

Reason / Problem UpToDate

Congenital Zika Virus Infection Neonatal Evaluation Order Set

- *Infants who warrant Zika virus laboratory testing include either of the following: Newborns of mothers with laboratory evidence for Zika virus infection during pregnancy, or newborns who have clinical or neuroimaging findings suggestive of congenital Zika syndrome and a maternal epidemiologic link suggesting possible transmission, regardless of maternal Zika virus test results. A normal head circumference does not exclude the possibility of Zika virus congenital syndrome. (UpToDate)*
- *Newborns with negative results on all laboratory Zika virus tests but microcephaly or intracranial calcifications should be evaluated for alternative etiologies. (UpToDate)*

Zika Virus Infection UpToDate UpToDate UpToDate UpToDate

Admit / Transfer

Admit inpatient to Level I Nursery as soon as possible

Admit inpatient to Level II Newborn Intensive Care as soon as possible

Admit inpatient to Level III Newborn Intensive Care as soon as possible

Transfer

Condition

Good

Fair

Serious

Critical

Code Status:

Full code

Do not resuscitate

Activity

Activity per unit/surgical protocol

Isolette

Diet

- *Women with Zika virus exposure may breastfeed. Transmission of Zika virus through breastfeeding has not been described, although the virus has been detected in breast milk. (UpToDate)*

Infant Feedings: breast milk

Infant Feedings: infant formula

Nothing by mouth

Vital Signs

Check vital signs per protocol

Check vital signs

IV

Crystalloid:

10% dextrose in water intravenously and

Crystalloid-Fluid Bolus:

Normal saline intravenous bolus

Lock IV:

Saline lock intravenous

Other Nursing

Assessments:

- There is no standard definition for diagnosis of microcephaly. (UpToDate)
- The World Health Organization (WHO) has defined microcephaly as the following: Occipitofrontal circumference (head circumference) greater than two standard deviations below the mean or less than the third percentile based on standard growth charts for sex, age, and gestational age at birth. The occipitofrontal circumference should be disproportionately small in comparison with the length of the infant and not explained by other etiologies or congenital disorders. If an infant's occipitofrontal circumference is greater than or equal to 3rd percentile but is notably disproportionate to the length of the infant or if the infant has deficits related to the central nervous system, additional evaluation for Zika virus infection may also be appropriate. WHO has further defined "Zika virus–related microcephaly" as microcephaly with a molecular or epidemiologic link to Zika virus in the absence of other conditions known to cause microcephaly. A molecular or epidemiologic link to Zika virus is defined as one of the following: mother had confirmed case of Zika virus infection during pregnancy; mother had sexual contact during pregnancy with a person with confirmed Zika virus infection; mother had typical clinical manifestations of Zika virus infection (one or more of the following: maculopapular pruritic rash, arthralgia, conjunctivitis, or fever) and relevant epidemiologic exposure during pregnancy (residence in or travel to an area where mosquito-borne transmission of Zika virus infection has been reported); amniocentesis with detection of Zika virus in amniotic fluid via polymerase chain reaction (PCR); and postmortem detection of Zika virus in fetal brain tissue via PCR. (UpToDate)
- The World Health Organization has further defined "Zika virus–related microcephaly" as microcephaly with a molecular or epidemiologic link to Zika virus in the absence of other conditions known to cause microcephaly. (UpToDate)

Measure head circumference and then [UpToDate](#)

Measure length and then

Obtain weight and then

Perform admission assessment normal newborn

Assess neurologic signs and then

Education: [UpToDate](#)

Provide disease/medical condition education

Fluid Balance:

Intake and output and then

Bedside POC Testing:

POC blood glucose

-

Cardiac:

Continuous cardiorespiratory monitoring

Circulatory:

Insert peripheral IV line

Peripheral IV line care per protocol

Umbilical line care per protocol

Respiratory:

Maintain oxygen saturation between and

Monitor pulse oximetry

Therapies

Respiratory Therapy Service:

, oxygen

Lines/Catheters:

Umbilical arterial catheter

Umbilical venous catheter

Procedures:

Lumbar puncture

Medications

Antipyretics-Analgesics:

Acetaminophen 160 mg/5 mL suspension 10 mg/kg orally every 6 hours as needed for pain

Acetaminophen 80 mg suppository 10 mg/kg rectally every 6 hours as needed for pain

Laboratory

- *Laboratory testing for Zika virus infection in the neonate includes the following: Serum and urine for Zika virus ribonucleic acid (RNA) via real-time reverse transcription polymerase chain reaction (rRT-PCR). Serum Zika virus immunoglobulin M (IgM) enzyme-linked immunosorbent assay (ELISA). If IgM is positive, plaque reduction neutralization test (PRNT) is used to confirm the specificity of the IgM antibodies against Zika virus and to exclude a false-positive IgM result. If cerebrospinal fluid (CSF) is available, test CSF for Zika virus RNA (via rRT-PCR) as well as Zika virus IgM. CSF specimens need not be collected for the sole purpose of Zika virus testing but may be reasonable for evaluation of infants with microcephaly or intracranial calcifications. (UpToDate)*
- *A definitive diagnosis of congenital Zika virus infection is confirmed by the presence of Zika virus ribonucleic acid (RNA) in samples of serum, urine, or cerebrospinal fluid (CSF) collected within the first two days of life; immunoglobulin M (IgM) antibodies may be positive or negative. A negative real-time reverse transcription polymerase chain reaction (rRT-PCR) result with positive Zika virus IgM test result indicates probable congenital Zika virus infection. (UpToDate)*
- *The initial samples should be collected from the infant within two days of birth if possible to distinguish between congenital, perinatal, and postnatal infection. (UpToDate)*
- *Testing cord blood is not recommended by the Centers for Disease Control (CDC). Instructions for collecting and shipping infant serum are available through the CDC website. (UpToDate)*
- *In addition to testing the neonate, maternal serum should be tested for Zika virus IgM and neutralizing antibodies and dengue virus IgM and neutralizing antibodies if testing was not already performed during pregnancy. (UpToDate)*

Microbiology:

- Zika virus RNA by RT-PCR (serum)
- Zika virus RNA by RT-PCR (urine)
- Zika virus antibody IgM (serum)
- Zika virus antibody IgM (urine)
- Zika virus plaque reduction neutralization test (PRNT) (serum)
- Dengue fever virus antibody IgM (serum)
- Dengue fever virus plaque reduction neutralization test (PRNT) (serum)
- Routine culture and sensitivities 2 sets (blood)

CSF:

- Zika virus RNA by RT-PCR (cerebrospinal fluid)
- Zika virus antibody IgM (cerebrospinal fluid)
- Zika virus plaque reduction neutralization test (PRNT) (cerebrospinal fluid)
- Dengue fever virus antibody IgM (cerebrospinal fluid)
- Dengue fever virus plaque reduction neutralization test (PRNT) (cerebrospinal fluid)

Chemistry:

- Basic metabolic panel (serum)
- Bilirubin total and direct (neonatal) (serum)
- Comprehensive metabolic panel (serum)

Blood Bank:

- ABO and Rh blood type (blood)
- Direct Coombs' (antiglobulin) (blood)

Blood Gases:

- Arterial blood gas (arterial blood)
- Capillary blood gas (blood)
- Venous blood gas (venous blood)

Hematology:

- CBC with platelets and differential (blood)

Inflammatory Markers:

- C-reactive protein (blood)

Genetics:

- Chromosome analysis (blood)

Ultrasound:

Head ultrasound today

Computed Tomography:

Brain CT scan today

Other Tests UpToDate**EENT Testing:**

Auditory brainstem response (ABR) testing

Otoacoustic emissions (OAE) testing

Consultations

- *Newborns with positive or inconclusive test results for Zika virus infection, with or without microcephaly, should undergo additional assessment for possible long-term sequelae, with appropriate referral if abnormalities are detected. This includes: repeat hearing screen at age six months (even if baseline hearing screen was normal because of potential for delayed hearing loss); appropriate follow-up of hearing abnormalities detected through newborn hearing screening; and evaluation of occipitofrontal circumference and developmental milestones throughout the first year of life. (UpToDate)*

Audiology consultation today

Lactation specialist consultation today

Neonatology consultation today

Pediatric Genetics consultation today

Pediatric Infectious Disease consultation today

Pediatric Neurology consultation today

Pediatric Ophthalmology consultation today

Pediatrics consultation today
