

# Reducing Preterm Birth

## Evidence-Based Strategies to Improve Outcomes

Progesterone treatment and cervical length measurement screening are key tools to lowering Ohio's high infant mortality rate

### ISSUE

Preterm birth in the United States accounts for 35 percent of deaths in the first year of life, contributing to our country's high infant mortality rate.

Ohio ranks 47th in the United States in infant mortality. This ranking is driven largely by Ohio's high rates of preterm birth. In Ohio, births before 32 weeks account for more than 70 percent of infant deaths (500 deaths annually) in the first four weeks of life.

### RESPONSE

The Progesterone Project, an initiative of the Ohio Perinatal Quality Collaborative (OPQC)—a statewide multi-stakeholder network that has worked to improve perinatal health in Ohio since 2007—aims to reduce the rate of premature births in Ohio by 10 percent by July 1, 2016. The project aims to increase the use of progesterone treatment to help reduce preterm birth among the women at highest risk. This is important, as an estimated 10,000 spontaneous preterm births before 37 weeks of gestation could be reduced if all pregnant women with a prior preterm birth were treated with progesterone.

**\$30,000**

The average cost of a preterm birth in Ohio.

**5-10 minutes**

The length of time a transvaginal ultrasound takes. A transvaginal ultrasound yields objective findings, is not associated with much discomfort, and is covered by most insurance plans.

**\$1,000**

The average cost of progesterone during a pregnancy.



# Key Strategies to Reduce Preterm Birth

## 1 PROGESTERONE

Progesterone is an evidence-based treatment that could benefit more at-risk women than current usage numbers reveal. Progesterone is backed by guidelines from the American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine that recommended offering progesterone prophylaxis to women with the greatest risk for preterm birth:

- Women who have had a previous spontaneous premature birth and currently have a singleton pregnancy.
- Women who are found to have a short cervix ( $\leq 20\text{mm}$ ) before 25 weeks in their current pregnancy.

## 2 TRANSVAGINAL ULTRASOUND

While women with a prior preterm birth can be identified by obtaining a thorough OB history at the time of their first visit, women with a short cervix during their current pregnancy can best be identified by cervical length measurement using transvaginal ultrasound.

Because preterm birth can happen in any pregnancy to women with no apparent risk factors, cervical length screening can be considered for all pregnant women. Some of Ohio's largest maternity care practices screen all pregnant women or are taking steps toward universal screening.

## 3 PATIENT EDUCATION

All patients should be educated on the signs and symptoms of preterm labor and given contact numbers to call should symptoms arise.



# Success Across the State

## How are different practices administering screening and/or treatment?

### TREATMENT TIMING

The Prematurity Clinic at The Ohio State University (OSU) Wexner Medical Center started offering patients progesterone in 2004, and accelerated it in 2008 by scheduling the first clinic visit sooner, before 14 weeks. Among nearly 1,100 women with a prior preterm birth, the rate of premature birth before 35 and 37 weeks of gestation dropped significantly only after progesterone use was increased and initiated earlier—at 16 weeks.

OSU has since adopted universal cervical length screening for its prenatal care sites. “Several studies show that the screening for cervical length and giving vaginal progesterone when the cervix is short is a cost-effective way for screening a population and reducing the risk of preterm birth,” says Jay Iams, MD, a maternal fetal medicine specialist in OSU’s Department of Obstetrics and Gynecology.

### UNIVERSAL SCREENING

The Aultman OB/GYN Resident Clinic cares for 700 deliveries each year. The clinic offers transvaginal ultrasound to all patients who present early enough in pregnancy. Vaginal progesterone is offered to women with a short cervix with the aim of starting the drug on the same day the short cervix is found. For patients with a history of previous spontaneous premature birth, the Clinic aims to start the 17OH P injections as early as 16 weeks gestation.

“Women with a short cervix are at high risk for preterm birth,” says Michael Krew, MD, a perinatologist in Aultman Hospital’s Maternal Fetal Medicine Center. “We have a medicine for that. Based on our experience, we feel the best way to figure out who has a short cervix is with transvaginal ultrasound.”

## How will expanding screening and treatment impact expenses and productivity?

### UNIVERSAL SCREENING AND COST

The Five Rivers Health Clinic at Dayton’s Miami Valley hospital has provided progesterone to women with a prior preterm birth since 2005. Beginning in 2012, all eligible women receiving prenatal care at Five Rivers get a transvaginal ultrasound in the second trimester to screen for a short cervix and are prescribed progesterone, if indicated.

Although universal screening can require additional training for sonographers and more dedicated space and bathroom capacity at some clinics or practices, David McKenna, MD, a Miami Valley maternal-fetal medicine specialist said “we found very little additional costs.” It adds 12 minutes per patient per visit, and about \$50 to \$75 in additional cost per patient, as transvaginal ultrasound is bundled with the abdominal ultrasound.

### UNIVERSAL SCREENING “SUSTAINABLE AND DOABLE”

Cincinnati’s Good Samaritan Hospital, Ohio’s largest obstetrical hospital, and its affiliate Bethesda North Hospital deliver 11,000 babies annually. In early 2014, several residency clinics and private practices that deliver at the two hospitals began screening all pregnant women for cervical length using trans-abdominal ultrasound and routinely use transvaginal ultrasound for women whose cervix appear short on the first scan.

Focusing only on women with a prior preterm birth “misses a fair number of women at risk” explains Michael Marcotte, MD, director of quality and safety for women’s services at Good Samaritan. However, it’s important to implement a policy that is both proactive and comprehensive without overwhelming established processes. “This is a process that is sustainable and doable,” says Marcotte.

# The Right Steps for Better Outcomes: Assess the Risk of Preterm Birth in Every Pregnancy

- Take a thorough history of all previous births between 16 and 36 weeks' gestation to identify candidates for supplemental progesterone;
- Adopt a plan to screen for preterm birth risk with transvaginal ultrasound examination at 18-22 weeks;
- Ensure sonographers are trained to perform transvaginal ultrasounds;
- Offer progesterone prophylaxis to pregnant women at highest risk for preterm birth—those with either a prior preterm birth or short cervix( $\leq 20$ mm)

## AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS (ACOG) GUIDELINES

ACOG guidance indicates that progesterone supplementation "...has the potential to reduce the preterm birth rate..., (and) is cost effective, safe, accepted by patients, and widely available."

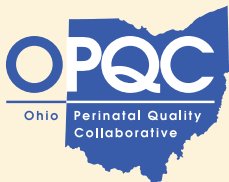
An October 2013 study in the *American Journal of Obstetrics & Gynecology* concluded that "increased attention to standardized education and credentials is warranted for persons who perform ultrasound examinations of the cervix in pregnancy."

Citation: "Adherence to criteria for transvaginal ultrasound imaging and measurement of cervical length," *American Journal of Obstetrics & Gynecology*, October 2013.

## Resources

### FOR MORE INFORMATION ABOUT PRETERM BIRTH AND PROGESTERONE:

- **Ohio Perinatal Quality Collaborative:** <https://www.opqc.net/>
- **March of Dimes:** <http://www.marchofdimes.com/>



The Ohio Perinatal Quality Collaborative includes hundreds of clinicians, 105 hospitals and clinics, the Ohio Department of Health, the March of Dimes and other stakeholders around the state dedicated to improving perinatal health in Ohio. To that end, OPQC members use scientifically proven methods to reduce preterm births in Ohio, which sees more infants die each year than most other states.

The Progesterone Project is funded by the Ohio Department of Health and the Ohio Department of Medicaid

