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Maine Health Alert Network (HAN) System

PUBLIC HEALTH ADVISORY

To: Health Care Providers
From: Dr. Isaac Benowitz, State Epidemiologist
Subject: **U.S. CDC: Increase in Human Parvovirus B19 Activity in the United States**
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U.S. CDC: Increase in Human Parvovirus B19 Activity in the United States

Summary
The U.S. Centers for Disease Control and Prevention (U.S. CDC) is issuing this Health Alert Network (HAN) Health Advisory to notify healthcare providers, public health authorities, and the public about current increases in human parvovirus B19 activity in the United States. Parvovirus B19 is a seasonal respiratory virus that is transmitted through respiratory droplets by people with symptomatic or asymptomatic infection. In the first quarter of 2024, public health authorities in 14 European countries observed unusually high numbers of cases of parvovirus B19. In the United States, there is no routine surveillance for parvovirus B19, and it is not a notifiable condition. Recently, U.S. CDC has received reports indicating increased parvovirus B19 activity in the United States. Data include increased test positivity for parvovirus B19 in clinical specimens and pooled plasma from a large commercial laboratory, and reports of clusters of parvovirus B19-associated complications among pregnant people and people with sickle cell disease. The proportion of people with IgM antibodies, an indicator of recent infection, increased among all ages from <3% during 2022–2024 to 10% in June 2024; the greatest increase was observed among children aged 5–9 years, from 15% during 2022–2024 to 40% in June 2024. Among plasma donors, the prevalence of pooled samples with parvovirus B19 DNA >10^4 IU/mL increased from 1.5% in December 2023 to 19.9% in June 2024.

Background
Parvovirus B19 is highly transmissible in respiratory droplets, with 50% of susceptible people infected after household exposure and 20–50% of susceptible students and staff infected during school outbreaks. Historically, people working in schools and in close contact with children (e.g., daycare workers and teachers) have had high occupational risk of infection. About 50% of adults have detectable antibodies by age 20 years. More than 70% of adults have detectable antibodies by age 40 years. Antibodies from prior infection are thought to protect against reinfection.

Parvovirus B19 infection can be transmitted during pregnancy (i.e., from mother to the fetus) or through transfusion of blood components and certain plasma derivates. The Food and Drug Administration (FDA) recommends testing all plasma-derived products and plasma units for parvovirus B19 using nucleic acid tests. Whole blood is not screened for parvovirus B19 in the United States. Transfusion-associated parvovirus B19 infection is extremely rare.

Although many people with parvovirus B19 infection are asymptomatic, immunocompetent children and adults with symptomatic disease typically develop a biphasic illness. The first phase of illness is characterized by symptoms of fever, myalgia, and malaise and develops approximately 7 days after infection. This phase lasts approximately 5 days. People with parvovirus B19 infection are most contagious during the first phase, when viral loads in respiratory secretions and saliva are highest. During the second phase of illness (approximately 7–10 days after the first phase), children often present with a characteristic facial rash (erythema infectiosum, or "slapped cheek" appearance), which may be followed by reticulated body rash or joint pain (arthralgia) 1–4 days later. In immunocompetent adults, the most common symptoms of parvovirus B19 disease typically occur during the second phase and include a reticular rash on the trunk and joint pain (arthralgia). Typically, the characteristic facial rash does not appear until after viral loads (a measure of infectiousness) have declined. Laboratory tests conducted during acute illness can demonstrate a transient decrease in absolute reticulocyte counts lasting approximately 10 days, mild anemia, thrombocytopenia, or leukopenia. Most people require only supportive care during the acute phase of illness and will recover completely. Severe outcomes from parvovirus B19 disease, such as myocarditis, hepatitis, or encephalitis, are rare. No vaccine or specific treatment is recommended for parvovirus B19 infection.

Parvovirus B19 infection can lead to adverse health outcomes among people without pre-existing immunity who are pregnant, immunocompromised, or have chronic hemolytic disorders. During pregnancy, most cases of fetal parvovirus B19 infection resolve spontaneously without adverse outcomes. However, the risk of an adverse fetal outcome (e.g., fetal anemia, non-immune hydrops, or fetal loss) is 5–10%, and is highest when acute infection occurs between gestational weeks 9–20. Treatment for acute infection in the pregnant individual is supportive, and management includes monitoring for and treating severe fetal anemia. Furthermore, parvovirus B19 can cause chronic or transient aplastic anemia among people with severely immunocompromising conditions (e.g., leukemia or other cancers, organ transplant, HIV infection, receiving chemotherapy) or chronic hemolytic disorders (e.g., sickle cell disease, thalassemia, hereditary spherocytosis). Red blood cell transfusions and intravenous immunoglobulin are the mainstays of treatment for aplastic anemia.

Recently, U.S. CDC has received reports indicating increased parvovirus B19 activity in the United States. These reports include data from commercial laboratories of increasing parvovirus B19 test positivity by nucleic acid amplification tests and serology in the general population and increased serological evidence of infection in plasma donors. The proportion of people with IgM antibodies increased among all ages from <3% during 2022–2024 to 10% in June 2024; the greatest increase was observed among children aged 5–9 years, from 15% during 2022–2024 to 40% in June 2024. Among plasma donors, the prevalence of pooled samples with parvovirus B19 DNA >10^4 IU/mL increased from 1.5% in December 2023 to 19.9% in June 2024. U.S. CDC has also received anecdotal reports from clinicians who have observed more than the expected number of cases of parvovirus B19 infections among pregnant people, including cases resulting in severe fetal anemia requiring fetal transfusions or pregnancy loss, and increases in aplastic anemia among people with sickle cell disease. There is no routine surveillance for parvovirus B19 in the United States.

Recommendations for Healthcare Providers

1. Have increased suspicion for parvovirus B19 among people presenting with compatible symptoms (i.e., fever, rash, arthropathy, or unexplained anemia with low reticulocyte count).
2. Provide preventive counseling and have a low threshold to test people who present with compatible signs and symptoms if they are at higher risk of severe parvovirus B19 disease, including:
    a. Pregnant people
    b. People with severely immunocompromising conditions, including leukemia or other cancers, organ transplant, HIV infection, or who are receiving chemotherapy.
    c. People with chronic hemolytic blood disorders, including sickle cell disease, thalassemia, and hereditary spherocytosis.

3. When treating people with suspected or confirmed parvovirus B19, inform them or their caregivers about high-risk groups and advise any exposed contacts in those groups (e.g., who may be pregnant) to consult with their healthcare providers.
4. Follow standard of care (e.g., professional society guidelines) for testing pregnant people reporting exposure to parvovirus B19 infection or who present with compatible signs and symptoms of maternal or fetal parvovirus B19 disease.
5. Promote U.S. CDC recommendations for core prevention strategies to prevent respiratory illness, including practicing good hand hygiene and taking steps for cleaner air to reduce spread of parvovirus B19 and other respiratory viruses.
    a. People at higher risk of severe outcomes or complications who work in settings with higher risk of parvovirus B19 exposure should practice hand hygiene, avoid sharing food or drinks, and consider wearing a respirator or mask while at work. There is no proven benefit to removing someone from work in settings with higher risk of parvovirus B19 exposure.
6. Follow recommended infection control precautions for persons with parvovirus B19 in healthcare settings.

Recommendations for the Public

1. Learn about parvovirus B19 symptoms and who may be at higher risk of severe disease.
2. Seek medical care if you:
    a. are pregnant and have been exposed to a person with suspected or confirmed parvovirus B19 or you have signs and symptoms of parvovirus B19.
    b. have a weakened immune system or a chronic hemolytic blood disorder including sickle cell disease, thalassemia, and hereditary spherocytosis, and you have signs and symptoms of parvovirus B19.
3. Follow general respiratory precautions to prevent spread of parvovirus B19 and other respiratory viruses. People at higher risk of severe parvovirus B19 can consider using additional prevention strategies such as wearing a mask when around others.
4. Know that children and adults with parvovirus B19 are no longer contagious once the characteristic facial rash appears.

For More Information

- About Parvovirus B19 | U.S. CDC
- Parvovirus B19 in Pregnancy | U.S. CDC
- Preventing Spread of Infections in K-12 schools | U.S. CDC
- Parvovirus B19 (Erythema Infectiosum, Fifth Disease), Red Book | American Academy of Pediatrics (AAP)
- Practice Bulletin on Cytomegalovirus, Parvovirus B19, Varicella Zoster, and Toxoplasmosis in Pregnancy | American College of Obstetricians and Gynecologists (ACOG)
- Fifth Disease (Erythema Infectiosum) Fact Sheet | MotherToBaby

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