

## Puerto Rico struggles with high preterm birth rate

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Maria Esther Rivera, left, and her husband Juan Castillo look through an incubator at their newborn son Asiel Samuel Castillo, born premature four days earlier, at the Medical Center's neonatal intensive care unit in San Juan, Tuesday, May 11, 2010. Asiel is among the many babies kept alive at this, the largest neonatal unit in Puerto Rico. The island has the highest pre-term birth rate in the United States and, with nearly 20 percent of infants born before 37 weeks, one of the highest in the world. (AP Photo/Ricardo Arduengo)

(AP) -- The first thing Dr. Marta Valcarcel notices on a walk through a nursery full of tiny, heavily bandaged babies is the empty incubator in the corner.

She calls out to a nurse who only shakes her head. The infant who came in days earlier weighing less than 3 1/2 pounds had succumbed to illness - another child born too early to survive.

"I try to distance myself or I would cry all the time," says Valcarcel, who runs the largest neonatal [intensive care unit](#) in this U.S. Caribbean territory. "We rejoice at the ones that survive."

Her unit at a San Juan hospital is pivotal in the struggle to save a growing number of babies born well before their due dates. With nearly 20 percent of infants born before 37 weeks, Puerto Rico has the highest pre-term birth rate in the United States and one of the highest in the world.

Poverty in Puerto Rico, which has half the per capita income of the poorest U.S. state, can be a factor. Also, 48 percent of the island's births are performed by Cesarean section, compared with 32 percent on the U.S. mainland. In some cases doctors opt to deliver babies by C-section before they reach term in hopes of avoiding complications.

But researchers say that's not enough to explain why the island's pre-term birth rate has jumped more than 50 percent over the last two decades.

The National Institutes of Health last month awarded \$9.9 million for a team of university researchers to study whether contaminants in Puerto Rico's groundwater are contributing to the problem.

The NIH-funded study will follow 900 pregnant women on the island's north coast, collecting data on their drinking water and everyday activities to measure potential exposure to contaminants.

The densely populated island of 4 million people has a legacy of industrial contamination and several overflowing landfills along its northern coast, where the karst geology of soluble rock allows water to enter underground aquifers with little filtering.

"The only thing we are really sure of is we need to do more investigation," said Alma Seda, executive director of Puerto Rico's

chapter of the March of Dimes.

Premature birth can lead to brain hemorrhaging, breathing problems and holes in the intestines. It is the No. 1 cause of infant mortality, and babies who survive can suffer from mental retardation or other lifelong handicaps, particularly the small minority born before 32 weeks' gestation.

The March of Dimes has also linked a high prevalence of behavioral problems and learning disabilities in island schools to pre-term births.

Local experts say they welcome any theories because the known risk factors do not seem to explain the dramatic rise. More women are receiving prenatal care early in their pregnancies, fewer pregnant women are smoking, and there are fewer multiple births compared with the U.S. mainland, where fertility treatments are more popular.

Doctors who treat the babies say they suspect a combination of factors, including a degree of social deterioration. Edwin Soot Tapia, a neonatologist based in the north coast town of Arecibo, said he sees a growing number of premature infants born to teenagers who consume drugs and alcohol during their pregnancies.

At Valcarcel's Puerto Rico Medical Center in San Juan, where the 50 slots in the NICU are practically always full, the doctor said she often finds herself dealing with parents' social problems as well as infants' medical issues. The hospital has refused to release babies to mothers who are addicted to drugs.

"They are born premature because there are many high-risk mothers," Valcarcel said. "The government needs to do a better job of maternal care."

The United States pre-term birth rate has also risen significantly in recent decades and stands at 12.3 percent - higher than the estimated average rates in any region of the world, according to the March of Dimes. Experts have linked the problem to such factors as maternal obesity and smoking, fertility treatments resulting in twins or triplets who tend to be delivered early and a lack of guaranteed care for pregnant women in the U.S. health care system. The U.S. government's Healthy People 2010 initiative calls for lowering the pre-term birth rate to 7.6 percent.

For mothers of premature children, there can be feelings of guilt.

Edith Yamila Rodriguez delivered her daughter at only 29 weeks after contracting preeclampsia, a pregnancy condition causing dangerously high blood pressure. The girl, now 6, spent her first seven weeks at the hospital and continues struggles today with weak vision, motor skills and immune system.

"The doctors told me it was out of my control," said Rodriguez, 36, who lives in the south coast town of Santa Isabel and volunteers for March of Dimes awareness campaigns. "We still wonder what happened. Was it something we ate? We have a lot of moms who are examining their lives."

The four-year study by researchers from Northeastern and Michigan universities and two campuses of the University of Puerto Rico is targeting chemicals commonly released from plastics and Superfund cleanup sites that other researchers have linked to premature labor.

"The potential for exposure to the chemicals from these sites and its effects on public health are not well understood," said Northeastern's Akram Alshwabkeh, the lead investigator.

Soto, the north coast neonatologist, said it could well take multiple studies to solve the medical mystery.

"It's a combination of factors," he said, "but there is something else out there that we are not picking up."

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