal death.

In fetal tissue research, investigators study samples of tissue taken from fetal remains following either spontaneous or induced abortions. (Fetal tissue obtained from induced abortions is preferred for

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\*Amniocentesis, one of these techniques, has become a routinely recommended second-trimester procedure for pregnant women over 35; it can detect hundreds of defects and problems, including Tay-Sachs disease, Down syndrome, cystic fibrosis, muscular dystrophy and an array of neural tube defects, such as spina bifida and anencephaly. In 1980, nearly one in four pregnant women over age 35 had an amniocentesis

performed (see: The Alan Guttmacher Institute, "The Financing of Maternity Care in the United States," New York, 1987, p. 20, Table 4). Besides giving the woman a chance to decide whether to carry the pregnancy to term if a defect is detected, amniocentesis allows the physician to change the timing or method of delivery or to plan for immediate treatment after delivery. In recent years, researchers have used fetal research to develop chorionic villus sampling, a procedure that can detect the same range of conditions as amniocentesis, but during the first trimester.

two reasons. First, current scientific understanding indicates that tissue obtained from spontaneous abortions might be defective. Second, the collection of fetal tissue is generally easier in the case of induced abortion, since most spontaneous abortions occur when the woman is not under medical supervision, thus making rapid tissue collection impossible.) Fetal tissue research has an even broader range of current and potential applications. Such tissue has been used to develop cell lines essential to the production of human viruses for both the diagnosis of disease and the production of vaccines. For example, the polio vaccine, the developers of which won the 1954 Nobel Prize for Medicine, was based on cultures of human fetal kidney cells; the developers of a vaccine against rubella used fetal tissue to demonstrate that the vaccine virus crossed the human placenta and infected the fetus.

Currently, researchers are using federal funds to study fetal retinal cells to determine a particular gene's role in retinoblastoma, a life-threatening childhood disease. They are also examining the differentiation of normal and malignant lymphoid cells, with the goal of understanding and curing lymphoid cancers, such as leukemia. Research to understand the regulation of lung surfactant protein expression may help prevent respiratory distress syndrome, while other work holds promise for the development of a vaccine for chicken pox, for an understanding of the rejection of kidney and liver transplants in adults and for the prevention of diseases such as sickle cell anemia. And researchers are using fetal cells in order to clarify the mechanism responsible for the neurological problems associated with AIDS.

Some of the most promising research using fetal tissue involves transplanting fetal cells obtained from induced abortions into severely ill adults. Fetal tissue has several unique properties that make it particularly suitable for such medical applications. First, it grows at a much faster rate than tissue obtained from an adult. As Robert Auerbach of the Center for Developmental Biology at the University of Wisconsin explained last year at a hearing on human fetal tissue transplantation, cell division occurs at a very rapid rate in the embryo and then slows with age. Similarly, the percentage of cells capable of division decreases with age. "If you examine blood vessels of the early chick embryo, 25-40 percent of those cells will be undergoing some form of cell division," Auerbach reported. "If you look at the adult individuals, it is less than one-tenth

of one percent of cells that will do so."<sup>2</sup>

Another unique characteristic of fetal tissue is its plasticity, or adaptability. Embryonic and fetal cells can adapt to their environment, both in their function and in the degree to which they will grow, an ability gradually lost during maturation. Finally, fetal cells have special immune properties. Although all human tissues contain cells that upon transplantation can trigger rejection by the host body, fetal cells (unlike mature cells) can be purified to reduce the likelihood of rejection. Thus, purified fetal cells can be transplanted without the necessity of either tissue matching or long-term immunosuppression.

One particularly promising application of fetal cell transplantation is as a treatment for Parkinson's disease, which causes the brain to produce insufficient quantities of dopamine. Parkinson's disease, an incurable condition, affects 300,000-500,000 people in the United States.<sup>3</sup> U.S. researchers implanted small quantities of fetal brain cells into the brains of primates in which a Parkinson's-like syndrome had been induced, and the implanted tissue survived, grew, developed neural connections and took on some function.<sup>4</sup> Swedish researchers tried a similar technique in two women, using small quantities of tissue from fetuses aborted at 7-10 weeks' gestation.<sup>5</sup> (Tissue from approximately four aborted fetuses was required for each transplant.) Preliminary results indicate that the transplants had no adverse effects and that there was a slight improvement in both patients' conditions.<sup>6</sup> Two similar transplants were performed (with no government funding) on patients at the University of Colorado and at Yale University.<sup>7</sup>

Other researchers have obtained promising results by transplanting cells from the pancreases of aborted fetuses into adults with diabetes, in order to stimulate insulin production. According to Hans Sollinger of the University of Wisconsin, "In my estimation, there are probably more than 10,000 . . . laboratory animals, worldwide, [that] have been cured of diabetes" by means of fetal tissue transplants.<sup>8</sup> While very few U.S. patients have received such transplants, six patients in Australia and as many as 300 in China have been studied.<sup>9</sup> The studies generally have been conducted using fetuses aborted at 14 to 20 weeks, although researchers believe that tissue from fetuses aborted earlier in gestation may also prove useful.

While the application of fetal transplants for Parkinson's disease and diabetes has received the most prominent public attention, the technique has been investigated

as a treatment for a wide range of other diseases and conditions. For example, in 1986, Robert Gale of the University of California at Los Angeles attempted to use fetal liver transplants to save the lives of radiation victims of the Chernobyl disaster in the Soviet Union. Gale had hypothesized that since the embryonic liver is a major producer of blood cells, its transplantation might provide patients with necessary blood-forming tissues. However, the patients died from radiation-induced burns before the success of the transplants could be ascertained.<sup>10</sup> Fetal tissue transplants are also being examined as possible cures or treatments for sickle cell anemia, thalassemia, leukemia, spinal cord injuries, Huntington's chorea, epilepsy, stroke, cancer and AIDS.

### Enter Politics . . .

Vocal opponents of abortion had scarcely questioned fetal research (involving either the study of fetuses in utero or the use of fetal tissue) during the decades before the 1973 Supreme Court decisions legalizing abortion. However, right-to-life leaders seized upon fetal research as an issue after abortion was legalized, arguing that using fetal tissue obtained from induced abortions for research purposes was an extension of a so-called "abortion mentality" that "dehumanized" the fetus. According to Judie Brown, president of the American Life League, "This is not a moral choice for any of us to make, because we are abusing members of our own human family for the purposes of advancing the needs of others."<sup>11</sup> As a result of the objections of anti-abortion activists, researchers have had to operate since 1973 in an extraordinarily politicized environment.

The timing of events in 1973 seems to have been ideal for abortion opponents. Around the time of the Supreme Court decisions, a protracted debate was raging in the U.S. Congress over the protection of human subjects of biomedical research, following media reports of suspected cases of abuse. By January 1973, bills concerning research on human subjects had been introduced and hearings scheduled.<sup>12</sup> While research on fetuses and pregnant women represented only a small part of all research on human subjects, the debate coincided with mounting congressional reaction to *Roe v. Wade* and *Doe v. Bolton*. After discussions in the House of Representatives in which fetal research was debated as an abortion issue, Representative Angelo D. Roncallo (R.-New York) amended pending legislation to ban research on live fetuses in projects conducted

by the National Science Foundation (NSF),<sup>13</sup> on the grounds that society should be "free from vivisection of its own living kind."<sup>14</sup> The provision had no effect, however, since no NSF projects involved fetal research.

The 1974 National Research Act contained a provision added during the Senate debate creating a commission to review all research involving human subjects that was supported by the Department of Health, Education and Welfare (DHEW, now the Department of Health and Human Services, or DHHS). During the debate, Senator James L. Buckley (R.-New York), a long-standing opponent of abortion, offered an amendment to ban most fetal research. After protracted discussion, the Senate voted 53 to 35 to adopt a compromise placing a moratorium on DHEW-supported research on the "living human fetus, before or after abortion," unless the purpose of the research was to assure the survival of that particular fetus (see Chart 1). It was to remain in effect until the newly created National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research had studied the issue and made recommendations.<sup>15</sup> Shortly after the bill had been passed, the DHEW issued regulations implementing the moratorium.<sup>16</sup>

The commission's chairman was Kenneth Ryan, chairman of the Department of Obstetrics and Gynecology at Harvard University. As part of its examination of the entire issue of research involving human subjects, the commission held seven public hearings on fetal research, and requested many of the leading authorities in the fields of medicine, ethics and law to prepare background papers for use in its deliberations on this topic; the volume containing the fetal research papers runs

600 pages. The commission issued its fetal research report in May 1975; on the basis of that work, the DHEW lifted the temporary moratorium and (on August 8, 1975) issued regulations on federally funded research involving fetuses and pregnant women.<sup>17</sup> These remain in effect.

The first part of the regulations calls for the protection of all human subjects of biomedical research. Before any research project involving human subjects can be funded by the DHHS, an institutional review board established by the researchers' sponsor (such as a university) must assure that the rights and welfare of research subjects will be protected. Any risks to participants must (to the extent possible) be minimized and must be clearly outweighed by the anticipated benefits of the research. In reviewing funding applications, the DHHS may also consider whether researchers have in the past "materially failed to discharge responsibility for the protection of the rights and welfare of human subjects (whether or not Department funds were involved)."<sup>18</sup> Funding may be terminated at any time if periodic reviews by the institutional review board find any failure to protect human research subjects.

The regulations provide special protections for fetuses and pregnant women involved in research studies, specifying that research involving fetuses and pregnant women can be conducted only if all appropriate studies on animals and nonpregnant women have been completed. In requiring assurance that the welfare of all research subjects will be protected, the regulations explicitly treat all fetuses equally, regardless of whether an abortion is intended; research posing more than a "minimal risk" to a fetus is permitted only if it is performed to meet the health needs of the specific fetus or pregnant woman. (Minimal risk requires that the anticipated risks of the research be no greater than those risks encountered in daily life or in routine medical examinations.)

Furthermore, the regulations stipulate that if the research involves a pregnancy that will be terminated, the abortion may not be delayed because of the research, nor may the abortion method be changed for the sake of research needs. Researchers may not offer any inducements, financial or otherwise, that might encourage or affect in any way the decision of a woman to have an abortion. If the research involves an aborted fetus, researchers are prohibited from either artificially maintaining or terminating its vital signs. In the extremely rare case in which an aborted fetus is ca-

pable of sustained life, the regulations require that it be considered a "premature infant," with full legal rights.

A waiver provision in the regulations allows the secretary of the DHHS to modify or set aside the risk standard in the case of research that is not undertaken for the benefit of the particular fetus involved and that cannot be shown to pose no more than a minimal risk. The waiver can be granted only on a case-by-case basis, following a review by the department's Ethics Advisory Board (EAB) and an opportunity for public comment. In determining whether to grant a waiver, the secretary is charged to consider whether the risks of the research are outweighed by its benefit to the subject and the importance of the knowledge sought.\*

The regulations refer only briefly to the use of fetal tissue, stating that research involving "the dead fetus, macerated fetal material or cells, tissues or organs excised from a dead fetus shall be conducted only in accordance with any applicable state or local laws regarding such activities." Nonetheless, the prohibitions against altering the timing or method of abortion or offering any inducements to a woman to terminate her pregnancy most likely apply to research involving fetal tissue obtained after an induced abortion.<sup>19</sup>

### Controversy Returns

Concern over fetal research seemed to fade after adoption of the regulations in 1975, but in 1982 the issue dramatically resurfaced when Congress began to debate legislation to reauthorize the NIH.

The reemergence of the issue again seemed linked to the complicated politics of abortion. At the beginning of the 1980s, inspired by the election of Ronald Reagan and the installation in the Senate of a Republican majority that included many vocal abortion foes, antiabortion activists launched a series of moves designed to ban abortion. However, by 1982, Congress had defeated a bill intended to ban abortion and Senator Orrin G. Hatch (R.-Utah), chief sponsor of a constitutional amendment giving both the states and the federal government authority to ban abortion, had abruptly removed his measure from consideration. With legislative attempts to ban abortion clearly thwarted, abortion opponents sought other, less direct approaches to express their opposition to abortion and the "abortion mentality."

One was a new attack on fetal research. When the NIH bill came up for consideration in 1982, Representative William E. Dannemeyer (R.-California) proposed

\*The EAB was established in 1978 to review ethical issues raised by specific research activities. The only research study of this nature that ever received a waiver was one that involved taking samples of fetal blood from a fetus in utero for use in the development of a diagnostic technique for sickle cell anemia, a genetic disease affecting 8-10 percent of the black population in the United States. Since the risk to the fetus from the procedure was unknown and was therefore considered potentially greater than minimal, the researchers requested permission to perform the initial studies on women terminating their pregnancies. Then-DHHS Secretary Joseph A. Califano, a vocal opponent of abortion, approved the waiver in 1979 (see: reference 10, p. 7). The dissolution of the EAB in 1980 has since precluded the possibility that any waivers can be granted. Although the DHHS announced in July 1988 that it intended to reconstitute an EAB and published for public comment a proposed charter in September 1988, a final charter has not yet been adopted. As a result, there is no current EAB.

**Chart 1. Chronology of events in the fetal research debate, 1975–1989**

Jan. 1973	U.S. Supreme Court overturns restrictive abortion laws.
July 1974	Congress places moratorium on federally funded research involving living human fetus.  National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research is created.
May–Aug. 1975	Commission completes study of fetal research and issues recommendations.  DHEW promulgates regulations. 1974 moratorium is lifted.
Oct. 1985	Congress passes 3-year NIH reauthorization that includes moratorium risk standard for federally funded fetal research.
Mar. 22, 1988	Moratorium imposed on federal funding of fetal tissue transplantation research.  Special NIH panel ordered to review transplant research.
Sept. 14, 1988	NIH panel holds first meeting.
Nov. 4, 1988	NIH reauthorization signed into law, including two-year extension of moratorium on waivers of minimal risk standard.
Dec. 5, 1988	NIH panel holds last meeting and finalizes conclusion that fetal tissue transplant research is "acceptable public policy."
Dec. 14, 1988	NIH director's advisory committee accepts panel's report.  Lifting of moratorium on federal funding of fetal tissue transplantation research is recommended.
Jan. 1989	NIH director Wyndgaarden transmits report of panel and recommendations of advisory committee to Assistant Secretary for Health.

amending it with language virtually identical to the provision added to the 1974 National Research Act. Dannemeyer's amendment passed the House by a vote of 260 to 140 on September 30.<sup>20</sup> However, because the complex bill contained (among other controversial elements) detailed congressional directives for all of NIH's responsibilities, it did not reach the Senate floor before the end of the year and the end of the congressional session.<sup>21</sup> With the controversy over both Congress's role in overseeing NIH and fetal research in general continuing throughout 1983 and 1984, a three-year reauthorization for NIH was not adopted until 1985.

The final legislation passed in 1985 contained a compromise provision codifying a portion of the 1975 regulations: All fetuses should be treated equally, whether they are to be aborted or carried to term; further, NIH funds could be used only for research posing no more than a minimal risk, or for research intended to enhance

the well-being or meet the health needs of that fetus.<sup>22</sup> The legislation also created a Congressional Biomedical Ethics Board, a bipartisan group made up of 12 members of Congress that in turn was to appoint a 14-member Biomedical Ethics Advisory Committee. This group was to undertake a series of studies on issues related to biomedical ethics, as requested by the congressional board.

The legislation charged this two-tiered structure to undertake, among other things, a study of the "nature, advisability, and biomedical and ethical implications of exercising any waiver of the risk standard within the regulations on fetal research."<sup>23</sup> Pending the results of this study, a three-year moratorium (not applicable to research conducted with private funds) was placed on waivers of the risk standard, thereby halting any federally funded research for which a waiver might have been needed. Although the congressional board was quickly appointed, the composition of the second-tier advisory committee became mired in disputes over the abortion views of prospective members. As a result, almost the entire three-year authorization period passed with no advisory committee appointed and no studies undertaken.

With the moratorium in place, fetal research receded as a political issue until 1988, when the three-year NIH reauthorization again came up for renewal. However, as work on a reauthorization measure began in the Senate, the issue took an unexpected turn. Before beginning their research, a group of NIH scientists had sought approval from DHHS Assistant Secretary for Health Robert Windom for a proposed project involving the transplantation of fetal tissue into an adult patient with Parkinson's disease. Windom's response propelled the issue of fetal tissue research (as opposed to research conducted on fetuses in utero) to the political forefront; his March 22 memorandum to NIH Director James Wyngaarden temporarily stopped all research "in which there is performed transplantation of human tissue from induced abortion."<sup>24</sup> (Like the moratorium included in the 1985 NIH legislation, this restriction applied only to federally funded research, and not to work funded through nongovernmental sources.) Windom also ordered NIH to establish an outside advisory committee or committees to examine the ethical, legal and scientific questions raised by this type of research.

Although the ban involved only tissue transplants, antiabortion forces immediately sought White House assistance in

broadening the prohibition to include all research involving fetal tissue. According to John Willke, president of the National Right to Life Committee, all research involving fetal tissue should be prohibited because "harvesting organs or tissues from abortion victims further dehumanizes unborn children and gives abortion an aura of legitimacy."<sup>25</sup>

Despite the interest in fetal tissue research generated by Windom's unilateral action, the NIH reauthorization that was introduced in the Senate a week later contained no provisions concerning either fetal tissue transplantation or fetal tissue research in general. Instead, the legislation was along the lines of its 1985 predecessor, and among other things extended the moratorium on waivers for research involving human fetuses in utero for another two years. However, since the Congressional Biomedical Ethics Board had been unable even to begin its review of the issue, the bill proposed that the National Academy of Sciences study the "scientific, ethical and funding issues surrounding the conduct of research on fetal therapy and involving fetuses," including the issue of waivers of the minimal risk standard in the federal fetal research regulations.<sup>26</sup>

The legislation was approved by the Senate Labor and Human Resources Committee on April 13, with no discussion of the highly controversial issues raised by Windom's memorandum; the bill passed the Senate on August 3, after deletion of the provisions concerning the National Academy of Sciences study and a return to the original concept of a study conducted by the advisory committee of the Congressional Biomedical Ethics Board. Still bearing no mention of research involving fetal tissue or fetal tissue transplantation, the legislation was passed by the House on October 13 and was signed into law on November 4.<sup>27</sup>

Nonetheless, fetal tissue transplantation was the subject of sporadic Senate debate for the remainder of the 1987–1988 congressional session, as a result of amendments offered by Senator Gordon Humphrey (R.-New Hampshire), one of the body's leading abortion opponents. When the Senate considered legislation to amend the National Organ Transplant Act\* in June 1988, Senator Humphrey proposed extending the law's prohibition against

\*Among other things, the act prohibits the provider of a human organ, such as a kidney, from making a profit by selling it to a researcher for research purposes; providers, however, may be reimbursed for any reasonable costs incurred in obtaining the organ for the researcher.

profiteering in human organs to cover fetal tissue that would be used for transplantation. Although some contended that fetal organs and tissues already came under the rubric of the organ transplant law, Senator Humphrey's amendment was passed by a voice vote, and the bill became law on November 4.<sup>28</sup>

Senator Humphrey also raised the issue when the annual DHHS appropriations bill came before the full Senate on July 27, 1988, by proposing a package of four amendments that restated provisions of the pending NIH bill, the amendment to the organ transplant act and the current federal regulations. Although the package passed with neither discussion nor disagreement, all four of its components were dropped as unnecessary and duplicative by the House-Senate conference committee that met to reconcile differences between the House and Senate versions of the bill.

### The NIH Panel

Meanwhile, the NIH had begun the laborious process of establishing the outside advisory panel called for by Windom. Formally named the Human Fetal Tissue Transplantation Research Panel, it was constituted as a body of "consultants" to the standing advisory committee to the director of the NIH. The chairman of the 21-member panel was Arlin Adams, a retired federal judge of the U.S. Circuit Court of Appeals for the Third Circuit and the vice president of the American Philosophical Society. Although Judge Adams was designated the overall chairman, the

group's scientific deliberations were to be led by Kenneth Ryan, who had been chairman of the commission that had developed the current federal regulations on research on human subjects; the panel's ethical deliberations were to be guided by LeRoy Walters, director of the Center for Bioethics at Georgetown University.\*

On September 9, just days before the panel was scheduled to convene for its first meeting, it was reported that as a part a Special Report to the President on the Family, the White House Office of Policy Development, acceding to the demands of abortion opponents, was working on a draft executive order to ban all research involving fetal tissue, even if the research did not involve the transplantation of such tissue.<sup>29</sup> The media accounts spurred an immediate reaction from researchers and politicians, who argued not only that the move would block important ongoing research but also that the administration should await the deliberations of the special NIH advisory panel that the antiabortion activists had so vigorously supported. The White House quickly and publicly backed down, claiming that the draft executive order was only one of the possible options being examined to implement the newly released report, which, among other recommendations, called for a complete ban on federal funding of fetal research.<sup>30</sup>

In this highly charged political atmosphere, the special NIH advisory panel held its first meeting on September 14, hearing from a variety of experts on the ethical, scientific and legal implications of research involving the transplantation of human fetal tissue derived from induced abortions. Many leading researchers involved in studies using transplanted fetal tissue addressed the panel, as did representatives of several procurement agencies that provide fetal tissue to researchers.

The first issue considered by the panel was the moral relevance of abortion to the decision to use aborted human fetal tissue for research. Witnesses opposed to abortion contended that research would be unacceptably tainted by any connection to abortion; Carl Anderson, of the Knights of Columbus, argued that abortion and fetal tissue research "cannot be ethically separated, any more than obtaining benefits from stolen goods can be separated from the ethical condemnation of the theft itself. Because induced abortion is the unethical termination of human life, we consider unethical the use of human tissue resulting from induced abortion, no matter the benefits obtained."<sup>31</sup>

Other witnesses testified that the fact

that the tissue was obtained through an abortion did not render it unusable from a moral perspective. According to Carol Lurie of the Juvenile Diabetes Foundation, "The morality of abortion is irrelevant from where I speak. Whether we like it or not, the legislatures and the courts have examined the moral and legal issues associated with abortion and have concluded that abortion is a legal act. . . . Murder is tragic, suicide is tragic and to many abortion is tragic, albeit a legal act. But in all three instances, the tissue [that] can be derived is that of a cadaver. It is socially and ethically reprehensible to destroy fetal cadaver tissue [that] can be used possibly towards saving millions of lives."<sup>32</sup>

After hearing the testimony, the panel decided that the fact that human fetal tissue is obtained from induced abortions is relevant to transplantation research. However, according to the panel, "in light of the fact that abortion is legal and that the research in question is intended to achieve significant medical goals, the panel concludes that the use of such tissue is acceptable public policy. . . . The panel notes that induced abortion creates a set of morally relevant considerations, but notes further that the possibility of relieving suffering and saving life cannot be a matter of moral indifference to those who shape and guide public policy."<sup>33</sup> Although the panel thus concluded that transplantation research is acceptable, it recommended the establishment of several safeguards to separate the abortion from the research and prevent either profiteering or any encouragement of abortion as a result of such research.

One of the most heated debates occurred over the issue of whether the very existence of fetal tissue transplantation research would encourage women to have abortions. One member, opposed to abortion, claimed that "there is no question that there are going to be women out there who will be swayed by the good and benefit that can be brought to others in terms of making a decision in favor of abortion when they might not do so if this avenue were closed."<sup>34</sup> Several witnesses disagreed, arguing that such a line of thought reflected a misunderstanding of the reasons why women choose abortion. According to Robin Chandler Duke of the Population Crisis Committee, "It is very clear that a lot of people around this room are not aware of why women have abortions and who those women are. . . . To pose the possibility that they would consider abortions on some of the grounds that have been expressed here [is] appalling."<sup>35</sup>

After lengthy deliberations, the panel

\*The members of the panel were the Honorable Arlin M. Adams, U.S. Court of Appeals (Ret.), and Schnader, Harrison, Segal and Lewis, Philadelphia; Kenneth J. Ryan, Brigham and Women's Hospital, Boston; LeRoy Walters, Georgetown University, Kennedy Institute of Ethics, Washington, D.C.; Rabbi J. David Bleich, Cardozo Law School, New York; James Bopp, Jr., Brames, McCormick, Bopp and Abel, Terre Haute, Ind.; Father James T. Burtchaell, University of Notre Dame; Notre Dame, Ind.; Robert C. Cefalo, University of North Carolina School of Medicine, Chapel Hill; James F. Childress, University of Virginia, Charlottesville; K. Danner Clouser, Pennsylvania State University, Hershey; Dale Cowan, Marymount Hospital, Garfield Heights, Ohio; Jane Delgado, National Coalition of Hispanic and Human Services Organizations, Washington, D.C.; Bernadine Healy, Cleveland Clinic Foundation, Cleveland; Dorothy I. Height, National Council of Negro Women, Alexandria, Va.; Barry J. Hoffer, University of Colorado, Denver; Patricia A. King, Georgetown University Law Center, Washington, D.C.; Paul Lacy, Washington University School of Medicine, St. Louis, Mo.; Joseph B. Martin, Massachusetts General Hospital, Boston; Aaron Moscona, University of Chicago, Chicago; John Robertson, University of Texas School of Law, Austin; Daniel Robinson, Georgetown University, Washington, D.C.; and the Reverend Charles Swezey, Union Theological Seminary, Richmond, Va.

concluded that the more than 30 years of publicized research involving fetal tissue has yielded "no evidence that [such] research has had a material effect on the reasons for seeking an abortion in the past."<sup>36</sup> Should demand outstrip the supply of fetal tissue in the future, the group asserted, researchers could easily adopt procedures "such as now exist for distributing the scarce supply of hearts, livers and kidneys to patients on waiting lists for transplants."<sup>37</sup> Nonetheless, to preclude any possible encouragement of abortion, the panel recommended that a woman "should not be induced to terminate pregnancy in order to furnish fetal tissue for transplantation or medical research."<sup>38</sup> According to the panel, the decision to have an abortion should be kept wholly separate from that of whether the fetal tissue should be used for research purposes: "The decision and consent to abort must precede the discussion of the possible use of the tissue and any consent required for that use."<sup>39</sup> (Such separation is a long-standing principle embodied in current federal regulations concerning fetal research.) In addition, the panel urged that the "timing and method of abortion should not be influenced by the potential uses of fetal tissue for transplantation or medical research," and that "no abortions should be scheduled or otherwise accommodated to suit the requirements of research."<sup>40</sup>

One panel member, James Bopp of the National Right to Life Committee, was particularly worried that abortion clinics would have a financial incentive to encourage women to seek abortions. Bopp argued that abortion clinics could reap a substantial profit by selling fetal organs for research purposes, and that as research begins to produce useful therapies, more fetal organs will be needed, raising the possibility of greater profit and, therefore, coercion by abortion providers. However, the panel found no evidence that abortion clinics have profited from the sale of fetal tissue, noting that "there have sometimes been payments made to abortion facilities and physicians who have provided fetal tissue for research. These payments are intended to cover the costs to the abortion facility of providing access to the procurement agency, including staff time in requesting [patient] consent and retrieving tissue and use of the clinic space by employee of the procurement agency."<sup>41</sup> Nonetheless, the panel chose to prevent even the possibility of such profiteering by recommending this de facto standard: "Payments and other forms of remuneration and compensation associated with the

procurement of fetal tissue should be prohibited, except payment for reasonable expenses occasioned by the actual retrieval, storage, preparation and transportation of the tissues."<sup>42</sup>

The panel was also concerned that a woman might feel pressured to terminate a pregnancy if a friend or family member could benefit from a fetal tissue transplant. Since the panel members could find no evidence that prohibiting such intrafamilial use of fetal tissue would limit valid clinical objectives and believed the idea of "directed donations" to be repugnant to many, the panel recommended that such donations be prohibited: "There should be no federal funding of experimental transplants performed with fetal tissue from induced abortions provided by a family member, friend or acquaintance."<sup>43</sup>

Many opponents of fetal tissue transplantation based their disapproval purely on the fact that the tissues used in such research are derived from induced abortions. According to Kay James of the National Right to Life Committee, "Is there any good great enough to warrant some reconsideration in terms of fetal tissue use? . . . [T]he answer to that question is no, because of the fact that when you are recognizing that we have a member of the human family, a child, an unborn child, whose body is being used to harvest spare parts for the benefit of the rest of us, when we recognize that that child is being used to grow tissue which may be used in experiments and research, I would again come back and answer no."<sup>44</sup>

In a lengthy dissent, panel members James Bopp and James Burtchaeil likened the transplantation of fetal tissue to the grotesque experiments performed by the Nazis on concentration camp inmates. In the end, however, their opposition boiled down to their opposition to abortion: "Research employing the remains of electively aborted fetuses is, in our judgment, ethically compromised by the absence of authentic informed consent, by complicity with the abortions that supply the tissue, and by the encouragement it will give to yet more abortions."<sup>45</sup>

### The Issue Unresolved

On December 5, the special NIH panel forwarded its report to the NIH director's standing advisory committee, which unanimously accepted the panel's entire report, with no changes. The committee went a step further than the special panel by specifically, and again unanimously, voting to recommend that the moratorium on the federal funding of fetal tissue trans-

plantation research be lifted. In late January, NIH director Wyngaarden formally forwarded the reports and recommendations of both the special panel and the committee to Assistant Secretary Windom.

Within days of the formal conclusion of the NIH review process, George Bush was sworn in as president, and the administration changed hands with the issue of fetal tissue transplantation research unresolved and the moratorium on federal funding of such research still in place. Whether the new administration will lift that moratorium and how long that process may take remain unknown. Two things, however, are certain. One is that the scientific community has again resisted (as in 1975) strong political pressures that threatened to block promising biomedical research simply because it had some connection to abortion. The other is that the antiabortion movement will continue to pursue its fight against abortion in any arena, including that of important biomedical research.

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that year. Overall, women who had attended college for four or more years, who were having their first birth, or who were over the age of 30 were more likely than others to be in the labor force in 1987.

Although the media have focused a great deal of attention on the rise in dual-income couples with no children, the data show that such families accounted for just 14 percent of all married-couple families in 1987, an increase of only two percentage points since 1976. On the other hand, dual-income couples with children now account for 46 percent of all such families, a rise of 13 percentage points since 1976. During the same period, the proportion of "traditional" families—that is, families in which the husband works and the wife stays home with the children—decreased from 43 percent to 28 percent of all married-couple families.

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## No Added Risk of Stroke Or Heart Attack Is Found Among Former Pill Users

Former users of oral contraceptives run no increased risk of suffering a heart attack, a stroke or other cardiovascular disease, or of dying from any of these, even if they used the pill for many years. Women who recently stopped using the pill are also at no excess risk. However, current pill users who smoke do have a significantly elevated risk of major coronary heart disease. These findings were reported recently from an eight-year prospective study involving more than 100,000 American women.<sup>1</sup>

In 1976, a total of 121,700 female registered nurses aged 30–55 years participated in the initial round of the prospective Nurses' Health Study and reported, among other things, a complete history of coronary heart disease and pill use. (The majority of pill users began use at a time when high-dose pills were not uncommon.) The investigators excluded women who gave no information on pill use or who reported a history of angina pectoris, myocardial infarction or stroke, leaving 119,061

women (98 percent of the original sample) available for this study.

Over the next eight years, the women completed biennial follow-up questionnaires regarding their pill use and history of heart attack and stroke. Their involvement in this analysis ended if they reported an occurrence of nonfatal myocardial infarction or a nonfatal stroke during the course of the eight years or if their death was reported before June 1, 1984. The investigators reviewed medical and hospital records and death certificates to confirm reports of nonfatal or fatal coronary heart disease and nonfatal or fatal stroke (excluding subdural hematomas and strokes caused by infection or neoplasia), in accordance with criteria established by the World Health Organization and the National Survey of Stroke. The investigators estimate that they confirmed 92 percent of the nonfatal events (by questionnaire and telephone interview) and 98 percent of the deaths (by review of death certificates and the National Death Index).

Current pill users were 2.5 times as likely as nonusers to experience cardiovascular disease or death, although the researchers determined that "the excess risk was concentrated among cigarette smokers." There was no overall increase in risk among past pill users after adjusting for the effects of age and risk factors for cardiovascular disease, such as hypertension and diabetes. Regardless of how long ago a woman had discontinued using the pill (ranging between one month and greater than 15 years), past users were at no increased risk of cardiovascular disease. The risk of stroke among women who had used the pill for longer than five years appeared elevated, but the researchers determined that the increase was not statistically significant.

The investigators maintain that current pill use increases the overall risk of cardiovascular disease, but this is true mainly for women who smoke. They add that oral contraceptives seem to primarily alter acute processes that affect the risk of heart disease, such as platelet function and coagulation; once a woman stops taking the pills, the acute processes return to levels found before pill use and the risk of cardiovascular disease probably reverts to that of a woman who has never used the pill. Furthermore, they state that their results "generally fail to show an increased risk even among recent past users of oral contraceptives." The investigators conclude that their findings "provide generally reassuring evidence that the risks of cardiovascular diseases faced by past us-

ers of oral contraceptives appear to be similar to those for women who have never used such agents." Given that the women in the sample were likely to have taken high-dose pills, the researchers also suggest that the study results "lend further support to findings of a lack of effect of past use of low-dose formulations [on cardiovascular disease risk]."

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