



Frequently Asked Questions about Fatal Infection and Mifepristone Medical Abortion

On December 1, 2005 the *New England Journal of Medicine* published case studies of the four American women who died following mifepristone medical abortion.¹ The answers to these Frequently Asked Questions are based on an in depth look at the available cases and scientific literature.

Could mifepristone and misoprostol have caused these deaths?

There is no scientific evidence that demonstrates this. The CDC has investigated the four deaths reported last year and has concluded that a bacteria species, *Clostridium sordellii*, is responsible for each woman's death. The FDA has stated that there is no established, causal relationship between infection and mifepristone or misoprostol, nor have they found evidence of bacterial contamination in the pills in any of the deaths. The FDA, the CDC, and state and local health departments are continuing to investigate these rare but troubling events.²

Is mifepristone medical abortion more likely to lead to fatal infection than other methods of abortion and pregnancy outcomes?

Fatal infections are rare, occurring in fewer than 1 out of 100,000 uses of mifepristone medical abortion, far less often than the incidence of fatal penicillin-induced anaphylaxis (0.002% or 1 in 50,000 uses).³ According to Dr. Stephen Galson, director of the FDA's Center for Drug Evaluation and Research, the risks of death from infection following mifepristone medical abortion are similar to the risks after surgical abortion or childbirth.⁴ Medical abortion is associated with the same risks as a natural miscarriage and is many times safer than carrying a pregnancy to term. In fact, the overall frequency of reported infection following medical abortion is lower than after surgical abortion or childbirth.⁵

Could off-label use of an FDA approved drug explain these fatal infections?

It is highly unlikely. Although oral use of misoprostol is specified in the FDA-approved regimen, vaginal use of misoprostol after mifepristone is the norm in the U.S. It is therefore expected that most deaths and adverse events would be recorded among users of vaginal misoprostol, since there is almost no oral use. Consequently, it is almost impossible to draw conclusions about oral versus vaginal use. Hundreds of thousands of women in Europe and other countries have used misoprostol vaginally for medical abortion and other indications (e.g. preparation for surgical abortion, induction of labor, etc.); no similar infections have been recorded in those women.

¹ On March 17, 2006, the FDA reported two additional deaths of women who had previously undergone mifepristone medical abortion. The FDA has subsequently concluded that one of these deaths is in no way linked to mifepristone. The investigation into the other death is ongoing. "Mifeprex (mifepristone) Information" FDA. April 10, 2006, <http://www.fda.gov/cder/drug/infopage/mifepristone/default.htm>

² "Questions and Answers on Mifeprex (mifepristone)," FDA. July 19, 2005 (updated November 4, 2005), www.fda.gov/cder/drug/infopage/mifepristone/mifepristone-qa20050719.htm

³ Neugut AI, Ghatak AT, Miller RL. Anaphylaxis in the United States: An investigation into its epidemiology. *Arch Intern Med.* 2001;161:15-21.

⁴ Harris, G. "Deaths After Abortion Pill to be Studied by Officials." *New York Times.* 23 November 2005, Wash. ed.: A12.

⁵ Shannon C, Brothers LP, Philip NM, Winikoff B. Infection after medical abortion: a review of the literature. *Contraception.* 2004;70:183-190.

Were there risk factors common to the women who contracted *C. sordellii* infection following mifepristone medical abortion?

To date, investigators have not been able to identify any common risk factors among these women that would have made them more predisposed to *C. sordellii* infection than other women undergoing medical abortion. However, a common exposure or condition that is still unknown may have heightened their risk of *C. sordellii* infection. The cases all occurred in California, even though only approximately 20% of medical abortions nationwide occur in California. The FDA, CDC, state health agencies and scientific researchers are investigating the clustering of cases in California.

What else do we know about *C. sordellii* infection?

C. sordellii infections have also occurred following childbirth (vaginal delivery and caesarean section) and pelvic and abdominal surgery. All such cases have been fatal. Additionally, infection is not restricted to women of reproductive age. Other known cases of *C. sordellii* have occurred in males and females of varying ages and under non-obstetric conditions, including umbilical infection, deep skin infection, tendon transplant surgery, orthopedic surgery, and following motor vehicle accidents. The FDA and the CDC have scheduled a workshop for May 11, 2006 to examine trends related to *C. sordellii* and the related *C. difficile* bacteria. The goal of the meeting is to bring together scientific and public health experts to gain a better understanding of the infections.

What is being done to prevent additional fatal infections?

Danco Laboratories, the manufacturer of Mifeprex, includes extensive warnings in the information given to patients and health care professionals. With approval from the FDA, Danco issued a letter alerting providers of medical abortion and emergency room health care providers to the occurrence of *C. sordellii* infection with presentation of atypical symptoms, such as the lack of fever.

It is unknown whether antibiotics would prevent the fatalities from *C. sordellii*. Preventive antibiotic use carries its own set of risks, including severe or fatal allergic reactions and growth of drug-resistant strains of bacteria.⁶ Because the reports of severe infection following medical abortion are rare and management with antibiotics is not well-established, the FDA continues to recommend *against* prophylactic antibiotics following use of mifepristone.

Are these deaths just the tip of the iceberg?

No, Danco Laboratories complies with the stringent and restrictive distribution, labeling, and reporting requirements stipulated by the FDA upon approval. The use and distribution of mifepristone and report of adverse events is very tightly controlled. The report of adverse events following mifepristone use is more complete and accurate than with other drugs because of these requirements. In addition, deaths are more likely to be reported than other adverse events and are more likely to be known publicly.

For More Information

- Gynuity Health Projects, New Research on Fatal Infection and Mifepristone Medical Abortion. www.gynuity.org
- Danco Laboratories, Mifeprex® website. www.earlyoptionpill.com
- FDA, Center for Drug Evaluation and Research, Mifepristone Information. www.fda.gov/cder/drug/infopage/mifepristone/default.htm
- Richard Hausknecht, "Mifepristone and Misoprostol for Early Medical Abortion: 18 Months Experience in the United States," *Contraception* 67:463-65 (2003).
- National Abortion Federation, Facts About Mifepristone. www.prochoice.org/about_abortion/facts/facts_mifepristone.html

⁶ "FDA Public Health Advisory," FDA. July 22, 2005 (updated November 4, 2005), www.fda.gov/cder/drug/advisory/mifeprex.htm.