Abortion At or Over 20 Weeks' Gestation: Frequently Asked Questions

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Summary

Legislation at the federal and state levels seeking to limit or ban abortions in midpregnancy has focused attention on the procedure and the relatively small number of women who choose to undergo such an abortion. According to the Guttmacher Institute, about 926,200 abortions were performed in 2014; 1.3% of abortions were performed at or over 21 weeks' gestation in 2013. A 2018 National Academies of Sciences, Engineering, and Medicine study found that most women who have abortions are unmarried (86%), are poor or low-income (75%), are under age 30 (72%), and are women of color (61%).

Stages of Pregnancy and Abortion Procedures

A typical, full-term pregnancy spans 40 weeks, separated into trimesters: first trimester (week 1 through week 13), second trimester (week 14 through week 27), and third trimester (week 28 through birth). Abortion in the second trimester can be performed either by using a surgical procedure or by using drugs to induce labor. According to the Centers for Disease Control and Prevention (CDC), in 2014 a surgical method was used for 98.8% of U.S. abortions at 14-15 weeks' gestation, 98.4% at 16-17 weeks, 96.6% at 18-20 weeks, and 90.2% at 21 weeks or later.

Proposed Legislation Related to Abortion

Legislation in the 115th Congress, the Pain-Capable Unborn Child Protection Act (H.R. 36, S. 1922, S. 2311), would prohibit an abortion if the probable postfertilization age of the fetus is 20 weeks (equivalent to 22 weeks of gestation) or greater, with certain exceptions to save the life of the mother or if the pregnancy is the result of rape or incest. If the Pain-Capable Unborn Child Protection Act becomes law, a physician performing an abortion procedure "may do so only in the manner which, in reasonable medical judgment, provides the best opportunity for the unborn to survive." This provision would not allow the physician to use the surgical abortion procedure.

If enacted by the 115th Congress, both the Pain-Capable Unborn Child Protection Act and the Born-Alive Abortion Survivors Protection Act (H.R. 37, H.R. 4712, S. 220) would require that if a fetus is "born alive" during an abortion procedure, a health care practitioner present at the time must "exercise the same degree of professional skill, care, and diligence to preserve the life and health of the child as a reasonably diligent and conscientious health care practitioner would render to a child born alive at the same gestational age" in the course of a natural birth. Both bills would require that infants born alive following an abortion procedure be transferred to a hospital for treatment. Failure to comply with these requirements would have to be immediately reported to a "State or Federal law enforcement agency or both." The legislation makes no provision for the treatment costs or subsequent care needed to support these children, who could become wards of the state.

Medical Issues and Costs Associated with Premature Infants

Infants born at 23 weeks' gestation do not have sufficiently developed lungs and cannot breathe on their own; such infants will die at birth if not given life-sustaining therapies. However, some infants are simply too small for the smallest breathing tube, or have lungs that are too premature for the infant to survive even if therapy is given. At 22-23 weeks, infants weigh about 1 pound and have delicate skin, which tears easily if exposed to extensive contact. The rate of survival without moderate to severe impairment is low, ranging from 9% at 22 weeks' gestation to 30% at 24 weeks' gestation. Treating extremely premature infants in the neonatal intensive care unit (NICU) is expensive. According to a 2016 study of all births in California from 1998 through 2000, mean hospital costs (and length of stay) for surviving infants born at 24 weeks were $297,627 (109.6 days) and $272,730 (101.7 days) for surviving infants born at 25 weeks of

gestation. In addition to the health care costs that extremely premature infants will generate post-NICU, other costs—such as day-care services, respite care, school—are likely to be much greater than those for full-term babies.

Scope of This Report

This report provides answers to frequently asked questions concerning abortions that are performed in the second trimester of a woman's pregnancy because Congress and many state legislatures are considering legislation that would limit or ban abortions in midpregnancy. This report does not discuss constitutional or legal questions nor does it discuss all the many varying state regulations regarding such abortions. This report also does not provide an ethics or morality discussion of second trimester abortion or whether a fetus is a person and has a right to life.

Contents

Tables

Contacts

Legislation at the federal and state levels seeking to limit or ban abortions in midpregnancy has focused attention on the procedure and the relatively small number of women who choose to undergo such an abortion. In the 115th Congress, the Pain-Capable Unborn Child Protection Act (H.R. 36, S. 1922, S. 2311) would prohibit an abortion if the probable postfertilization age of the fetus is 20 weeks (equivalent to 22 weeks of gestation; see **text box**) or greater, with certain exceptions to save the life of the mother or if the pregnancy is the result of rape or incest.

If enacted, under the Pain-Capable Unborn Child Protection Act, a physician performing an abortion procedure "may do so only in the manner which, in reasonable medical judgment, provides the best opportunity for the unborn to survive." In addition, under the Pain-Capable Unborn Child Protection Act, as well as the Born-Alive Abortion Survivors Protection Act (H.R. 37, H.R. 4712, S. 220), if the fetus is "born alive," a health care practitioner present at the time must humanely "exercise the same degree of professional skill, care, and diligence to preserve the life and health of the child as a reasonably diligent and conscientious health care practitioner would render to a child born alive at the same gestational age" in the course of a natural birth.[1] Following this initial provision of care, "the child born alive shall be immediately transported and admitted to a hospital." Any failure to comply with these requirements would have to be immediately reported "to an appropriate State or Federal law enforcement agency or both." The legislation makes no provision for the treatment costs (medical or otherwise) or subsequent care for these children, who could become wards of the state.

Pregnancy: A typical pregnancy spans 40 weeks (about nine months), from the start of the last menstrual period—a date most women can identify—until birth. Pregnancy is often described in terms of three trimesters, each trimester being roughly three months (or 13 weeks) in duration. The first trimester is week 1 through week 13, the second trimester is week 14 through week 27, and the third trimester is week 28 through birth at 40 weeks.

Gestational age/probable postfertilization age: Gestational age, a term used by physicians, is measured in weeks starting from the first day of a woman's last menstrual period. In a standard 28-day menstrual cycle, ovulation typically occurs midcycle, at about day 14. Fertilization occurs just after ovulation, but the date and time of fertilization cannot be pinpointed by any test. Adding two weeks to a reported "probable postfertilization age" is equivalent to gestational age, accounting for time from the start of the last menstrual period until ovulation in a standard 28-day cycle.

This report provides answers to frequently asked questions concerning abortions that are performed in the second trimester of a woman's pregnancy. This report does not discuss constitutional or legal questions nor does it discuss all the many varying state regulations regarding such abortions.[2] This report also does not provide an ethics or morality discussion of second trimester abortion or whether a fetus is a person and has a right to life.

[1] The term "born alive" is defined in the Born-Alive Infants Protection Act of 2002 (P.L. 107-207) as follows: "the complete expulsion or extraction from his or her mother of that member, at any stage of development, who after such expulsion or extraction breathes or has a beating heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, regardless of whether the umbilical cord has been cut, and regardless of whether the expulsion or extraction occurs as a result of natural or induced labor, cesarean section, or induced abortion."

[2] For a discussion of constitutional and legal issues, see CRS Report RL33467, *Abortion: Judicial History and Legislative Response*.

How many abortions are performed per year in the United States, and what percentage occurs in the second trimester?

According to the Centers for Disease Control and Prevention (CDC), of the 652,639 abortions reported to the agency in 2014, 91.5% were performed at or under 13 weeks' gestation, 7.2% were performed between 14 and 20 weeks' gestation, and 1.3% were performed at or over 21 weeks' gestation.[3] These statistics align with data collected by the Guttmacher Institute (Guttmacher), which found that in 2013, 1.3% of abortions were performed at or over 21 weeks' gestation.[4] According to Guttmacher, approximately 926,200 abortions were performed in 2014.[5] A 2018 National Academy of Sciences, Engineering, and Medicine (NAS) study found that most women who have abortions are unmarried (86%), poor or low-income (75%), under age 30 (72%), and women of color (61%).[6]

What is known about women who seek an abortion at or after 20 weeks of gestation?

The largest study of women in the United States seeking abortions at 20 weeks or more is the Turnaway study.[7] Conducted by researchers at the University of California, San Francisco, the Turnaway study investigates the consequences of receiving or being denied a wanted abortion.[8] The study recruited almost 1,000 women—who were seeking an abortion for reasons other than fetal anomaly or life endangerment—from 30 abortion facilities across the country. The data were collected from 2008 through the end of 2010. For comparison purposes, the Turnaway study recruited three groups of women: (1) those who obtained a first trimester abortion, (2) those who obtained an abortion just under the clinic's gestational limit, and (3) those who were turned away because of advanced gestation.[9] The Turnaway study has followed these women over time to

[3] Tara C. Jatlaoui, Jill Shah, Michele G. Mandel, et al., "Abortion Surveillance—United States, 2014," *MMWR Surveillance Summaries*, vol. 66, no. 24 (November 24, 2017), pp. 1-44. The CDC report "summarizes abortion data for 2014 that were provided voluntarily to CDC by the central health agencies of 49 reporting areas (the District of Columbia [DC]; New York City; and 47 states, excluding California, Maryland, and New Hampshire)." Ibid., p. 2.

[4] Guttmacher Institute, *Fact Sheet: Induced Abortion in the United States*, January 2018, at https://www.guttmacher.org/fact-sheet/induced-abortion-united-states. Guttmacher is a research and policy organization committed to advancing sexual and reproductive health and rights in the United States and globally.

[5] Ibid. "In 2014, the most recent year for which the Guttmacher Institute has published data, abortions performed in California, Maryland, and New Hampshire accounted for 20% of the 926,200 abortions counted through the Guttmacher Institute's national census of abortion providers." According to CDC, "the total annual number of abortions reported to CDC was consistently approximately 71% of the number recorded by [Guttmacher], which uses numerous active follow-up techniques to increase the completeness of the data obtained through its periodic national census of abortion providers." *MMWR Surveillance Summaries*, vol. 66, no. 24 (November 24, 2017), p. 13.

[6] National Academies of Sciences, Engineering, and Medicine, *The Safety and Quality of Abortion Care in the United States*, Washington, DC, March 2018, p. S-5, https://doi.org/10.17226/24950. Regarding income level, the 2018 NAS study states that 49% are below the federal poverty level (FPL) and 26% are 100% to 200% of the FPL.

[7] Diana Greene Foster and Katrina Kimport, "Who Seeks Abortions at or after 20 Weeks?," *Perspectives on Sexual and Reproductive Health*, vol. 45, no. 4 (2013), pp. 210-218; and U.S. Congress, Senate Committee on the Judiciary, *Late-Term Abortion: Protecting Babies Born Alive and Capable of Feeling Pain*, 114th Cong., 2nd sess., March 15, 2016. For further information about the Turnaway Study, see https://www.ansirh.org/research/turnaway-study.

[8] Diana Greene Foster and Katrina Kimport, "Who Seeks Abortions at or after 20 Weeks?," *Perspectives on Sexual and Reproductive Health*, vol. 45, no. 4 (2013), pp. 210-218.

[9] Ibid., p. 211. The groups of women were recruited in a ratio of 1:2:1. "The facilities set limits based on state law, the availability of trained physicians, clinician and staff comfort, and facility regulations. Gestational age limits at these clinics ranged from 10 weeks to the end of the second trimester; 16 sites had a limit beyond 20 weeks."

track their health and wellbeing.[10] Data collected from the Turnaway study have resulted in numerous articles published in the academic literature.

The Turnaway study found that women who obtained later abortions (group 2) were similar to women who obtained an abortion in the first trimester (group 1) in terms of "race, ethnicity, number of live births or abortions, mental or physical health history or substance use."[11] For example, most women in the study who obtained an abortion were unmarried: 96% in group 2 and 91% in the first trimester group. Most women in the study were already mothers (63% in both groups).[12] Regarding employment, 50% of women seeking a later abortion were employed, compared with 66% of women who had a first trimester procedure. A lower proportion of women in the later abortion group had private health insurance (23%) compared with women in the first trimester group (33%). Women in the late group tended to be younger (59% under 25) compared with women in the first trimester group (41% under 25).

According to the study authors, women who sought later abortions were "much more likely than first trimester patients to have been eight or more weeks pregnant at the time they discovered their pregnancy (68% vs. 12%) and to have traveled more than three hours to get to the abortion facility (21% vs. 5%)."[13]

What percentage of abortions performed at or after 20 weeks of gestation is due to fetal anomaly or the health of the mother?

According to Diana Greene Foster, the lead investigator on the Turnaway study (described above) and a professor at the University of California, San Francisco, Bixby Center for Global Reproductive Health, "[t]here aren't good data on how often later abortions are for medical reasons."[14] Based on limited research and discussions with researchers in the field, Dr. Foster believes that abortions for fetal anomaly "make up a small minority of later abortion" and that those for life endangerment are even harder to characterize.[15] Many of the women whose lives are at risk would be treated under emergency circumstances at a hospital rather than at a dedicated abortion clinic, making numbers more difficult to obtain, according to Dr. Foster.

Approximately 3% of pregnant women in the United States receive a prenatal diagnosis identifying a fetal abnormality.[16] This diagnosis could be due to either (1) fetal aneuploidy, which is an abnormality in the number of chromosomes—either too few or too many—most commonly trisomy (such as Down syndrome), or (2) fetal structural abnormalities of the neurologic, cardiac, musculosketal, genitourinary, or other systems. In cases where a pregnancy is affected by a

[10] Authors of the Turnaway study state, "The account we have presented of women who seek later abortions is not meant to supersede consideration of the fetus in the abortion debate. Rather, we are offering an important corrective to discussions that have conceptualized later abortions exclusively in terms of the fetus, without a portrait of the women seeking them." Ibid., p. 217.

[11] Ibid., p. 212.

[12] Ibid.

[13] Ibid.

[14] Dave Levitan, "Clinton Off on Late-Term Abortions," Scicheck, FactCheck.org, September 29, 2015, at https://www.factcheck.org/2015/09/clinton-off-on-late-term-abortions/.

[15] Ibid.

[16] Anne R. Davis, Sarah K. Horvath, and Paula M. Castaño, "Trends in Gestational Age at Time of Surgical Abortion for Fetal Aneuploidy and Structural Abnormalities," *Am J Obstet Gynecol*, vol. 216, no. 278 (2017), pp. e1-e5; and Lori M. Gawron, Kenzie A. Cameron, Ava Phisuthikul, et al., "An Exploration of Women's Reasons for Termination Timing in the Setting of Fetal Abnormalities," *Contraception*, vol. 88 (2013), pp. 109-115.

genetic or structural fetal abnormality, more than 80% of women choose to terminate the pregnancy.[17]

A study published in 2017 found that due to advancements in prenatal testing, the gestational age at the time of abortion for fetal aneuploidy decreased substantially from 19 weeks in 2004 to 14 weeks in 2014.[18] In contrast, the 2017 study found that women seeking abortion for fetal structural abnormalities did not experience a change in timing: the median gestational age was greater than or equal to 20 weeks for each year during the study interval, likely because "no first-trimester screening test exists for most of the nonaneuploid fetal structural abnormalities" and therefore "diagnosis of structural abnormalities has relied on second-trimester ultrasound."[19]

Why might a woman experience a delay in seeking or receiving an abortion?

A woman might experience a delay in seeking or receiving an abortion for a variety of reasons, such as late recognition of pregnancy, inability to obtain transportation, and difficulty in raising the necessary funds (e.g., for medical services, transportation and hotel costs, and child care).[20] Moreover, according to the 2018 NAS study mentioned above, "numerous abortion-specific federal and state laws and regulations affect the delivery of abortion services." The NAS study provides a table listing state regulations that may affect the safety and quality of abortion services, either by delaying or otherwise adversely affecting the delivery of those services.[21]

The Turnaway study (described above) found that women in both the later abortion group and the first trimester group experienced delays in seeking or receiving an abortion: "Indeed, 94% of the later abortion patients and 80% of first trimester patients reported that something slowed them down."[22] In both groups, roughly the same proportion stated that not realizing they were pregnant delayed them in seeking an abortion: "However, women seeking later abortions were generally much farther along when they discovered their pregnancy than were women seeking first trimester abortions: 12 weeks, on average, compared with just five weeks."[23]

For women seeking later abortion, 38% reported having trouble locating an abortion facility, because later procedures are less commonly available, compared with 18% of those who had a first trimester abortion. Some facilities refuse to perform an abortion on women with certain physical conditions, such as obesity.[24] Travel considerations were also a problem. Women seeking

[17] Lori M. Gawron, Kenzie A. Cameron, Ava Phisuthikul, et al., "An Exploration of Women's Reasons for Termination Timing in the Setting of Fetal Abnormalities," *Contraception,* vol. 88 (2013), pp. 109-115.

[18] Anne R. Davis, Sarah K. Horvath, and Paula M. Castaño, "Trends in Gestational Age at Time of Surgical Abortion for Fetal Aneuploidy and Structural Abnormalities," *Am J Obstet Gynecol*, vol. 216, no. 278 (2017), pp. e1-e5.

[19] Ibid.

[20] Diana Greene Foster and Katrina Kimport, "Who Seeks Abortions at or After 20 Weeks?," *Perspectives on Sexual and Reproductive Health*, vol. 45, no. 4 (2013), pp. 210-218.

[21] National Academies of Sciences, Engineering, and Medicine, *The Safety and Quality of Abortion Care in the United States*, Washington, DC, March 2018, p. 1-6, https://doi.org/10.17226/24950. For an overview of state abortion-specific regulations that may affect safety and quality of abortion services, see Table 1-1 on pages 1-7 through 1-9.

[22] Diana Greene Foster and Katrina Kimport, "Who Seeks Abortions at or After 20 Weeks?," *Perspectives on Sexual and Reproductive Health*, vol. 45, no. 4 (2013), pp. 210-218.

[23] Ibid., pp. 213-214.

[24] Ibid., pp. 214.

later abortions were more than twice as likely as first trimester patients to report that difficulty getting to the abortion facility caused a delay (27% versus 12%).[25]

According to the study authors, "[a]lmost two-thirds of the women seeking later abortion and fewer than one-third of those seeking a first trimester abortion said they were delayed because they were raising money for travel, the procedure, and other costs."[26] In addition, "women seeking later abortions were twice as likely as women seeking first trimester abortions to report delays because of difficulties securing public or private insurance coverage for the abortion (41% vs. 20%)."[27] Other factors delayed women who were seeking abortion services: 37% of women in the study (40% later, 33% first trimester) reported that the process of deciding whether to have an abortion delayed them, and 18% of women in the study (20% later, 16% first trimester) said that disagreement over the abortion decision with the man involved in the pregnancy delayed them.[28]

A January 2017 study of more than 8,000 U.S. abortion patients found that "women who live in states that required an in-person counseling visit 24-72 hours prior to the procedure were less likely to obtain an early abortion."[29] Such requirements for in-person counseling can delay the procedure for a period of time longer than the one imposed by the state law. "For example, some facilities only provide abortion care a few days or even one day, per week. In states with an in-person counseling requirement this could hinder access to very early abortion."[30] According to Guttmacher, as of February 1, 2018, 27 states have a 24- to 72-hour waiting period after counseling, and "14 of these states have laws that effectively require the woman make two separate trips to the clinic to obtain the procedure."[31] For example, the 72-hour waiting period in South Dakota excludes weekends and annual holidays.[32]

The January 2017 study identified several characteristics of women who were more likely to have a second trimester abortion. They included not having graduated from high school, recognizing the pregnancy late, using financial assistance (e.g., clinic discounts) to pay for the abortion, and living 25 or more miles from the abortion facility.[33]

What methods do providers use to perform an abortion in the second trimester?

Abortion in the second trimester can be performed by a surgical procedure, or by a medical abortion method that relies on drugs to induce labor.

In the surgical procedure—called dilation and evacuation (D&E)—the cervix is dilated over 24-48 hours, usually as an outpatient procedure.[34] The fetus does not survive D&E procedures; after

[25] Ibid., pp. 214.

[26] Ibid., p. 215.

[27] Ibid.

[28] Ibid., p. 214.

[29] Rachel K. Jones and Jenna Jerman, "Characteristics of U.S. Women Who Obtain Very Early and Second-Trimester Abortions," *PLoS ONE*, vol. 12, no. 1 (January 25, 2017), pp. 1-15.

[30] Ibid., p. 13.

[31] Guttmacher Institute, *An Overview of Abortion Laws*, February 2018, https://www.guttmacher.org/print/state-policy/explore/overview-abortion-laws.

[32] Ibid.

[33] Rachel K. Jones and Jenna Jerman, "Characteristics of U.S. Women Who Obtain Very Early and Second-Trimester Abortions," *PLoS ONE*, vol. 12, no. 1 (January 25, 2017), p. 1.

[34] Daniel Grossman, Kelly Blanchard, and Paul Blumenthal, "Complications after Second Trimester Surgical and (continued...)

the cervix is dilated, the amniotic fluid is drained and "the fetal and placental tissue are removed in pieces using grasping forceps."[35] D&E can be performed in 15-20 minutes, often using ultrasound guidance. According to CDC, in 2014 a surgical method was used for 98.8% of U.S. abortions at 14-15 weeks' gestation, 98.4% at 16-17 weeks, 96.6% at 18-20 weeks, and 90.2% at 21 weeks or later.[36]

In the medical abortion method, a drug or drug combination is given to the patient to induce labor. In one method, a drug (e.g., prostaglandin) is injected directly into the uterus. This method has largely been replaced by a second method, which uses the drugs mifepristone and misoprostol.[37] Mifepristone is taken orally on an outpatient basis; 36-48 hours after taking the drug, the woman is admitted to the clinic or hospital and another drug, misoprostol, is administered vaginally.[38] This dosage may be followed by another oral administration of misoprostol, as necessary, until the abortion occurs. Misoprostol may be used alone if mifepristone is unavailable. The median induction time for regimens using misoprostol alone ranges from 12 to 45 hours.[39] The combination of mifepristone and vaginal misoprostol shortens the median induction-to-abortion interval to 5.9-6.6 hours and lowers the dose of required drugs (misoprostol), as well as the need for pain-relieving drugs; many women (over 75%) receive care without an overnight stay.[40] Neither mifepristone nor misoprostol kills the fetus; however, the trauma of labor usually results in the death of the fetus up through 21 weeks of pregnancy.[41]

Randomized Controlled Trial

In a randomized controlled trial (RCT), participants are randomly assigned to two or more groups. Randomization ensures that any patient characteristics that might affect the outcome will be roughly equal across each group in the study. Any difference in outcomes between the groups is then likely due to the intervention. The RCT is often called the gold standard of evidence for a clinical trial.

A 2008 Cochrane Collaboration review looked at the small number of randomized controlled trials (RCTs) that have compared surgical and medical abortion methods used in the second trimester.[42] The 2008 Cochrane review focused on two U.S. RCTs that evaluated

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Medical Abortion," *Reproductive Health Matters*, vol. 16 (2008), pp. 173-182.

[35] Daniel Grossman, Kelly Blanchard, and Paul Blumenthal, "Complications after Second Trimester Surgical and Medical Abortion," *Reproductive Health Matters*, vol. 16 (2008), p. 174.

[36] Tara C. Jatlaoui, Jill Shah, Michele G. Mandel, et al., "Abortion Surveillance—United States, 2014," *MMWR Surveillance Summaries*, vol. 66, no. 24 (November 24, 2017), p. 43.

[37] Patricia A. Lohr, Jennifer L. Hayes, and Kristina Gemzell-Danielsson, "Surgical Versus Medical Methods for Second Trimester Induced Abortion (Review)," *The Cochrane Database of Systematic Reviews*, 2008.

[38] Daniel Grossman, Kelly Blanchard, and Paul Blumenthal, "Complications after Second Trimester Surgical and Medical Abortion," *Reproductive Health Matters*, vol. 16 (2008), p. 174; and Kristina Gemzall-Danielsson and Sujata Lalitkumar, "Second Trimester Medical Abortion with Mifepristone-Misoprostol and Misoprostol Alone: A Review of Methods and Management," *Reproductive Health Matters*, vol. 16 (2008), pp. 162-172. About 0.2%-0.4% of women abort with mifepristone alone.

[39] Patricia A. Lohr, Jennifer L. Hayes, and Kristina Gemzell-Danielsson, "Surgical Versus Medical Methods for Second Trimester Induced Abortion (Review)," *The Cochrane Database of Systematic Reviews*, 2008.

[40] Ibid., p. 3, and Kristina Gemzall-Danielsson and Sujata Lalitkumar, "Second Trimester Medical Abortion with Mifepristone-Misoprostol and Misoprostol Alone: A Review of Methods and Management," *Reproductive Health Matters*, vol. 16 (2008), pp. 165 and 167.

[41] David A. Grimes, "The Choice of Second Trimester Abortion Method: Evolution, Evidence and Ethics," *Reproductive Health Matters*, vol. 16 (2008), p. 185; and Kristina Gemzall-Danielsson and Sujata Lalitkumar, "Second Trimester Medical Abortion with Mifepristone-Misoprostol and Misoprostol Alone: A Review of Methods and Management," *Reproductive Health Matters*, vol. 16 (2008), p. 167.

efficacy, side effects, adverse events, and acceptability.[43] One RCT published in 1980 compared D&E with prostaglandin injection into the uterus; it enrolled a total of 100 participants with pregnancies of 13-18 weeks' gestation. The second RCT published in 2004 compared D&E with a mifepristone-misoprostol regimen and aimed to recruit a total of 60 women at 13.9-19.9 weeks' gestation. Recruitment was stopped after one year (as required by the trial's stopping rules) due to slow enrollment—women were unwilling to be randomized: 93% of those who declined to participate stated they preferred D&E.[44] In the second trial, a total of 18 women were randomized, 9 per group.

The Cochrane review states that in these two RCTs, D&E is superior to injection of prostaglandin into the uterus and that the "current evidence also appears to favor D&E over mifepristone and misoprostol, however larger randomized trials are needed."[45] The 2008 Cochrane review provides the following background information:

> Specialized training and the maintenance of an adequate caseload are required to perform D&E safely. Inexperienced providers are advised to use medical methods. The relative frequency of D&E to medical induction, therefore, varies. For example, D&E is used for 96% of abortions performed at ≥ 13 weeks' gestation in the United States and 75% of those in England and Wales. In contrast, in Finland and Sweden virtually all abortions in the second trimester are performed medically.[46]

Another source provides information on the use of second trimester medical abortion in Europe: "In the Scandinavian countries, the use of second trimester medical abortion assures wide access to induced abortion since it can be performed in all gynecological clinics. Furthermore, in these settings mid-level providers with adequate training and back-up can provide the abortion care."[47]

How many providers perform second trimester abortions?

According to a study published in 2014, almost all U.S. abortion facilities (95%) in 2012 offered abortions at 8 weeks' gestation, 72% offered abortions at 12 weeks, 34% at 20 weeks, and 16% at 24 weeks.[48] The authors surveyed all known abortion-providing facilities in the United States. A

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[42] Patricia A. Lohr, Jennifer L. Hayes, and Kristina Gemzell-Danielsson, "Surgical Versus Medical Methods for Second Trimester Induced Abortion (Review)," *The Cochrane Database of Systematic Reviews*, 2008. The Cochrane Collaboration is an international network of over 37,000 contributors from more than 130 countries, who prepare and update Cochrane Reviews. Cochrane Reviews provide evidence-based advice to help patients and physicians make well-informed health care decisions. For more information, see http://consumers.cochrane.org/about-cochrane-collaboration.

[43] Patricia A. Lohr, Jennifer L. Hayes, and Kristina Gemzell-Danielsson, "Surgical Versus Medical Methods for Second Trimester Induced Abortion (Review)," *The Cochrane Database of Systematic Reviews*, 2008.

[44] Daniel Grossman, Kelly Blanchard, and Paul Blumenthal, "Complications after Second Trimester Surgical and Medical Abortion," *Reproductive Health Matters*, vol. 16 (2008), p. 179.

[45] Patricia A. Lohr, Jennifer L. Hayes, and Kristina Gemzell-Danielsson, "Surgical Versus Medical Methods for Second Trimester Induced Abortion (Review)," *The Cochrane Database of Systematic Reviews*, 2008, p. 2.

[46] Ibid.

[47] Kristina Gemzall-Danielsson and Sujata Lalitkumar, "Second Trimester Medical Abortion with Mifepristone-Misoprostol and Misoprostol Alone: A Review of Methods and Management," *Reproductive Health Matters*, vol. 16 (2008), pp. 162-172.

[48] Jenna Jerman and Rachel K. Jones, "Secondary Measures of Access to Abortion Services in the United States, 2011 and 2013: Gestational Age Limits, Cost, and Harassment," *Women's Health Issues*, vol. 24, no. 4 (2014), p. e421.

total of 1,720 abortion facilities participated in this study: 453 were located in the Northeast, 737 in the West, 357 in the South, and 173 in the Midwest.[49]

What is the cost of an abortion at 20 weeks of gestation?

According to a study published in 2014, "[a]bortions at 20 weeks' gestation typically take 2 or more days to complete, and involve greater skill and resources. The median charge for an abortion at 20 weeks' gestation in 2011 and 2012 was $1,350 (range, $750-$5,000)."[50] For comparison, the same 2014 study states that the median charge for a surgical abortion at 10 weeks' gestation in 2011 and 2012 was $495 (with a range of $10 to $2,908).[51] The Turnaway study found somewhat higher average prices: $2,014 for a later abortion and $519 for a first trimester procedure; data were collected from 2008 through the end of 2010.[52]

Do federal/state dollars support these abortions?

In general, federal law prohibits the use of federal funds for abortions, except in cases of rape, incest, or endangerment of the woman's life.[53] Medicaid is the only domestic program for which CRS has data on federally funded abortions; data on government funding for abortions are not broken out by gestational age. Medicaid is jointly funded by state and federal dollars. According to a report by the U.S. Department of Health and Human Services (HHS), in FY2016, there were 69 Medicaid abortions for which federal financial participation was claimed (2 were due to incest, 33 were due to rape, and 34 were due to endangerment of the woman's life).[54] In FY2015, there were 148 Medicaid abortions for which federal financial participation was claimed (1 was due to incest, 44 were due to rape, and 103 were due to endangerment of the woman's life).[55] The HHS report does not report these abortions by gestational age.[56] For comparison, Medicaid financed 1.68 million births (43% of 3.95 million total births) in 2016.[57]

As noted above, federal Medicaid funding for abortion is limited to cases of rape, incest, or endangerment of the woman's life. Some state Medicaid programs cover other abortions with state-only funds. Guttmacher occasionally surveys state Medicaid agencies about state-only abortion expenditures; it found that in FY2015, states contributed $70.9 million to 157,070 abortions, and the federal government contributed $490,000 to 160 abortions. The Guttmacher report does not break out these abortions by gestational age.[58]

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[49] Ibid.

[50] Jenna Jerman and Rachel K. Jones, "Secondary Measures of Access to Abortion Services in the United States, 2011 and 2013: Gestational Age Limits, Cost, and Harassment," *Women's Health Issues*, vol. 24, no. 4 (2014), pp. e419-e424.

[51] Ibid., p. e421. The authors note that the "unusually low minimum ($10) was listed by one facility that did relatively few abortions and likely reflects a sliding scale or reduced fee."

[52] Diana Greene Foster and Katrina Kimport, "Who Seeks Abortions at or after 20 Weeks?," *Perspectives on Sexual and Reproductive Health*, vol. 45, no. 4 (2013), p. 214.

[53] For more details, see CRS Report R44130, *Federal Support for Reproductive Health Services: Frequently Asked Questions*, and CRS Report RL33467, *Abortion: Judicial History and Legislative Response*.

[54] HHS, Office of the Assistant Secretary for Financial Resources, *FY2018 Moyer Material*, June 21, 2017.

[55] Ibid.

[56] Ibid.

[57] Joyce A. Martin, Brady E. Hamilton, and Michelle J.K. Osterman, et al., "Births: Final Data for 2016," *National Vital Statistics Reports*, vol. 67, no. 1 (January 31, 2018), p. 2.

[58] Kinsey Hasstedt, Adam Sonfield, and Rachel Benson Gold, *Public Funding for Family Planning and Abortion* (continued...)

Another 2017 Guttmacher study used a nationally representative sample of 8,380 nonhospital abortion patients in 2014 and 2015. The study found that 22% had used Medicaid to pay for the abortion.[59] Of the abortions paid for by Medicaid, 13% were in the second trimester (later than 12 weeks' gestation).[60] Women using Medicaid to pay for the abortion were no more or less likely than those paying out of pocket to be obtaining a second trimester abortion. The study did not indicate whether federal dollars contributed to any second trimester abortions. It noted that "Medicaid was the second most common method of payment. (The overwhelming majority of these patients lived in one of the 15 states that use their own Medicaid funds to cover abortion.)"[61]

Are second trimester abortions safe for women?

Measures of safety during a medical procedure generally refer to the probability of an adverse outcome, the most severe being death due to the procedure (serious medical complications are discussed in the next question and answer). For women in the United States, the mortality rate associated with childbirth or continuing the pregnancy is higher than the abortion mortality rate. The 2018 NAS study states that the "risk of death subsequent to a legal abortion (0.7 per 100,000) is a small fraction of that for childbirth (8.8 per 100,000). Abortion-related mortality is also lower than that for colonoscopies (2.9 per 100,000), plastic surgery (0.8 to 1.7 per 100,000), dental procedures (0.0 to 1.7 per 100,000), and adult tonsillectomies (2.9 to 6.3 per 100,000)."[62]

However, the abortion mortality rate increases with gestational age. A U.S. study published in 2015 reports that between 1998 and 2010, for legal abortions performed at eight weeks or earlier, the mortality rate was 0.3 deaths per 100,000 abortions; at 9-13 weeks, the mortality rate was 0.5 deaths per 100,000 abortions; at 14-17 weeks, the mortality rate was 2.5 deaths per 100,000 abortions; and at 18 weeks or later, the mortality rate was 6.7 deaths per 100,000 abortion procedures.[63] In this 2015 study, the "most common causes of death after a second trimester abortion were hemorrhage and infection."[64]

What are the possible physical health complications or side effects associated with a second trimester abortion?

According to a literature review of articles published in 2008, the complication rates for both D&E and the mifepristone-misoprostol regimen are low or rare; this is especially the case for serious complications such as uterine rupture, major hemorrhage, and cervical tear.[65] However,

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Services, FY 1980-2015, Guttmacher Institute, New York, NY, April 2017, https://www.guttmacher.org/report/public-funding-family-planning-abortion-services-fy-1980-2015.

[59] Rachel K. Jones and Jenna Jerman, "Characteristics of U.S. Women Who Obtain Very Early and Second-Trimester Abortions," *PLoS ONE*, vol. 12, no. 1 (January 25, 2017), pp. 1, 3, and 6.

[60] Ibid., p. 10 (odds ratio 1.18; 95% confidence interval 0.88-1.58; p-value 0.28).

[61] Ibid., p. 5.

[62] National Academies of Sciences, Engineering, and Medicine, *The Safety and Quality of Abortion Care in the United States*, Washington, DC, March 2018, p. 2-24, https://doi.org/10.17226/24950. The NAS study notes that comparable data for other common medical procedures are difficult to find.

[63] Suzanne Zane, Andreea A. Creanga, Cynthia J. Berg, et al., "Abortion-Related Mortality in the United States 1998-2010," *Obstet Gynecol*, vol. 126, no. 2 (August 2015), pp. 258-265.

[64] Ibid.

[65] Daniel Grossman, Kelly Blanchard, and Paul Blumenthal, "Complications after Second Trimester Surgical and (continued...)

incomplete abortion was significantly more common in women undergoing a second trimester medical abortion (8%) compared with women undergoing the surgical procedure (0.05%).[66] In an incomplete abortion, some placental or fetal tissue remains in the uterus and surgical removal is necessary. In addition, a higher proportion of women who had a medical abortion required blood transfusion compared with women who had D&E.[67]

One 2008 review article suggests that women in the United States may prefer D&E because it is "exceedingly predictable with respect to the amount of time required.... For the woman, such a predictable scenario is often psychologically preferable" to the unknown number of hours spent in labor with the mifepristone-misoprostol induction procedure.[68] Also, "abdominal pain is one of the most common adverse effects of medical abortion."[69] D&E avoids the pain of labor, and "because of the additional tranquilizing effect of the pain medication used, as well as the more passive involvement of the woman (who is 'operated on' but is not an active participant in the actual procedure), D&E may be less emotionally traumatic than induction approaches" such as a mifepristone-misoprostol regimen.[70]

A 2004 report on the use of a mifepristone-misoprostol regimen in Scotland found that 8% of the 1,000 women in the study had an incomplete abortion requiring surgical completion of the procedure and 3% required antibiotic treatment due to suspected infection.[71] A 2006 report of a similar mifepristone-misoprostol regimen found that 5% of women required surgical evacuation of the uterus.[72] For comparison, 0.05% of women undergoing D&E require repeat surgical evacuation.[73] Another 2008 review article states that complications or adverse events are 2.6 to 7.9 times more common with labor induction methods (prostaglandin injection or mifepristone-misoprostol regimen) compared with D&E.[74]

The 2008 Cochrane Collaboration review comparing surgical and medical abortion methods used in the second trimester found that the total number of women experiencing one or more adverse

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Medical Abortion," *Reproductive Health Matters*, vol. 16 (2008), p. 178; and Kristina Gemzall-Danielsson and Sujata Lalitkumar, "Second Trimester Medical Abortion with Mifepristone-Misoprostol and Misoprostol Alone: A Review of Methods and Management," *Reproductive Health Matters*, vol. 16 (2008), p. 166.

[66] Daniel Grossman, Kelly Blanchard, and Paul Blumenthal, "Complications after Second Trimester Surgical and Medical Abortion," *Reproductive Health Matters*, vol. 16 (2008), p. 178.

[67] Ibid.

[68] Ibid., p. 179.

[69] Kristina Gemzall-Danielsson and Sujata Lalitkumar, "Second Trimester Medical Abortion with Mifepristone-Misoprostol and Misoprostol Alone: A Review of Methods and Management," *Reproductive Health Matters*, vol. 16 (2008), p. 166.

[70] Daniel Grossman, Kelly Blanchard, and Paul Blumenthal, "Complications after Second Trimester Surgical and Medical Abortion," *Reproductive Health Matters*, vol. 16 (2008), p. 179.

[71] Ibid., and P.W. Ashok, A. Templeton, P.T. Wagaarachchi, et al., "Midtrimester Medical Termination of Pregnancy: A Review of 1002 Consecutive Cases," *Contraception*, vol. 69, no. 1 (2004), pp. 51-58.

[72] Patricia A. Lohr, Jennifer L. Hayes, and Kristina Gemzell-Danielsson, "Surgical Versus Medical Methods for Second Trimester Induced Abortion (Review)," *The Cochrane Database of Systematic Reviews*, 2008, p. 5, and S.E. Goh and K.J. Thong, "Induction of Second Trimester Abortion (12-20 weeks) with Mifepristone and Misoprostol: A Review of 386 Consecutive Cases," *Contraception*, vol. 73 (2006), pp. 516-519.

[73] Daniel Grossman, Kelly Blanchard, and Paul Blumenthal, "Complications after Second Trimester Surgical and Medical Abortion," *Reproductive Health Matters*, vol. 16 (2008), p. 178.

[74] David A. Grimes, "The Choice of Second Trimester Abortion Method: Evolution, Evidence and Ethics," *Reproductive Health Matters*, vol. 16 (2008), pp. 183-188.

events was lower in the D&E group compared with the mifepristone-misoprostol group.[75] Adverse events experienced by the mifepristone-misoprostol group were fever (one woman required antibiotic treatment) and incomplete abortion requiring surgical extraction. Side effects (e.g., nausea, vomiting, and diarrhea) were more frequent in the mifepristone-misoprostol group. "Overall pain was significantly higher in the mifepristone-misoprostol group but there were no substantial differences in other indicators of acceptability and satisfaction."[76] Women in the D&E group did not require overnight hospitalization.

As mentioned above, the 2018 NAS study found that "numerous abortion-specific federal and state laws and regulations affect the delivery of abortion services."[77] The NAS study states that safety "is enhanced when the abortion is performed as early in pregnancy as possible."[78] The 2018 NAS study also states that "the risk of serious complication increases with weeks gestation. As the number of weeks increases, the invasiveness of the required procedure and the need for deeper levels of sedation also increase. Thus, delaying the abortion increases the risk of harm to the woman."[79] The NAS study provides a table listing state regulations that may affect safety and quality by delaying abortion services or otherwise adversely impacting the delivery of abortion services.[80] Examples given in the 2018 NAS study of state regulations that delay the abortion include the following:

- requiring women to make multiple in-person visits because, for example, ultrasound or counseling must be performed or conducted before the abortion;
- requiring mandatory waiting periods between in-person counseling and the abortion procedure;
- reducing the availability of care by restricting the types of providers and the settings in which abortion services can be provided;
- prohibiting public payers from paying for abortions; and
- prohibiting health insurance exchange plans or private insurance plans sold in the state from covering or paying for abortions, with few exceptions.[81]

Regarding the state requirements for mandatory counseling before an abortion is performed, the 2018 NAS study found that

> abortion patients in many of these states are offered or given inaccurate or misleading information (verbally or in writing) on: reversing medication abortions [Arkansas, South Dakota, Utah], risks to future fertility [Arizona, Kansas, North Carolina, Nebraska, South Dakota, Texas], possible breast cancer risk [Alaska, Kansas, Mississippi, Oklahoma, Texas], and/or long-term mental health consequences of abortion [Idaho, Kansas,

[75] Patricia A. Lohr, Jennifer L. Hayes, and Kristina Gemzell-Danielsson, "Surgical Versus Medical Methods for Second Trimester Induced Abortion (Review)," *The Cochrane Database of Systematic Reviews*, 2008, p. 5

[76] Ibid.

[77] National Academies of Sciences, Engineering, and Medicine, *The Safety and Quality of Abortion Care in the United States*, Washington, DC, March 2018, p. 1-6, https://doi.org/10.17226/24950.

[78] Ibid., p. S-10.

[79] Ibid., p. 2-26.

[80] Ibid. Table 1-1 on pp. 1-7 through 1-9 of the 2018 NAS study provides an overview of state abortion-specific regulations that may affect safety and quality of abortion services.

[81] Ibid., pp. 2-26 through 2-27. The authors note that exceptions "are limited and vary by state. They are often made for pregnancies resulting from rape or incest, pregnancies that endanger the woman's life or severely threaten the health of the woman, and cases of fetal impairment."

> Louisiana, Michigan, North Carolina, North Dakota, Nebraska, Oklahoma, South Dakota, Texas, Utah, West Virginia].[82]

The 2018 NAS study notes that "[l]ong-established ethical and legal standards for informed consent in health care appear to have been compromised in the delivery of abortion care."[83] The main objective of the informed consent process is that patients understand the nature and risks of their upcoming procedure. "[L]egally requiring providers to inform women about risks that are not supported and are even invalidated by scientific research violates the accepted standards of informed consent."[84]

Do women who have a second trimester abortion, or who are prevented from having such an abortion, experience any mental health complications?

According to testimony before the Senate Judiciary Committee by Diana Greene Foster, lead investigator on the Turnaway study (described above), there are

> no significant differences between women seeking later abortions and women seeking first trimester abortions in their emotional or psychological responses. Women feel a range of emotional responses to having had an abortion including, in decreasing order, relief, sadness, guilt, happiness and regret. But at every time point in the five years interviewing these women, we have found that over 95% of women report that the abortion was the right decision for them.[85]

The Turnaway study has found that "[s]oon after being denied abortions, women experienced higher perceived stress than women who received abortions. The study found no longer-term differences in perceived stress or emotional social support between women who received versus were denied abortions."[86] A 2015 Turnaway study publication found that "[a]mong women seeking abortions near facility gestational limits, those who obtained abortions were at no greater mental health risk than were women who carried an unwanted pregnancy to term."[87]

Data from the Turnaway study indicate that "the primary reasons for wanting an abortion were: feeling not financially prepared (40%), not the right time (36%), and having a baby now would interfere with future opportunities (20%)."[88]

The 2018 NAS study "identified a wide array of research on whether abortion increases women's risk of depression, anxiety, and/or posttraumatic stress disorder (PTSD) and concludes that having an abortion does not increase a woman's risk of these mental health disorders."[89]

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[82] Ibid., p. 2-27. See also Table 1-1 on p. 1-7.

[83] Ibid.

[84] Ibid.

[85] U.S. Congress, Senate Committee on the Judiciary, *Late-Term Abortion: Protecting Babies Born Alive and Capable of Feeling Pain*, 114th Cong., 2nd sess., March 15, 2016.

[86] Laura F. Harris, Sarah C.M. Roberts, M. Antonia Biggs, et al., "Perceived Stress and Emotional Social Support Among Women Who Are Denied or Receive Abortions in the United States: A Prospective Cohort Study," *BMC Women's Health*, vol. 14, no. 76 (2014), pp. 1-11.

[87] M. Antonia Biggs, John M. Neuhaus, and Diana G. Foster, "Mental Health Diagnoses 3 Years After Receiving or Being Denied an Abortion in the United States," *American Journal of Public Health*, vol. 105, no. 12 (December 2015), pp. 2557-2563.

[88] Ushma D. Upadhyay, M. Antonia Biggs, and Diana Greene Foster, "The Effect of Abortion on Having and Achieving One-Year Plans," *BMC Women's Health*, vol. 15, no. 102 (2015), pp. 1-10.

What is the viability of an infant born in the second trimester?

In medical abortions, neither mifepristone nor misoprostol kills the fetus.[90] The trauma of labor usually results in the death of the fetus up through 21 weeks of pregnancy.[91] However, some fetuses at 22 weeks' gestation or after may survive labor associated with medical abortion.[92] An examination of the outcomes of extremely preterm infants from intended pregnancies—born between weeks 22 and 25—may shed some light on the viability of fetuses that survive a second trimester medical abortion.

The author of a 2017 overview on the survival of extremely preterm infants—born prior to 25 weeks gestation—states that although such infants typically died prior to the 1960s, "[t]echnological advances—particularly concerning neonatal nutrition and respiration—have allowed hospitals to resuscitate extremely preterm infants steadily earlier, with a current limit of about 21 weeks."[93] At 23 weeks, "infants do not have sufficiently developed lungs to breathe on their own" and "will die upon delivery if not given life-sustaining therapies."[94] However, "some infants are simply too small for the smallest breathing tube, or have lungs that are too premature for the infant to survive, even if maximal therapy is provided."[95] At 22-23 weeks, infants weigh about 1 pound (500 grams) and have "paper-like skin which tears easily if exposed to extensive contact."[96] Outcomes vary widely for infants born in the "gray area" between weeks 22 and 25, "and prognostication is difficult. Indeed, although practice tends to be guided by gestational age, there is good evidence that several other factors have significant effects on outcomes."[97]

According to guidelines and standards in place in 2017, in general, infants born before 22 weeks are rarely treated, "while treatment for infants 25 weeks and beyond is typically seen as obligatory. Parents in this latter case lose the right to refuse treatment for their child at birth, even

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[89] National Academies of Sciences, Engineering, and Medicine, *The Safety and Quality of Abortion Care in the United States*, Washington, DC, March 2018, p. 5-3, https://doi.org/10.17226/24950.

[90] David A. Grimes, "The Choice of Second Trimester Abortion Method: Evolution, Evidence and Ethics," *Reproductive Health Matters*, vol. 16 (2008), p. 185.

[91] Ibid., and Kristina Gemzall-Danielsson and Sujata Lalitkumar, "Second Trimester Medical Abortion with Mifepristone-Misoprostol and Misoprostol Alone: A Review of Methods and Management," *Reproductive Health Matters*, vol. 16 (2008), p. 167.

[92] The fetus does not survive D&E procedures; after the cervix is dilated, the amniotic fluid is drained and "the fetal and placental tissue are removed in pieces using grasping forceps." Daniel Grossman, Kelly Blanchard, and Paul Blumenthal, "Complications after Second Trimester Surgical and Medical Abortion," *Reproductive Health Matters*, vol. 16 (2008), p. 174.

[93] Travis N. Rieder, "Saving or Creating: Which Are We Doing When We Resuscitate Extremely Preterm Infants?," *The American Journal of Bioethics*, vol. 17, no. 8 (2017), pp. 4-12.

[94] Ibid., p. 5.

[95] Stephanie Kukora and Naomi Laventhal, "Rock the Baby, Not the Boat: A Defense of Epidemiology-Based and Values-Based Shared Decision Making at the Margin of Gestational Viability," *The American Journal of Bioethics*, vol. 17, no. 8 (2017), pp. 16-18.

[96] Travis N. Rieder, "Saving or Creating: Which Are We Doing When We Resuscitate Extremely Preterm Infants?," *The American Journal of Bioethics*, vol. 17, no. 8 (2017), p. 7.

[97] Ibid., p. 6. The author states in footnote 7, "In a study of more than 4400 infants born between 22 and 25 weeks gestational age, increased birth weight (per 100-g increment), the use of antenatal corticosteroid therapy, female sex, and singleton birth were each associated with a benefit similar to increasing gestational age by approximately 1 week." J. E. Tyson, N. A. Parikh, J. Langer, et al., "Intensive Care for Extreme Prematurity—Moving Beyond Gestational age," *The New England Journal of Medicine*, vol. 358, no. 16 (2008), pp. 1672–81.

though some of these babies will still die from prematurity-related difficulties, and others will suffer prolonged hospital stays and/or permanent disabilities."[98]

A 2015 *New England Journal of Medicine* (*NEJM*) study looked at 24 U.S. hospitals and the variation in treatment and outcomes of extremely preterm infants, defined as those born before 27 weeks' gestation without congenital anomalies.[99] Among infants born at 22, 23, or 24 weeks of gestation, hospital rates of treatment varied widely.[100] For example, the study found that for infants born at 22 weeks' gestation, four hospitals never provided treatment, whereas five always provided treatment; most hospitals provided active treatment to all infants born at 25 or 26 weeks' gestation.[101] Infants were considered to have received active treatment if they received any of the following interventions: surfactant therapy, tracheal intubation, ventilatory support (including continuous positive airway pressure, bag–valve–mask ventilation, or mechanical ventilation), parenteral nutrition, epinephrine, or chest compressions.

The 2015 *NEJM* study collected data on survival and neurodevelopmental impairment at 18 to 22 months of corrected age.[102] The neurodevelopmental assessment "consisted of a structured neurologic examination and developmental and behavioral tests."[103] The 2015 *NEJM* study provided—by gestational week—rates of survival, survival without severe impairment, and survival without moderate or severe impairment.[104]

As shown in **Table 1**, among children born at 22 weeks of gestation, overall rates of survival, survival without severe impairment, and survival without moderate or severe impairment were 5.1%, 3.4%, and 2.0%, respectively.[105] Among those born at 22 weeks of gestation who received active treatment, rates of survival, survival without severe impairment, and survival without moderate or severe impairment were 23.1%, 15.4%, and 9%, respectively.[106]

The study authors note that the impairment "scores at 18 to 22 months of corrected age may not fully predict developmental outcomes later in childhood."[107] Other studies have found that these

[98] Ibid., p. 4. The author states in footnote 2 "Although there is some variation, this general framework of moral latitude is fairly widely endorsed. Prominent examples of this sort of guideline are provided by the Neonatal Resuscitation Program (NRP), the American Academy of Pediatrics (AAP), and the Nuffield Council on Bioethics."

[99] Matthew A. Rysavy, Lei Li, Edward F. Bell, et al., "Between-Hospital Variation in Treatment and Outcomes in Extremely Preterm Infants," *The New England Journal of Medicine*, vol. 372, no. 19 (May 7, 2015), pp. 1801-1811.

[100] Ibid., p. 1804.

[101] Ibid.

[102] Corrected age is the chronological age reduced by the number of weeks born before 40 weeks of gestation; the term should be used only for children up to three years of age who were born preterm. Example: a 24-month-old, former 28-week gestational age infant has a corrected age of 21 months. Committee on Fetus and Newborn, American Academy of Pediatrics, Policy Statement, "Age Terminology During the Perinatal Period," *Pediatrics*, vol. 114, no. 5 (November 2004), pp. 1362-1364. This Policy Statement was reaffirmed in 2009, 2011, and 2014, http://pediatrics.aappublications.org/content/114/5/1362.

[103] Ibid., p. 1803. Note that on page 1810 in this 2015 *NEJM* article, the authors state that impairment "scores at 18 to 22 months of corrected age may not fully predict developmental outcomes later in childhood."

[104] *Severe impairment* was defined as a cognitive or motor score on the Bayley Scales of Infant and Toddler Development, third edition (Bayley-III), of less than 70 (i.e., >2 SD below the scale mean; mean [±SD], 100±15), severe cerebral palsy, a Gross Motor Function Classification System (GMFCS) level of 4 or 5 (on a scale of 0 [normal] to 5 [most impaired]), bilateral blindness (visual acuity, <20/200), or severe hearing impairment that cannot be corrected with bilateral amplification. *Moderate impairment* was defined as a Bayley-III cognitive or motor score of 70 to 84, (i.e., 1 to 2 SD below the scale mean), moderate cerebral palsy, or a GMFCS level of 2 or 3.

[105] Ibid.

[106] Ibid., pp. 1804-1806.

[107] Ibid., p. 1810.

early developmental assessments of extremely preterm/low birth weight infants have a poor predictive value for cognitive function at school age.

Table 1. Outcomes by Gestational Age at Birth

Outcome	All Infants	Infants Who Received Active Treatment
22 Weeks of gestation		
Survival	5.1%	23.1%
Survival without severe impairment	3.4%	15.4%
Survival without moderate or severe impairment	2.0%	9.0%
23 Weeks of gestation		
Survival	23.6%	33.3%
Survival without severe impairment	17.9%	25.2%
Survival without moderate or severe impairment	11.3%	16.0%
24 Weeks of gestation		
Survival	54.9%	56.6%
Survival without severe impairment	44.7%	46.1%
Survival without moderate or severe impairment	30.0%	30.9%
25 Weeks of gestation		
Survival	72.0%	72.3%
Survival without severe impairment	61.1%	61.4%
Survival without moderate or severe impairment	44.3%	44.5%
26 Weeks of gestation		
Survival	81.4%	81.6%
Survival without severe impairment	75.6%	75.7%
Survival without moderate or severe impairment	58.5%	58.6%

Source: Matthew A. Rysavy, Lei Li, Edward F. Bell, et al., "Between-Hospital Variation in Treatment and Outcomes in Extremely Preterm Infants," *The New England Journal of Medicine*, vol. 372, no. 19 (May 7, 2015), Table 2 on p. 1807.

Notes: The table displays the overall rate, the percentage of all infants regardless of hospital of birth.
"Active treatment" of infants was defined as receiving any of the following interventions: surfactant therapy, tracheal intubation, ventilatory support (including continuous positive airway pressure, bag–valve–mask ventilation, or mechanical ventilation), parenteral nutrition, epinephrine, or chest compressions.
"Severe impairment" was defined as a cognitive or motor score on the Bayley Scales of Infant and Toddler Development, third edition (Bayley-III), of less than 70 (i.e., >2 SD below the scale mean; mean [±SD], 100±15), severe cerebral palsy, a Gross Motor Function Classification System (GMFCS) level of 4 or 5 (on a scale of 0 [normal] to 5 [most impaired]), bilateral blindness (visual acuity, <20/200), or severe hearing impairment that cannot be corrected with bilateral amplification.
"Moderate impairment" was defined as a Bayley-III cognitive or motor score of 70 to 84, (i.e., 1 to 2 SD below the scale mean), moderate cerebral palsy, or a GMFCS level of 2 or 3.

What are the costs associated with treating an extremely preterm infant?

Under legislation introduced in the 115th Congress, the Pain-Capable Unborn Child Protection Act (e.g., H.R. 36, S. 1922, S. 2311), as well as the Born-Alive Abortion Survivors Protection Act (H.R. 37, H.R. 4712, S. 220), if a fetus is "born alive" following an abortion procedure, any health care practitioner present at the time would be required to "exercise the same degree of professional skill, care, and diligence to preserve the life and health of the child as a reasonably diligent and conscientious health care practitioner would render to a child born alive at the same

gestational age" in the course of a natural birth. Both acts would require that fetuses born alive following an abortion procedure be transferred to a hospital for treatment. Failure to comply with these requirements would need to be immediately reported "to an appropriate State or Federal law enforcement agency or both."

Relatively few studies have examined the costs associated with caring for and raising/parenting extremely premature infants and no single study looks at the complete costs (e.g., health care, legal, educational) over the child's lifetime. However, some studies have sought to assess particular aspects of the costs associated with raising and parenting extremely premature infants.

A study published in 2003 found that "neonatal hospital costs averaged $202,700 for a delivery at 25 weeks" and "neonatal costs were $224,400 for a newborn at 500-700 grams."[108] A 2016 study of all births in California in 1998-2000 found that mean hospital costs (and length of stay) for survivors born at 24 weeks were $297,627 (109.6 days) compared with $272,730 (101.7 days) for survivors born at 25 weeks of gestation.[109] A 2015 study using 2009 data found that the median hospital cost for surviving infants born at less than 24 weeks of gestation was $209,000 and for those at 24 weeks' gestation, the median hospital cost was $200,000.[110] In this study, 34% (432 of 1,276) of fetuses born at less than 24 weeks of gestation survived, compared with 56% (1,051 of 1,884) survival for those at 24 weeks of gestation.

A study published in 2017 looked at the costs of caring for surviving newborns at 23-25 weeks' gestational age in one university-based neonatal intensive care unit (NICU) over a 42-month period from January 2012 through June 2015.[111] The 2017 study provides a detailed list of the cost incurred by a hospital for one female patient who weighed 540 grams at birth, was delivered at 23 4/7 weeks of gestation, and stayed in the NICU for 112 days (see **Table 2**). The study did not include indirect costs, such as family expenses and lost income, nor did it include information on "long term costs of post discharge care" or "long term survival and morbidity."[112]

Table 2. Hospital Cost Calculation for One Extremely Preterm Infant

Female, 540 grams at 23 4/7 weeks' gestation, 112 days in NICU

Hospital Cost	Dollars	Percentage
Salary and benefits		
Staff nurses	85,200	32.8
Nurse practitioners	28,470	10.9
Neonatologists	13,104	5.0
Nursing administration	5,280	2.0
Respiratory care	20,519	7.8

[108] W.M. Gilbert, T.S. Nesbitt, B. Danielsen, "The Cost of Prematurity: Quantification by Gestational Age and Birth Weight," *Obstet. Gynecol*., vol. 102, no. 3, September 2003, pp. 488-492.

[109] Ciaran S. Phibbs and Susan K. Schmitt, "Estimates of the Cost and Length of Stay Changes That Can Be Attributed to One-Week Increases in Gestational Age for Premature Infants," *Early Human Development*, vol. 82, no. 2 (February 2006), pp. 85-95.

[110] William R. Hayman, Steven R. Leuthner, Naomi T. Laventhal, et al., "Cost Comparison of Mechanically Ventilated Patients Across the Age Span," *J Perinatol*, vol. 35, no. 12 (December 2015), pp. 1020-1026.

[111] K.M. Allen, B. Smith, I. Iliev, et al., "Short Term Cost of Care for the Surviving Periviable Neonate," *Journal of Neonatal-Perinatal Medicine*, vol. 10 (2017), pp. 191-194.

[112] Ibid., p. 193.

Hospital Cost	Dollars	Percentage
Depreciation	14,793	5.6
Maintenance	4,542	1.7
Administration and general	23,096	8.8
Housekeeping	2,555	1.0
Medical records	1,102	0.4
Social services	1,202	0.5
House staff	7,348	2.8
Cost-to-charge		
Pharmacy	18,546	7.1
Laboratory	16,647	6.3
Radiology	17,844	6.8
Total	260,248	100

Source: K.M. Allen, B. Smith, I. Iliev, et al., "Short Term Cost of Care for the Surviving Periviable Neonate," *Journal of Neonatal-Perinatal Medicine*, vol. 10 (2017), p. 193.

Notes: "Administration and general" includes costs for marketing, provider tax, malpractice insurance, business office, registration, information technology, and hospital administration.

The above four studies describing the costs of the initial hospitalization of extremely preterm infants do not include the costs of follow-up health care and other services required after discharge from the NICU over the lifetime of the child. Because there are "increasing social and economic pressures to discharge preterm infants as early as possible" ... parents must "know how to take care of airway tubes, feeding tubes, and other mechanical and prosthetic devices, operate and troubleshoot equipment, change dressings, suction airways and do physical therapy."[113] These infants may also need later surgeries and postoperative care. In addition, "former preemies have five times the rate of hospitalization of full-term babies during the first year of life."[114]

In addition to the health care costs that extremely premature infants will generate post-NICU, other economic costs—such as day-care services, respite care, and school—are likely to exceed those of full-term babies. Examples of other on-going economic expenses include travelling to and from medical and other special needs child-related appointments as well as lost parental earnings due to time away from work. These financial pressures and time constraints can have a lasting impact on the family and society as a whole. Although a complete discussion is beyond the scope of this report, the care requirements—postdischarge—for an extremely premature neonate "far exceeds that of the NICU in both economic and non-economic terms."[115] For example, the time and attention required by an extremely preterm infant may adversely affect the existing family dynamic, possibly resulting in separation or divorce.[116] "Other children in the

[113] Janet M. Bronstein, "Chapter 5, The Health Care Dimension: Delivering Care for High-Risk Pregnant Women and Preterm Infants," in *Preterm Birth in the United States* (Springer, 2016), pp. p. 246-247.

[114] John D. Lantos and William L. Meadow, "Chapter 6, Economics of the NICU," in *Neonatal Bioethics: The Moral Challenges of Medical Innovation* (Johns Hopkins University Press, 2008), p. 123.

[115] For further details, see Neera Bhatia, "Cutting the Cord: Can Society Over-Invest in Extremely Premature and Critically Impaired Neonates?," *J Law Med*, vol. 23, no. 2 (December 2015), pp. 443-456.

[116] Shailender Swaminathan, Greg Alexander, and Sheree Boulet, "Delivering a Very Low Birth Weight Infant and the Subsequent Risk of Divorce or Separation," *Maternal and Child Health Journal*, vol. 10 (2006), pp. 473-479; and, (continued...)

family may also be deprived of social outings, extracurricular activities such as music or sport that provide opportunities for their holistic development, or even the loss of access to better education and subsequent career possibilities and experiences."[117] Studies have found that caring for extremely premature neonates causes parental stress and is associated with a high risk of depression in mothers as well as fathers.[118] This experience may result in some parents deciding not to have other children due to the high economic costs as well as the time demands of the disabled child, thus losing the opportunity of another pregnancy and the birth of a healthy child.[119] Regarding the larger impact on society, parents of extremely premature neonates and severely disabled children "may be unable to realize their employment potential or decline promotions" thus not only failing to reach their full economic potential but also failing to achieve their full potential in their career and their contribution to the local community or society.[120]

Looking into the future lives of these children, a 2006 study in the United Kingdom and the Republic of Ireland examined spending in a variety of categories—hospital inpatient, outpatient, community health, drugs, education, additional family expenses, and indirect costs—over a 12-month period. The study involved a group of 241 six-year-olds born extremely premature and a control group of 160 six-year-olds born at full term. The study reported that the cost for children born at 20-25 weeks' gestation ranged from two to six times more than for the control group of full-term infants.[121] These increased costs are likely to continue well beyond six years of age.

A 2012 study estimated the average lifetime costs of mild, moderate, and severe impairment associated with the resuscitation of infants at 20-23 weeks and 6 days of gestation (following either a preterm delivery or the termination of a pregnancy). The 2012 study provides the following estimates in 2010 dollars: "$52,056 for mild, $578,958 for moderate (the mean between costs for hearing impairment [$491,202] and visual impairment [$666,714]), and $1,139,657 for severe (the mean between costs for cerebral palsy [$1,084,883] and mental retardation [$1,194,431])."[122]

(...continued)

Nancy E. Reichman, Hope Corman, and Kelly Noonan, "Impact of Child Disability on the Family," Maternal and Child Health Journal, vol. 12 (2008) pp. 679-683.

[117] Neera Bhatia, "Cutting the Cord: Can Society Over-Invest in Extremely Premature and Critically Impaired Neonates?," *J Law Med*, vol. 23, no. 2 (December 2015), p. 452.

[118] Leigh Davis, Helen Edwards, Heather Mohay, et al., "The impact of very premature birth on the psychological health of mothers," *Early Human Development*, vol. 73 (2003) pp. 61–70; A. Kersting, M. Dorsch, U. Wesselmann, et al., "Maternal posttraumatic stress response after the birth of a very low-birth-weight infant," *Journal of Psychosomatic Research*, vol. 57 no. 5 (November 2004) pp. 473-476; and, J.D. Carter, R.T. Mulder, A.F. Bartram, et al., "Infants is a Neonatal Intensive Care Unit: Parental Response," *Arch Dis Child Fetal Neonatal Ed*, vol. 90 (2005) pp. F109-F113. For an account of the impact of such a child on one family in the UK, see Jane Raca, "Would you give up your disabled son to allow your other children a chance of happiness? Despite agonies of guilt, Jane says it's the best decision she ever made," *The Daily Mail*, March 14, 2013, at http://www.dailymail.co.uk/femail/article-2293579/Would-disabled-son-allow-children-chance-happiness.html.

[119] Helga Kuhse and Peter Singer, "Age and the Allocation of Medical Resources," *Journal of Medical Philosophy*, vol. 13 (1988), p. 109.

[120] Neera Bhatia, "Cutting the Cord: Can Society Over-Invest in Extremely Premature and Critically Impaired Neonates?" *J Law Med*, vol. 23, no. 2 (December 2015), p. 452.

[121] Nuffield Council on Bioethics, "Chapter 5 Dilemmas in Current Practice: Babies Born at the Borderline of Viability," in *Critical Care Decisions in Fetal and Neonatal Medicine* (London: Nuffield Council on Bioethics, 2006), p. 85.

[122] John Colin Partridge, Mya D. Sendowski, Alma M. Martinez, et al., "Rususcitation of Likely Nonviable Infants: A Cost-Utility Analysis After the Born-Alive Infant Protection Act," *Am J Obstet Gynecol*, vol. 206, no. 1 (2012), pp. 49.e1-10.

What is the evidence that a fetus has the ability to feel pain?

With more than 58,000 members, the American College of Obstetricians and Gynecologists (ACOG) is the specialty's "professional membership organization dedicated to the improvement of women's health."[123] The American Congress of Obstetricians and Gynecologists is its companion organization. In July 2013, the American Congress of Obstetricians and Gynecologists released a one-page statement entitled *Facts Are Important: Fetal Pain*.[124] An excerpt of the 2013 statement is copied below:

> A human fetus does not have the capacity to experience pain until after viability. Rigorous scientific studies have found that the connections necessary to transmit signals from peripheral sensory nerves to the brain, as well as the brain structures necessary to process those signals, do not develop until at least 24 weeks of gestation.[125] Because it lacks these connections and structures, the fetus does not even have the physiological capacity to perceive pain until at least 24 weeks of gestation.
>
> In fact, the perception of pain requires more than just the mechanical transmission and reception of signals. Pain is "an emotional and psychological experience that requires conscious recognition of a noxious stimulus."[126] This capacity does not develop until the third trimester at the earliest, well past the period between 20 weeks and viability. The evidence shows that the neural circuitry necessary to distinguish touch from painful touch does not, in fact, develop until late in the third trimester. The occurrence of intrauterine fetal movement is not an indication that a fetus can feel pain.[127]

The 2013 statement cites to two references on the issue of fetal pain. The first is a March 2010 report, *Fetal Awareness: Review of Research and Recommendations for Practice*, released by the Royal College of Obstetricians and Gynecologists (RCOG), a United Kingdom-based group that is analogous to ACOG.[128] Copied below is a paragraph on the subject of fetal pain that was excerpted from the summary of the March 2010 RCOG report:

> In reviewing the neuroanatomical and physiological evidence in the fetus, it was apparent that connections from the periphery [in the body] to the cortex [in the brain] are not intact before 24 weeks of gestation and, as most neuroscientists believe that the cortex is necessary for pain perception, it can be concluded that the fetus cannot experience pain in any sense prior to this gestation. After 24 weeks there is continuing development and elaboration of intracortical networks such that noxious stimuli in newborn preterm infants produce cortical responses. Such connections to the cortex are necessary for pain experience but not sufficient, as experience of external stimuli requires consciousness. Furthermore, there is increasing evidence that the fetus never experiences a state of true wakefulness in utero and is kept, by the presence of its chemical environment, in a continuous sleep-like unconsciousness or sedation. This state can suppress higher cortical

[123] https://www.acog.org/About-ACOG/About-Us.

[124] ACOG, July 2013, *Facts Are Important: Fetal Pain*, at https://www.acog.org/-/media/Departments/Government-Relations-and-Outreach/FactAreImportFetalPain.pdf.

[125] Royal College of Obstetricians and Gynecologists, *Fetal Awareness: Review of Research and Recommendations for Practice* (March 2010), at https://www.rcog.org.uk/globalassets/documents/guidelines/rcogfetalawarenesswpr0610.pdf

[126] Ibid.

[127] Susan J. Lee, Henry J. Peter Ralston, and Eleanor A. Drey, et al., "Fetal Pain: A Systematic Multidisciplinary Review of the Evidence," *JAMA*, vol. 294, no. 8 (August 24/31, 2005), pp. 947-954.

[128] According to its website, the RCOG's over 14,000 members in the United Kingdom and worldwide work "to improve the standard of care delivered to women, encourage the study of obstetrics and gynaecology (O&G), and advance the science and practice of O&G." Royal College of Obstetricians and Gynecologists, at https://www.rcog.org.uk/en/about-us/what-we-do/.

> activation in the presence of intrusive external stimuli. This observation highlights the important differences between fetal and neonatal life and the difficulties of extrapolating from observations made in newborn preterm infants to the fetus.[129]

The second source is a 2005 review published in *JAMA.* It concluded that "[e]vidence regarding the capacity for fetal pain is limited but indicates that fetal perception of pain is unlikely before the third trimester." Copied below is a synthesis of the evidence from the 2005 *JAMA* article:

> Pain perception requires conscious recognition or awareness of a noxious stimulus. Neither withdrawal reflexes nor hormonal stress responses to invasive procedures prove the existence of fetal pain, because they can be elicited by nonpainful stimuli and occur without conscious cortical processing [in the brain]. Fetal awareness of noxious stimuli requires functional thalamocortical connections [in the brain]. Thalamocortical fibers begin appearing between 23 to 30 weeks' gestational age, while electroencephalography suggests the capacity for functional pain perception in preterm neonates probably does not exist before 29 or 30 weeks.[130]

In a 2015 commentary, a representative of ACOG stated that the 2005 *JAMA* review article "incontrovertibly found no existence of fetal pain until much later in gestation. Importantly, no research since its publication has contradicted its findings."[131]

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[129] Royal College of Obstetricians and Gynecologists, *Fetal Awareness: Review of Research and Recommendations for Practice* (March 2010), p. viii; at https://www.rcog.org.uk/globalassets/documents/guidelines/rcogfetalawarenesswpr0610.pdf.

[130] Susan J. Lee, Henry J. Peter Ralston, Eleanor A. Drey, et al., "Fetal Pain: A Systematic Multidisciplinary Review of the Evidence," *JAMA*, vol. 294, no. 8 (August 24/31, 2005), p. 947.

[131] Mark S. DeFrancesco, MD, MBA, on behalf of ACOG, "No evidence to show fetal pain in second trimester," *Medscape*, May 27, 2015.