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HEALTH ALERT NETWORK | **HEALTH UPDATE** | July 28, 2020

Take Action to Prevent Congenital Syphilis in ND

As of July 14, 2020, the North Dakota Department of Health (NDDoH) is reporting two cases of congenital syphilis in North Dakota for 2020. Prior to 2020, the last case of congenital syphilis in North Dakota was reported in 2009. Syphilis cases have been increasing in North Dakota and the U.S. over recent years. From 2015 to 2019, there has been an 126% increase in reported syphilis cases in North Dakota with 97 cases reported in 2019.

CDC recently released the report, *Missed Opportunities for Prevention of Congenital Syphilis — United States, 2018*. In this report, it indicated that 1 in 2 newborn syphilis cases in the United States occur due to gaps in testing and treatment during prenatal care. Nationally, the most commonly missed opportunities for prevention of congenital syphilis are a lack of adequate maternal treatment despite timely diagnoses of syphilis (31%) and a lack of timely prenatal care (28%), followed by late identification of seroconversions (11%). In North Dakota, lack of maternal testing in the third trimester or at delivery occurred in both cases of congenital syphilis resulting in a missed opportunity for congenital syphilis prevention. One maternal case from 2019 had symptoms of a syphilitic rash at the time of delivery and was not screened for syphilis but was subsequently diagnosed by a dermatologist with secondary syphilis. The second maternal case reported symptoms of primary and secondary syphilis during her third trimester and was not screened for syphilis.

Congenital Syphilis

Congenital syphilis can cause a lifetime of disability or even death if the diagnoses is missed. Congenital syphilis is an infection with *Treponema pallidum* in an infant or fetus, acquired during pregnancy or possibly at birth from a mother with untreated or inadequately treated syphilis. Congenital syphilis can cause miscarriage, stillbirth, or early infant death, and infected infants can experience lifelong physical and neurologic problems. The majority of infants delivered with congenital syphilis will have normal laboratory and examinations, so prenatal screening is critical to identify pregnant women with syphilis so that they can be treated in a timely manner and to allow nursery providers to appropriately manage exposed neonates. Although timely identification and treatment of maternal syphilis during pregnancy can prevent congenital syphilis, the number of reported congenital syphilis cases in the United States increased 261% during 2013–2018, from 362 to 1,306. Untreated infants are at high risk for physical and intellectual disability.

Case Review

The infant most recently diagnosed with congenital syphilis in North Dakota may have lifelong physical and neurologic problems. Below is a case report provided by Dr. Clifford Mauriello, MD, a pediatric infectious disease provider at Sanford Health in Fargo.

"A 32-day old term male infant was recently admitted to a Pediatric Care Unit in Fargo for management of respiratory failure and hypo-tension. The baby had not regained his birth weight. His examination was remarkable for unusual desquamation of the hands and feet, generalized edema, bleeding around the lips and anus, and proportional microcephaly. His laboratory was remarkable for coagulopathy, hypoglycemia, thrombocytopenia, and inappropriately low T4 and cortisol measurements. An MRI of the brain demonstrated multiple areas of ischemia. The baby's mother noted the desquamation had been present since nursery discharge. An evaluation for late onset neonatal sepsis was unrevealing; however, a diagnosis of congenital syphilis was ultimately established serologically with a positive syphilis IgM and IgG screen and reflex RPR titer of 1:256.

Review of maternal serology demonstrated that the baby's mother had a negative serological screen for syphilis in the first trimester; however, recommended screening for syphilis was not repeated in the third trimester or at delivery. Furthermore, the baby's mother had been evaluated for a rash consistent with secondary syphilis at 30 weeks gestation, but the diagnosis was missed. The child has been started on treatment with IV penicillin, but his long-term developmental outcome is guarded."

Prevention of Congenital Syphilis

One intervention that is strongly recommended to be implemented by all hospitals, clinics and health care providers that provide prenatal and delivery care is screening pregnant women three times during their pregnancy. **In July 2018, the NDDoH issued a recommendation that in additional to first trimester syphilis screening, all pregnant women should be screened twice during the third trimester, once at 28-32 weeks' gestation and again at delivery.** A health update issued in September 2019 reiterated this same recommendation. This recommendation applies to all pregnant women regardless of race, ethnicity, age, county of residence, marital status or sexual history. Adherence to this recommendation should make symptomatic congenital syphilis a "never event". In 2019, there were 34 cases among females and seven of those cases were pregnant. Of those cases that were pregnant, two were identified at the 28- 32-week screening. With prompt identification and treatment of these cases, congenital syphilis was averted, and healthy infants were born.

Best Practice Implementation

We are asking that providers and health systems implement EMR prompts to perform syphilis screening in all pregnant women in the first trimester, 28-32 weeks and at delivery. Syphilis screening is built into the electronic medical record order sets at the appropriate intervals for both outpatient and inpatient. Implementing this clinical practice for syphilis screening in pregnant women is one the best methods for the prevention of congenital syphilis.

Maternal and Infant Evaluation of Syphilis

Pregnant women with syphilis should be treated with intramuscular penicillin according to their stage of disease. Women with primary, secondary, or early latent syphilis can be treated with a single dose of 2.4 million Units of IM benzathine penicillin G. Women with late latent syphilis or syphilis of unknown duration should receive 3 doses of 2.4 million units of IM benzathine

penicillin G with each dose being seven days apart. Non-penicillin regimens for syphilis are not recommended for pregnant women. Ideally, treatment should be completed one month prior to delivery.

Infants with exposure to mother's with reactive syphilis serology during pregnancy should be evaluated for possible congenital infection according to AAP and CDC guidelines. Pediatric Infectious Disease experts should be consulted if there is any question on management.

Educational Opportunity

Please join the NDDoH HIV.STD.TB.Viral Hepatitis program for a **webinar on August 26th at 12:00 p.m. CT** on syphilis in pregnant women and congenital syphilis. Please register for this webinar at www.ndhealth.gov/HIV/Provider. Continuing education credits from the North Dakota Board of Nursing is available.

For more information on treatment and clinical management of syphilis, including other complications such as ocular or neurosyphilis , please refer to the STD Treatment Guidelines. For any questions, please contact the NDDoH STD program at 701.328.2378 or 800.472.2180.

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