Life Changing Surgery for 7-day old Kara

"We are blessed and grateful to Dr. Keijzer and to the Manitoba Lung Association and its donors for supporting research into Congenital Diaphragmatic Hernia (CDH)," says Holly Hamm, a mother from Winkler, Manitoba.

Dr. Richard Keijzer MD, PhD, and MSc treated the Hamm's daughter, Kara. As one of the world's leading surgeons and researchers working to find the cause of CDH, he helps newborn infants breathe.

Dr. Keijzer conducts his world-class research right here in Winnipeg, working to solve the mystery of this little understood and currently incurable disease that is almost as common as cystic fibrosis.

CDH causes children, like Kara, to be born with abnormal lungs and a hole in the diaphragm, the muscle that separates the lungs from the abdomen. This hole interferes in the diaphragm's crucial role of helping the lungs to inflate for breathing and allows internal organs to shift upwards and push aside the already abnormally developed lungs.

This makes breathing difficult.

Dr. Keijzer says it is heartbreaking to know that as many as ten to 20 per cent of these precious children will not survive. Others may have lung complications and struggle to breathe throughout their lives. Worldwide, about 150 children are born with CDH every day.

Holly says they learned everything wasn't right with Kara at her 20-week prenatal ultrasound, and had to spend the last weeks of her pregnancy knowing that nothing could be done for Kara until she was born, and even then, it was uncertain Kara would survive.

"We found out her heart was pushed to the right," says Holly. "That's one of the signs [of CDH] that they look for."

It was clear that Kara would be born with serious complications, like pulmonary hypertension, and would need ventilators to breathe, as well as surgery to close the hole in her diaphragm.

Dr. Keijzer performed the surgery when Kara was only one week old, using a prosthetic patch to close the hole. And, they moved Kara's displaced organs to their proper places.

"Most improvements in outcomes have come from better treatments in the intensive care units," says Dr. Keijzer. "Now imagine if we could learn why this abnormal lung

development happens; we wouldn't have to perform complex surgeries on vulnerable babies.

"That's exactly what I'm researching, because surgery at birth doesn't cure the abnormal lungs in CDH."

The Manitoba Lung Association funds Dr. Keijzer's research in partnership with the Children's Hospital Research Foundation of Manitoba and the Canadian Institutes for Health Research.

Keijzer, who is from the Netherlands, says the grant was a key reason he decided to come to Manitoba to practice medicine as it helps him "dive" into his research.

"For me the grant was a big push," Dr. Keijzer says. "It allows me to expand my research and combine it with my clinical pediatric surgical practice.

"I'm really grateful to the Manitoba Lung Association for it," he says.