

## Connecticut Conducts Assisted Reproductive Technology Surveillance and Education to Reduce Harms from Multiple Births

*The Connecticut Department of Public Health is working to reduce low birth weight from multiple births resulting from assisted reproductive technology through surveillance and educating healthcare providers and the public about reducing the risk of multiple births.*

[Assisted reproductive technology](#) (ART) practices significantly increase the likelihood of multiple gestation pregnancies.<sup>1</sup> In 2011, [nearly half of ART infants \(45.6 percent\) were born in multiple-birth deliveries, compared to just 3.4 percent of all infants](#). Multiple gestation pregnancies [increase risk for poor birth outcomes](#), including premature births, low birth weights, disabilities, deaths, and [high C-section rates](#).

State health agencies can support efforts to limit multiple gestation pregnancies resulting from ART in several ways. [Two approaches](#) include conducting ongoing surveillance of ART procedures and neonatal and maternal health outcomes, and raising awareness among healthcare providers and individuals undergoing fertility treatment of options that reduce risk of multiple gestation pregnancy. An expert panel opinion recommends transferring only single embryos to patients with a good prognosis to reduce multiple gestation pregnancies and births.<sup>1</sup>

The Connecticut Department of Public Health (CTDPH) is using both approaches to reduce rates of low birth weight in the state by focusing on reducing twin birth rates. In 2012, as a result of new data indicating that Connecticut had one of the highest ART usage rates in the nation, Connecticut Commissioner of Health **Jewel Mullen** championed efforts to prevent low birth weight among multiple gestation pregnancies. A CTDPH ART team was formed that includes Lloyd Mueller, Carol Stone, and Karyn Backus, epidemiologists within the Health Statistics and Surveillance Section of the agency, and the team identified a lack of surveillance data in the state that directly linked ART use with adverse infant and maternal health outcomes. Through partnerships with CDC, Connecticut March of Dimes, and the Connecticut Department of Social Services (the state Medicaid agency), the CTDPH ART team is conducting surveillance of the impact of ART on adverse maternal and infant outcomes, and encouraging use of [elective single embryo transfer](#) (eSET), an ART technique that involves transferring a single embryo per cycle, which significantly reduces risk of a multiple gestation pregnancy.

### Steps Taken:

- In spring 2013, Connecticut joined the [States Monitoring Assisted Reproductive Technology \(SMART\) Collaborative](#), facilitated by CDC's Division of Reproductive Health. Through the SMART Collaborative, the Connecticut ART team is linking vital records data for 2000-2011—including

- In 2011, [Connecticut ranked third among all states for both ART use and twin births](#).
- The CDC estimates that [14 percent of all low birth weight babies in Connecticut are attributable to ART use](#).

<sup>1</sup> Multiple gestation pregnancies involve the presence of more than one fetus, resulting in twins and higher order births.

birth records and maternal and infant death records—to CDC’s National ART Surveillance System (NASS). This linkage will create a population-based data registry of ART and non-ART births that can be used to monitor and study ART pregnancy outcomes in Connecticut. Currently, nine fertility clinic sites across the state report data to NASS.

- Use of certain fertility drugs is a factor in rates of multiple gestation pregnancy and low birth weight. The CTDPH ART team is gathering data to examine how fertility drugs may influence multiple gestation pregnancy risk. In 2013, Connecticut included a set of questions on reproductive health in the Connecticut [Behavioral Risk Factor Surveillance System \(BRFSS\)](#). The question set, developed by CDC for women 18-50 years old, included questions about infertility experiences and actions women have taken to address fertility issues. These questions are also included in the current 2015 Connecticut BRFSS survey with a larger sample size, which the CTDPH ART team hope will allow more granular analysis of prevalence across demographic groups and health insurance types. Preliminary data from 2013 indicates that, among Connecticut women of reproductive age, 11 percent have experienced fertility issues at some point.
- Through a partnership with the Center for Advanced Reproductive Services, an academic affiliate of UCONN Health, the CTDPH ART team created and tested a [factsheet](#) with patients at the center and with the general public. The factsheet highlights the impact of ART procedures on birth outcomes in the state and provides information about eSET.
- In Connecticut, an insurance mandate allows for reimbursement of up to two cycles of two embryo transfers each. Others outside CTDPH are working with insurance providers to develop creative strategies to incentivize single-embryo transfers. For example, In Vitro Sciences, Inc., a management company for fertility clinics with two locations in Connecticut, advocates for implanting a single fresh embryo and freezing a second embryo for future use, if needed, at no additional cost.

## Results:

- Key findings from the field test of the ART factsheet are summarized in a [report](#). Results indicated that the factsheet was informative, helpful, and easy to understand for both the general public and patients at the fertility clinic. Usefulness of the factsheet, however, was reported to be better for patients in the clinical setting.
- Data analysis through the NASS and BRFSS is ongoing.
- Next steps include:
  - Linking maternal and infant hospitalization records to the NASS to better understand ART impact on morbidity.
  - Partnering with fertility clinics to incorporate the factsheet into clinical practice.
  - Working with insurance providers to develop creative solutions that reduce multiple gestation pregnancies.

## Lessons Learned:

- Make an effort to explore issues associated with multiple births. The CTDPH ART team recommends analyzing state data to determine the contribution of multiple births to overall low birth weight prevalence. If multiple gestation pregnancy has a high contribution, tap into key resources from CDC and other states (such as those in the SMART Collaborative) working on the issue.

- Strong partner support is critical. Key partners for CTDPH include the ART Surveillance and Research Team in CDC's Division of Reproductive Health, In Vitro Sciences, Inc., the Center for Advanced Reproductive Services, the Connecticut March of Dimes, and ASTHO. In addition, executive-level support from the Connecticut health commissioner has been critical to demonstrating CTDPH support for this sometimes sensitive issue. Having the internal staff capacity to access and manage linked data is also essential.
- The CTDPH ART team indicates that securing funding for these activities and building coalitions around the issue of reducing twin births has been important to making this progress. Fertility clinics are becoming important partners and are helping to elevate the conversation around this issue across the state.

**For more information:**

Carol Stone, PhD, MPH, MAS, MA  
Supervising Epidemiologist, BRFSS Project Director/Principal Investigator  
Connecticut Department of Public Health, Health Statistics and Surveillance Section  
Email: Carol.Stone@ct.gov

Ellen Schleicher Pliska, MHS, CPH  
Family and Child Health Director  
Association of State and Territorial Health Officials (ASTHO)  
Phone: (202) 371-9090  
Email: epliska@astho.org

---

<sup>1</sup> American Society for Reproductive Medicine. "Multiple Gestation Associated with Infertility Therapy: An ASRM Practice Committee Opinion, 2011." *Fertil Steril*. 2012. 97:825–34.