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## Reproductive Genetics

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Reproductive genetics touches the very core of our existence—the ability of human beings to procreate. As a result, the ethical and legal dilemmas raised by assisted reproductive technology (ART) are of interest to all people. Public concerns about the use of ART are not based on speculation, but rather on imminent realities that challenge notions of family, the limits—both ethical and technical—of science, the right of every human to create life, and the rights of potential children and parents.

In light of our ever-increasing grasp on the mechanics of reproduction, it seems evident that legislators will continue to confront these difficult issues. An understanding of the technologies, the laws and regulations related to their use and the ethical and legal concerns will assist legislators in making informed policy choices for ART.

### The Technology

Couples who are unable to conceive through sexual intercourse have numerous tools of assisted conception at their disposal. ART can help intended parents have children that are as closely biologically connected to them as possible and may involve the use of genetic material from third parties.

ART typically applies *in vitro* fertilization (IVF) methods, which allow reproductive specialists to fertilize a woman's eggs in the laboratory using gametes—as the egg and sperm are known together—of donors or the intended parents when fertilization inside the body has proven unsuccessful. ART also permits doctors to screen or test embryos through preimplantation genetic diagnosis (PGD) to help couples select healthy embryos for implantation or to detect abnormalities during early stages of gestation.

Techniques currently under experimentation like cytoplasmic transfer and nuclear transfer—in which the gametes of three people are used to create one embryo—and human cloning—a form of asexual reproduction—may have yet unknown implications for the genetic makeup of the resulting child. In general, infertility treatments bear differently on the genetic or social parentage of offspring, depending on the degree of third-party involvement in reproduction and the technique used to assist conception.

### Laws and Regulations

Two federal laws—the Clinical Laboratory Improvement Amendments of 1988 and the Fertility Clinic Success Rate and Certification Act of 1992—play a significant role in governing the use of ART by infertility clinics through the establishment of testing standards and reporting requirements. State laws on a variety of subjects regulate infertility clinics and the use of ART. Licensing of reproductive specialists, gamete donor laws and insurance coverage of infertility are some of the issues addressed by state legislatures. Lost or misappropriated embryos and wrongful birth or life also have received attention in the states, primarily through common law.

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**Family Law.** As states wrestle with collaborative—or third party—reproduction, in which donated genetic material or wombs are used, policymakers will be asked to weigh the best interests of intended parents, potential children and society at large. Because a child’s birth history now may consist of genetic, gestational and social ties beyond the child’s recognized mother and father, third party reproduction tests the traditional legal definitions of family. As a result, the traditional model of genetic parentage may provide inadequate legal protection for children created using ART and their intended parents. To include these individuals under the umbrella of protections afforded by family law, state policymakers may need to reconsider statutory definitions of family.

The use of ART also complicates the rights and responsibilities of parents, physicians and government. Conflicts about the rights of individuals to implant embryos in the event of divorce or death of the other partner and the responsibilities of the other party in the event of implantation have resulted in numerous court cases. Only six state legislatures—Florida, Louisiana, North Dakota, Texas, Virginia and Washington—have tackled the issue by requiring legal agreements that provide instructions for disposition prior to the creation of embryos or by establishing legal responsibility under the law in certain circumstances. Without direction, which may involve adoption by another couple, destruction, or donation to research, physicians face the dilemma of what to do with frozen embryos left in limbo at the clinic’s expense. Controversial forms of ART such as embryo selection through preimplantation genetic diagnosis have yet to be addressed by state legislatures but raise ethical concerns about the right of parents to make choices on behalf of potential children and may be the subject of future legislative debate.

**Consumer Protection.** Protecting consumers becomes relatively difficult when the product being consumed requires a high degree of technical knowledge, as is the case with reproductive technology. At present, few legal protections exist for most patients who are undergoing ART, although professional organizations offer guidance to reproductive specialists. If legislators conclude that relying on the ethical standards of those in the field provides inadequate safeguards, they may want to enact informed consent requirements for ART procedures. Informed consent forms might address pregnancy success rates; the importance of addressing the fate of unused embryos; and the possible risks of ART for donors, patients and potential children. Policymakers also could bridge the gap between physician and patient knowledge of ART safety and awareness by communicating information to the American public about assisted conception through public health programs.

An assessment of the appropriate policy response to reproductive technologies can begin by asking the fundamental question: Should limits be placed on one’s reproductive rights? The tools of assisted conception often make this question—and those that logically follow—difficult to answer. In the end, policymakers will decide whether legislative action is appropriate. That decision will best come from a full understanding of the technology, relevant laws and regulations and the primary ethical and legal concerns, followed by a thoughtful debate and a thorough consideration of the policy options.

## Selected References

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