TO: Vermont Health Care Providers and Health Care Facilities
FROM: Jennifer S. Read, MD, FAAP; Medical Epidemiologist

Congenital Syphilis in Vermont

Pregnant women who have untreated or inadequately treated syphilis (infection with *Treponema pallidum*) can transmit this infection to their infant (congenital syphilis). Intrauterine infection with *T. pallidum* can result in fetal loss or preterm birth (1).

Infected infants can have a myriad of signs and symptoms, including snuffles (copious nasal secretions), lymphadenopathy, hepatosplenomegaly, pneumonia, osteochondritis, periostitis, maculopapular rash, hemolytic anemia, or thrombocytopenia at birth or within the first 4-8 weeks of age (1). Alternatively, infants with *in utero* exposure to syphilis may be asymptomatic at birth (1). Untreated infants, irrespective of manifestations in early infancy, can develop late manifestations – usually appearing after 2 years of age and involving the central nervous system, bones and joints, teeth, eyes, and skin (1). Prevention of congenital syphilis relies upon timely identification and treatment of maternal syphilis during pregnancy.

Congenital syphilis is a reportable condition in all 50 states and the District of Columbia. According to the U.S. Centers for Disease Control and Prevention, the number of reported congenital syphilis cases in the U.S. increased 261% from 2013-2018 (from 362 to 1306). In this analysis, the most commonly missed congenital syphilis prevention opportunities were lack of adequate maternal treatment (despite the timely diagnosis of syphilis) (31%) and a lack of timely prenatal care (28%). Preventing congenital syphilis requires decreasing barriers to prenatal care, ensuring syphilis screening at the first prenatal visit with rescreening at 28 weeks' gestation and at delivery, as indicated, and adequately treating pregnant women with syphilis.

The Vermont Department of Health recently received notification of an infant with congenital syphilis who was born to a Vermont resident. The mother had limited prenatal care and multiple sexual partners in the past year. She had substance abuse disorder and tobacco use disorder, and was hepatitis C-positive. She reported no previous treatment for hepatitis C and the hepatitis C viral load was extremely high when measured in hospital. She presented in withdrawal with preterm premature rupture of membranes.

The mother underwent treponemal antibody screening at presentation, and this screen was positive. She had no previous testing or treatment for syphilis. She delivered a preterm, low birth weight infant. In addition to the anticipated sequelae of preterm birth, the infant had jaundice and anemia. Rapid plasma reagin (RPR) testing of both the mother and the infant was performed, and the titers obtained were identical (and high) in both mother and infant. Long bone radiographs, Venereal Disease Research Laboratory (VDRL) assay of the cerebrospinal

fluid, liver ultrasound, and ocular examination of the infant were normal. Both the mother and infant were treated with penicillin as per treatment guidelines.

This infant meets the surveillance case definition for probable congenital syphilis based on having a mother with untreated syphilis at delivery and the infant having a reactive RPR assay as well as evidence of congenital syphilis on physical examination (jaundice, anemia). (A confirmed case of congenital syphilis requires demonstration of *T. pallidum* by darkfield microscopy of lesions, body fluids, or neonatal nasal discharge OR positive polymerase chain reaction or other direct molecular method of neonatal nasal discharge, placenta, umbilical cord, or autopsy material OR immunohistochemistry or special stains of specimens from lesions, placenta, umbilical cord, or autopsy material.)

Although the case described here is the first case of congenital syphilis in Vermont for over 20 years, other parts of the U.S. have seen very large numbers of infants with congenital syphilis. Clinicians in every state (including Vermont) should be prepared to recognize and manage both pregnant women and children with suspected or confirmed syphilis. Innovative strategies (2) to combat this epidemic appear to be required.

REFERENCES:

1. American Academy of Pediatrics. Syphilis. In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. Red Book: 2018 Report of the Committee on Infectious Diseases. 31st edition. Itasca, IL: American Academy of Pediatrics; 2018: 773-788.

2. Venegas AL, Melbourne HM, Castillo IA, et al. Enhancing the routine screening infrastructure to address a syphilis epidemic in Miami-Dade County. Sex Transm Dis 2020; 47 (SS Suppl 1): S61-65.

REQUESTED ACTIONS:

1. Be familiar with the surveillance case definition for congenital syphilis, and report cases of congenital syphilis to the Vermont Department of Health.

2. Be familiar with national guidelines for syphilis screening and treatment in pregnant women and for the management of infants born to women with suspected or confirmed syphilis.

If you have any questions, please contact the HAN Coordinator at 802-859-5900 or vthan@vermont.gov.

HAN Message Type Definitions
Health Alert: Conveys the highest level of importance; warrants immediate action or attention.

Health Advisory: Provides important information for a specific incident or situation may not require immediate action.
Health Update: Provides updated information regarding an incident or situation; unlikely to require immediate action.
Info Service Message: Provides general correspondence from VDH, which is not necessarily considered to be of an emergent nature.