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# Severe Acute Respiratory Syndrome

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Severe Acute Respiratory Syndrome (SARS) is a viral respiratory illness caused by SARS-associated coronavirus (SARS-CoV). First appearing in Asia in late 2002, SARS spread to 29 countries in four continents in the first few months of 2003. Cases were identified in North America, South America, Europe and Asia.

Eight confirmed cases and 184 probable cases of SARS were reported in the United States. In probable cases, SARS could not be definitively confirmed or ruled out. The initial use of a sensitive case definition in the United States promoted early case detection. However, the vast majority of these febrile respiratory infections proved not to be SARS by viral assays and other laboratory methods.

At the current time, the reason that the United States was spared a major outbreak is unknown. However, it is possible that SARS will reemerge. While reemergence, if it occurs, will most likely begin outside of the United States, failure to diagnose early cases could lead to the unchecked and rapid global spread of the disease.

### Facts About the Spread of SARS in Late 2002 and Early 2003

- Global travel facilitated the spread of SARS
- Healthcare facilities contributed to the spread of SARS as evidenced by the fact that the following groups were at increased risk for acquiring SARS:

1. Healthcare workers
2. Hospitalized patients
3. Hospital visitors

- The majority of SARS cases had known previous exposures to other individuals with SARS
- Transmission often occurred in localized "pockets" and transmission rates were variable as evidenced by the following:

1. Infection rates differed by country
2. Infection rates differed by setting: community versus hospitals

### Risk Assessment and Diagnosis

At the current time, in the absence of known SARS transmission anywhere in

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**Special points of interest:**

- *Cases of Select Notifiable Infectious Diseases for Ohio—Reported Through September 30, 2003*
- *World AIDS Day Conference*

the world, healthcare providers should still ask *all people who are hospitalized with CXR-confirmed pneumonia* the following three key screening questions:

1. "Do you have a history of recent travel (within 10 days) to a previously SARS-affected area or close contact with ill persons with a history of travel to such areas?"
2. "Are you employed as a health care worker with direct patient contact?"
3. "Do you have close contacts, who have been told they have pneumonia?"

If the answer to any of the three screening questions is "yes," healthcare providers need to:

- Institute airborne and droplet precautions with goggles
- Notify the local health department
- Consider SARS testing if no alternative diagnosis is found within 72 hours

**Reporting Potential Cases of SARS**

Cases under investigation for SARS should be reported to the Ohio local public health jurisdiction in which the individual resides, in order to ensure that all appropriate testing is performed. This will also ensure the Ohio Department of Health's ability to monitor the extent of any outbreak, as well as provide assistance as needed. Testing will be performed at the Ohio Department of Health Laboratory (ODHL). Guidance for specimen collection for SARS Co-V testing is detailed in the table below.

## Specimen Collection Guidelines in Suspected SARS

| Suspected Virus | Clinical Specimens Accepted | Shipping | Assay | Turn around time for results |
|---|---|---|---|---|
| **SARS Coronavirus (CoV)** | Serum | Shipped on cold packs overnight | Enzyme immunoassay | 2 days |
| | Oropharyngeal or bronchoalveolar lavage, aspirates, sputum samples, nasopharyngeal or oropharyngeal swabs in, or without,transport medium | Shipped on cold packs overnight | Polymerase chain reaction | 2 days |

**Comments:**

1. Please include the contact information for receipt of patient results on the lab submission form.
2. Specimens submitted for SARS CoV will be forwarded to CDC until ODHL performs the assay in-house.

# Hepatitis C Virus: Epidemiology, Prevention and Control

by Jeff Vasiloff, MD, MPH , Chief HIV/STD

Hepatitis C virus (HCV) is estimated to infect more than 200,000 Ohioans. A minority of infected individuals develop an acute, clinically apparent illness that resolves, similar to what occurs in hepatitis A infection. More commonly, hepatitis C infections are both chronic and insidious. In these cases the hepatitis C virus evades immune neutralization and clearance by various mechanisms similar to HIV.

Among those who are chronically infected with HCV for many years, cirrhosis results in 10-20 percent and primary liver cancer (hepatocellular carcinoma) occurs in 1-5 percent. HCV infection leads all other liver diseases in necessitating liver transplantation.

Prior to blood factor virus inactivation procedures (1987), the vast majority of people requiring factor VIII or factor IX for hemophilia and related disorders became infected with HCV. Similarly, prior to specific blood screening (1992), HCV infected many blood transfusion recipients; these infections were termed non-A non-B hepatitis prior to the isolation of the hepatitis C virus.

At the current time, injection drug use is the largest risk factor for HCV. The prevalence of HCV among long-term injection drug users is as high as 80 percent. Multiple sex partners also increases risk and it has been estimated that as many as 15-20 percent of cases of acute hepatitis C are sexually acquired. However, in contrast, the risk of transmission between long-term monogamous spouses appears to be low. Reasons for this disparity are incompletely characterized at this time.

Patients undergoing hemodialysis are at increased risk as are healthcare workers who are stuck with needles containing HCV-contaminated blood. Further, perinatal transmission occurs in about one of 20 live births to infected mothers.

While residing in a correctional institution per se has not been established as a risk factor for hepatitis C transmission, it is known that the prevalence of HCV infection among incarcerated individuals is very high. Of 1,283 Ohio inmates tested as of January 2003, 25.9 percent were found to be infected with HCV.

HCV is an RNA virus with several genotypes and more than 50 subtypes. Genotype 1 accounts for three-quarters of the HCV infections in the United States. Unfortunately, this genotype is most resistant to current anti-viral therapy.

Infection by HCV can be detected by measuring antibodies against the virus with an enzyme immunoassay (EIA). This is the first-line test in the screening or diagnosis of those with suspected HCV. A negative EIA rules out HCV infection in immune-competent patients. However, because a positive EIA test can occasionally be falsely positive, a confirmatory test must be done in those who are EIA positive.

A positive EIA can be confirmed as a true positive in any of three ways. First, HCV infection can be confirmed by a positive HCV recombinant assay (RIBA). Second, HCV infection can be confirmed by the direct detection of HCV RNA by polymerase chain reaction methodology [nucleic acid amplification test]. Third, HCV infection can sometimes be confirmed by the EIA test alone if the signal to cut off ratio is high enough (3.8+).

When faced with the differential diagnosis of possible viral hepatitis, four serological tests are most useful. IgM anti-HAV is useful to determine whether acute hepatitis A is present. IgG anti-HAV or total (IgG/IgM) anti-HAV are not useful in this situation because positive results on either of these tests indicates only that hepatitis occurred at some time in the person's life.

HBsAg and IgM anti-HBc are useful in the diagnosis of hepatitis B. In acute hepatitis B the following occurs: HBsAg positive **or** IgM anti-HBc positive **or** HBsAg positive + anti-HBc positive. In chronic hepatitis B only HBsAg is positive.

Finally, in hepatitis C, as noted above, anti-HCV is positive.

Once diagnosed, all patients with hepatitis C are potential candidates for antiviral therapy. The National Institutes of Health has recently published a consensus statement concerning treatment. Treatment is consistently recommended for those at risk for cirrhosis. These patients have detectable HCV RNA levels higher than 50IU/ml and characteristic changes on liver biopsy.

# Hepatitis C Virus: Epidemiology, Prevention, and Control—continued

Treatment with pegylated interferon plus ribavirin has resulted in significant virologic and biochemical responses in 42-46 percent of those with genotype 1 and 76-82 percent with genotypes 2 and 3. General medical care is recommended for all patients and includes vaccination to hepatitis A and B (if not immune), abstention from alcohol and hepatotoxic drugs, and cessation of injection drug use (if applicable).

Hepatitis C threatens the health of the public in two ways. First, without proper preventive measures, the current large reservoir of infected individuals will transmit the disease to even greater numbers of people. Second, without proper treatment, those with chronic infection will create a large burden of cirrhosis, end-stage liver disease and liver cancer. The costs here include impaired quality of life, premature death and depletion of financial resources.

Thus, the Ohio Department of Health, along with members of the statewide Hepatitis Advisory Commission have recently completed the *Ohio Hepatitis C Plan: Prevention and Control* to address the problem of hepatitis C and the public health response in Ohio. This plan contains four major strategies. First, awareness of hepatitis C will be increased among both medical and public health professionals as well as Ohio citizens.

Second, hepatitis C counseling and testing will be integrated into the state's HIV counseling and testing sites. A pilot study of 12 counseling and testing sites is currently ongoing. Third, referral of confirmed cases will be made to physicians for management.

Finally, the surveillance of hepatitis C will be expanded. As described in the accompanying article, Hepatitis Reporting, all past and present hepatitis C infections are now reportable.

For more information on the Ohio Hepatitis C Plan and ODH's efforts to prevent and control hepatitis C, please contact Kevin Runyon at: krunyon@gw.odh.state.oh.us of the Section of HIV/STD/HCV or Jeff Vasiloff, MD, MPH at: jvasilof@gw.odh.state.oh.us.

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# Summary of Human West Nile Virus (WNV) Infections in Ohio in 2002

by Kim Winpisinger, MS, Epidemiologist, Vector-Borne Disease Program

The national West Nile Virus (WNV) epidemic of 2002 was the largest outbreak of any mosquito-transmitted disease in the United States. It was also the largest outbreak of WNV in the world. Evidence of WNV was found in all but four states of the continental United States. Ohio reported the third-largest number of human cases in the country, behind Illinois and Michigan. New illness syndromes (West Nile fever) and new modes of transmission were documented in 2002.

Ohio reported 441 cases of WNV infection to Centers for Disease Control (CDC) in 2002. See note following article for WNV case criteria. Of these 441 cases, 300 were reported as probable cases and 141 were confirmed. An additional 80 cases were investigated. These cases either did not meet the case definition or occurred in out-of-state residents who were visiting Ohio.

Some points of interest from the data collected on the 441 cases reported to CDC include:

There were 299 (68 percent) cases classified as meningoencephalitis, encephalitis, or meningitis. The remaining 142 (32 percent) cases were classified as West Nile fever, either because they met West Nile fever criteria or else we lacked information on whether meningoencephalitis was present.

There were 356 (81 percent) cases known to be hospitalized. In another two (<1 percent) cases, the status of hospitalization was not known. Of the 356 hospitalized cases, information provided on 74 did not confirm meningoencephalitis. Thus these 74 hospitalized cases classified as West Nile fever.

Patients ranged in age from 2 years to 98 years old. The mean age was 58 years and the median was 61 years. Twelve cases occurred in those 16 years old and younger. Table 1 shows a graph of WNV cases by age.

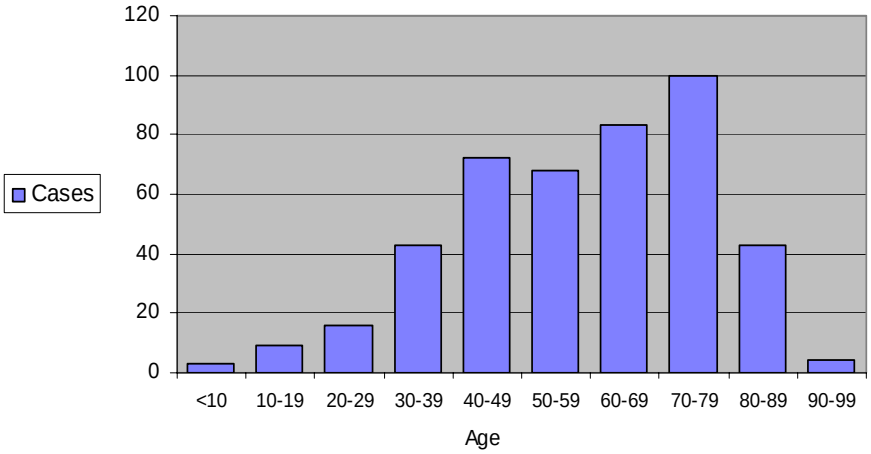
- The gender ratio was 227 females (51 percent) to 214 males (49 percent).
- There were 31 deaths in 15 counties. However, because the reporting of fatalities is not required, this number may be low. The fatal cases ranged in age from 32 to 98 years with 22 (71 percent) of the fatalities occurring in men. The median age for the fatalities was 75 years.

Cuyahoga County reported 219 cases - the most cases reported in any Ohio county. This accounted for 49.6 percent of all the Ohio cases. There were 144 (66 percent) cases classified as meningoencephalitis, encephalitis or meningitis.

The remaining 75 (34 percent) cases were classified as West Nile fever. Patients ranged in age from 11 years to 98 years old. The mean age was 59 years and the median was 62 years. The gender ratio was 115 females (53 percent) to 104 males (47 percent). There were 10 deaths among Cuyahoga County residents ranging from 66 to 98 years old.

- Cases were found in 56 (64 percent) of Ohio's counties.
- There were six possible transfusion/transplant cases that were investigated. Only one of these cases was proven to have been transmitted in this manner. The first case was reported to ODH on Aug. 14, 2002. The last case of the 2002 season was reported on Jan. 3, 2003.

**Table 1.** **Age of Human WNV Cases, 2002**



# Summary of Human West Nile Virus (WNV) Infections in Ohio in 2002—continued

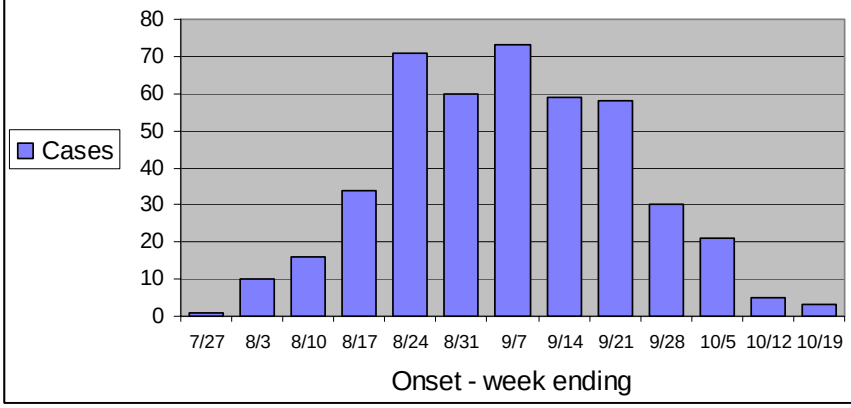
The dates of onset ranged from July 27, 2002, to Oct. 19, 2002. Table 2 shows a graph of onset dates.

At the time of this writing, we are in the midst of the 2003 WNV season. This data will be presented in a later issue.

**Note: WNV Case Criteria:**
Probable Case: clinical symptoms, ranging from febrile headache to aseptic meningitis to encephalitis, occurring during a period when arboviral transmission is likely, and with the following supportive serology: (1) a single or stable (less than or equal to twofold change) but elevated titer of virus-specific serum antibodies; or (2) serum IgM antibodies detected by antibody-capture EIA but with no available results of a confirmatory test for virus-specific serum IgG antibodies in the same or a later specimen.

Confirmed Case: an encephalitis or meningitis case that is laboratory confirmed by fourfold or greater change in virus-specific serum antibody titer, or isolation of virus from or demonstration of specific viral antigen or genomic sequences in tissue, blood, cerebrospinal fluid (CSF), or other body fluid, or virus-specific immunoglobulin M (IgM) antibodies demonstrated in CSF by antibody-capture enzyme immunoassay (EIA), or virus-specific IgM antibodies demonstrated in serum by antibody-capture EIA and confirmed by demonstration of virus-specific serum immunoglobulin G (IgG) antibodies in the same or a later specimen by another serologic assay (e.g., neutralization or hemagglutination inhibition).

**Table 2.** **Onset of Human WNV, 2002**



# CDC's New HIV Prevention Initiative

by Jeff Vasiloff, MD, MPH , Chief HIV/STD

On April 17, 2003, the Centers for Disease Control and Prevention (CDC) unveiled its new HIV Prevention Initiative: *Advancing HIV Prevention: New Strategies for a Changing Epidemic*. The rationale for this change includes the following:

- 850,000 – 950,000 people are living with HIV in the United States.
- Twenty-five percent of those with HIV do not know they are infected.
- Of those who know they are infected, one-third are not in treatment.
- The incidence of HIV has remained at about 40,000 per year.
- Data from 1999-2001 reveal that HIV infection has increased 14 percent among men who have sex with men (MSM) and 10 percent among heterosexual individuals.
- Many people postpone HIV testing until they are late in the course of their infection (i.e, one study revealed that 41 percent of newly identified cases of HIV developed full-blown AIDS within one year).

The reasons for the undiminished, if not increasing number of HIV cases, includes a likely return of high-risk behavior among some subsets of sexually active individuals, and to a lesser degree, injection-drug-using individuals. This may be due at least partially to the better prognosis of HIV with current antiretroviral therapy. This is compounded by the fact that some individuals may feel less of a mandate to practice safer sex when they are unaware that they are infected with HIV. It has been well established that cognizance of one's positive serostatus frequently leads to the practice of safer sex with partners who are seronegative or of unknown serostatus.

In accord with these considerations, the goals of the new initiative are to:

- Reduce barriers to the early diagnosis of HIV.
- Increase access of HIV-positive individuals to quality medical care.
- Increase the enrollment of HIV-positive individuals in sustained prevention services to stop the spread of HIV.

To accomplish these goals, the CDC has enumerated the following four strategies:

- Make HIV testing a routine part of medical care.
- Implement new models for diagnosing HIV infection outside of medical settings.
- Prevent new infections by working with HIV-positive individuals and their partners.
- Further decrease perinatal HIV transmission.

Routine HIV testing in the medical setting follows from the fact that many people with AIDS make several visits to hospitals, medical clinics, and managed-care organizations prior to being diagnosed with HIV. Unfortunately, during these many visits, HIV tests are rarely, if ever, suggested.

Thus, these episodes in which HIV testing was not recommend during the course of multiple clinic and hospital patient visits represent missed opportunities to diagnose HIV earlier in the course of the disease. Further, it has been found that when routine HIV testing is conducted in high-prevalence, high-volume hospitals and emergency departments, 2-7 percent of individuals are found to be HIV positive.

Thus, the implementation of routine HIV testing in the medical setting will include offering testing to all patients in all high-prevalence settings (e.g., city hospitals and emergency departments). Additionally, it will include offering testing to all high-risk patients in all other clinical settings.

Testing in non-medical venues includes the implementation of rapid HIV testing (OraQuick: Orasure Technologies, Inc., Bethlehem, Penn.). These test kits provide results in 20 minutes and can be used in the field. Further, the rapid test can be performed by non-medical personnel. This allows the staffs of community-based organizations to perform on-site testing in venues frequented by high-risk individuals.

During 2000, it was found that 31 percent of individuals who

## CDC's New HIV Prevention Initiative—continued

tested positive for HIV at federally funded Counseling, Testing, and Referral (CTR) sites did not return in one to two weeks to obtain their results. Rapid testing, in which results are available within minutes, would obviously circumvent this problem.

Rapid testing may also be used in the testing of sexual partners of newly identified individuals with HIV. Because 8-39 percent of partners of newly identified cases of HIV are also infected, the new initiative calls for increased efforts to identify, locate and test the sexual partners of new cases of HIV.

Prevention among HIV-positive individuals represents a slight shift in CDC focus. For many years the thrust of HIV prevention has been directed toward preventing seronegative individuals from contracting the disease. It is important to note that this is still the ultimate goal of CDC. What is new is an increased focus on the behavior of those who are HIV-positive to prevent transmission of the virus.

This will require three steps. First, HIV-positive individuals must be made aware of their serostatus. Second, individuals must be referred to quality medical care and other services. Third, interventions must be implemented to reduce high-risk behavior and maintain low-risk behavior.

Finally, the new initiative calls for further decreasing perinatal transmission of HIV through universal prenatal testing. One consideration is whether prenatal HIV testing is performed using an opt-in or opt-out protocol. At the current time, Ohio uses the opt-in protocol. In states that have changed from opt-in to opt-out, prenatal screening rates increase significantly. The CDC's new initiative recommends the use of the opt-out scenario when not restricted by state law. In both opt-in and opt-out scenarios, the use of rapid testing lends itself to use in the labor and delivery setting.

The HIV/STD/HCV program within ODH is already working with our in-state partners, CDC and the National Alliance of State and Territorial AIDS Directors in ushering in these forward-thinking guidelines.

For any information on ODH's HIV Prevention Program, please contact:

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## Hepatitis Surveillance and Reporting Requirements in Ohio

by Julie Lazaroff, MPH, Epidemiologist, Hepatitis Surveillance

The Centers for Disease Control and Prevention (CDC) has been collecting statistics for acute viral hepatitis since 1947. **Chronic hepatitis B virus infection** and **hepatitis C virus infection (past or present)** were added to the list of nationally reportable conditions on Jan. 1, 2003. Data collected through Ohio's hepatitis surveillance system now provides serologic, demographic and epidemiologic information on acute and chronic cases of hepatitis. This data helps to direct and evaluate efforts to meet the growing need for prevention, control and medical management of hepatitis A, B and C in Ohio.

The effectiveness of the surveillance system is dependent upon the data that hospitals, clinics and private physicians provide through hepatitis case reporting. In accordance with the Ohio Administrative Code, rule 3701-3-03, those individuals or organizations providing care for or having knowledge of a case of hepatitis A, B or C (designated as reportable under rule 3701-3-02) are required "to submit a case report to the board of health of the health district in which the patient resides." Whereas in the past this applied only to acute cases, reporting of all cases of viral hepatitis is now in full force.

The new **Viral Hepatitis Case Report** form collects all of the minimum data elements needed for the national surveillance database that is housed at CDC; this report form is available at most city and county local health districts or from the Ohio Department of Health, Infectious Dis-

# Hepatitis Surveillance and Reporting Requirements in Ohio—continued

Disease Surveillance Section. Though less preferable, cases may also be reported on a **Confidential Case Report Card** (3812.11 rev. 12/81), **a lab report** (3833.11) or by telephone .

The CDC case definitions for acute viral hepatitis also include laboratory criteria. The serologic tests **IgM anti-HAV** and **IgM anti-HBc** are included in acute hepatitis panels and are both strong indicators of recent infection of hepatitis A and hepatitis B, respectively. Unfortunately, there is no comparable serologic indicator for hepatitis C. Clinicians should be cautioned about neglecting to order these IgM tests and mistakenly only order tests for **total anti-HAV** (IgM/IgG) or **total anti-HBc** (IgM/IgG). The **IgM/IgG** tests can indicate past infection and are not meaningful on their own. Moreover, both positive and negative test results on the acute hepatitis panel are needed to confirm the type of viral hepatitis causing an acute episode. Because laboratories do not report negative results, medical providers should report negative results for acute cases.

The CDC case definitions for chronic hepatitis B include laboratory criteria only. Lab results for **IgM anti-HBc** and **HBsAg** are needed to confirm cases of chronic hepatitis B. The case definition for chronic hepatitis B is confirmed with two positive **HBsAg** test results with specimen collection dates at least six months apart. Thus, reporting specimen collection dates for HBsAg

**Hepatitis, Viral, Acute Case Definition**

**Clinical case definition:**
An acute illness with (a) discrete onset of symptoms and (b) jaundice or elevated serum aminotransferase levels

**Laboratory criteria for diagnosis:**
Hepatitis A:
- IgM anti-HAV positive

Hepatitis B:
- IgM anti-HBc positive, or HBsAg positive, and IgM anti-HAV negative (if done)

Hepatitis C:
- Serum alanine aminotransferase levels greater than seven times the upper limit of normal, and
- IgM anti-HAV negative, and
- IgM anti-HBc negative (if done) or HBsAg negative, and
- Anti-HCV positive verified by an additional more specific assay

**Case Classification**
*Confirmed*: a case that meets the clinical case definition and is laboratory confirmed

**Chronic Hepatitis B Virus Infection Case Definition**

**Laboratory criteria for diagnosis:**
HBsAg positive, total anti-HBc positive (if done) and IgM anti-HBc negative, **or** HBsAg positive two times at least six months apart.

**Case Classification**
*Confirmed*: a case that is laboratory confirmed

**Hepatitis C Virus Infection (past or present) Case Definition**

**Laboratory criteria for diagnosis:**
- Anti-HCV positive (repeat reactive) by EIA, verified by an additional more specific assay (e.g., RIBA for anti- HCV or NAT for HCV RNA), or
- HCV RIBA positive, or
- Anti-HCV positive (repeat reactive) by EIA with a signal to cut-off ratio >3.8 (as this becomes available).

**Case Classification**
*Confirmed*: a case that is laboratory confirmed and that does not meet the case definition for acute hepatitis C
*Probable:* a case that is anti-HCV positive (repeat reactive) by EIA and has alanine aminotranferase (ALT or SGPT) values above the upper limit of normal, but the anti-HCV EIA result has not been verified by an additional more specific assay or the signal to cutoff ratio is unknown

# Hepatitis Surveillance and Reporting Requirements in Ohio—continued

Though laboratories are required to report all positive lab results, there are particular test results that have more relevance to surveillance case definitions than others:

**Lab data of most value to surveillance:**

- Specimen collection dates
- IgM anti-HAV (positive and negative)
- IgM anti-HBc (positive and negative)
- HBsAg (positive and negative)
- Anti-HCV
- HCV RNA
- HCV RIBA
- Signal to cut-off ratio

**Clinical data of most value to surveillance:**

- Symptoms of viral hepatitis
- Date of symptom onset
- Serum aminotransferase levels (ALT and AST)
- Physician diagnosis
- Pregnancy status for HBsAg positive females

**Abbreviations:**

- IgM anti-HAV: Immunoglobulin M antibody to hepatitis A virus
- IgM anti-HBc: Immunoglobulin M antibody to hepatitis B core antigen
- HBsAg: Hepatitis B surface antigen
- Anti-HCV: Antibody to hepatitis C virus
- HCV RNA: Hepatitis C virus ribonucleic acid
- HCV RIBA: Hepatitis C virus recombinant immunoblot assay
- S/Co: signal to cutoff ratio
- ALT: alanine aminotransferase
- AST: aspartate aminotranferase

positive results is especially important. The case definition can also be met if **IgM anti-HBC** is negative and **HBsAg** is positive. Once again, because laboratories are not required to report negative tests, healthcare providers should provide negative test results for **IgM anti-HBc** when reporting chronic hepatitis B cases.

The CDC case definition for hepatitis C (past or present) also includes only laboratory criteria. Positive test results for **HCV RIBA** or **HCV RNA** single handedly confirm a case. In addition, a repeatedly reactive anti-HCV test by EIA with a **signal to cut-off ratio** greater than or equal to 3.8 also confirms a case. The signal to cut-off ratio has come into favor for confirming the antibody screening test, because it is less expensive than the **HCV RIBA** test and nearly as reliable.

In addition to reporting acute and chronic hepatitis cases, healthcare providers should also **report all new pregnancies** in women who are infected with hepatitis B (**HBsAg** positive). Even if the case of hepatitis B was previously reported, each new pregnancy must be reported so that these cases can be managed by public health workers who ensure that these newborns receive hepatitis B immune globulin and the first dose of vaccine at birth.

# Cases of Select Notifiable Infectious Diseases for Ohio

## Reported through September 30, 2003*

| Reportable Condition | Suspect | Probable | Confirmed | Total |
|---|---|---|---|---|
| Amebiasis | - | - | 12 | 12 |
| Botulism, Infant | - | - | 2 | 2 |
| Brucellosis | - | - | 1 | 1 |
| Campylobacteriosis | 1 | 5 | 986 | 992 |
| Creutzfeldt-Jakob Disease (CJD) | 4 | 2 | 1 | 7 |
| Cryptosporidiosis | 1 | 1 | 97 | 99 |
| Cytomegalovirus (CMV), Congenital | - | - | 6 | 6 |
| Dengue | - | 4 | 1 | 5 |
| E Coli O157:H7 | 4 | 3 | 69 | 76 |
| E Coli Shiga Toxin Producing (Not O157:H7) | 1 | 2 | 10 | 13 |
| E Coli Shiga Toxin Producing (Unknown Sero-group) | 2 | 2 | 11 | 15 |
| Ehrlichiosis, Human Granulocytic (HGE) | 1 | 2 | - | 3 |
| Ehrlichiosis, Human Monocytic (HME) | - | 4 | 1 | 5 |
| Encephalitis, La Crosse | - | 12 | 8 | 20 |
| Encephalitis, Post Other Viral | 1 | 1 | 6 | 8 |
| Encephalitis, Primary | 7 | 4 | 16 | 27 |
| Encephalitis, West Nile | 4 | 54 | 7 | 65 |
| Giardiasis | - | 4 | 666 | 670 |
| Haemophilus Influenzae (Invasive Disease) | - | - | 58 | 58 |
| Hemolytic Uremic Syndrome (HUS) | - | 1 | 4 | 5 |
| Hepatitis A | - | - | 84 | 84 |
| Hepatitis B, Acute | 1 | 1 | 108 | 110 |
| Hepatitis B, Perinatal | - | - | 4 | 4 |
| Hepatitis C, Acute | - | - | 7 | 7 |
| Herpes, Congenital | - | 1 | 7 | 8 |
| Legionellosis (Legionnaires' Disease) | - | - | 176 | 176 |
| Leprosy (Hansen's Disease) | - | - | 1 | 1 |
| Leptospirosis | 1 | - | - | 1 |
| Listeriosis | - | 1 | 18 | 19 |
| Lyme Disease | 11 | - | 49 | 60 |

# Cases of Select Notifiable Infectious Diseases for Ohio

## Reported through September 30, 2003*—continued

| Reportable Condition | Suspect | Probable | Confirmed | Total |
|---|---|---|---|---|
| Malaria | 1 | - | 15 | 16 |
| Measles Imported From Outside Ohio | - | - | 2 | 2 |
| Measles Indigenous/Imported Status Unknown | - | 1 | - | 1 |
| Meningitis, Aseptic | 138 | 101 | 522 | 761 |
| Meningitis, Bacterial (Not N. Meningitidis) | 11 | 10 | 60 | 81 |
| Meningococcal Disease | 4 | 5 | 38 | 47 |
| Mucocutaneous Lymph Node Syndrome (Kawasaki Disease) | 13 | 3 | 46 | 62 |
| Mumps | - | 1 | 6 | 7 |
| Outbreaks, Foodborne | 8 | 11 | 20 | 39 |
| Outbreaks, Unspecified | 4 | 2 | 20 | 26 |
| Outbreaks, Waterborne | - | - | 1 | 1 |
| Pertussis | 1 | 19 | 177 | 197 |
| Q Fever | - | 5 | - | 5 |
| Rabies, Animal | - | - | 47 | 47 |
| Rheumatic Fever | - | - | 2 | 2 |
| Rocky Mountain Spotted Fever (RMSF) | - | 6 | 4 | 10 |
| Salmonellosis | 2 | - | 1107 | 1109 |
| Shigellosis | 1 | 3 | 250 | 254 |
| Streptococcal Disease, Group A, Invasive | 6 | 1 | 248 | 255 |
| Streptococcal Toxic Shock Syndrome (STSS) | - | 3 | 16 | 19 |
| Streptococcal, Group B In Newborn | 4 | - | 46 | 50 |
| Tetanus | - | - | 2 | 2 |
| Toxic Shock Syndrome (TSS) | 1 | 5 | 6 | 12 |
| Typhoid Fever | - | - | 2 | 2 |
| Vibrio Vulnificus | - | - | 1 | 1 |
| Vibriosis, (Not Cholera) | - | - | 4 | 4 |
| Yersiniosis | - | - | 40 | 40 |

**Tuberculosis, STDs, and HIV/AIDS are not included in these totals. A dash symbol ( - ) indicates zero cases reported. Data were reported to the Ohio Department of Health via the Ohio Disease Reporting System (ODRS) through 9/30/2003.* ***This report includes confirmed, probable and suspect cases that have been reported to the CDC.*** *Some reportable conditions may be under investigation. Therefore, all data in this report are provisional.*

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