Intro: Congenital heart problems are the most common structural birth defect. They affect about 1 in 100 children. However, the condition a little North Dakota girl came into the world with is incredibly uncommon. She was born with her heart outside of her chest. Sadly, it’s also uncommon for most children to survive it – unless the stars align perfectly. In this case they did and those stars were wearing hospital-blue surgical gowns. Here’s Dennis Douda for the Mayo Clinic News Network.

Video

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Dennis Douda speaking

Caitlin Veitz never takes for granted just how special her daughter Kieran is.

Caitlin Veitz speaking

“She’s laid back, happy, wonderful.”

Dennis Douda speaking

Caitlin learned she was special in another way, even before she was born.

Caitlin Veitz speaking

“It was at her 20 week ultrasound. That her heart wasn’t where it was normally, that it had developed outside of the chest wall.”

Title: Dr. Joseph Dearani
Mayo Clinic Pediatric Cardiac Surgeon

“She had probably one of the, if not the, most rare, congenital heart defects and that is a defect called ectopia cordis.”

Caitlin Veitz speaking

“We didn’t have any idea that anything like that could happen. It was scary. The odds were stacked against her.”

Dennis Douda speaking

Kieran would need very complex, highly-specialized surgery to survive.

Dr. Joseph Dearani speaking

“And the only chance you have of treating this successfully is having an integrated approach where you can gather experts.”

Title: Dr. Christopher Moir
Mayo Clinic Pediatric Surgeon

“Cooperative integrated care is essential. But, everybody’s got their own job. We’re teams of teams.”

Dennis Douda speaking

Dr. Christopher Moir is one of Kieran’s pediatric surgeons. Dr. Jane Matsumoto is a radiologist who helped doctors see in advance - exactly what they would be dealing with.

Dr. Jane Matsumoto speaking

“I segmented out the uterus, placenta, the heart, and the liver. A good question here is, you know, where was the defect? Where did the abdominal wall musculature stop and start?”

Dennis Douda speaking

Dr. Carl Rose is Caitlin’s obstetrician.
| Title: Dr. Carl Rose  
Mayo Clinic Obstetrician | “There was much discussion that went on in advance. It is obviously almost a very unique circumstance, even for here at the Mayo Clinic.” |
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Dennis Douda speaking | As co-director of Mayo Clinic’s 3D anatomic modeling lab, Dr. Matsumoto and her staff also provided the team with another priceless tool, a 3D model of Kieran, while she was still in the womb. |
Dr. Christopher Moir speaking | “This is life-sized, one-to-one, exact detail.” |
Dennis Douda speaking | For the surgeons, the model turned out to be a game-changer. |
Dr. Christopher Moir speaking | “When you take a look at the child, you see the liver is out, the intestines are out, as well as the heart. You want to fix both of those, but we found from the model that fixing both would put too much stress on the baby.” |
Dennis Douda speaking | The first priority had to be protecting the heart and moving it into the chest. Because doctors did not want Caitlin to risk going into labor, a Caesarian section was scheduled for the 37th week of her pregnancy. But, several days early, Caitlin’s blood pressure rose suddenly and Kieran’s vital signs weakened. An emergency C-section delivery was scheduled immediately. |
Caitlin Veitz speaking | “They pulled everyone together, about 60 doctors and nurses from 12 different teams, in about an hour and a half.” |
Dennis Douda speaking | All of the advance planning suddenly came into play. In spite of the urgency, however, pediatric cardiac surgeon Dr. Joseph Dearani says, the baby’s heart operation could not be rushed. So - they used a C-section technique called an EXIT procedure. |
Dr. Joseph Dearani speaking | “Which means, that the baby is partially delivered, but still connected to mom via the umbilical cord, so it takes the pressure off doing anything quickly to the baby.” |
Dennis Douda speaking | This allowed Dr. Dearani time to stabilize the infant’s heart. Remember, it had been suspended in amniotic fluid, attached only by its veins and arteries, which could not be permitted to twist. It also gave specialists extra time to safely put a breathing tube into Kieran’s airway, in |
Dr. Joseph Dearani speaking | “So, this delivery was done in the cardiac surgery operating room and we had the Maternal Fetal Medicine team; we had ENT; we had the Neonatal Intensive Care Unit team; we had the cardiac surgical team.”

Caitlin Veitz speaking | “It took them about 5 hours to place the heart back inside.”

Dennis Douda speaking | For Caitlin and Brian Veitz, the Mayo Clinic team had given their daughter all a mother and father could ask for their child – a future.

Caitlin Veitz speaking | “The possibilities for her are endless.”

Dennis Douda speaking | For Dr. Dearani and the team, it’s a success story you can literally wrap your arms around.

Dr. Joseph Dearani speaking | “It is. It's the best part of the job. It's the best part of the job.”

Dr. Christopher Moir speaking | “There’s a satisfaction on so many levels, it’s hard to even describe.”

Dr. Carl Rose speaking | “One of those moments. She’s with us and she gets to go home.”

Dennis Douda speaking | Kieran will still need surgery to repair a heart defect in the coming months, but the ventilator tube that helps her to breathe is expected to be removed from her trachea very soon. She spent four and a half months in the pediatric Intensive Care Unit to make certain she was able to thrive, which she definitely has. By the time of her baptism at 6 months, her growth was on track with any other baby girl her age.

Dr. Christopher Moir speaking | “Seeing the child, their parents and the joy that they have, is incredibly gratifying.”

Dennis Douda speaking | For the Mayo Clinic News Network, I’m Dennis Douda.

Anchor tag: Many members of the Mayo Clinic team that helped Kieran have experience separating conjoined twins. That proved to be invaluable, as those cases often involve organs developing out of place and also require meticulous planning between medical specialties for each stage of the surgery.

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