

**2010**

# **Assisted Reproductive Technology**

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**Fertility Clinic Success Rates Report**

National Center for Chronic Disease Prevention and Health Promotion  
Division of Reproductive Health



Updates to this report will be posted on the CDC Web site at the following address:

[www.cdc.gov/art/ART2010](http://www.cdc.gov/art/ART2010)

For additional information, send an e-mail to [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov) (Subject: ART)

Or write to CDC, ATTN: ART Surveillance and Research Team  
4770 Buford Highway, N.E.; Mail Stop K-34; Atlanta, GA 30341-3717.

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**August 2012**

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Division of Reproductive Health



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**Centers for Disease Control and Prevention**

National Center for Chronic Disease  
Prevention and Health Promotion

Ursula E. Bauer, PhD, MPH, Director

Division of Reproductive Health

CAPT Wanda D. Barfield, MD, MPH, Director  
Kelly Brumbaugh, MPH, CHES

Women's Health and Fertility Branch

Denise J. Jamieson, MD, MPH, Chief  
Jeani Chang, MPH  
Dmitry Kissin, MD, MPH  
Aniket D. Kulkarni, MBBS, MPH  
Mithi Sunderam, MA, PhD  
Daniel Wallace  
Yujia Zhang, PhD

**American Society for Reproductive Medicine**

Rogerio A. Lobo, MD, President

**Society for Assisted Reproductive Technology**

Glenn L. Schattman, MD, President  
Kelley Jefferson

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# Preface

For many people who want to start a family, the dream of having a child is not easily realized; about 12% of women of childbearing age in the United States have used an infertility service. Assisted reproductive technology (ART) has been used in the United States since 1981 to help women become pregnant, most commonly through the transfer of fertilized human eggs into a woman's uterus. However, for many people, deciding whether to undergo this expensive and time-consuming treatment can be difficult.

The goal of this report is to help potential ART users make informed decisions about ART by providing some of the information needed to answer the following questions:

- What are my chances of having a child by using ART?
- Where can I go to get this treatment?

The Society for Assisted Reproductive Technology (SART), an organization of ART providers affiliated with the American Society for Reproductive Medicine (ASRM), has been collecting data and publishing annual reports of pregnancy success rates for fertility clinics in the United States and Canada since 1989. In 1992, the U.S. Congress passed the Fertility Clinic Success Rate and Certification Act. This law requires the Centers for Disease Control and Prevention (CDC) to publish pregnancy success rates for ART in fertility clinics in the United States. (For more details about the law, see [www.cdc.gov/dls/pdf/art/fr06no98n.pdf](http://www.cdc.gov/dls/pdf/art/fr06no98n.pdf).) Since 1995, CDC has worked in consultation with SART and ASRM to report ART success rates.

The 2010 report of pregnancy success rates is the sixteenth to be issued under the law. This report is based on the latest available data on the type, number, and outcome of ART cycles performed in U.S. clinics.

The 2010 ART report has three major sections:

- **Commonly asked questions about the U.S. ART clinic reporting system.** This section provides background information on infertility and ART and an explanation of the data collection, analysis, and publication processes.
- **Fertility clinic tables.** Many factors contribute to the success of ART, including the training and experience of the ART clinic and laboratory professionals, the quality of services, and the characteristics of the patient population. The fertility clinic tables section displays ART results and success rates for individual U.S. Fertility Clinics in 2010. The section also includes the National Summary table, which combines data from all clinics.

- **Appendixes:**

**Appendix A** contains technical notes on the interpretation of 95% confidence intervals of success rates reported in the fertility clinic tables and information about 2010 data validation activities.

**Appendix B** provides definitions for technical and medical terms used throughout the report.

**Appendix C** includes the current names and addresses of all reporting clinics along with a list of clinics known to be in operation in 2010 that did not report their success rates data to CDC as required by law.

**Appendix D** includes the names and addresses of national consumer organizations that offer support to people experiencing infertility.

Success rates can be reported in a variety of ways, and the statistical aspects of these rates can be difficult to interpret. This report is intended for the general public, and the emphasis is on presenting the information in an easily understandable form. CDC hopes that this report is informative and helpful to people considering an ART procedure. We welcome any suggestions for improving the report and making it easier to use. (Please contact us at [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov) [Subject: ART].)

In addition to the *2010 Assisted Reproductive Technology Fertility Clinic Success Rates Report*, CDC also publishes the *2010 Assisted Reproductive Technology National Summary Report* (available in December 2012), which provides an overall national picture that uses 2010 data to answer specific questions related to ART success rates.

# Commonly Asked Questions About the U.S. ART Clinic Reporting 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 have infertility problems?**

The latest data on infertility available to the Centers for Disease Control and Prevention (CDC) are from the 2002 National Survey of Family Growth ([www.cdc.gov/nchs/data/series/sr\\_23/sr23\\_025.pdf](http://www.cdc.gov/nchs/data/series/sr_23/sr23_025.pdf)).

- Of the approximately 62 million women of reproductive age in 2002, about 1.2 million, or 2%, had had an infertility-related medical appointment within the previous year and an additional 10% had received infertility services at some time in their lives. (Infertility services include medical tests to diagnose infertility, medical advice and treatments to help a woman become pregnant, and services other than routine prenatal care to prevent miscarriage.)
- Additionally, of 2.1 million married couples in which the woman was of reproductive age, 7% reported that they had not used contraception for 12 months and the woman had not become pregnant.

### **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 both eggs and sperm are handled. In general, ART procedures involve surgically removing eggs from a woman's ovaries, combining them with sperm in the laboratory, and returning them to the woman's body or donating them to another woman. They do NOT include treatments in which only sperm are handled (i.e., 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)**. IVF involves extracting a woman's eggs, fertilizing the eggs in the laboratory, and then transferring the resulting embryos into the woman's uterus through the cervix. For some IVF procedures, fertilization involves a specialized technique known as intracytoplasmic sperm injection (ICSI). In ICSI, a single sperm is injected directly into the 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 the 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 her fallopian tubes.

In addition, ART often is categorized according to whether the procedure used a woman's own eggs (nondonor) or eggs from another woman (donor) and according to 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 over an interval of approximately 2 weeks, 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 when a woman begins taking drugs to stimulate egg production or starts ovarian 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.

### **4. How do U.S. 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 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 actively follows up reports of ART physicians or clinics not on its list to update the list as needed. 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 information on the client'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 2010 success rates being published in 2012?**

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 late in the year after ART treatment was initiated (about 9 months past year-end, when all the births have occurred). Accordingly, the results of all the cycles initiated in 2010 were not known until October 2011. After ART outcomes are known, the following occurs before the report is published:

- Clinics enter their 2010 data into NASS and verify the data's accuracy before submitting the data at the end of 2011 to Westat.
- Westat compiles a national data set in the beginning of 2012 from the data submitted by individual clinics.
- CDC data analysts conduct comprehensive checks of the numbers reported for every clinic.
- Individual fertility clinic tables are available in the spring of 2012 on CDC's Web site at [www.cdc.gov/art/ARTReports.htm](http://www.cdc.gov/art/ARTReports.htm).
- Clinic tables and accompanying text for both the printed and Web site versions of the full report are compiled and laid out.

- Necessary changes are incorporated and proofread.
- The report is submitted to the Government Printing Office to begin the printing and production process.

These steps are time-consuming but essential for ensuring that the report provides the public with correct information particularly regarding each clinic's success rates.

## **6. Which clinics are represented in this report?**

The data in this report come from 443 fertility clinics that provided and verified information about the outcomes of the ART cycles started in their clinics in 2010.

Although almost all clinics that provided ART services in the United States throughout 2010 are represented in this report, data from 31 clinics or practitioners are not included because they either were not in operation throughout 2010 or did not report as required. Clinics and practitioners known to have been in operation throughout 2010 that did not report and verify their data are listed in this report as nonreporters, as required by law (see Appendix C: Nonreporting ART Clinics for 2010, by State on pages 519–520). Given the estimated number of ART cycles performed in nonreporting clinics, we estimate that ART surveillance covered 97% of ART cycles performed in the United States in 2010. We will continue to make every effort to include in future reports all clinics and practitioners providing ART services.

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

Because the decision to undergo ART treatment is a very personal decision, this report may not contain all of the information that consumers need to decide which ART clinic or procedure is best for their treatment. Many factors contribute to the success rate of an ART procedure in particular patients, and a difference in success rates between two ART clinics may reflect differences in the groups 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 11–20). 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 for infertility, there are many other factors that may affect the decision. Going through repeated ART cycles requires substantial commitments of time, effort, money, and emotional energy. Therefore, 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 data for all 147,260 ART cycles performed in 2010 by the 443 clinics that reported their data as required. A small number of ART cycles are not included in either the National Summary table or the individual fertility clinic tables. These were cycles in which a new treatment procedure was being evaluated. Only 4 ART cycles fell into this category in 2010.

## **9. How are the success rates determined?**

This report presents several measures of success for ART, including the percentage of ART cycles that result in a pregnancy. (Please note that not all pregnancies result in live birth; some pregnancies may result in miscarriage, induced abortion, or stillbirth.) All live-birth deliveries were reported to the ART clinic by either the patient or the patient's obstetric provider. Because this report is geared toward patients, the focus is on the percentage of cycles resulting in live births. Singleton live births are presented as a separate measure of success because they have a much lower risk than multiple-infant births for adverse infant health outcomes, including prematurity, low birth weight, disability, and death. Success rates were additionally calculated at various steps of the ART cycle to provide a complete picture of the chances for success as the cycle progresses.

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

Many consumers ask this question because they assume that the pregnancy will lead to a live birth. Unfortunately, not all ART procedures that result in a pregnancy lead to the delivery of a live infant. For example, 100,824 fresh nondonor ART cycles were started in 2010. Of those, 37,191 (37%) led to a pregnancy, but only 30,425 (30%) resulted in a live birth. In other words, 6,766 (18%) of ART pregnancies did not result in a live birth. The percentage of cycles resulting in live births 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, 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.

## **11. If a patient has had more than one ART treatment cycle, how is the success rate calculated? Alternatively, how many cycles does a patient usually go through before getting pregnant?**

As required by law, this report presents ART success rates in terms of how many cycles were started each year. Because clinics report information based on outcomes for each cycle started, success rates on a "per patient" basis, or the number of cycles that an average patient may undergo before achieving success are not presented in this report. While it is possible to achieve success with one ART cycle, success rates vary in the context of patient and treatment characteristics. Consumers should consult with their physician to understand their specific medical situation and their chances of using ART.

## **12. 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 tabulated success rates are accurate. Then, Westat conducts an in-house review and contacts the clinics if corrections are necessary. After the data have been verified, a quality control process called validation begins. This year, 35 of the 443 reporting clinics were selected after taking into consideration some cycle and clinic characteristics and whether the clinic had been selected before. (See Appendix A: Technical Notes on pages 469–471 for a more detailed presentation of sampling strategy.) Members of the Westat

Validation Team visit these clinics and review medical record data for a sample of the clinic's ART cycles. For each cycle, the validation team abstracts information from the patient's medical record. The abstracted information is then reviewed onsite and compared with the data submitted for the report. 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. Findings and discrepancy rates from the 2010 validation visits will be available on the CDC Web site later this year at [www.cdc.gov/art/ARTReports.htm](http://www.cdc.gov/art/ARTReports.htm).

### **13. How does CDC use the variables/data collected but not reported in the annual *Assisted Reproductive Technology Fertility Clinic Success Rates Report* and *National Summary Report*?**

CDC uses the data collected and not reported in the annual ART reports to evaluate emerging ART research questions and to monitor safety and efficacy issues related to ART treatment for improving maternal and child outcomes. Other data may not be released in order to protect the ART patient's confidentiality. A list of ART publications is available at [www.cdc.gov/art/pubs.htm](http://www.cdc.gov/art/pubs.htm).

### **14. How does CDC ensure the confidentiality of the ART data it collects?**

CDC has an Assurance of Confidentiality for the ART database. An Assurance of Confidentiality is a formal confidentiality protection authorized under Section 308(d) of the Public Health Service Act (42 U.S.C. 242[m]). An assurance is used for projects conducted by CDC staff or contractors involving the collection or maintenance of sensitive identifiable or potentially identifiable information. The assurance allows CDC programs to assure that individuals and institutions involved in research or nonresearch projects protect the confidentiality of the data collected. Under Public Health Service Act Section 308(d), no identifiable information may be used for any purpose other than the purpose for which it was supplied unless such institution or individual has consented to that disclosure. CDC's current Assurance of Confidentiality for this project is ongoing.

### **15. Why doesn't the report contain specific medical information about ART?**

This report describes a woman's average chances of success per ART cycle. Although the report provides some information about factors such as age and infertility diagnosis, consumers face many unique medical situations. This population-based registry of ART procedures cannot capture detailed information about specific medical conditions associated with infertility. Consumers should consult with their physician to understand their specific medical situation and their chances of success using ART.

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

During 1996–2010, the percentage of ART clinics reporting data to CDC with a SART membership ranged from approximately 85% to 95%. Annual summary statistics of ART treatments performed in each of these clinics are available online at [www.sart.org](http://www.sart.org). Although many of the same table items are used in both the CDC's *Fertility Clinic Tables* and SART's *IVF Success Rate Reports*, 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 and statistical methods used to generate statistics.

### **17. Does CDC have any information on the women who donate eggs?**

CDC only collects information on the age of egg donors, but does not present it in the individual clinic tables for this report. In 2010, the average age of egg donors was approximately 28 years. Success rates for cycles using donor eggs or using embryos derived from donor eggs is related to the age of the woman who produced the eggs. Thus, the percentage of transfers that resulted in live births for cycles using fresh embryos from donor eggs remained consistently high—above 50% among most patients of different ages.

### **18. Are there any medical guidelines for ART performed in the United States?**

The American Society for Reproductive Medicine (ASRM) and the Society of Assisted Reproductive Technology (SART) issue guidelines dealing with specific ART practice issues, such as the number of embryos to be transferred in an ART procedure. Further information can be obtained from ASRM or SART (both at telephone 205-978-5000 or Web sites [www.asrm.org](http://www.asrm.org) and [www.sart.org](http://www.sart.org)).

### **19. Where can I get additional information on U.S. fertility clinics?**

For further information on specific clinics, contact the clinic directly (see Appendix C for current contact information). In addition, SART can provide general information on its member clinics (telephone 205-978-5000, extension 109).

# 2010

## Fertility Clinic Tables





# INTRODUCTION TO FERTILITY CLINIC TABLES

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The first table in this section is the 2010 National Summary of combined data from all clinics. Individual clinic tables follow, with each clinic's data presented in a one-page table that includes the types of assisted reproductive technology (ART) used, patient diagnoses, success rates, and individual clinic characteristics. Clinics are listed in alphabetical order by state, city, and clinic name.

Many people considering ART will want to use this report to find the “best” clinic. However, comparisons between clinics must be made with caution. Many factors contribute to the success of an ART procedure. Some factors are related to the training and experience of the ART clinic and laboratory professionals and the quality of services they provide. Other factors are related to the patients themselves, such as their age, quality of their eggs and sperm (including motility and ability to penetrate the egg), cause of their infertility, genetic factors, and diagnosis. Some clinics may be more willing than others to accept patients with low chances of success or may specialize in various ART treatments that attract particular types of patients.

We encourage consumers considering ART to contact clinics to discuss their specific medical situations and their potential for success using ART. Because clinics did not have the opportunity to provide narratives to explain their data in this report, such conversations could provide additional information to help consumers decide whether to use ART.

Although ART offers important options for the treatment of infertility, the decision to use ART involves many factors in addition to success rates. Therefore, consumers should carefully examine all related financial, psychological, and medical issues before beginning treatment. They also will want to consider the location of the clinic, the counseling and support services available, and the rapport that staff members have with their patients. Important factors to consider when interpreting clinic data are discussed below.

## Important Factors to Consider When Using These Tables to Assess a Clinic

- ***These statistics are for 2010.*** Data for cycles started in 2010 could not be published until 2012 because the final outcomes of pregnancies conceived in December 2010 were not known until October 2011. Additional time was then required to collect and analyze the data and prepare the report. Many factors that contribute to a clinic's success rate may have changed in the 2 years since these cycles were performed. Personnel may be different. Equipment and training may or may not have been updated. As a result, success rates for 2010 may not necessarily represent current rates.
- ***No reported success rate is absolute.*** A clinic's success rates may vary from year to year even if all determining factors remain the same. The more cycles that a clinic carries out, the less the rate is likely to vary. Conversely, clinics that perform fewer cycles are likely to have more variability in

success rates from year to year. As an extreme example, if a clinic reports only one ART cycle in a given category, as is sometimes the case in the data presented here, the clinic's success rate in that category would be either 0% or 100%. (For further detail, see Appendix A: How to Interpret a Confidence Interval on pages 469–470.) Because success rate calculations are very unstable if they are based on a small number of cycles, the rates are shown as fractions rather than percentages when fewer than 20 cycles are reported in a given category.

- **Some clinics see more than the average number of patients with difficult infertility problems.** Some clinics are willing to offer ART to most potential patients, even those who have a low probability of success. Others discourage such patients or encourage them to use donor eggs, practices that result in higher success rates among older women. Clinics that accept a higher percentage of women who previously have had multiple unsuccessful ART cycles will generally have lower success rates. In contrast, clinics that offer ART procedures to women who might have become pregnant with less technologically advanced treatment will generally have higher success rates.
- **The percentage of cycles that are canceled.** Percentages of canceled cycles using fresh nondonor eggs or embryos vary among clinics from less than 1% to, in a few cases, more than 30%. A high percentage of cancellations tends to lower the percentage of cycles resulting in live births but may increase the percentage of retrievals resulting in live births and the percentage of embryo transfers resulting in live births.
- **Percentages of unstimulated (or “natural”) cycles are included with those for stimulated cycles.** In an unstimulated cycle, the woman ovulates naturally rather than through the daily injections used in stimulated cycles. Unstimulated cycles are less expensive because they require no daily injections and fewer ultrasounds and blood tests. However, women who use natural or mild stimulation produce only one or two follicles, thus reducing the potential number of embryos for transfer. As a result, clinics that perform a relatively high percentage of unstimulated cycles may have lower success rates. Nationally, less than 1% of ART cycles using fresh nondonor eggs or embryos in 2010 were unstimulated. In a very few clinics, more than 2% of cycles were unstimulated.
- **Success rates are calculated per cycle rather than per patient.** Success rates shown in this report are presented in terms of cycles, as required by law, rather than in terms of patients. As a result, patients who had more than one ART cycle in 2010 are represented in multiple cycles that are not linked. If a patient who underwent several ART cycles at a given clinic either never had a successful cycle or had a successful cycle only after numerous attempts, the clinic's success rates would be lowered. In addition, for patients who undergo both fresh and frozen cycles, success rates are calculated separately for each cycle. Clinics that have a very high percentage of cycles resulting in live births with frozen embryos would have higher ART success rates if these births were included as successes from the original stimulated cycle. Consumers should look at both rates (for cycles using fresh embryos and for those using frozen embryos) when assessing a clinic's success rates.

- ***The number of embryos transferred varies from clinic to clinic.*** In 2010, the average number of embryos that a clinic transferred to women younger than age 35 ranged from one to four for fresh nondonor cycles. The American Society for Reproductive Medicine and the Society for Assisted Reproductive Technology discourage the transfer of a large number of embryos because of the increased likelihood of multiple-fetus pregnancies. Multiple-fetus pregnancies, in turn, increase the probability of premature births and related health problems.

An explanation of how to read a fertility clinic table begins on page 15.

## SAMPLE CLINIC TABLE

**A comparison of clinic success rates may not be meaningful because patient medical characteristics and treatment approaches vary from clinic to clinic. For more details about this, along with information on how to interpret the statistics in this table, see pages 11–20.**

### 2010 ART CYCLE PROFILE

1 Type of ART <sup>a</sup>			2 Patient Diagnosis				
IVF	>99%	<b>Procedural Factors:</b>	Tubal factor	13%	Other factor	7%	
GIFT	<1%	With ICSI	53%	Ovulatory dysfunction	6%	Unknown factor	10%
ZIFT	<1%	Unstimulated	<1%	Diminished ovarian reserve	9%	<i>Multiple Factors:</i>	
Combination	<1%	Used gestational carrier	<1%	Endometriosis	6%	Female factors only	13%
		Used PGD	5%	Uterine factor	1%	Female & male factors	18%
		With eSET	3%	Male factor	17%		

### 4 2010 PREGNANCY SUCCESS RATES

3 Data verified by X. Y. Zee, MD

Type of Cycle	5 Age of Woman				
	<35	35–37	38–40	41–42	43–44 <sup>d</sup>
<b>4A Fresh Embryos from Nondonor Eggs</b>					
Number of cycles	115	106	68	19	12
Percentage of embryos transferred resulting in implantation <sup>b</sup>	32.5	24.5	16.6	9.3	3 / 18
Percentage of cycles resulting in pregnancies <sup>b</sup>	45.2	37.7	23.5	5 / 19	3 / 12
Percentage of cycles resulting in live births <sup>b,c</sup>	37.4	31.1	20.6	2 / 19	1 / 12
6 (Confidence Interval)	(28.5–46.2)	(22.3–39.9)	(11.0–30.2)		
Percentage of retrievals resulting in live births <sup>b,c</sup>	42.6	33.3	23.7	2 / 17	1 / 10
Percentage of transfers resulting in live births <sup>b,c</sup>	52.4	34.7	24.1	2 / 15	1 / 7
Percentage of transfers resulting in singleton live births <sup>b</sup>	29.3	29.5	19.0	2 / 15	0 / 7
Percentage of cancellations <sup>b</sup>	12.2	6.6	13.2	2 / 19	2 / 12
Average number of embryos transferred	2.0	2.5	3.8	2.9	2.7
Percentage of pregnancies with twins <sup>b</sup>	38.5	12.5	4 / 16	1 / 5	1 / 3
Percentage of pregnancies with triplets or more <sup>b</sup>	3.8	2.5	1 / 16	0 / 5	0 / 3
Percentage of live births having multiple infants <sup>b,c</sup>	44.2	15.2	3 / 14	0 / 2	1 / 1
<b>4B Frozen Embryos from Nondonor Eggs</b>					
Number of transfers	62	25	20	14	8
Percentage of transfers resulting in live births <sup>b,c</sup>	27.4	24.0	20.0	2 / 14	1 / 8
Average number of embryos transferred	2.1	2.0	2.7	3.1	2.9
	<b>All Ages Combined<sup>e</sup></b>				
<b>4C Donor Eggs</b>	<b>Fresh Embryos</b>		<b>Frozen Embryos</b>		
Number of transfers	49		14		
Percentage of transfers resulting in live births <sup>b,c</sup>	51.0		4 / 14		
Average number of embryos transferred	2.1		3.4		

### 7 CURRENT CLINIC SERVICES AND PROFILE

**Current Name:** California Fertility Partners

Donor egg?	Yes	Gestational carriers?	Yes	SART member?	Yes
Donor embryo?	Yes	Cryopreservation?	Yes	Verified lab accreditation?	Yes
Single women?	No			(See Appendix C for details.)	

<sup>a</sup> Reflects patient and treatment characteristics of ART cycles performed in 2010 using fresh nondonor eggs or embryos.

<sup>b</sup> When fewer than 20 cycles are reported in an age category, rates are shown as a fraction and confidence intervals are not given. Calculating percentages from fractions may be misleading and is not encouraged.

<sup>c</sup> A multiple-infant birth is counted as one live birth.

<sup>d</sup> Clinic-specific outcome rates for women older than 44 undergoing ART cycles using fresh or frozen embryos with nondonor eggs are not included because of small numbers.

<sup>e</sup> All ages (including ages >44) are reported together because previous data show that patient age does not materially affect success with donor eggs.

## 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 the opposite page. Technical terms are defined in the Glossary of Terms (see Appendix B on pages 475–477).

### 1. Type of ART cycle performed

This section gives the breakdown of ART cycle types that each clinic performed using fresh nondonor eggs or embryos. It also lists the percentage of procedures that involved intracytoplasmic sperm injection (ICSI); the percentage of cycles that were unstimulated; the percentage of cycles that used a gestational carrier; the percentage of cycles that used preimplantation genetic diagnosis (PGD); and the percentage of cycles with elective single-embryo transfer (eSET). (See Appendix B: Glossary of Terms on pages 475–477 for definitions of ART cycle types and procedures.)

### 2. ART patient diagnosis

Consumers may want to know what percentage of a particular clinic's patients have the same diagnosis as they do. (See Appendix B: Glossary of Terms on pages 475–477 for definitions of diagnoses.) 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.

### 3. Verification

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

### 4. Success rates by type of cycle

Success rates are given for the three categories of cycles described in 4A–4C: cycles using fresh embryos from nondonor eggs, cycles using frozen embryos from nondonor eggs, and cycles using donor eggs. The ART success rates shown were calculated on the basis of data from all ART cycle types. Data from these procedures were combined because there was little difference in success rates when we examined each type of ART procedure separately.

The success rates indicate the average chance of success for the given procedure at the clinic in 2010 for each of five age groups. Success rates are calculated as the percentage of cycles started, egg retrievals, or embryo transfers that resulted in either pregnancies or live births in 2010. For example, if a clinic started a total of 50 cycles in 2010 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 2010 was 30%, meaning that 30% of cycles started that year resulted in a live birth.

Success rate calculations are very unstable if they are based on a small number of cycles. Therefore, when fewer than 20 cycles are reported in a given category, the rates are shown as fractions rather than percentages. For example, 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%—were

successful. However, 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 resulted in a live birth.

#### **4A. Cycles using fresh embryos from nondonor eggs**

This section includes all ART cycles that used a woman's own eggs. Cycles that used frozen embryos or donor eggs or embryos are not included here.

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

(The larger of either the number of maximum fetal hearts or maximum infants born [live births + stillbirths] divided by the number of embryos transferred, expressed as a percentage of embryo transfers)

This number represents the cycles that resulted 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 number of maximum fetal hearts detected by ultrasound or maximum infants born, including live births and stillbirths.

- **Percentage of cycles resulting in pregnancies**

(Number of pregnancies divided by number of cycles started, expressed as a percentage of cycles)

A stimulated cycle is started when a woman begins taking fertility drugs; an unstimulated cycle is started when egg production begins being monitored. 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. 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.

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

(Number of live births divided by number of cycles started, expressed as a percentage of cycles)

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

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

(Number of live births divided by number of egg retrieval procedures, expressed as a percentage of retrievals)

This number represents the cycles that resulted in a live birth out of all cycles in which egg retrieval was performed. The number of retrievals a clinic performs often is smaller than the number of cycles started because some cycles are canceled before the woman has an egg retrieved. As a result, the percentage of retrievals resulting in live births is usually higher than the percentage of cycles resulting in live births. Cycles are canceled for many reasons: eggs may not develop, the patient may become ill, or the patient may choose to stop treatment.

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

(Number of live births divided by number of embryo transfer procedures, expressed as a percentage of transfers)

This number represents the cycles that resulted in a live birth out of all cycles in which one or more embryos were transferred. A clinic may perform more egg retrievals than embryo transfers because not every retrieval results in egg fertilization and transfer. For this reason, the percentage of transfers resulting in live births generally will be higher than those reported for retrievals and for cycles started.

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

(Number of singleton live births divided by number of embryo transfer procedures, expressed as a percentage of transfers)

This number represents the cycles that resulted in the birth of a single infant out of all cycles in which one or more embryos were transferred. Singleton births have a much lower risk than multiple-infant births for adverse infant health outcomes, including prematurity, low birth weight, disability, and death.

- **Percentage of cancellations**

(Number of cycles canceled divided by the total number of cycles, expressed as a percentage of cycles)

This number refers to the cycles that were stopped before an egg was retrieved. 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**

(Average number of embryos per embryo transfer procedure)

The average number of embryos transferred varies from clinic to clinic. The American Society for Reproductive Medicine (ASRM) and the Society for Assisted Reproductive Technology (SART) have practice guidelines that address this issue. Further information can be obtained from ASRM or SART (both at telephone 205-978-5000 or Web sites [www.asrm.org](http://www.asrm.org) and [www.sart.org](http://www.sart.org)).

- **Percentage of pregnancies with twins**

(Number of pregnancies with two fetuses divided by the total number of pregnancies, expressed as a percentage of pregnancies)

A pregnancy with two fetuses is counted as one pregnancy.

- **Percentage of pregnancies with triplets or more**

(Number of pregnancies with three or more fetuses divided by the total number of pregnancies, expressed as a percentage of pregnancies)

Pregnancies with multiple fetuses can be associated with increased risk for mothers and infants (e.g., higher rates of caesarean section, prematurity, low birth weight, infant death) and the possibility of multifetal pregnancy reduction.

A pregnancy with three or more fetuses is counted as one pregnancy.

- **Percentage of live births having multiple infants**

(Number of deliveries resulting in a birth of more than one infant divided by the number of live births, expressed as a percentage of live births)

A delivery of one or more live-born infants is counted as one live birth.

#### **4B. Cycles using frozen embryos from nondonor eggs**

Frozen (cryopreserved) embryo cycles are those in which previously frozen embryos are thawed and then transferred. Because frozen embryo cycles use embryos formed from a previous stimulated cycle, no stimulation or retrieval is involved. 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.

#### **4C. Cycles using donor eggs**

Success rates are presented separately for cycles using fresh donor eggs or embryos and those using frozen donor embryos. Older women, women with premature ovarian failure (early menopause), women whose ovaries have been removed, and women with 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. For these cycle types, results from women in all age groups (including older than 44) are reported together because previous data show that patient age does not affect success rates with donor eggs.

### **5. 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, for women aged 38–40, for women aged 41–42, and for women aged 43–44. Outcome rates are not shown in the individual clinic tables for women older than age 44 who undergo ART using their own eggs because the number of women in this age group at each clinic is small; therefore, a calculation of the percentage of cycles resulting in live births in older age groups may not be meaningful. However, combined outcome rates are shown for these women in the National Summary table because the numbers are greater. 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 35 was 37.4%, whereas the percentage of cycles resulting in live births among women aged 38–40 was 20.6%.

## 6. Confidence interval

The tables show a range, called the **95% confidence interval**, that conveys the reliability of a clinic's success rate. (For more information on how to interpret a confidence interval, refer to Appendix A: How to Interpret a Confidence Interval on pages 469–470.) This range is calculated only if 20 or more cycles are reported in an age category. (When fewer than 20 cycles are reported in a given category, success rates are shown as fractions rather than percentages; see section 4, Success rates by type of cycle on page 15.) In general, the more cycles that a clinic performs, the narrower the range. A narrow range means we are more confident that a clinic would have a similar success rate if it treated other similar groups of patients under similar clinical conditions. On the other hand, a wide range tells us that a clinic's success rate is more likely to vary under similar circumstances because we had less information (fewer cycles) on which to base our estimates. Even though one clinic's success rate may appear higher than another's based on the confidence intervals, these confidence intervals are only one indication that the success rate may be better. Other factors also must be considered when comparing rates from two clinics. For example, some clinics see more than the average number of patients with difficult infertility problems, whereas others discourage patients with a low probability of success. For further information on important factors to consider when using the tables to assess a clinic, refer to pages 11–13.

For a more detailed explanation and examples of confidence intervals, see Appendix A: How to Interpret a Confidence Interval on pages 469–470.

## 7. Current clinic services and profile

- **Current name.** This name reflects a name change that may have occurred since 2010, whereas the clinic name at the top of the table was the name of the ART clinic as it existed in 2010. 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 will be listed, but a statement will be included that the clinic has undergone reorganization since 2010. Also, in such cases, no current clinic services or profile will be listed.
- **Donor egg program.** 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.** These are 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.
- **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 2010, 375 of the 443 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 of the following organizations:
  - College of American Pathologists/ASRM, Reproductive Laboratory Accreditation Program (CAP/ASRM).
  - The Joint Commission (formerly the Joint Commission on Accreditation of Healthcare Organizations).
  - New York State Tissue Bank Program (NYSTB).

If “pending” appears here, it means that the clinic has submitted an application for accreditation to one of the above 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.

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 following accrediting organizations directly:

- CAP/ASRM: 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.
- 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.

## 2010 NATIONAL SUMMARY

**A comparison of clinic success rates may not be meaningful because patient medical characteristics and treatment approaches vary from clinic to clinic. For more details about this, along with information on how to interpret the statistics in this table, see pages 11–20.**

### 2010 ART CYCLE PROFILE

Type of ART <sup>a</sup>		Patient Diagnosis					
IVF	>99%	<b>Procedural Factors:</b>	Tubal factor	7%	Other factor	7%	
GIFT	<1%		With ICSI	66%	Unknown factor	12%	
ZIFT	<1%	Unstimulated	<1%	Diminished ovarian reserve	15%	<b>Multiple Factors:</b>	
Combination	<1%	Used gestational carrier	<1%	Endometriosis	4%		Female factors only
		Used PGD	4%	Uterine factor	1%	Female & male factors	18%
		With eSET	6%	Male factor	17%		

### 2010 PREGNANCY SUCCESS RATES

Type of Cycle	Age of Woman					
	<35	35–37	38–40	41–42	43–44	>44
<b>Fresh Embryos from Nondonor Eggs</b>						
Number of cycles	41,744	21,369	21,741	10,122	4,501	1,347
Percentage of embryos transferred resulting in implantation	36.5	26.9	17.7	9.6	4.2	1.7
Percentage of cycles resulting in pregnancies	47.6	38.8	29.9	19.9	10.6	3.2
Percentage of cycles resulting in live births <sup>b</sup>	41.5	31.9	22.1	12.4	5.0	1.0
Percentage of retrievals resulting in live births <sup>b</sup>	44.4	35.4	25.3	14.8	6.3	1.4
Percentage of transfers resulting in live births <sup>b</sup>	47.6	38.3	28.1	16.7	7.4	1.8
Percentage of transfers resulting in singleton live births	31.4	27.3	21.5	13.7	6.6	1.6
Percentage of cancellations	6.6	9.9	12.8	16.4	20.6	25.5
Average number of embryos transferred	2.0	2.2	2.6	3.0	3.2	2.7
Percentage of pregnancies with twins	32.9	27.3	21.6	15.0	8.1	2.3
Percentage of pregnancies with triplets or more	2.6	3.1	3.7	3.0	0.6	2.3
Percentage of live births having multiple infants <sup>b</sup>	34.0	28.7	23.3	18.0	10.2	2 / 14
<b>Frozen Embryos from Nondonor Eggs</b>						
Number of transfers	12,631	6,195	4,682	1,591	710	432
Percentage of transfers resulting in live births <sup>b</sup>	38.4	34.7	28.4	21.5	16.8	13.0
Average number of embryos transferred	2.0	1.9	2.1	2.2	2.2	2.0
<b>All Ages Combined<sup>c</sup></b>						
<b>Donor Eggs</b>	<b>Fresh Embryos</b>		<b>Frozen Embryos</b>			
Number of transfers	9,866		6,665			
Percentage of transfers resulting in live births <sup>b</sup>	55.8		34.9			
Average number of embryos transferred	2.0		2.0			

### CURRENT CLINIC SERVICES AND PROFILE

**Total number of reporting clinics:** 443

**Total number of reported cycles:** 147,260<sup>d</sup>

**Percentage of clinics that offer the following services:**

Donor egg	93%	Gestational carriers	84%
Donor embryo	69%	Cryopreservation	99%
Single women	95%		

**Clinic profile:**

SART member	85%
Verified lab accreditation <sup>e</sup>	
Yes	93%
No	6%
Pending	2%

<sup>a</sup> Reflects patient and treatment characteristics of ART cycles performed in 2010 using fresh nondonor eggs or embryos.

<sup>b</sup> A multiple-infant birth is counted as one live birth.

<sup>c</sup> All ages are reported together because previous data show that patient age does not materially affect success with donor eggs.

<sup>d</sup> This is the number of cycles used to calculate national table data. It excludes 4 cycles in which a new procedure was being evaluated.

<sup>e</sup> Total does not equal 100% due to rounding.

