

How to Read a Fertility Clinic Table

This section is provided to help consumers understand the information presented in the fertility clinic tables. The number before each heading refers to the number of the corresponding section in the sample clinic table on page 14. Technical terms are defined in the Glossary of Terms (see Appendix B on pages 517–519).

1. Verification

To have success rates published in the annual report, a clinic's medical director must verify the accuracy of the data reported to CDC. The name of the medical director who verified the clinic's data is shown.

2. Type of ART and procedural factors

This section gives the percentage of in vitro fertilization (IVF) cycles using fresh nondonor embryos. It also lists the percentage of ART cycles using fresh nondonor eggs or embryos that were unstimulated, that used a gestational carrier, that involved intracytoplasmic sperm injection (ICSI), and that used preimplantation genetic diagnosis (PGD).

3. Patient diagnosis

This section gives the percentage of ART cycles for which patients had a particular diagnosis out of the total number of cycles performed at the clinic. Cycles started with the intent of freezing and banking all eggs/embryos for future use are not included in the calculations of percentages in this section.

Consumers may want to know what percentage of cycles are performed for a clinic's patients with the same diagnosis as they have. In addition, patients' diagnoses may affect a clinic's success rates. However, the use of these diagnostic categories may vary somewhat from clinic to clinic, and total patient diagnosis percentages may be greater than 100% because more than one diagnosis can be reported for each cycle.

4. Total number of cycles performed, including banking cycles

The first number represents total ART cycles started at the clinic in 2012. It includes the total number of cycles with the intention of freezing and banking (cryopreserving) all resulting eggs/embryos for potential future use, which is shown in parentheses. The total number of ART cycles performed excludes any cycles in which a new procedure was being evaluated (a small number nationwide). The number of cycles in which a new procedure was being evaluated is shown in footnote e, and this cycle type is not used to calculate clinic success rates presented in clinic tables or the national summary.

5. Success rates by type of cycle

Success rates are given for the three categories of ART cycles included in Sections 7–9: cycles using fresh embryos from nondonor eggs, cycles using frozen embryos from nondonor eggs, and cycles using donor eggs. The success rates shown are calculated on the basis of data from all ART cycle procedures (IVF, gamete intrafallopian transfer or GIFT, and zygote intrafallopian transfer or ZIFT).

Success rates for the birth of a single live infant (a singleton live birth) are emphasized in the table because they are an important measure of success. Multiple-infant births are associated with increased risk of adverse outcomes for mothers and infants, including higher rates of caesarean section, prematurity, low birth weight, and infant disability or death.

Clinic table success rates indicate the average chance of success for cycles started at the clinic in 2012. Success rates are calculated by ART cycle stage (start, transfer, pregnancy) and by age group or for all ages combined. For example, if a clinic started 50 cycles in 2012, and these resulted in 15 live births, the average success rate for cycles started at that clinic would be

$$15 \text{ (births)} \div 50 \text{ (cycles)} = 0.3 \text{ or } 30\%$$

Thus, the success rate at that clinic in 2012 was 30%, meaning that 30% of cycles started that year resulted in a live birth.

Success rate calculations may be misleading if they are based on a small number. Therefore, when fewer than 20 cycles or outcomes (pregnancies, transfers) are reported in a given category, the rates are shown as fractions rather than percentages. For example, suppose that the sample clinic performed only 19 fresh embryo cycles using nondonor eggs among women aged 41–42 years. Of these 19 cycles, 2—or about 10%—resulted in a live birth. Because of the small number of cycles, 10% is not a statistically reliable success rate, so the success rate is presented as 2/19, meaning 2 out of 19 cycles started resulted in a live birth.

6. Age of woman

Because a woman's fertility declines with age, clinics report lower success rates for older women attempting to become pregnant with their own eggs. For this reason, rates for women using nondonor eggs or embryos are reported separately for women younger than age 35, for women aged 35–37, aged 38–40, aged 41–42, aged 43–44, and for woman older than age 44. The sample clinic table illustrates the decline in ART success rates among older women. For example, for cycles that used fresh embryos from nondonor eggs, the percentage of cycles resulting in live births among women younger than age 35 was 37.4%, whereas the percentage of cycles resulting in live births among women aged 38–40 was 20.6%.

7. Cycles using fresh embryos from nondonor eggs

This section includes success rates for all ART cycles started with the intent to use fresh embryos from a woman's own eggs. Cycles started with the intention of freezing and banking all eggs/embryos for future use are not included in the calculations of success rates in this section.

- **Number of cycles**

This represents the number of ART cycles by age of woman.

- **Percentage of cancellations**

This is calculated as follows: number of cycles canceled divided by the total number of cycles, expressed as a percentage of cycles.

This refers to cycles that were stopped before an egg retrieval was attempted. A cycle may be canceled if a woman's ovaries do not respond to fertility medications and thus do not produce a sufficient number of follicles. Cycles also may be canceled because of illness or other medical or personal reasons.

- **Average number of embryos transferred**

This is calculated as follows: number of embryos transferred divided by number of cycles in which one or more embryos were transferred.

The average number of embryos transferred varies from clinic to clinic. ASRM and SART have practice guidelines that address this issue. Further information can be obtained from ASRM or SART (both at telephone 205-978-5000 or at Web sites <http://www.asrm.org> and <http://www.sart.org>).

- **Percentage of embryos transferred resulting in implantation**

This is calculated as follows: the larger of either the maximum number of fetal hearts or maximum number of infants born [live births + stillbirths] divided by the number of embryos transferred, expressed as a percentage of embryos transferred.

This represents the cycles resulting in an intrauterine clinical pregnancy out of the total number of embryos transferred in which one or more embryos were transferred. Not all fetal hearts can be detected by ultrasound. For this reason, a positive intrauterine clinical pregnancy is defined as the larger of either the maximum number of fetal hearts detected by ultrasound or maximum number of infants born, including live births and stillbirths.

- **Percentage of elective single embryo transfer (eSET)**

This is calculated as follows: the number of cycles in which one embryo was transferred and one or more embryos were cryopreserved, divided by the number of transfer procedures in which either one embryo was transferred and one or more embryos were cryopreserved or more than one embryo was transferred, expressed as a percentage of these transfer procedures.

This represents the cycles in which one embryo is selected to be transferred from a larger number of available embryos, usually for the purpose of reducing the chance of having a multiple birth. For these cycles, one or more of the extra embryos are cryopreserved during the current cycle for future use.

7A. Outcomes per cycle

In this section, success rates using fresh embryos from nondonor eggs are calculated as a percentage of the fresh nondonor ART cycles started. The number of cycles that a clinic starts is not the same as the number of patients treated because some patients start more than one cycle in a year.

- **Percentage of cycles resulting in singleton live births**

This is calculated as follows: number of singleton live births divided by number of cycles, expressed as a percentage of cycles.

This represents the cycles that resulted in the birth of a single live infant out of all cycles started.

- **Percentage of cycles resulting in triplets or more live births**

This is calculated as follows: number of triplet or more live births divided by number of cycles, expressed as a percentage of cycles.

This represents the cycles that resulted in a triplet or more live birth out of all cycles started. A multiple-infant birth with one or more infants born live is counted as one live birth.

- **Percentage of cycles resulting in live births**

This is calculated as follows: number of live births divided by number of cycles, expressed as a percentage of cycles.

This represents the cycles that resulted in a live birth out of all cycles started. A cycle resulting in live birth may include one or more infants born alive; that is, a multiple-infant birth (e.g., twins, triplets) with at least one live-born infant is counted as one live birth.

- **Percentage of cycles resulting in pregnancy**

This is calculated as follows: number of pregnancies divided by number of cycles, expressed as a percentage of cycles.

This represents the cycles that resulted in a pregnancy out of all cycles started. Because some pregnancies end in a miscarriage, induced abortion, or stillbirth, the percentage of cycles resulting in pregnancies is usually higher than the percentage of cycles resulting in live births.

7B. Outcomes per transfer

In this section, success rates using fresh embryos from nondonor eggs are calculated as a percentage of fresh nondonor ART cycles in which an embryo transfer procedure was attempted, even if no embryos were successfully transferred. A clinic may begin cycles that do not proceed to transfer because not every cycle started results in successful egg retrieval, fertilization, and embryo transfer. For this reason, percentages of transfers resulting in pregnancies and live births generally are higher than the percentage for cycles started.

- **Number of transfers**

This represents the number of transfers by age of woman.

- **Percentage of transfers resulting in singleton live births**

This is calculated as follows: number of singleton live births divided by number of transfers, expressed as a percentage of transfers.

This represents the transfer procedures that resulted in the birth of a single live infant out of all cycles in which a transfer was attempted.

- **Percentage of transfers resulting in triplets or more live births**

This is calculated as follows: number of triplet or more live births divided by number of transfers, expressed as a percentage of transfers.

This represents the transfer procedures that resulted in a triplet or more live birth out of all cycles in which a transfer was attempted. A multiple-infant birth with one or more infants born live is counted as one live birth.

- **Percentage of transfers resulting in live births**

This is calculated as follows: number of live births divided by number of transfers, expressed as a percentage of transfers.

This represents the transfer procedures that resulted in a live birth out of all cycles in which a transfer was attempted. A transfer resulting in live birth may include one or more infants born alive; that is, a multiple-infant birth (e.g., twins, triplets) with at least one live-born infant is counted as one live birth.

- **Percentage of transfers resulting in pregnancy**

This is calculated as follows: number of pregnancies divided by number of transfers, expressed as a percentage of transfers.

This represents the transfer procedures that resulted in a pregnancy out of all cycles in which a transfer was attempted. Because some pregnancies end in a miscarriage, induced abortion, or stillbirth, the percentage of transfers resulting in pregnancies is usually higher than the percentage of transfers resulting in live births.

7C. Outcomes per pregnancy

In this section, success rates using fresh embryos from nondonor eggs are calculated as a percentage of fresh nondonor ART cycles resulting in pregnancy. A pregnancy with more than one fetus is counted as one pregnancy. Because not every cycle started results in successful egg retrieval, fertilization, transfer, and pregnancy, the percentage of pregnancies resulting in live births generally is higher than percentages for cycles started or transfers attempted.

- **Number of pregnancies**

This represents the number of pregnancies by age of woman.

- **Percentage of pregnancies resulting in singleton live births**

This is calculated as follows: number of singleton live births divided by number of pregnancies, expressed as a percentage of pregnancies.

This represents the pregnancies that resulted in the birth of a single live infant out of all cycles resulting in a pregnancy. It includes multiple-fetus pregnancies that may have been reduced to a single-fetus pregnancy by the time of birth, either naturally (e.g., fetal death) or because a woman and her doctor decided to reduce the number of fetuses through a procedure called multifetal pregnancy reduction. (CDC does not collect information on multifetal pregnancy reductions.)

- **Percentage of pregnancies resulting in triplets or more live births**

This is calculated as follows: number of triplet or more live births divided by number of pregnancies, expressed as a percentage of pregnancies.

This represents the pregnancies that resulted in a triplet or more live birth out of all cycles resulting in a pregnancy. A multiple-infant birth with one or more infants born live is counted as one live birth.

- **Percentage of pregnancies resulting in live births**

This is calculated as follows: number of live births divided by number of pregnancies, expressed as a percentage of pregnancies.

This represents the pregnancies that resulted in a live birth out of all cycles resulting in a pregnancy. A pregnancy resulting in live birth may include one or more infants born alive; that is, a multiple-infant birth (e.g., twins, triplets) with at least one live-born infant is counted as one live birth.

8. Cycles using frozen embryos from nondonor eggs

Frozen embryo cycles are those in which previously frozen (cryopreserved) embryos are thawed and transferred. Because these cycles use embryos formed from a previous cycle, no stimulation or retrieval is involved in the current cycle. As a result, these cycles usually are less expensive and less invasive than cycles using fresh embryos. In addition, freezing some of the embryos from a retrieval procedure may increase a woman's overall chances of having a child from a single retrieval.

Success rates for cycles using frozen embryos from nondonor eggs are calculated as the percentage of these cycles resulting in embryo transfer, not the percentage of cycles started; not every cycle started results in successful thaw of frozen embryos or proceeds to transfer. The embryos transferred in frozen nondonor cycles come from prior cycles with the original intent to retrieve and transfer embryos (fresh nondonor cycles) and in which one or more embryos were frozen (cryopreserved). Embryos transferred in frozen nondonor cycles also come from "banking cycles" with the original intent to cryopreserve all retrieved eggs/embryos for future use. Banking cycles may be performed to avoid potentially negative effects of stimulation, or when it is necessary to wait for results of genetic testing. Since some patients may only develop a small number of eggs during a single cycle, women may undergo several short-term banking cycles to improve availability of good-quality eggs/embryos for later transfer. In other situations, patients may choose to freeze eggs or embryos because the patient or partner needs to undergo medical treatment that may harm their future reproduction capabilities or to delay childbearing for other reasons.

The average number of frozen nondonor transfers per fresh nondonor retrieval is the only calculation in the clinic table that includes banking cycles. See Sections 8A for the interpretation of this success rate and Sections 7 and 7B on pages 16–19 for the interpretation of other success rates.

8A. Estimated average number of transfers per retrieval

This is calculated as follows: number of frozen nondonor cycles in which embryos were transferred divided by the sum of the number of banking cycles among all patients and the number of fresh nondonor cycles among those patients with at least one frozen nondonor cycle resulting in embryo transfer.

This measure provides an estimate of the average number of transfers from frozen nondonor cycles for a patient per retrieval. All banking cycles started during the reporting year, and any fresh nondonor cycles performed during the reporting year among patients who received a transfer of frozen nondonor embryos are included. Frozen nondonor transfers performed early in the reporting year might have involved eggs/embryos retrieved and frozen during cycles performed in previous years. Additionally, cycles in which retrieval and cryopreservation occurred late in the reporting year may not contribute to frozen nondonor cycles in which thawed embryos are transferred until subsequent years.

This measure will be lower in clinics performing a larger number of short-term banking cycles to increase the number of good-quality embryos available for transfer, or in clinics performing a larger number of long-term banking cycles for fertility preservation. On the other hand, this measure will be higher in clinics practicing elective single embryo transfer (eSET) when one retrieval cycle results in several subsequent frozen nondonor cycles.

9. Cycles using donor eggs

Women who are older, have premature ovarian failure (early menopause), whose ovaries have been removed, and who have a genetic concern about using their own eggs may consider using eggs that are donated by a young, healthy woman. Embryos donated by patients who previously had ART also may be available. Many clinics provide services for donor egg and embryo cycles.

In this section, success rates are presented separately for ART cycles using fresh donor eggs or embryos and those using frozen donor embryos. For these cycle types, results among women in all age groups are reported together because previous data show that patient age does not affect success rates with donor eggs. Success rates using donor eggs or embryos are calculated as a percentage of transfers, and cycles started with the intention of freezing and banking all eggs/embryos for future use are not included in any calculations of success rates in this section. See Sections 7 and 7B on pages 16–19 for the interpretation of success rates.

10. Current clinic services and profile

- **Current name**

This may reflect a clinic name change that occurred since 2012, whereas the clinic name at the top of the table was the name of the ART clinic as it existed in 2012. Some clinics not only have changed their names but have reorganized as well. Reorganization is defined as a change in ownership or affiliation or a change in at least two of the three key staff positions (practice director, medical director, or laboratory director). In such cases, no current name is listed, but a statement that the clinic has undergone reorganization since 2012 is included, and no current clinic services or profile are listed.

- **Donor egg**

Some clinics have programs for ART using donor eggs. Donor eggs are eggs that have been retrieved from one woman (the donor) and then transferred to another woman (the recipient). Policies regarding sharing of donor eggs vary from clinic to clinic.

- **Donor embryo**

This refers to whether the clinic has a program for ART using embryos that were donated by other patients who previously underwent ART treatment and had extra embryos available.

- **Single women**

Clinics have varying policies regarding ART services for single (unmarried) women.

- **Gestational carriers**

A gestational carrier is a woman who carries a child for others; sometimes such women are referred to as gestational surrogates. Policies regarding ART services using gestational carriers vary from clinic to clinic. Some states do not permit clinics to offer this service.

- **Embryo cryopreservation**

This item refers to whether the clinic has a program for freezing extra embryos that may be available from a patient's ART cycle.

- **SART member**

In 2012, 377 of the 456 reporting clinics were SART members.

- **Verified lab accreditation**

If "Yes" appears next to this item, the ART clinic uses an embryo laboratory accredited by one or more of three specific accrediting organizations. If "Pending" appears here, it means that the clinic has submitted an application for accreditation to one or more of the three organizations and has provided proof of such application to CDC. "No" indicates that the embryo laboratory has not been accredited by any of these three organizations or has not provided proof of accreditation to CDC.

CDC provides this information as a public service. Please note that CDC does not oversee any of these accreditation programs. They are all nonfederal programs. To become certified, laboratories must have in place systems and processes that comply with the accrediting organization's standards. Depending on the organization, standards may include those for personnel, quality control and quality assurance, specimen tracking, results reporting, and the performance of technical procedures. Compliance with these standards is confirmed by documentation provided by the laboratory and by on-site inspections. For further information, consumers may contact the three accrediting organizations directly:

- College of American Pathologists (CAP): For a list of accredited laboratories, call 800-323-4040 and follow the prompts for Laboratory Accreditation.
- The Joint Commission: Call 630-792-5800 to inquire about the status of individual laboratories.
- New York State Tissue Bank Program (NYSTB): Call 518-485-5341 to find out which laboratories are certified under the tissue bank regulations.

Further information on laboratory accreditation for specific clinics is provided in Appendix C.