

Addressing the need to treat hepatitis C in pregnancy and infancy

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Driven by the ongoing opioid epidemic and the sharing of needles, hepatitis C cases have been rising in the United States over the last decade, with the highest infection rates among young adults, including

women of childbearing age. Without treatment, hepatitis C can lead to acute and chronic hepatitis, increasing the risk of liver cancer, liver failure and other conditions.

During pregnancy, hepatitis C has been associated with low birthweight, intrahepatic cholestasis of pregnancy and [preterm birth](#). The standard of care for treating hepatitis C in a pregnant person is to initiate [treatment](#) postpartum, which can start as soon as the person gives birth, but this approach has significant limitations.

Under the guidance of specialists at Northwestern Medicine and Ann & Robert H. Lurie Children's Hospital of Chicago, an innovative treatment plan is now being offered during pregnancy, allowing the pregnant person to be cured of hepatitis C during the course of prenatal care, which may also substantially mitigate or even eliminate the risk of transmitting hepatitis C to the baby.

"Our goal is pretty simple—we want to improve the lives of pregnant patients with hepatitis C and their infants," said Lynn Yee, MD, a maternal fetal medicine specialist and director of the Northwestern Medicine Women's Infectious Disease Program. "Although treatment during pregnancy is not yet common, our professional societies support a shared decision-making process, including discussing with patients what is known versus unknown.

"We believe that by including pregnant people in hepatitis C research and treatment programs, we will work towards the public health goal of eliminating hepatitis C as well as addressing historical issues of excluding pregnant people from life-changing therapies."

"There is still an overall lack of awareness among providers about the impact of hepatitis C in pregnancy and its transmission to infants," said Ravi Jhaveri, MD, pediatrician and division head of Pediatric Infectious

Diseases at Lurie Children's Hospital. "Because hepatitis C acquisition is often associated with injection drug use, there's still a lot of stigma and judgment among providers towards patients that prevents them from having open conversations. We hope every pregnant patient is tested for hepatitis C and those who test positive are quickly offered treatment."

Testing and treating pregnant patients

The greatest risk of acquiring hepatitis C belongs to people who work with human blood, body fluids or needles; use IV or intravenous drugs; have unprotected sex; are living with HIV; and are born to mothers with hepatitis C. Most people with hepatitis C have no symptoms, which is why testing during pregnancy is so important.

In 2020, guidelines implemented by the [United States Preventive Services Task Force](#) recommend all pregnant people are tested for hepatitis C antibodies during routine prenatal care. Patients who have evidence of hepatitis C antibodies undergo further testing and are referred to the Northwestern Medicine Women's Infectious Disease Program.

At this specialized program, for patients with evidence of [chronic hepatitis C](#), the first step of the treatment plan is in-depth counseling and shared decision-making about the risks, benefits and alternatives to treatment during versus after pregnancy. As the first in Chicago and one of a few programs in the country to offer a treatment plan for eligible patients, Northwestern Medicine is a referral center for pregnant people with hepatitis C.

"Although treatment during the postpartum period is a great plan for many patients, there are significant limitations of this approach," said Dr. Yee. "Many people lose touch with health care after giving birth, due to a wide range of factors. For example, in many states, pregnant people

who have Medicaid lose their Medicaid 60 days after giving birth, and so there may be limited time to initiate and complete treatment. For other people, the competing priorities and burdens of being a parent take precedent over care for one's own health.

"Yet, we know from ample research that pregnancy is a period of enhanced engagement in health care and motivation for improving health, making it the ideal window of opportunity for treatment. And not only does treatment during pregnancy mean that a pregnant person can be cured of hepatitis C during the course of prenatal care, but it is also highly likely that achieving cure before giving birth can substantially mitigate or eliminate the risk of transmitting hepatitis C to the baby, which would represent an incredible public health advancement."

When patients desire treatment, physicians and infectious diseases pharmacists work on obtaining insurance coverage for treatment. Medications are then initiated, which are once-daily pills taken for 8–12 weeks. Lab surveillance is done before, during, and after the treatment course, in order to ensure there are no side effects and to monitor for viral cure.

The experts at the Northwestern Medicine Women's Infectious Disease Program also collaborate closely on research involving the responsible inclusion of pregnant people in hepatitis C research and [treatment programs](#), and are able to refer patients to research programs when desired.

To date, specialists at the Women's Infectious Disease Program have treated approximately five pregnant patients with hepatitis C. In all cases, patients have completed their treatment course during pregnancy and have achieved sustained virologic response—also known as a cure.

One of those patients, Kareena Wasserman, was shocked to learn she

tested positive for hepatitis C while pregnant with her second child. She underwent the treatment plan during her third trimester which cleared the virus, and Wasserman delivered a healthy baby girl at Northwestern Medicine Prentice Women's Hospital.

"I honestly have no idea how I contracted hepatitis C, especially since my husband and oldest child don't have the virus," said Wasserman. "But when Dr. Yee told me there was a path for a cure—not just for myself, but also the baby—I knew the reward outweighed any risk. I want other patients to know they're not alone, and there is a safe treatment option available at Northwestern Medicine."

New CDC testing recommendations for infants

While infants can clear a hepatitis C virus at a higher rate than adults, if left untested and untreated for several years, it can cause scarring and fibrosis in the liver. Until now, testing in infants was often delayed until after 18 months of age due to interference for hepatitis C antibodies passed from mother to infant during late stages of the pregnancy, and the long delay meant most infants were never tested.

This November, the Centers for Disease Control and Prevention (CDC) is set to publish new guidelines for testing hepatitis C in infants. Dr. Jhaveri co-authored a [commentary piece](#) about the new CDC testing recommendations, published in *Pediatrics* on November 1.

"The CDC has simplified and clarified their testing guidance. Infants with hepatitis C exposure during pregnancy should have one single hepatitis C virus (HCV) RNA PCR test between 2 and 6 months of age. If the result is negative and they don't have hepatitis C, they don't need further testing. If the result is positive, they should be connected with a provider who can follow them, retest at a later date and ultimately get them treated by age three," said Dr. Jhaveri.

"I think these new recommendations will significantly improve our ability to do the right testing. They will reduce confusion among providers about which test to send when, cut down on the time to ultimately test and capitalize on existing newborn visits to send the testing."

Northwestern Medicine and Lurie Children's Hospital will soon be part of a national study conducted by the International Maternal Pediatric Adolescent AIDS Clinical Trials Network (IMPAACT), which will enroll eligible patients who are pregnant with confirmed hepatitis C and undergoing treatment.

The group also obtained CDC funding to design a video-based learning model for physicians to learn about the key aspects of hepatitis C in pregnancy and early infancy, how to improve decision-making conversations with patients, and how to start hepatitis C treatment.

"With our society's increased focus on social justice, we would argue that there has been a long-standing injustice here," said Dr. Jhaveri. "Pregnant patients have been excluded from hepatitis C research and treatment for reasons that are rooted in historical practices. We hope that our work helps address this injustice and allows pregnant patients to receive [hepatitis C](#) treatment easily and openly without the barriers that currently exist."

More information: Ezzeldin Saleh et al, Earlier Screening of Infants With Perinatal Hepatitis C Exposure: A Key Step Towards Elimination, *Pediatrics* (2023). [DOI: 10.1542/peds.2023-064242](https://doi.org/10.1542/peds.2023-064242)

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