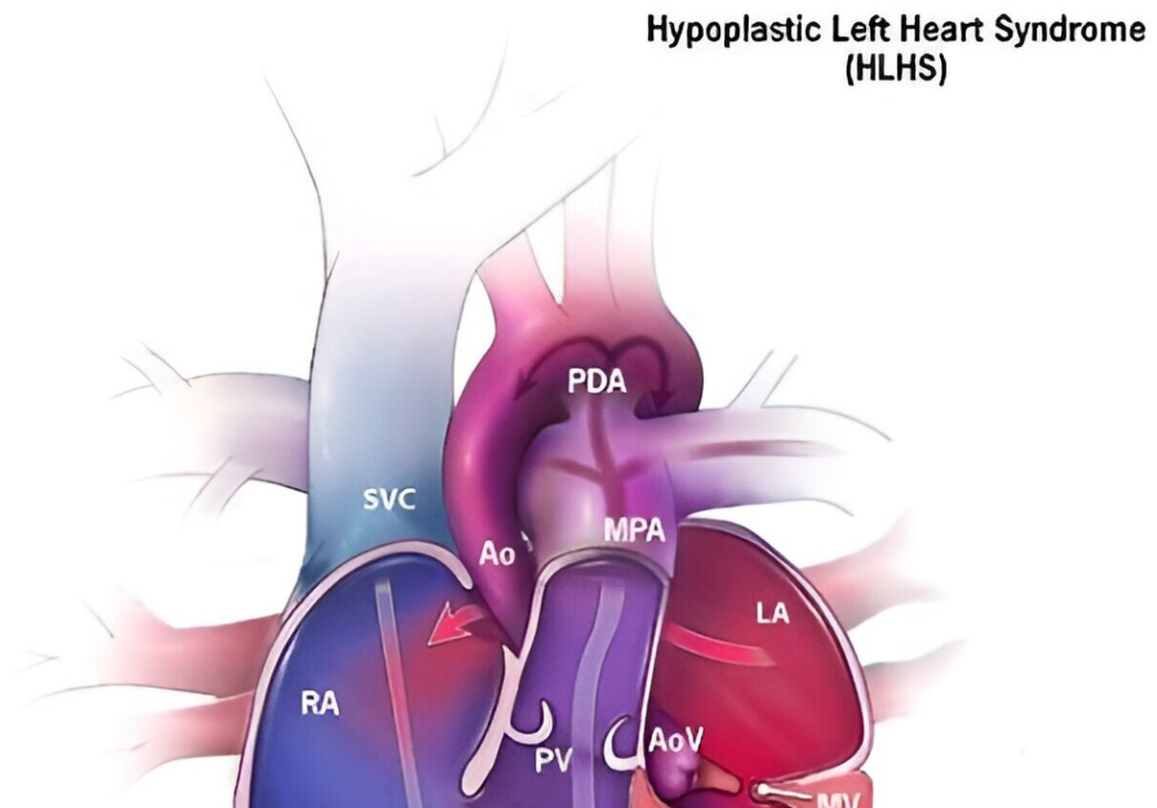


Abortion bans increase need for congenital heart defect care, study finds

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While hypoplastic left heart syndrome can be treated with surgery, normal heart function is still not restored, and many infants suffer damage to other organs. Some do not survive. Credit: Centers for Disease Control and Prevention, National Center on Birth Defects and Developmental Disabilities

The number of babies born with severe congenital heart defects will

increase because of new U.S. abortion bans, potentially straining the health care system's capacity to meet their needs, according to research from the Stanford School of Medicine.

The study, which was published Aug. 3 in *Obstetrics and Gynecology*, focused on a group of congenital heart conditions known as single-ventricle cardiac defects. Even with the best medical and surgical care, these conditions are fatal for 10% to 30% of affected infants.

The [heart defects](#) are usually diagnosed at a prenatal ultrasound around 20 weeks of pregnancy, prompting some parents to opt for an [abortion](#). However, when the 2022 U.S. Supreme Court decision *Dobbs v. Jackson Women's Health Organization* removed federal constitutional protections for abortion, it became unavailable in many U.S. states, with uncertain consequences for the health care system.

"We wanted to understand how abortion bans are going to impact hospital resources for newborns born with cardiac anomalies," said the study's lead author, Hayley Miller, MD, a fellow in maternal-fetal medicine. "Our analysis of the impact on health systems can help inform legislators of the realities of medical care with abortion restrictions. Some states will have incredibly impacted neonatal and cardiac intensive care units."

The study's senior author is Yair Blumenfeld, MD, professor of obstetrics and gynecology. The research team includes Stanford Medicine experts in maternal-fetal medicine, complex family planning and pediatric cardiology.

When more infants are born with severe heart defects, some hospitals may not have the resources to provide the intensive care services and open-heart surgeries that are needed. The resulting demand for [neonatal intensive care unit](#) beds could also affect newborns with other medical

problems. Similarly, the demand for cardiac resources—including cardiac ICU beds—may be limited for other children with [heart disease](#).

Missing heart chamber

The heart normally has four chambers: two atria, and two ventricles, which are larger and are the heart's main pumps. The [right ventricle](#) pumps blood through the lungs to pick up oxygen. The left ventricle pumps oxygenated blood to the rest of the body.

Hypoplastic left heart syndrome, one of the most common forms of single-ventricle cardiac defect, is a devastating diagnosis for expectant parents to receive midway through pregnancy. It occurs when the left ventricle does not form correctly before birth. The syndrome also includes malformation of valves that normally maintain one-way blood flow through the heart, and of the aorta, the large blood vessel that carries blood away from the heart to the rest of the body. Without treatment, this heart defect is always fatal in infancy.

The condition can be treated with three open-heart surgeries performed in the first two to three years of life. The surgeries reroute blood so that the right ventricle pumps oxygen-rich blood throughout the body instead of pumping only to the lungs. Although the surgeries can be lifesaving, they do not restore normal heart structure. Even with excellent surgical care, some patients die in infancy or childhood, and others suffer damage to the brain, lungs, liver, kidneys or intestines. Some affected children receive a [heart transplant](#) instead, which provides a heart with normal physiology but also requires a lifetime of immune-suppressing drugs to prevent rejection of the organ.

"Because of the guarded prognosis and difficult life that faces children born with single-ventricle diseases, termination of pregnancy is offered at most major hospitals following diagnosis," said Shiraz Maskatia, MD,

a fetal cardiologist at Stanford Medicine and a co-author on the study. "A universal, 20-week ban on abortion limits treatment options for doctors and families and creates a heavier demand for other health care resources."

In the study, the authors used mathematical models to estimate how many more infants with single-ventricle cardiac defects would be born each year under three different abortion-ban scenarios, as compared with the rate of these births before the 2022 Dobbs decision. Before 2022, abortion was legal across the country until approximately 24 weeks of pregnancy. The scenarios the researchers used for modeling were national bans on abortion after 20 weeks' gestation, 13 weeks' gestation and a complete abortion ban at any stage of pregnancy. Abortion policies now vary from state to state and are still in flux, so the researchers modeled what would happen under national scenarios for simplicity's sake.

The study's models predicted that under pre-Dobbs laws, about 1,006 infants would be born each year with single-ventricle cardiac defects, which is similar to the U.S. Centers for Disease Control estimate of 1,025 cases per year. The model predicted that, in their first year, these babies would need 986 heart surgeries, 28 heart transplants and 142 uses of extracorporeal membrane oxygenation support. ECMO provides mechanical support like that of a heart-lung machine and is used for some infants awaiting heart surgery if medication does not stabilize them. The researchers studied ECMO use because it is complex and high risk, requiring a highly trained care team and specialized equipment. The model also predicted 189 newborn deaths per year from single-ventricle cardiac defects.

If a complete abortion ban were enacted nationwide, the models predicted that 1,547 babies born each year would be affected by single-ventricle cardiac defects, an increase of 541 affected newborns per year.

This would result in 1,517 heart surgeries, 44 heart transplants, 219 ECMO utilizations and 291 neonatal deaths. Modeling the outcomes for national abortion bans at 13 and 20 weeks of gestation led to intermediate predictions for all outcomes, with more affected births, heart surgeries, ECMO utilizations and deaths than under pre-Dobbs laws but fewer than under a complete abortion ban.

A ban at or before 20 weeks of pregnancy prevents a family from choosing an abortion after diagnosis of a severe heart condition, as defects cannot reliably be diagnosed earlier, Miller said. She added that the researchers do not aim to promote abortions for these pregnancies but recognize that families may choose abortion for personal reasons.

"Some families want to avoid the trauma that accompanies neonatal death, or they realize that having a newborn who will require major surgeries and prolonged NICU stays in the first year of life might change family dynamics in a way they cannot support," she said.

"The research team hopes that legislators passing abortion restrictions will thoroughly consider the effects of these laws on patients, families, hospitals and health care systems," Miller said.

"Not only will the need for NICU beds be increased, but more ECMO machines and [heart](#) transplants, which are already in short supply, will be needed for babies born in states with restrictive bans," she said. "Based on my understanding from colleagues in restrictive states, they are now seeing dramatic increases in need for hospital resources, and seeing newborns who must be hospitalized far away from home to get a NICU bed."

More information: Hayley E. Miller et al, Abortion Bans and Resource Utilization for Congenital Heart Disease, *Obstetrics & Gynecology* (2023). [DOI: 10.1097/AOG.0000000000005291](https://doi.org/10.1097/AOG.0000000000005291)

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