

Commonly Asked Questions About the US National ART Surveillance System

Background Information, Data Collection Methods, Content and Design of the Report, and Additional Information About ART in the United States

1. How many people in the United States experience infertility?

The latest data on infertility available to CDC are from the 2015–2017 National Survey of Family Growth. (For more details about the data, see www.cdc.gov/nchs/nsfg.)

- Of the approximately 72 million women aged 15–49 years in 2015–2017, 13% had received infertility services.
- Additionally, almost 9% of married women aged 15–49 years were unable to get pregnant after at least 12 consecutive months of trying to conceive.

2. What is assisted reproductive technology (ART)?

Although various definitions have been used for ART, the definition used in this report is based on the 1992 law that requires CDC to publish this report. According to this definition, ART includes all fertility treatments in which either eggs or embryos are handled outside a woman's body. In general, ART procedures involve surgically removing eggs from a woman's ovaries, combining them with sperm in the laboratory, and returning them to a female patient or gestational carrier or donating them to another patient. They do NOT include treatments in which only sperm are handled (such as intrauterine insemination) or procedures in which a woman takes drugs only to stimulate egg production without the intention of having eggs surgically retrieved.

The main type of ART is **in vitro fertilization (IVF)**. For some IVF procedures, fertilization involves a specialized technique known as intracytoplasmic sperm injection (ICSI). In ICSI, a single sperm is injected directly into a woman's egg.

Other types of ART exist, but are rarely performed. **Gamete intrafallopian transfer (GIFT)** involves using a fiber optic instrument called a laparoscope to guide the transfer of unfertilized eggs and sperm (gametes) into a woman's fallopian tubes through small incisions in her abdomen. **Zygote intrafallopian transfer (ZIFT)** involves fertilizing a woman's eggs in the laboratory and then using a laparoscope to guide the transfer of the fertilized eggs (zygotes) into a woman's fallopian tubes.

In addition, ART often is categorized according to whether the procedure involved freezing all eggs or embryos (banking), whether the procedure used a patient's own eggs or eggs from another woman (donor), whether the eggs were frozen and thawed before use, and whether the embryos used were newly fertilized (fresh) or previously fertilized, frozen, and then thawed (frozen).

3. What is an ART cycle?

Because ART consists of several steps, an ART procedure is typically referred to as a **cycle** of treatment rather than a procedure at a single point in time. The start of an ART cycle is usually when a woman begins taking medication to stimulate egg production or begins monitoring with the intent of having embryos transferred. For the purposes of this report, data on all cycles that were started, even those that were discontinued before all steps were undertaken, are counted in the clinic's success rates. For additional information about the steps and progression of an ART cycle, see page 527 of Appendix A: Glossary of Terms.

4. How do United States ART clinics report data to CDC about their success rates?

CDC contracts with a statistical survey research organization, Westat, to obtain the data published in the *Fertility Clinic Success Rates Report*.

Westat maintains a list of all ART clinics known to be in operation, identifies new clinics throughout the year, and tracks clinic reorganizations and closings. This list includes clinics and individual providers that are members of the Society for Assisted Reproductive Technology (SART) as well as clinics and providers that are not SART members. Westat maintains the National ART Surveillance System (NASS), the web-based data collection system that all ART clinics use to submit data to CDC. Clinics either electronically enter or import data into NASS for each ART cycle started in a given reporting year. SART-member clinics can report directly to SART, and SART submits the data to NASS. The data collected include de-identified information on the patient's medical history (such as infertility diagnoses), clinical information pertaining to the ART procedure, and information on resulting pregnancies and births.

5. Why is the report of 2018 success rates being published in 2020?

Before success rates based on live births can be calculated, every ART pregnancy must be followed up to determine whether a birth occurred. Therefore, the earliest possible date that clinics can report complete annual data is about 9 months past the end of the reporting year, when all the births have occurred. Accordingly, the results of all the cycles initiated in 2018 were not known until October 2019. After ART outcomes are known, the following occurs before the report is published:

- Clinics enter their 2018 data into NASS and verify that the generated clinic tables are accurate before submitting the data at the end of 2019.
- Preliminary data for individual fertility clinic tables are prepared and made available in the spring of 2020 on CDC's website at www.cdc.gov/art/artdata.
- After CDC conducts extensive data checks, the full report with all fertility clinic tables and the National Summary table is prepared and published on the CDC website at www.cdc.gov/art/artdata.

6. Which clinics are represented in this report?

The data in this report come from 456 fertility clinics that provided and verified information about the outcomes of the ART cycles.

Although almost all clinics that provided ART services in the United States during 2018 are represented in this report, data from 43 clinics or individual providers are not included because they did not report as required. Clinics known to have been in operation at any time during 2018 that did not report and verify their data are listed in this report as nonreporters, as required by law (see Appendix B: 2018 Nonreporting Clinics, by State on pages 571–573).

Given the estimated number of ART cycles performed in nonreporting clinics, we estimate that ART surveillance covered 98% of ART cycles performed in the United States in 2018. We will continue to make every effort to include in future reports all clinics that provide ART services.

7. Why aren't the clinics ranked by their success rates?

Many factors contribute to the success rate of an ART procedure, and a difference in success rates between two ART clinics may reflect differences in the characteristics of patients treated, the types of procedures performed, or other factors. More explanations on how to use the success rates and other statistics published in this report are in the Introduction to Fertility Clinic Tables section (see pages 11–23). The report should be used to help people considering an ART procedure find clinics where they can meet personally with ART providers to discuss their specific medical situation and their likelihood of success using ART. Contacting a clinic also may provide additional information that could be helpful in deciding whether or not to use ART. Because ART offers several treatment options, and because there are non-ART treatment options for infertility, there are many other factors that may affect the decision. This report may be a helpful starting point for consumers to obtain information and consider their options.

8. Does this report include all ART cycles performed by the reporting clinics?

This report includes 306,197 ART cycles performed in 2018 by the 456 clinics that reported their data as required. The 306,197 total cycles performed in 2018 excludes 8 cycles started in which a new treatment procedure was being evaluated. The number of new treatment procedures performed is shown for each clinic in footnote “a” of their table.

9. How are the success rates determined?

Due to changes in clinical practice and more variation in ART treatment options, including improvements in egg and embryo cryopreservation (freezing), the field of ART is moving toward reporting “cumulative” success rates. This is accomplished by calculating success rates that include all transfers of eggs or embryos that occur within one year after an egg retrieval cycle. For this reason, the calculation of cumulative success rates includes ART cycles performed in 2017 and 2018 (see pages 12, 14–17 for more details). Because this report is geared toward patients, the focus is on live birth success rates. Singleton live births (birth of a single, live infant), are emphasized as a separate measure of success because they have a much lower risk than multiple births for adverse outcomes for mothers and infants, including caesarean section, prematurity, low birth weight, and infant disability or death.

This report presents several measures of success for ART, including the percentage of live births among ART cycles in which at least one egg or embryo is transferred to a patient or gestational carrier. Note that not all transfer cycles result in a pregnancy, and not all pregnancies result in a live birth.

10. What are my chances of getting pregnant using ART?

The percentage of cycles resulting in live births based on the overall number of cycles performed to retrieve eggs or to transfer eggs or embryos will give a more accurate answer to the question, “If I have an ART procedure, what is my chance that I will have a baby?” It is important to note that ART success rates vary in the context of patient and treatment characteristics. These characteristics include age, type of infertility diagnosis, number of embryos transferred, type of ART procedure, use of techniques such as ICSI, and history of previous births, miscarriages,

and ART cycles. CDC’s Division of Reproductive Health has designed the IVF Success Estimator tool to estimate the chance of having a live birth using IVF—the most common type of ART. The estimates are calculated based on the experiences of women and couples with similar characteristics. This estimator tool is available at www.cdc.gov/art/ivf-success-estimator.

11. What quality control steps are used to ensure data accuracy?

To have their success rates published in this annual report, clinics have to submit their data in time for analysis and the clinics’ medical directors have to verify by signature that the generated clinic tables are accurate. Then, Westat conducts an in-house review of the data and contacts the clinics if corrections are necessary. After the data have been checked, a quality control process called validation normally begins.

During the annual validation process, members of the Westat Validation Team usually visit a selection of reporting clinics and review medical record data for a sample of the clinic’s ART cycles. For each cycle, the validation team typically abstracts information from the patient’s medical record. The abstracted information is then compared with the data submitted for the report. In recent years, up to 35 reporting clinics (approximately 8% of the total reporting clinics) have been selected annually and visited for validation.

The data validation process does not include any assessment of clinical practice or overall record keeping. Validation primarily helps ensure that clinics submit accurate data. It also serves to identify any systematic problems that could cause data collection to be inconsistent or incomplete.

As a result of travel restrictions during the COVID-19 pandemic, data validation was not conducted in 2020.

12. Does CDC collect any data that it does not report in the annual *Assisted Reproductive Technology Fertility Clinic Success Rates Report*?

CDC uses the data collected and not reported in the annual *ART Fertility Clinic Success Rates Report* for surveillance of emerging practice patterns, to better understand success rates by the characteristics of the patient or practice, evaluation of emerging ART research questions, and the monitoring of safety and efficacy issues related to ART treatment for improving maternal and child health outcomes. CDC uses these data in the IVF Success Estimator tool, state-specific ART surveillance summary, and scientific publications that are available at www.cdc.gov/art.

13. How does CDC ensure the confidentiality of the ART data it collects?

CDC has an Assurance of Confidentiality for the ART database. An assurance is a formal confidentiality protection used for projects conducted by CDC staff or contractors involving the collection or maintenance of sensitive, identifiable, or potentially identifiable information. The assurance protects the confidentiality of individuals and institutions included in ART data. The ART data are stored in a secure, limited-access, password-protected environment.

14. Why doesn’t the report contain specific medical information about ART?

This report describes average chances of success per ART cycle. Although the report provides some information about factors such as age and type of infertility diagnosis, patients have many unique medical situations. This population-based registry of ART procedures cannot capture detailed information about specific medical conditions associated with infertility. Patients should consult with their physician to understand their specific

medical situation and their chances of success using ART.

15. Why are statistics in the Fertility Clinic Tables published by CDC different from statistics reported by SART's IVF Success Rate Reports?

In 2018, of all the ART clinics reporting data to CDC, 80% were SART members. Annual summary statistics of ART treatments performed in each of these SART member clinics are available in this report, and online at www.sart.org. Discrepancies in tabulated statistics between the SART and CDC tables may be due to (1) the inclusion in the CDC Fertility Clinic Reports of ART treatments performed at non-SART member clinics; (2) differences in the data submission deadlines between SART and CDC, which may result in ART clinics being excluded from CDC's annual Fertility Clinic Reports; and (3) differences in data processing procedures, statistical methods, choice of reported measures, and data presentation.

16. Does CDC have any information on the women who donate eggs?

When a woman seeks treatment for the purpose of donating her eggs, CDC collects information on the donor such as age, race/ethnicity, and details about the stimulation and retrieval. Success rates for cycles using donor eggs or embryos derived from donor eggs are related to the age of the woman who produced the eggs. However, CDC does not present data about egg donors in the clinic tables for cycles in which the donated eggs are used by another ART patient.

17. Are there any medical guidelines for ART performed in the United States?

ASRM and SART issue guidelines dealing with specific ART practices, such as the number of embryos to be transferred in an ART procedure. Further information can be obtained from ASRM or SART at websites www.asrm.org and www.sart.org.

18. Where can I get additional information on United States fertility clinics?

For further information on specific clinics, contact the clinic directly. (See Appendix B: ART Clinics on pages 533–573 for contact information.) In addition, SART can provide general information on its member clinics (telephone 205-978-5000 or at website www.sart.org).

19. What resources are available for people experiencing infertility or people interested in ART?

Resources for people experiencing infertility can be found at www.cdc.gov/reproductivehealth/infertility under Related Links. The CDC Division of Reproductive Health's IVF Success Estimator tool can be found at www.cdc.gov/art/ivf-success-estimator. Resources for people interested in ART can be found at www.cdc.gov/art/whatis.html under Related Resources.

20. What's new in the 2018 report?

CDC is constantly striving to present the most accurate and relevant ART clinic success rates to help inform potential patients' decisions. Modifications to this year's report include having numbers between 1 and 4 in the clinic table success rates suppressed and shown as “*” to protect confidentiality.

Beginning in 2017, cumulative ART success rates among all patients (with or without prior ART cycles) and new patients (with no prior ART cycles) using their own eggs are reported per intended retrievals, actual retrievals, and embryo transfers, by patient age group. This and other changes to clinic success rates reporting that began in 2017 can be found at www.cdc.gov/art/reports/2017/fertility-clinic.html.