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Acute Flaccid Paralysis Syndrome Associated with West Nile Virus Infection — Mississippi and Louisiana, July–August 2002

West Nile virus (WNV) infection can cause severe, potentially fatal neurologic illnesses including encephalitis and meningitis (*1,2*). Acute WNV infection also has been associated with acute flaccid paralysis (AFP) attributed to a peripheral demyelinating process (Guillain-Barré Syndrome [GBS]) (*3*), or to an anterior myelitis (*4*). However, the exact etiology of AFP has not been assessed thoroughly with electrophysiologic, laboratory, and neuroimaging data. This report describes six cases of WNV-associated AFP in which clinical and electrophysiologic findings suggest a pathologic process involving anterior horn cells and motor axons similar to that seen in acute poliomyelitis. Clinicians should evaluate patients with AFP for evidence of WNV infection and conduct tests to differentiate GBS from other causes of AFP.

Case Reports

Case 1. In July 2002, a previously healthy man aged 56 years from Mississippi was admitted to a local hospital with a 3-day history of fever, chills, vomiting, confusion, and acute painless weakness of the arms and legs. On physical examination, he had tremor and areflexic weakness in both arms and asymmetric weakness in the legs with hypoactive reflexes; sensation was intact. Laboratory abnormalities included a mildly elevated protein in the cerebrospinal fluid (CSF) (Table). An evolving stroke was diagnosed, and the patient was treated with anticoagulant therapy; subsequently, the illness was attributed to GBS, and intravenous immune globulin (IVIG) therapy was initiated. A computerized tomography (CT) scan and magnetic resonance imaging (MRI) of the brain and cervical spine were normal. Electromyography and nerve-conduction studies (EMG/NCS) were indicative of a severe asymmetric process involving anterior horn cells and/or their axons. An acute WNV infection was considered probable on the basis of the presence of virus-specific IgM antibody in serum.

Case 2. In July 2002, a man aged 57 years from Mississippi was admitted to a local hospital with a 3-day history of fever, chills, vomiting, and headache. Laboratory abnormalities indicated an elevated protein and pleocytosis in the CSF (Table). The patient subsequently had acute respiratory failure requiring intubation. On physical examination, rigidity in all extremities was observed with no spontaneous movement. Following extubation, bilateral facial and areflexic, asymmetric weakness was observed in all extremities; sensory examination was normal. Brain MRI was normal. EMG/NCS were indicative of a severe asymmetric process affecting anterior horn cells and/or their axons. IgM and neutralizing antibody test results confirmed an acute WNV infection.

Case 3. In July 2002, a man aged 56 years from Louisiana with a history of hypertension and coronary artery disease was hospitalized with a 4-day history of fever, vomiting, and painless asymmetric leg weakness. On examination, the patient had a flaccid areflexic right leg and a weak, hyporeflexic left leg; strength and reflexes in the arms were normal. The

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patient had decreased sensation in a stocking-and-glove distribution and a coarse upper extremity action tremor. A lumbar puncture revealed a CSF pleocytosis (Table). He was admitted with a diagnosis of postviral demyelination syndrome and treated with antimicrobial medication, IVIG, and dexamethasone. MRI of the spine revealed mild cervical spinal stenosis and homogeneous enhancement of the cauda equina consistent with meningitis. EMG/NCS were indicative of a severe asymmetric process affecting anterior horn cells and/or their axons. IgM and neutralizing antibody test results confirmed an acute WNV infection.

Case 4. In August 2002, a woman aged 69 years from Louisiana with a history of diabetes and degenerative disc disease was hospitalized with a 1-day history of vomiting, lethargy, confusion, fever, and painless right arm weakness. On examination, the patient had nuchal rigidity and a coarse tremor in the chin, left arm, and both legs. The right arm was flaccid and areflexic; strength and reflexes in the other extremities were normal. She was admitted with a diagnosis of meningoencephalitis with associated focal motor radiculitis versus monoplegia secondary to cerebrovascular ischemia. Head CT and brain MRI showed chronic microvascular ischemic changes; MRI of the cervical spine displayed mild narrowing of the spinal cord and the right neural foramina at the C5-6 level. EMG/NCS indicated a severe, asymmetric process affecting anterior horn cells and/or their axons. IgM and neutralizing antibody test results confirmed an acute WNV infection.

Case 5. In August 2002, a previously healthy man aged 50 years from Mississippi was hospitalized with vomiting and headache. He had flaccid, areflexic weakness in the right arm; sensation in all extremities was normal. An acute stroke was diagnosed, and the patient received anticoagulant therapy. EMG/NCS were indicative of a severe, asymmetric process affecting anterior horn cells and/or their axons in the right upper extremity. IgM and neutralizing antibody test results confirmed an acute WNV infection.

Case 6. In August 2002, a man aged 46 years from Louisiana with a history of coronary artery disease was admitted to a hospital with fever, chills, fatigue, and leg weakness. He had a plegic and areflexic right leg and mild left leg weakness; sensation was intact. Laboratory abnormalities included a lymphocytic pleocytosis in CSF (Table). The patient was admitted with a diagnosis of GBS and treated with IVIG and antibiotics. An enhanced MRI of the spine revealed findings suggestive of meningitis involving the conus medullaris and cauda equina. EMG/NCS indicated a severe, asymmetric process affecting anterior horn cells and/or their axons. IgM and neutralizing antibody test results confirmed an acute WNV infection.

TABLE. Initial laboratory findings* in patients with acute flaccid paralysis (AFP) associated with acute West Nile virus infection — Mississippi and Louisiana, 2002

Case no.	Admission WBC	Admission hematocrit	Initial CSF WBC	Initial CSF RBC	Initial CSF protein	Initial CSF glucose
1	17.6 x 10^3/mm^3	38.0%	3/mm^3	1,778/μL	234 mg/dL	74 mg/dL
2	3.6 x 10^3/mm^3	38.2%	2,600/mm^3	87/μL	204 mg/dL	99 mg/dL
3	11.8 x 10^3/mm^3	44.4%	140/mm^3	40/μL	234 mg/dL	74 mg/dL
4	9.5 x 10^3/mm^3	37.8%	143/mm^3	4/μL	116 mg/dL	119 mg/dL
5	7.9 x 10^3/mm^3	45.6%	ND†	ND†	ND†	ND†
6	13.0 x 10^3/mm^3	45.4%	329/mm^3	7/μL	75 mg/dL	66 mg/dL

*Normal laboratory values: peripheral white blood cell (WBC) count=5.0–10.0 x 10^3/mm^3; hematocrit=37%–52%; cerebrospinal fluid (CSF) WBC=0–5 cells/μL; CSF red blood cell (RBC) count=0; CSF protein=15–45 mg mg/dL; and CSF glucose=50–75 mg/dL.
†Not done.

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Editorial Note: The clinical, laboratory, and electrophysiologic findings of these six patients suggest that WNV-associated AFP is a polio-like syndrome with involvement of the anterior horn cells of the spinal cord and motor axons. All six patients had acute onset of asymmetrical weakness without pain or sensory loss. All but one of those with CSF drawn had pleocytosis. Investigation of these patients is continuing.

A polio-like syndrome has been associated with flaviviruses other than WNV (*5*), and anterior myelitis has occurred with WNV infection (*4*). Investigations of primates (*6*) and other vertebrates infected with WNV have documented involvement of spinal motor neurons and lesions in the ventral gray matter of the spinal cord, with an absence of lesions in peripheral nerves.

Previous case series have attributed WNV infection–associated AFP to a peripheral neuronal process similar to GBS; acute poliomyelitis might simulate GBS, causing diagnostic confusion (*7*). Clinical, laboratory, and electrophysiologic features of these cases might help differentiate poliomyelitis from GBS. In comparison with the asymmetric AFP observed in these patients, GBS syndrome is more often symmetric, generally involves sensory changes or paresthesias, and is associated with an elevation of CSF protein in the absence of pleocytosis. Additional features of typical GBS include an onset several days following signs of acute infection and a generally favorable outcome with rapid improvement in strength. In addition, EMG/NCS typically suggest a predominantly demyelinating picture, or a combined axonal and demyelinating process. A pure motor axonal variant of GBS (*8*) might be confused with polio; however, this GBS variant is typically characterized by symmetric, distally prominent weakness and subclinical sensory nerve involvement on EMG/NCS.

Treatment modalities used for patients with GBS include anticoagulation, IVIG, plasmapheresis, and high-dose corticosteroids. These therapies have no beneficial effect for poliomyelitis and can have significant morbidity (*9,10*). In areas where WNV transmission is occurring, clinicians should suspect acute WNV infection and conduct appropriate diagnostic tests in patients presenting with acute, painless, asymmetric weakness, particularly in the setting of an acute febrile illness with CSF pleocytosis. In addition, CSF analysis, thorough EMG/NCS, and neuroimaging should be strongly considered before initiating therapies for GBS or other peripheral inflammatory processes.

Continued surveillance and public health investigation is needed to fully define the scope of neurologic illnesses associated with WNV infection. Health-care providers who are aware of patients with acute WNV infection and AFP should contact their state or local health departments and CDC, telephone 404-639-4657; e-mail, zea3@cdc.gov.

References

1. Nash D, Mostashari F, Fine A, et al. The outbreak of West Nile virus infection in the New York City area in 1999. N Engl J Med 2001; 344:1807–14.
2. Weiss D, Carr D, Kellachan J, et al. Clinical findings of West Nile virus infection in hospitalized patients, New York and New Jersey, 2000. Emerg Infect Dis 2001;7:654–7.
3. Asnis D, Conetta R, Teixeria A, Waldman G, Sampson B. The West Nile virus outbreak of 1999 in New York; the Flushing Hospital experience. Clin Infect Dis 2000; 30:413–18.
4. Ohry A, Karpin H, Yoeli D, Lazari A, Lerman Y. West Nile virus myelitis. Spinal Cord 2001;39:662–3.
5. Solomon T, Kneen R, Dung N, et al. Poliomyelitis-like illness due to Japanese encephalitis virus. Lancet 1998;351:1094–7.
6. Manuelidis E. Neuropathology of experimental West Nile infection in monkeys. J Neuropathol Exp Neurol 1956;15:448–60.
7. Gorson K, Ropper A. Nonpoliovirus poliomyelitis simulating Guillain-Barre Syndrome. Arch Neurol 2001;58:1460–4.

8. Visser L, Van der Meche F, Van Doorn P, et al. Guillain-Barre syndrome without sensory loss (acute motor neuronopathy): a subgroup with specific clinical, electrodiagnostic and laboratory features. Brain 1995;118:841–7.
9. Norda R, Berseus O, Stemayr B. Adverse events and problems in therapeutic hemapheresis: a report from the Swedish registry. Transfus Apheresis Sci 2001;25:33–41.
10. Stangel M, Muller M, Marx P. Adverse events during treatment with high-dose intravenous immunoglobulins for neurological disorders. Eur Neurol 1998;40:173–4.

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Human Rabies — Tennessee, 2002

On August 31, 2002, a boy aged 13 years residing in Franklin County, Tennessee, died from rabies encephalitis caused by a rabies virus variant associated with silver-haired and eastern pipistrelle bats. This report summarizes the investigation by the Tennessee Department of Health (TDH). Persons should avoid direct contact with bats, other wildlife, and stray or ill domestic animals; however, if direct contact with bats has occurred, exposed persons should see their health-care provider, and the exposure should be reported to local public health officials.

On August 21, the patient complained of headache and neck pain. The next day, he experienced right arm numbness and weakness and a temperature of 100° F (37.8° C). On August 24, the patient was taken to a local hospital emergency department (ED) because of these symptoms and diplopia and was discharged home with a diagnosis of "muscle strain." On August 25, he again sought medical care at the local hospital ED. Symptoms at this time included fever of 102.0° F (39.0° C), right arm weakness, slurred speech, diplopia, nuchal rigidity, and dysphagia. The peripheral white blood cell (WBC) count was 10,000/μL (normal: 4.3–11.0/μL) with 83% lymphocytes. Laboratory results from the cerebrospinal fluid (CSF) revealed a WBC count of 220/mL (normal: 0–7/mL) with 80% lymphocytes, a protein concentration of 96 mg/dL (normal: 5–40 mg/dL), and a glucose concentration of 57 mg/dL (normal: 40–80 mg/dL). A computerized tomography scan of the head revealed no focal lesions. The patient was transferred to a regional children's hospital.

On August 26, the patient had difficulty breathing because of decreased mental status and hypersalivation. He was intubated, mechanically ventilated, and sedated because of agitation. Rabies was suspected on the basis of focal neurologic symptoms and hypersalivation, and TDH was notified. The patient's mental status deteriorated rapidly, and by the next morning, he was unresponsive and no longer required sedation. On August 31, the patient was pronounced brain dead, support was withdrawn, and the patient died.

Patient samples, including serum, CSF, saliva, and a nuchal skin biopsy, were collected and sent to CDC on August 27. No rabies virus–specific antibodies were detected in the serum and CSF samples by the indirect fluorescent antibody test. The nuchal skin biopsy was negative for rabies virus antigen by the direct fluorescent antibody test. Additional samples of serum, CSF, and saliva were sent to CDC on August 29. Rabies virus–specific antibody was detected in both the serum and CSF on August 30. The nuchal skin biopsy and saliva from August 29 were positive for rabies virus RNA by reverse transcription polymerase chain reaction. The virus was identified by genetic sequence analysis as a variant associated with silver-haired and eastern pipistrelle bats.

The patient's family had several pets, including cats, dogs, and horses, none of which had been ill. The parents reported that the patient had found a bat on the ground during the day at a nearby lake on approximately July 1 and brought it home. No other family members handled the bat, which was released the same day. The patient never reported being bitten by the bat, but at the time of the investigation the patient could not be asked directly. The family was unaware of any animal bite, and the patient never sought medical counseling or care related to the bat exposure. The family was unaware that bats might be rabid and can transmit rabies virus to humans.

Four household members and one other family member received postexposure prophylaxis (PEP) for rabies because of possible exposure to the virus through contact with the patient's saliva. In addition, 18 health-care workers who had contact with the patient received PEP.

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Editorial Note: This report describes a case of human rabies occurring in Franklin County, Tennessee, caused by a rabies virus variant associated with silver-haired and eastern pipistrelle bats. Overall, rates of human rabies cases in the United States remain low, averaging three cases per year during the previous

decade (*1*). Since 1990, a total of 26 (74%) of the 35 human rabies deaths in the United States have been associated with bat-variant rabies viruses (*2*). This is a marked contrast with human rabies cases in Asia, Africa, and South America and with human rabies cases in the United States during the first half of the 20th century, in which canine-variant rabies predominate. It is unclear whether bat-variant human rabies virus cases have increased over time or whether more focused surveillance efforts have detected bat-variant rabies more effectively.

Issues of transmission and exposure are more complicated in bat-variant rabies than in terrestrial carnivore–variant rabies. Of the 26 human cases of bat-variant rabies in the United States since 1990, only two had known animal bites. Possible reasons for the cryptogenic nature of transmission of bat-variant rabies include 1) lack of knowledge by the general public that bats might be rabid and can transmit the virus to humans; 2) limited pain and injury inflicted by bites from the relatively small jaws and teeth of bats; and 3) viral mechanisms that might increase virulence, including increased epithelial cell tropism and muted antigenic response associated with silver-haired/eastern pipistrelle bat–variant rabies virus (*3*). Because the majority of human cases of bat-variant rabies lack a history of a known bite, PEP not only is indicated in the setting of a recognized bite but also might be considered in situations in which there is a reasonable possibility that a bite has occurred. The Advisory Committee on Immunization Practices (ACIP) has outlined specific bat exposure scenarios for which PEP should or should not be recommended (*4*). Experienced emergency-medicine physicians, infectious disease consultants, and public health officials can provide advice on using PEP for persons with complicated exposure histories.

Bat rabies has been documented throughout the continental United States. Prevention of human cases of bat-variant rabies is complicated by the cryptogenic nature of many exposures. However, certain prevention guidelines should be followed. The public should be informed that bats carry the rabies virus. Unvaccinated or untrained persons should not handle bats unless necessary. If necessary, protective gloves and safety precautions should be used. Bats are not appropriate as pets. Bats should be excluded from buildings and other structures in close proximity to humans. In cases of known or possible exposure to a bat, timely submission of the bat to public health officials facilitates testing for the presence of rabies virus, helps to ensure rapid PEP when indicated, and minimizes the unnecessary use of an expensive therapy.

References

1. Krebs JW, Mondul AM, Rupprecht CE, Childs JE. Rabies surveillance in the United States during 2000. J Am Vet Med Assoc 2001;219:1687–99.
2. Messenger SL, Smith JS, Rupprecht CE. Emerging epidemiology of bat-associated cryptic cases of rabies in the United States. Clin Infect Dis 2002;35:738–47.
3. Dietzschold B, Morimoto K, Hooper DC, et al. Genotypic and phenotypic diversity of rabies virus variants involved in human rabies: implications for postexposure prophylaxis. J Hum Virol 2000;3:50–7.
4. CDC. Human rabies prevention—United States, 1999. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1999;48(No. RR-1).

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Carbon-Monoxide Poisoning Resulting from Exposure to Ski-Boat Exhaust — Georgia, June 2002

Carbon monoxide (CO) is an odorless, colorless gas produced from the incomplete combustion of carbon-based fuels such as gasoline or wood. In the United States, CO poisoning causes approximately 500 unintentional deaths each year (*1*). Although CO poisonings often have been reported to occur in enclosed and semi-enclosed environments (*2*), they can also occur in open-air environments (*3,4*). This report describes two related cases of CO poisoning that occurred in children who were participating in recreational activities on a ski boat. Recreational boaters should be aware of the dangers of open-air CO poisoning, and engineering solutions are needed to reduce the amount of CO in boat exhaust.

On June 1, 2002, a family of two adults and three children (two boys aged 4 and 12 years and a girl aged 2 years) and three friends went to a lake in Georgia to water ski. The ski boat was placed in an idling position while one parent put on a ski vest. During this time, the girl climbed over the back of the boat onto the swim platform (a wooden platform attached to the stern a few inches above the surface of the water) and lay in a prone position to push back and kick the water. In <1 minute, she became unconscious and unresponsive.

The girl's father, a family physician, observed that her pupils were constricted and her jaw was firmly clenched. She had a pulse but no chest movement. He performed rescue breathing; after 15–20 assisted ventilations, the child resumed unassisted breathing. Local emergency medical services (EMS) personnel were notified. Approximately 35 minutes later, EMS personnel arrived and started the child on

100% oxygen through a nonrebreather mask and transported the child to the local hospital. Nearly 3 hours after exposure, the child's carboxyhemoglobin (COHb) level was 14.3% (normal: <5.0%). Back calculations of COHb levels estimated that her COHb level was 50%–57% immediately after exposure on the swim platform.

During the initial resuscitation of the girl, her youngest brother was removed from the swim platform and watched by friends during his sister's transport to the hospital. Several hours after being removed from the water, he complained of severe headache, vomited, and fell asleep. He was transported to the hospital for evaluation. Approximately 4 hours after exposure, his COHb level was 10.1%. Back calculations of COHb levels estimated that the boy's COHb level was 18%–21% immediately after exposure. Both children were transported to another hospital, admitted to the pediatric intensive care unit, and treated with 100% oxygen. They were discharged the following day.

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Editorial Note: Open-air CO-related morbidity and mortality has been reported to occur with exposure to exhaust from gasoline-powered electricity generators on houseboats (*3*). However, this report describes CO poisoning resulting from direct exposure to CO in the exhaust of a ski boat. Ambient CO concentrations have been measured as high as 27,000 parts per million (ppm) in the stern of boats involved in CO-poisoning fatalities (*5*). In comparison, the World Health Organization has set a ceiling limit on a person's exposure to CO at 87 ppm during a 15-minute interval (*6*). Although the introduction of the catalytic converter to automobiles reduced CO concentrations in automobile exhaust by >90% (*7*), emissions-control devices have not been introduced to the propulsion engines of recreational boats.

Since 1990, a case listing compiled by an interagency working group consisting of the U.S. Department of the Interior, National Park Service, CDC's National Institute for Occupational Safety and Health, and the U.S. Coast Guard has documented 17 fatalities and 37 nonfatal poisonings on U.S. waters resulting from exposure to the propulsion engine exhaust of ski boats and cabin cruisers (*5*). Although many poisoning victims were exposed while on or near the swim platform, several fatalities also occurred among persons seated in the stern of the boat. This case listing was compiled from media reports and probably underrepresents the national burden of these incidents. In addition, because COHb measurements are obtained infrequently from victims of unwitnessed drownings (*8*), the actual number of drownings resulting from CO poisoning remains unknown.

On inhalation, CO binds to hemoglobin with a binding affinity 200–270 times greater than that of oxygen. At COHb concentrations of 10%–20%, symptoms of CO poisoning might resemble those of motion sickness or heat exhaustion and can include headache, nausea, dizziness, and vomiting. Although seizures, coma, and death might occur at COHb concentrations >30% (*9*), COHb concentrations of >50% have been found after minutes of outdoor exposure to boat exhaust (*5*). Health-care providers should consider immediate COHb measurements any time a drowning occurs near a boat or boat occupants present with signs and symptoms consistent with CO poisoning.

Recreational boaters should be aware that boat exhaust can flow back into the rear of the boat and that CO in the exhaust is undetectable because it is odorless and colorless. In addition, they should avoid swimming or body surfing near the exhaust system while the boat or generator is running. Studies of CO concentrations in the air around boats and of COHb levels in recreational boaters are needed to determine the extent of boat-related CO poisonings, and public health campaigns to warn of the danger of boat-related CO poisonings require further evaluation. The use of emissions-control devices in recreational boats can reduce CO emissions and the risk for CO poisoning.

References

1. CDC. Carbon monoxide poisoning: what's the problem? Available at http://www.cdc.gov/nceh/airpollution/carbonmonoxide/cofaq.htm.
2. CDC. Unintentional carbon monoxide poisonings in residential settings—Connecticut, November 1993–March 1994. MMWR 1995;44:765–7.
3. CDC. Houseboat-associated carbon monoxide poisonings on Lake Powell—Arizona and Utah, 2000. MMWR 2001;49:1105–7.
4. CDC. Outdoor carbon monoxide poisoning attributed to tractor exhaust—Kentucky, 1997. MMWR 1997;46:1224–7.
5. U.S. Department of the Interior. Boat-related carbon monoxide poisonings on U.S. waters. Available at http://safetynet.smis.doi.gov/cohouseboats.htm.
6. World Health Organization. Environmental Health Criteria 213: Carbon Monoxide. 2nd ed. Geneva, Switzerland: World Health Organization, 1999.
7. Shelef M. Unanticipated benefits of automotive emission control: reduction in fatalities by motor vehicle exhaust gas. Sci Total Environ 1994;146:93–101.
8. CDC. Review of national park service emergency medical records to identify carbon monoxide poisonings at Lake Mead National Recreation Area. Washington, DC: U.S. Department of Health and Human Services, CDC, National Institute for Occupational Safety and Health, 2000; NIOSH report no. HETA 2000-0400.
9. Viccellio P, Bania T, eds. Emergency toxicology. 2nd ed. Philadelphia, Pennsylvania: Lippincott-Raven, 1998.

Progress Toward Poliomyelitis Eradication — India, Bangladesh, and Nepal, January 2001–June 2002

Since the World Health Assembly resolved in May 1988 to eradicate poliomyelitis, the estimated incidence of polio has decreased >99%, and three World Health Organization (WHO) regions (American, Western Pacific, and European) have been certified polio free (*1*). Member countries of the South-East Asia Region (SEAR)* of WHO began accelerating polio eradication activities in 1994 and since then have made substantial progress toward that goal (*2*). By January 2001, indigenous wild poliovirus transmission in SEAR was limited to northern India, with ongoing poliovirus transmission posing a continuing threat to Bangladesh and Nepal. This report summarizes progress towards polio eradication in India, Bangladesh, and Nepal during January 2001–June 2002 and highlights the remaining challenges to eradicating polio in these countries.

Routine Immunization

According to official government estimates, 70% of infants aged <1 year in India, 66% in Bangladesh, and 92% in Nepal received 3 doses of oral poliovirus vaccine (OPV) during 2001. National aggregate data might not reflect substantial in-country variation and are not necessarily verified by accurate surveys.

Supplementary Immunization Activities

During 2001, National Immunization Days (NIDs)† were conducted in India, Bangladesh, and Nepal (total estimated 2001 population: 1 billion, 129 million, and 24 million persons, respectively). During December 2001–March 2002, the three countries conducted two rounds of synchronized NIDs. Since 1999, these supplementary immunization activities (SIAs) have been intensified through house-to-house vaccination after 1 day of fixed-site activities. During 2001, in addition to NIDs, each country conducted Subnational Immunization Days (SNIDs)§ including 1) one round during October in four high-risk states in India and in parts of four other states coordinated with four bordering districts of Nepal, 2) a one-round multiantigen campaign during August for high-risk districts in Bangladesh targeting 15% of children aged <5 years, and 3) two rounds in Nepal during April–May in the Terai region bordering India and in the Kathmand Valley.

During 2001, in response to the detection of wild poliovirus in India, 17 mop-up¶ vaccination campaigns were conducted covering 48 million children aged <5 years. For 2002, a total of 61 mop-up campaigns are planned targeting 29 million children aged <5 years; as of June, 15 have been completed covering 9.8 million children aged <5 years. Selected high-risk districts in northern states of India conducted an additional two rounds of house-to-house vaccination as a preemptive measure during spring 2001 (covering 34 million children aged <5 years) and spring 2002 (covering 8.9 million children aged <5 years).

Acute Flaccid Paralysis Surveillance

Acute Flaccid Paralysis (AFP) surveillance in India, Bangladesh, and Nepal is facilitated through a network of surveillance medical officers (SMOs) who receive special training and are responsible for assisting the local health authorities in a defined area. As of June 2002, India had 239 SMOs, Bangladesh had 33, and Nepal had 14. This system has been supported in Bangladesh and Nepal by Stop Transmission of Polio (STOP) teams**.

Since 2000, India, Bangladesh, and Nepal have exceeded the WHO-established target for a nonpolio AFP rate indicative of sensitive surveillance (i.e., ≥1 per 100,000 population aged <15 years) and met the WHO target measure of timeliness and completeness of stool specimen collection (i.e., ≥80%) (Table). As of June 2002, a total of 10 Indian states (accounting for 15% [approximately 151 million persons] of the country's total population) had nonpolio AFP rates of <1 per 100,000 population aged <15 years. Six Indian states (accounting for 8% [approximately 80 million persons] of the country's population) had inadequate stool specimen collection rates (i.e., <80%). During 2001, the nonpolio enterovirus isolation rate (target: ≥10%), a marker of laboratory performance and the integrity of the reverse cold chain for specimens, was 10%–30% in different laboratories (total: eight laboratories) of India, 29% in Bangladesh, and 29% in Nepal.

Wild Poliovirus Incidence

Since the last wild poliovirus positive cases occurred in Bangladesh (August 2000) and Nepal (November 2000), India has been the only country in SEAR with indigenous

*Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, and Thailand.

†Nationwide mass campaigns during a short period (days to weeks) in which 2 doses of OPV are administered to all children (usually aged <5 years), regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

§Mass campaigns same as NIDs but limited to parts of a country.

¶In India, mopping-up activities are mass campaigns in selected areas conducted in response to isolation of wild poliovirus, with emphasis on door-to-door vaccination.

**Groups of international health-care professionals deployed to a local area for 3 months to assist health ministry staff.

TABLE. Number of reported cases of acute flaccid paralysis (AFP), nonpolio AFP rates, and confirmed poliomyelitis cases, by country — India, Bangladesh, and Nepal, January 2001–June 2002*

Country	AFP cases reported		Nonpolio AFP rate†		% of persons with AFP with adequate specimens§		Confirmed wild poliovirus cases¶		
	2001	2002	2001	2002	2001	2002	2001	January–June 2001	January–June 2002
India	7,470	4,092	1.88	1.28	84	83	268	31	159
Bangladesh	1,288	788	2.42	2.18	80	88	0	0	0
Nepal	175	109	1.83	1.61	83	89	0	0	0

* Data as of July 29, 2002.
† Cases per 100,000 population aged <15 years (rates for 2002 are annualized).
§ Percentage with two adequate stool specimens, collected ≥24 hours apart, within 14 days of onset of paralysis.
¶ As of January 2001, all countries are using the virologic classification scheme.

transmission. India reported 265 wild poliovirus cases in 2000. Of the 268 cases reported in 2001, a total of 209 (78%) cases were type 1 (P1), 56 (21%) were type 3 (P3), and three (1%) were mixtures of P1 and P3. During January–June 2002, a total of 159 wild virus isolates were identified (131 [82%] P1 and 28 [18%] P3) (Figure) compared with 31 isolates reported during January–June 2001.

During 2000–2001, the number of circulating poliovirus genetic lineages decreased for P1 (from eight to three) and P3 (from four to three); all cases observed during 2001 were attributable to one of these six remaining lineages, and no new lineages were identified. Surveillance data indicate that two northern states, Uttar Pradesh (UP) and Bihar, are the remaining endemic foci responsible for continuing circulation in India. Although wild poliovirus was isolated from a total of 63 districts in 11 Indian states in 2001, the majority were reported from these two states: 216 (81%) cases in UP and 27 (10%) in Bihar. As of June 2002, of the 159 cases reported from 50 districts in eight states, 135 (85%) were reported from UP and nine (6%) from a small cluster in Bihar. In UP, a large outbreak related to a single P1 strain has spread to new areas in central and eastern UP; P3 lineages were detected only in western UP. All cases identified in the other six states belong to P1 lineages indigenous to UP and Bihar and are considered importations from these areas.

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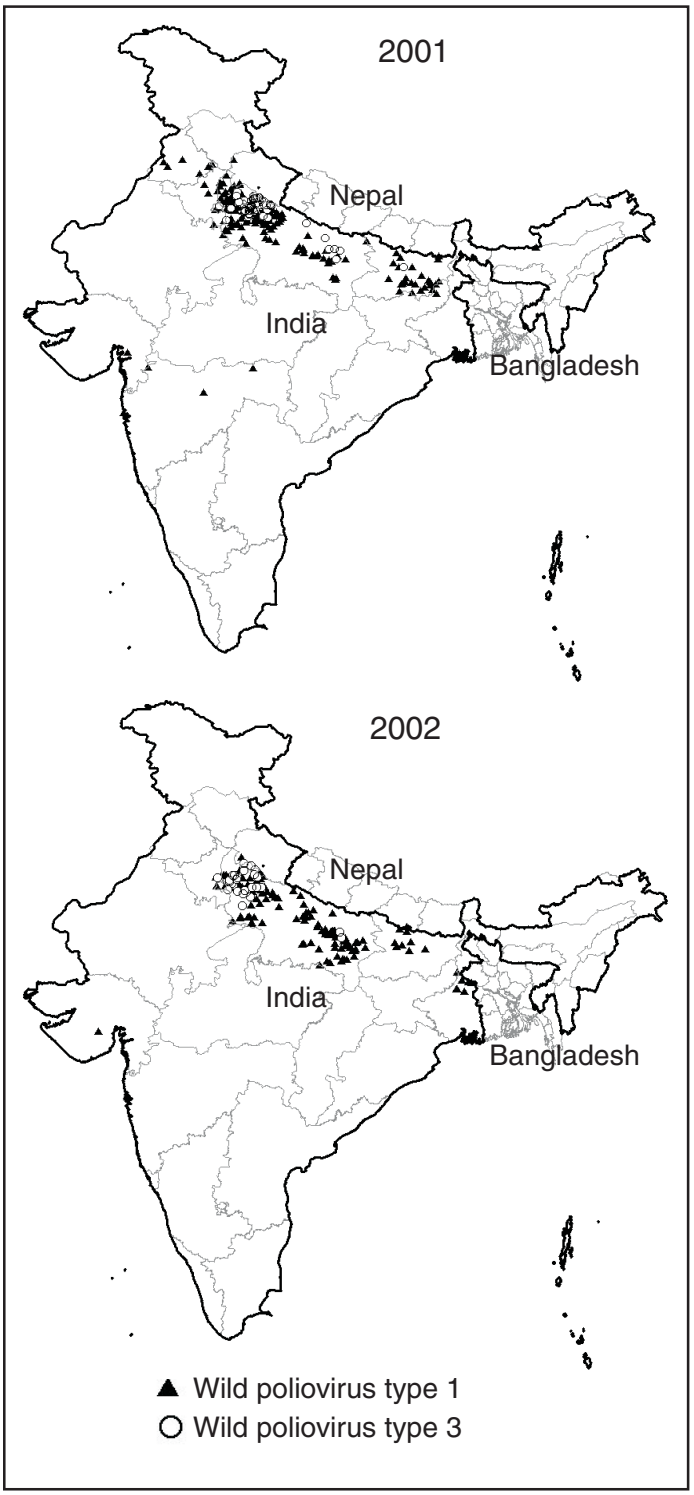
Editorial Note: Since January 2001, substantial progress has been made toward polio eradication in SEAR with indigenous circulation of poliovirus now limited to the northern Indian states of UP and Bihar. Two countries in which polio was endemic recently, Bangladesh and Nepal, have remained polio-free. Transmission of P2 appears to have been interrupted globally, with the last case occurring in UP in October 1999. The SMO network has played a vital role in the achievement and maintenance of high-quality AFP surveillance levels in all three countries.

Despite this progress, continuing transmission during 2002 in northern India poses a challenge. Circulation of P3 in 2002 has been restricted primarily to western UP. The geographic range of P1 circulation in Bihar has diminished since 2001; however, the spread of wild poliovirus to districts of UP without endemic transmission and to other states in India indicates the urgency of implementing SIAs with improved quality. The principal reasons for failure to vaccinate children during vaccination campaigns are 1) vaccination teams not identifying all eligible children, 2) poor or nonexistent supervision in many areas, and 3) poor participation of families in underserved communities. High population density, poor sanitation and hygiene, and low routine vaccination coverage in these areas greatly favor transmission of wild poliovirus, and high birth rates leave large cohorts of children unvaccinated.

The basic strategies of AFP surveillance and intensive OPV campaigns to supplement routine vaccination programs have been proven successful in eradicating polio in nearly all states of India, the other nine countries of SEAR, and other countries worldwide (*3*). To interrupt transmission in northern India, innovative measures are needed to increase community involvement and improve the quality of SIAs. On the basis of an analysis of standardized independent observer checklists and program management reviews, many new approaches were implemented in India during January 2001–June 2002. These included 1) deploying follow-up vaccinator teams to find and vaccinate children missed by primary teams; 2) increasing the number of SMOs working in high-risk districts; 3) changing the ratio of supervisors to vaccination teams from one to five during SIAs to one to three in selected high-risk areas; 4) creating a network of social mobilization persons at the district, block, and village levels to generate demand and promote acceptance of vaccination; 5) retraining vaccinators and supervisors to improve interpersonal communication skills; 6) forming a National Operations Group comprising the Ministry of Health and national and international partners to facilitate rapid implementation of strategic decisions; and

FIGURE. Confirmed cases of poliomyelitis*, by type of wild poliovirus isolate — India, January 2001–June 2002†



* n=268 for 2001, including three wild poliovirus mixture (P1 and P3) and 159 for January–June 2002.
† Data as of July 29, 2002.

7) increasing the number of field monitors and more extensive analysis of quality indicators.

India will continue to monitor the impact of these interventions during SNIDs that are planned to cover UP, Bihar, and parts of five other high-risk states†† during September and November 2002. In response to the detection of polio cases in border districts of India, Bangladesh and Nepal are intensifying AFP surveillance and SIAs in addition to ensuring high routine OPV3 coverage in these areas. Bangladesh expanded its SNIDs during August–September 2002 to include all districts neighboring India. Nepal is planning an aggressive OPV campaign in the border area with India during October–November 2002. The transmission of poliovirus in border districts highlights the importance of maintaining close communication and cooperation across borders to minimize the risk for re-introduction of wild poliovirus to areas that have interrupted transmission.

Progress towards polio eradication in India, Bangladesh, and Nepal is the result of substantial investments made by these countries and the international polio eradication partnership. The eradication initiative in SEAR is close to achieving its goal, and all groups involved should intensify their efforts to ensure success. This will require continuing political commitment and effective acceleration of strategies to reach every child during the planned immunization rounds, particularly in northern India.

References

1. CDC. Progress toward global eradication of poliomyelitis, 2001. MMWR 2002;51:253–6.
2. CDC. Progress toward poliomyelitis eradication—South-East Asia, January 2000–June 2001. MMWR 2001;50:738–42,751.
3. World Health Organization. Global polio eradication initiative: strategic plan 2001–2005. Geneva, Switzerland: World Health Organization, 2000.

†† Delhi, eastern part of Haryana bordering UP, northern Jharkhand bordering Bihar, part of northern West Bengal, and part of Maharashtra including Mumbai and parts of two adjoining districts.

Update: Investigations of West Nile Virus Infections in Recipients of Organ Transplantation and Blood Transfusion

An investigation involving CDC, the Food and Drug Administration (FDA), the Health Resources and Services Administration (HRSA), the Georgia Division of Public Health, and the Florida Department of Health identified West Nile virus (WNV)–associated illnesses in four recipients of organs from the same donor (*1,2*). Although the transplanted

organs were the source of infection for the four organ recipients, the source of the organ donor's infection remains unknown; an investigation of the numerous transfusions received by the organ donor is ongoing.

Since the report of these cases, CDC has been informed of other patients with suspected WNV-associated meningoencephalitis (WNME) after receiving blood products within 4 weeks of illness onset. One of these patients also received an organ transplant. All of these patients resided in areas with epidemic and epizootic WNV activity; investigations are ongoing to determine whether transfusion or transplantation was the source of WNV transmission. This report summarizes two investigations of recipients of organs and blood products, four investigations of transfusion recipients, and one investigation of a WNV-seronegative person with fever and encephalopathy who received a potentially contaminated unit of blood.

Investigation 1. On August 1, four organs were recovered from an organ donor and were transplanted into four persons (*1,2*). WNME was confirmed in three recipients and WNV fever in one recipient (Table). Illness began 7–17 days after transplantation. Although a sample of the donor's plasma collected at the time of the organ recovery was positive for WNV by kinetic quantitative PCR assay (TaqMan®), the source of the organ donor's infection is unknown. During treatment for injuries, which eventually were fatal, the organ donor received blood products from 63 unique donors. Donor follow-up has been initiated by the blood collection agency. Of 41 donors for whom retention segments* were available, 22 tested negative for WNV by TaqMan® and serology, and 19 tested negative for WNV by TaqMan®; serology testing on these 19 segments is in progress. In addition to the organ donor, 35 other persons received components derived from these 63 donors; follow-up of these recipients is pending. Untransfused components are being returned to the blood collection agency. One has tested negative for WNV by TaqMan®; testing on the others is under way.

Investigation 2. A man aged 47 years received a liver transplant on August 14 and during the next 7 days received 39 units of blood products. After discharge on August 24, he was readmitted to the hospital on September 3 with fever and subsequently developed encephalopathy. A lumbar puncture revealed elevated protein, a lymphocytic pleocytosis, and WNV IgM antibody; the patient recovered and was discharged. Before organ recovery, the donor received two units of albumin and one unit of fresh frozen plasma (FFP). In addition to the liver, two kidneys were recovered and were transplanted into one recipient, whose clinical status is being investigated.

Investigation 3. During July 27–28, a woman aged 24 years received 18 units of blood products (12 units of packed red blood cells [PRBC] and six units of FFP) because of postpartum hemorrhage. On August 1, she was discharged. The patient developed worsening headache and fever and 22 days later was readmitted to the hospital with meningitis. A lumbar puncture revealed a lymphocytic pleocytosis; serum and CSF samples were positive for WNV by IgM. Retention segments were available from 15 of the 18 donations administered in July; three (20%) were positive for WNV by

*Blood samples from tubing that had been attached to the original donor collection bag.

TABLE. Persons included in seven investigations of possible transfusion- and/or transplantation-related West Nile virus (WNV) infections

Investigation	Patient	Age (yrs)	Sex	Clinical diagnosis*	Status	Identified WNV exposure
1	Organ donor	≤20	Female	West Nile viremia	Fatal; not related to WNV	Under investigation
	Kidney recipient	38	Male	WNME	Fatal due to WNV	Organ from WNV-infected donor
	Kidney recipient	31	Female	WNME	Hospitalized	Organ from WNV-infected donor
	Liver recipient	71	Female	WNF	Recovered	Organ from WNV-infected donor
	Heart recipient	63	Male	WNME	Hospitalized	Organ from WNV-infected donor
2	Liver recipient	47	Male	WNME	Hospitalized	Under investigation
3	Transfusion recipient	24	Female	WNV-associated meningitis	Recovered	WNV-containing blood product
4	Transfusion recipient	72	Male	WNME	Recovered	Under investigation
5	Transfusion recipient	78	Female	WNME	Hospitalized	Under investigation
6	Transfusion recipient	77	Male	WNME	Fatal due to WNV	Under investigation
7	Transfusion recipient	55	Female	Unspecified encephalitis†	No evidence of WNV infection	WNV TaqMan®-positive blood product

* WNME=WNV-associated meningoencephalitis; WNF=WNV fever.
† Acute-phase (collected 4 days after illness onset) and convalescent-phase (collected 40 days after illness onset) serum samples negative for WNV by IgM.

TaqMan®. Of three components derived from a donation associated with these positive segments, one unit of FFP was retrieved, tested, and found to be positive for WNV by TaqMan®; viable WNV also was isolated from this plasma. The donor of this blood component sought medical care 4 days after donation because of fever, chills, and headache; follow-up WNV-antibody testing of this donor is in progress.

Investigation 4. A man aged 72 years with a history of myelodysplasia and frequent blood transfusions received four units of PRBC during July 18–August 7. The patient was admitted on August 8 with generalized weakness and fever. A serum sample obtained 2 days later was positive for WNV by IgM. No retention segments were available. Of five components derived from these four donations, four units of FFP were retrieved, and testing is in progress. One unit of platelets was transfused into another recipient, and follow-up is pending.

Investigation 5. On July 17, a woman aged 78 years received two units of PRBC 1 day after a surgical amputation. Three days after receiving the transfusions, she developed fever, altered mental status, and seizures. Acute- and convalescent-phase serum samples and CSF were positive for WNV by IgM. Retention segments associated with both units of PRBC were negative for WNV by TaqMan® and by IgM. Follow-up of the two donors and a patient who received platelets from one of these donors is in progress.

Investigation 6. During July 26–August 23, a man aged 77 years who required frequent blood transfusions for myelodysplasia received eight units of blood products (four units of PRBC and four units of single-donor platelets). On August 23, the patient developed fever and headache. Serum and CSF samples were positive for WNV-specific IgM. The patient had progressive encephalopathy and died. Four retention segments were available for four of the eight donations; all were negative for WNV by TaqMan®. Follow-up is ongoing for three patients who received platelets from three of the eight donors. In addition, four units of plasma have been withdrawn and are being tested.

Investigation 7. On July 26, a woman aged 55 years received three units of PRBC after an orthopedic procedure. The following day, she developed fever and encephalopathy. Serum samples collected on the fourth and 40th days after illness onset were negative for WNV by IgM. Retention segments were available from all donations; two were negative for WNV by TaqMan®. One was positive for WNV by TaqMan® but negative for WNV-specific IgM; serum collected from the donor 69 days after donation was positive for WNV-specific IgM, reflecting WNV seroconversion. The donor denied fever, headache, or other symptoms during the 3 weeks before or after the donation. A patient undergoing cardiac surgery received a unit of FFP from this donation. A serum sample collected from this patient was negative for WNV by IgM. Follow-up serum samples are being collected for the index case and for the recipient of the FFP.

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Editorial Note: CDC, FDA, HRSA, blood collection agencies, and state and local health departments continue to investigate possible transmission of WNV through blood transfusion or organ transplantation. The initial investigation demonstrated transmission from a WNV-viremic organ donor to four recipients of those organs. In another investigation (Investigation 3), the isolation of live WNV from a unit of FFP indicates that the virus can survive in some blood components and probably can be transmitted by transfusion. Although this case is highly suspicious for transfusion-associated transmission, this patient lived in an area where WNV was active, and the exact means of WNV acquisition cannot be determined. In contrast, the preliminary results of another case investigation (Investigation 7) indicate that not all recipients of potentially WNV-contaminated units (i.e., those that are positive for WNV by TaqMan®) will become infected with WNV.

The Public Health Service (PHS) recommends several precautionary measures to reduce the possible risk for WNV transmission by organ transplantation or blood transfusion. Patients with WNV infection who have received blood transfusions or organs within 4 weeks preceding symptom onset should be reported to CDC through local public health authorities to initiate an investigation. Serum or tissue samples should be retained for later studies. In addition, patients with WNV infection who have onset of symptoms within 1 week of blood

or organ donation should be reported. Prompt reporting of these persons will facilitate withdrawal of potentially infected blood components. HRSA has alerted organ transplant organizations about the potential for transplantation-associated WNV infection.

Tests for WNV suitable for routine blood donor screening are not available. However, FDA is working with public and private partners to facilitate development of such tests to ensure their availability if screening is necessary. FDA is developing additional guidance for blood centers to enhance reporting of post-donation illnesses suggestive of WNV infection and to determine when retrieval of recent blood collections from these donors is warranted.

Approximately 4.5 million persons receive blood or blood products annually. Although persons needing blood transfusions or organ transplants should be aware of the risk for WNV infection, the benefits of receiving needed transfusions or transplants outweigh the potential risk for WNV infection. In addition, blood donation poses no risk to the donor for acquiring WNV, and PHS encourages blood donation.

References

1. CDC. West Nile virus infection in organ donor and transplant recipients—Georgia and Florida, 2002. MMWR 2002;51:790.
2. CDC. Investigation of blood transfusion recipients with West Nile virus infections. MMWR 2002;51:823.

West Nile Virus Activity — United States, September 12–18, 2002, and Ohio, January 1–September 12, 2002

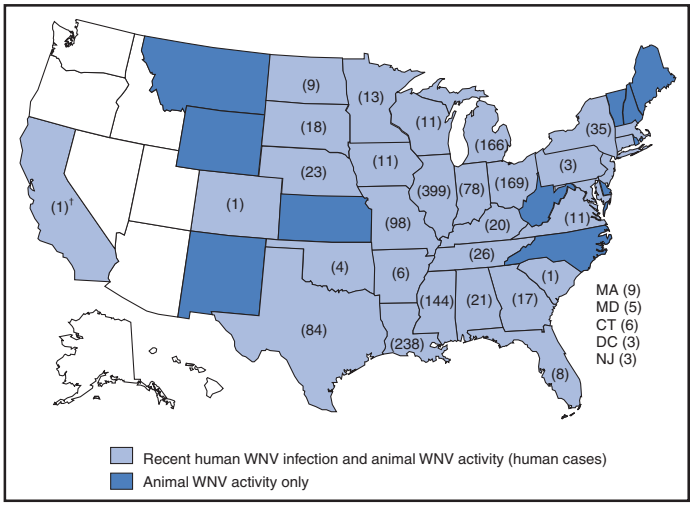
This report summarizes West Nile virus (WNV) surveillance data reported to CDC through ArboNET and by states and other jurisdictions as of 7:30 a.m. Mountain Daylight Time, September 18, 2002.

United States

During the reporting period of September 12–18, a total of 440 laboratory-positive human cases of WNV-associated illness were reported from Illinois (n=107), Ohio (n=76), Michigan (n=50), Indiana (n=36), Missouri (n=23), Mississippi (n=22), Texas (n=17), Louisiana (n=16), New York (n=13), Georgia (n=11), Iowa (n=10), Kentucky (n=eight), Nebraska (n=eight), Alabama (n=seven), Virginia (n=six), Minnesota (n=five), North Dakota (n=five), South Dakota (n=five), Connecticut (n=three), Tennessee (n=three), Florida (n=two), Massachusetts (n=two), Pennsylvania (n=two), Colorado (n=one), New Jersey (n=one), and Oklahoma (n=one). During this period, Colorado reported its first human WNV case ever. During the same period, WNV infections were reported in 525 dead crows, 509 other dead birds, 552 horses, and 399 mosquito pools.

During 2002, a total of 1,641 human cases with laboratory evidence of recent WNV infection have been reported from Illinois (n=399), Louisiana (n=238), Ohio (n=169), Michigan (n=166), Mississippi (n=144), Missouri (n=98), Texas (n=84), Indiana (n=78), New York (n=35), Tennessee (n=26), Nebraska (n=23), Alabama (n=21), Kentucky (n=20), South Dakota (n=18), Georgia (n=17), Minnesota (n=13), Iowa (n=11), Virginia (n=11), Wisconsin (n=11), Massachusetts (n=nine), North Dakota (n=nine), Florida (n=eight), Arkansas (n=six), Connecticut (n=six), Maryland (n=five), Oklahoma (n=four), the District of Columbia (n=three), New Jersey (n=three), Pennsylvania (n=three), California (n=one), Colorado (n=one), and South Carolina (n=one) (Figure 1). Among the 1,371 patients with available data, the median age was 55 years (range: 3 months–99 years); 731 (53%) were male, and the dates of illness onset ranged from June 10 to September 11. A total of 72 human deaths have been reported. The median age of decedents was 79 years (range: 42–99 years); 42 (58%) deaths were among men. In addition, 4,562 dead crows and 3,366 other dead birds with WNV infection were reported from 42 states, New York City, and the District of Columbia; 2,244 WNV infections in mammals (all equines) have been reported from 31 states (Alabama, Arkansas, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Minnesota, Mississippi, Missouri,

FIGURE 1. Areas reporting West Nile virus (WNV) activity — United States, 2002*



* As of 7:30 a.m. Mountain Daylight Time, September 18, 2002.
† California has reported human WNV activity only.

Montana, Nebraska, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, and Wyoming). During 2002, WNV seroconversions have been reported in 191 sentinel chicken flocks from Florida, Iowa, Nebraska, Pennsylvania, and New York City; 2,976 WNV-positive mosquito pools have been reported from 25 states (Alabama, Arkansas, Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Dakota, Texas, Vermont, and Virginia), New York City, and the District of Columbia.

Ohio

During January 1–September 12, 2002, the Ohio Department of Health (ODH) identified 133 persons with positive initial test results for WNV in cerebrospinal fluid or serum (IgM ELISA); three cases were laboratory confirmed at CDC by plaque reduction neutralization test. Seven cases were fatal.

The 133 patients had a median age of 61 years (range: 9–98 years); 71 (53%) were male. The median age for 29 patients with known diagnosis of either aseptic meningitis (17 cases), encephalitis (10 cases), meningo-encephalitis (one case) or acute flaccid paralysis (one case) was 52 years (range: 9–86 years); 14 (48%) were male. The median age of the seven decedents was 79 (range: 68–88 years) years; five (71%) were men. Onset of symptoms of WNV infection among reported patients occurred during July 27–September 8. All cases remain under investigation.

Human cases have occurred among residents of 20 counties (Figure 2), with 96 (72%) cases reported from the most populated county in Ohio, Cuyahoga County, which includes Cleveland with 32 cases. The attack rate during January 1–September 12 was 1.2 per 100,000 for the state population, 7.0 for Cuyahoga County, and 6.7 for Cleveland.

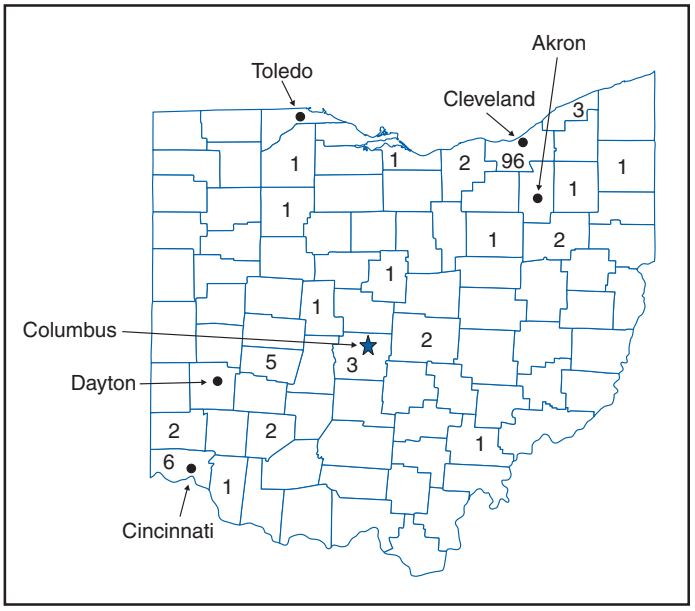
Of Ohio's 88 counties, 87 (99%) reported WNV activity in horses, birds, or mosquitoes. The first bird tested positive on May 19. Of the 1,643 dead birds tested, 855 (52%) have tested positive for WNV by polymerase chain reaction. Mosquito pools began testing positive on May 28. Through September 11, a total of 1,018 mosquito pools have tested positive, and 133 horses from 49 counties have tested laboratory positive. Public health authorities plan to continue surveillance for human and equine cases through October.

The Ohio WNV Work Group comprises representatives from the departments of Health, Agriculture, Environmental Protection, and Natural Resources and coordinates surveillance and response activities. Ohio has a program for technical support of public agencies performing mosquito-management services. The established partnership between the Ohio Mosquito Control Association, ODH, the Ohio Pest Control Association, the Ohio State University Extension, and local mosquito-control agencies provided training to persons with an interest in mosquito management. ODH helps local governments establish mosquito-management programs.

Ohio's prevention activities include risk communication and informing the public about how to avoid exposure through source reduction and personal protection. Pamphlets, fact sheets, and posters have been disseminated through local health departments. ODH also established the WNV Telephone Information Line to handle questions from the public. During August 1–September 12, a total of 3,884 phone calls were received.

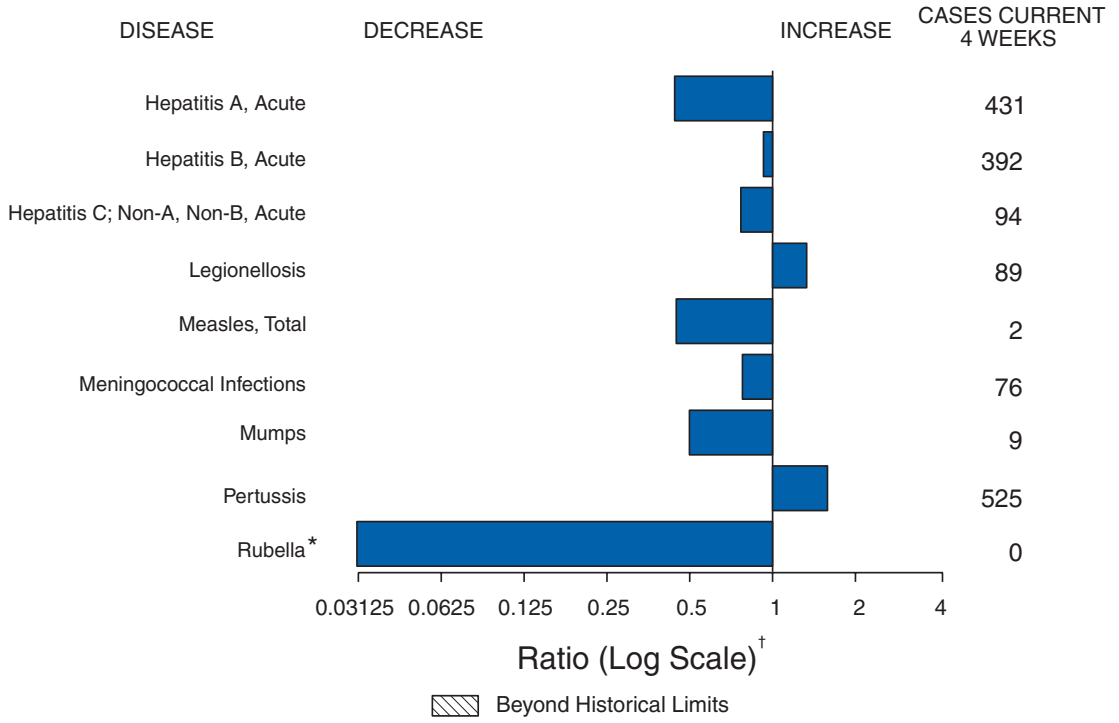
Additional information about WNV activity in Ohio is available at http://www.odh.state.oh.us. Additional information about WNV activity is available from CDC at http://www.cdc.gov/ncidod/dvbid/westnile/index.htm and http://www.cindi.usgs.gov/hazard/event/west_nile/west_nile.html.

FIGURE 2. Number of West Nile virus cases in humans*, by county — Ohio, January 1–September 12, 2002



* n=133.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals ending September 14, 2002, with historical data



* No rubella cases were reported for the current 4-week period yielding a ratio for week 37 of zero (0).
† Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary of provisional cases of selected notifiable diseases, United States, cumulative, week ending September 14, 2002 (37th Week)*

		Cum. 2002	Cum. 2001		Cum. 2002	Cum. 2001
Anthrax		2	1	Encephalitis: West Nile†	411	32
Botulism:	foodborne	11	33	Hansen disease (leprosy)†	56	50
	infant	42	68	Hantavirus pulmonary syndrome†	10	6
	other (wound & unspecified)	15	12	Hemolytic uremic syndrome, postdiarrheal†	144	119
Brucellosis†		55	94	HIV infection, pediatric†§	116	127
Chancroid		52	26	Plague	-	2
Cholera		5	4	Poliomyelitis, paralytic	-	-
Cyclosporiasis†		152	114	Psittacosis†	17	10
Diphtheria		1	2	Q fever†	26	18
Ehrlichiosis:	human granulocytic (HGE)†	233	156	Rabies, human	2	1
	human monocytic (HME)†	96	86	Streptococcal toxic-shock syndrome†	62	59
	other and unspecified	5	4	Tetanus	19	26
Encephalitis:	California serogroup viral†	50	64	Toxic-shock syndrome	80	89
	eastern equine†	2	6	Trichinosis	12	13
	Powassan†	-	-	Tularemia†	46	106
	St. Louis†	-	67	Yellow fever	1	-
	western equine†	-	-			

-:No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).
† Not notifiable in all states.
§ Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP). Last update July 28, 2002.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending September 14, 2002, and September 15, 2001 (37th Week)*

Reporting Area	AIDS		Chlamydia†		Cryptosporidiosis		*Escherichia coli, Enterohemorrhagic*			
							O157:H7		Shiga Toxin Positive, Serogroup non-O157	
	Cum. 2002§	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	24,713	26,945	532,912	542,575	1,691	2,662	2,257	2,123	104	101
NEW ENGLAND	1,011	981	18,699	16,974	121	104	182	190	26	31
Maine	23	26	1,129	914	9	13	27	24	5	-
N.H.	20	23	1,104	968	23	6	21	25	-	3
Vt.	8	11	611	435	23	27	5	11	1	1
Mass.	519	532	7,640	7,302	39	44	84	93	7	9
R.I.	71	70	1,931	2,062	14	3	9	9	-	-
Conn.	370	319	6,284	5,293	13	11	36	28	13	18
MID. ATLANTIC	5,619	6,909	60,383	58,932	201	226	158	149	-	-
Upstate N.Y.	404	1,042	11,773	9,386	71	71	119	91	-	-
N.Y. City	3,210	3,732	20,207	21,066	85	91	10	14	-	-
N.J.	925	1,153	7,506	10,221	8	12	29	44	-	-
Pa.	1,080	982	20,897	18,259	37	52	N	N	-	-
E.N. CENTRAL	2,494	1,909	90,732	99,637	411	1,277	532	548	11	6
Ohio	453	360	21,321	25,647	95	122	105	118	9	4
Ind.	347	223	11,324	10,895	27	61	43	59	-	-
Ill.	1,170	879	24,198	30,269	54	455	117	136	-	-
Mich.	398	328	22,987	21,269	76	124	95	68	2	2
Wis.	126	119	10,902	11,557	159	515	172	167	-	-
W.N. CENTRAL	421	572	30,055	27,628	271	335	349	342	17	28
Minn.	90	101	6,571	5,706	141	114	118	127	14	25
Iowa	54	65	3,647	3,320	32	66	86	60	-	-
Mo.	189	263	10,689	9,906	26	35	49	46	N	N
N. Dak.	1	2	682	720	6	9	3	13	-	1
S. Dak.	3	19	1,516	1,261	17	6	31	29	1	1
Nebr.	43	58	2,263	2,372	39	103	38	51	2	1
Kans.	41	64	4,687	4,343	10	2	24	16	-	-
S. ATLANTIC	7,537	8,169	101,119	104,546	231	267	198	166	30	20
Del.	131	184	1,860	1,992	2	3	4	3	-	1
Md.	1,066	1,083	10,720	10,499	16	31	18	20	-	-
D.C.	371	586	2,363	2,289	4	11	-	-	-	-
Va.	538	714	10,911	12,985	11	17	41	41	6	2
W. Va.	58	56	1,627	1,665	2	2	4	9	-	-
N.C.	555	549	17,285	15,754	26	20	31	35	-	-
S.C.	547	489	8,457	11,162	5	6	4	12	-	-
Ga.	1,160	930	20,333	22,331	101	114	49	23	10	9
Fla.	3,111	3,578	27,563	25,869	64	63	47	23	14	8
E.S. CENTRAL	1,128	1,257	34,042	35,066	94	38	77	105	-	-
Ky.	173	244	6,127	6,304	4	3	21	55	-	-
Tenn.	483	390	11,320	10,556	47	11	33	29	-	-
Ala.	197	308	9,112	9,721	37	12	16	13	-	-
Miss.	275	315	7,483	8,485	6	12	7	8	-	-
W.S. CENTRAL	2,696	2,782	74,337	75,888	27	97	51	146	-	-
Ark.	163	141	4,643	5,289	7	6	9	10	-	-
La.	693	588	13,451	12,921	4	7	1	7	-	-
Okla.	133	170	7,837	7,482	11	9	16	19	-	-
Tex.	1,707	1,883	48,406	50,196	5	75	25	110	-	-
MOUNTAIN	790	960	33,046	32,110	122	125	249	202	15	10
Mont.	8	14	1,529	1,406	4	9	20	13	-	-
Idaho	18	17	1,599	1,303	21	12	34	40	7	2
Wyo.	6	2	658	587	8	4	8	7	1	-
Colo.	157	211	9,807	9,120	44	35	73	74	3	5
N. Mex.	53	88	4,613	4,337	18	18	5	11	3	3
Ariz.	327	383	10,589	10,109	12	6	28	20	1	-
Utah	43	82	1,800	1,637	12	36	59	25	-	-
Nev.	178	163	2,451	3,611	3	5	22	12	-	-
PACIFIC	3,017	3,406	90,499	91,794	213	193	461	275	5	6
Wash.	302	361	10,086	9,572	37	U	103	65	-	-
Oreg.	216	134	4,797	5,152	28	33	169	44	5	6
Calif.	2,416	2,857	70,243	72,355	147	156	150	147	-	-
Alaska	17	16	2,467	1,911	-	1	6	4	-	-
Hawaii	66	38	2,906	2,804	1	3	33	15	-	-
Guam	2	9	-	286	-	-	N	N	-	-
P.R.	668	815	1,745	1,839	-	-	-	1	-	-
V.I.	66	2	98	119	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	2	U	132	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

† Chlamydia refers to genital infections caused by *C. trachomatis*.

§ Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention. Last update July 28, 2002.

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 14, 2002, and September 15, 2001 (37th Week)*

Reporting Area	*Escherichia coli, Enterohemorrhagic* Shiga Toxin Positive, Not Serogrouped		Giardiasis	Gonorrhea		*Haemophilus influenzae*, Invasive All Ages, All Serotypes		*Haemophilus influenzae*, Invasive Age <5 Years Serotype B	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	29	11	10,890	224,918	250,143	1,114	1,089	16	20
NEW ENGLAND	-	1	1,136	5,267	4,764	79	79	-	1
Maine	-	-	135	93	102	1	1	-	-
N.H.	-	-	31	86	123	7	4	-	-
Vt.	-	1	90	74	50	6	3	-	-
Mass.	-	-	568	2,331	2,240	40	37	-	1
R.I.	-	-	101	613	563	10	3	-	-
Conn.	-	-	211	2,070	1,686	15	31	-	-
MID. ATLANTIC	-	1	2,314	27,437	29,007	194	157	3	3
Upstate N.Y.	-	-	782	6,071	5,789	89	52	2	-
N.Y. City	-	-	898	8,260	8,860	45	40	-	-
N.J.	-	-	222	4,215	5,296	40	38	-	-
Pa.	-	1	412	8,891	9,062	20	27	1	3
E.N. CENTRAL	12	5	1,928	43,753	52,167	171	198	3	2
Ohio	11	5	618	11,750	14,119	63	53	-	1
Ind.	-	-	-	4,831	4,642	35	38	1	-
Ill.	-	-	425	13,027	16,769	56	70	-	-
Mich.	1	-	589	10,182	12,414	10	12	2	-
Wis.	-	-	296	3,963	4,223	7	25	-	1
W.N. CENTRAL	-	2	1,362	11,700	11,795	46	55	1	1
Minn.	-	-	535	1,981	1,810	32	30	1	-
Iowa	-	-	212	836	927	1	-	-	-
Mo.	N	N	330	6,041	6,071	10	16	-	-
N. Dak.	-	2	11	37	30	-	6	-	-
S. Dak.	-	-	48	179	200	-	-	-	-
Nebr.	-	-	116	707	854	-	2	-	1
Kans.	-	-	110	1,919	1,903	3	1	-	-
S. ATLANTIC	-	-	1,966	58,225	64,834	291	270	2	1
Del.	-	-	34	1,122	1,178	-	-	-	-
Md.	-	-	83	5,891	6,235	68	69	2	-
D.C.	-	-	29	1,946	2,060	-	-	-	-
Va.	-	-	191	6,513	7,743	24	20	-	-
W. Va.	-	-	35	661	463	13	14	-	1
N.C.	-	-	-	11,406	12,057	30	41	-	-
S.C.	-	-	72	5,095	8,035	9	4	-	-
Ga.	-	-	607	11,268	12,345	74	67	-	-
Fla.	-	-	915	14,323	14,718	73	55	-	-
E.S. CENTRAL	7	1	250	19,478	22,677	48	62	1	-
Ky.	7	1	-	2,582	2,476	4	2	-	-
Tenn.	-	-	111	6,513	7,102	25	32	-	-
Ala.	-	-	139	5,883	7,535	14	26	1	-
Miss.	-	-	-	4,500	5,564	5	2	-	-
W.S. CENTRAL	-	-	155	33,029	37,349	43	41	2	1
Ark.	-	-	107	2,706	3,291	2	-	-	-
La.	-	-	3	8,327	8,945	4	6	-	-
Okla.	-	-	45	3,353	3,428	32	34	-	-
Tex.	-	-	-	18,643	21,685	5	1	2	1
MOUNTAIN	10	1	1,093	6,994	7,371	138	119	2	7
Mont.	-	-	64	65	81	-	-	-	-
Idaho	-	-	83	58	56	2	1	-	-
Wyo.	-	-	21	43	51	1	1	-	-
Colo.	10	1	355	2,416	2,238	26	34	-	-
N. Mex.	-	-	124	927	691	21	17	-	1
Ariz.	-	-	143	2,572	2,794	64	50	1	4
Utah	-	-	207	173	129	15	5	-	-
Nev.	-	-	96	740	1,331	9	11	1	2
PACIFIC	-	-	686	19,035	20,179	104	108	2	4
Wash.	-	-	261	1,996	2,134	2	2	1	-
Oreg.	-	-	291	598	811	51	32	-	-
Calif.	-	-	-	15,595	16,494	22	47	1	4
Alaska	-	-	67	404	291	1	6	-	-
Hawaii	-	-	67	442	449	28	21	-	-
Guam	-	-	-	-	33	-	-	-	-
P.R.	-	-	20	255	420	1	1	-	-
V.I.	-	-	-	25	20	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	1	13	U	-	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 14, 2002, and September 15, 2001 (37th Week)*

Reporting Area	*Haemophilus influenzae*, Invasive, Age <5 Years, Non-Serotype B, Cum. 2002	*Haemophilus influenzae*, Invasive, Age <5 Years, Non-Serotype B, Cum. 2001	*Haemophilus influenzae*, Invasive, Age <5 Years, Unknown Serotype, Cum. 2002	*Haemophilus influenzae*, Invasive, Age <5 Years, Unknown Serotype, Cum. 2001	Hepatitis (Viral, Acute), By Type, A, Cum. 2002	Hepatitis (Viral, Acute), By Type, A, Cum. 2001	Hepatitis (Viral, Acute), By Type, B, Cum. 2002	Hepatitis (Viral, Acute), By Type, B, Cum. 2001	Hepatitis (Viral, Acute), By Type, C; Non-A, Non-B, Cum. 2002	Hepatitis (Viral, Acute), By Type, C; Non-A, Non-B, Cum. 2001
UNITED STATES	182	179	14	24	6,021	6,897	4,772	5,032	11,848	2,904
NEW ENGLAND	8	13	-	-	224	431	174	93	20	30
Maine	-	-	-	-	7	9	8	5	-	-
N.H.	-	1	-	-	11	11	13	10	-	-
Vt.	-	-	-	-	1	8	3	5	12	6
Mass.	5	7	-	-	100	191	93	18	8	24
R.I.	-	-	-	-	29	29	21	20	-	-
Conn.	3	5	-	-	76	183	36	35	-	-
MID. ATLANTIC	24	24	-	3	684	881	987	961	1,156	924
Upstate N.Y.	10	7	-	1	135	177	95	87	44	20
N.Y. City	7	6	-	-	291	315	490	450	-	-
N.J.	4	4	-	-	88	216	243	209	1,089	856
Pa.	3	7	-	2	170	173	159	215	23	48
E.N. CENTRAL	27	32	1	2	796	869	583	670	72	128
Ohio	7	9	1	-	255	173	78	83	6	8
Ind.	7	6	-	1	37	66	31	36	-	1
Ill.	11	11	-	-	205	328	83	98	10	9
Mich.	1	-	-	1	175	245	391	423	56	110
Wis.	1	6	-	-	124	57	-	30	-	-
W.N. CENTRAL	2	2	3	6	246	280	157	147	650	860
Minn.	2	1	1	2	36	25	20	16	-	8
Iowa	-	-	-	-	63	27	12	17	1	-
Mo.	-	-	2	4	68	64	84	82	636	841
N. Dak.	-	1	-	-	1	2	4	-	-	-
S. Dak.	-	-	-	-	3	2	1	1	1	-
Nebr.	-	-	-	-	16	30	20	20	9	5
Kans.	-	-	-	-	59	130	16	11	3	6
S. ATLANTIC	43	39	1	6	1,812	1,474	1,242	993	130	64
Del.	-	-	-	-	9	11	7	21	5	4
Md.	3	7	-	1	222	173	89	100	9	6
D.C.	-	-	-	-	56	33	14	11	-	-
Va.	4	5	-	-	80	94	144	115	6	-
W. Va.	1	1	1	1	15	10	18	20	2	9
N.C.	3	2	-	4	168	141	175	141	22	16
S.C.	2	1	-	-	49	61	71	24	4	5
Ga.	15	15	-	-	376	692	338	290	29	-
Fla.	15	8	-	-	837	259	386	271	53	24
E.S. CENTRAL	10	12	1	3	183	292	246	331	158	165
Ky.	1	-	-	1	40	97	43	36	3	6
Tenn.	6	6	-	1	71	109	85	164	26	54
Ala.	3	5	1	1	29	65	54	66	4	3
Miss.	-	1	-	-	43	21	64	65	125	102
W.S. CENTRAL	11	5	-	-	400	677	367	591	9,523	586
Ark.	1	-	-	-	30	58	67	69	5	6
La.	2	-	-	-	25	73	33	92	17	123
Okla.	6	5	-	-	38	96	23	80	4	4
Tex.	2	-	-	-	307	450	244	350	9,497	453
MOUNTAIN	34	19	7	1	432	553	442	354	52	43
Mont.	-	-	-	-	12	9	4	3	-	1
Idaho	1	-	-	-	24	48	6	10	-	2
Wyo.	-	-	-	-	2	6	14	2	5	5
Colo.	2	2	-	-	66	63	58	76	15	6
N. Mex.	6	7	1	1	15	32	107	102	1	11
Ariz.	16	8	5	-	235	283	174	108	4	9
Utah	5	2	-	-	42	58	38	18	4	2
Nev.	4	-	1	-	36	54	41	35	23	7
PACIFIC	23	33	1	3	1,244	1,440	574	892	87	104
Wash.	1	1	-	1	120	98	50	101	17	17
Oreg.	5	5	-	-	52	87	94	120	15	13
Calif.	13	25	1	1	1,062	1,227	421	647	55	74
Alaska	1	1	-	-	8	14	3	8	-	-
Hawaii	3	1	-	1	2	14	6	16	-	-
Guam	-	-	-	-	-	1	-	-	-	-
P.R.	-	1	-	-	79	148	72	191	-	1
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	37	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 14, 2002, and September 15, 2001 (37th Week)*

Reporting Area	Legionellosis		Listeriosis		Lyme Disease		Malaria		Measles Total	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	671	721	347	420	8,985	10,706	856	1,096	22†	98§
NEW ENGLAND	55	44	41	38	2,017	3,168	45	73	-	5
Maine	2	5	4	-	53	-	4	4	-	-
N.H.	4	7	4	3	170	58	6	2	-	-
Vt.	21	5	2	2	22	12	2	1	-	1
Mass.	19	14	20	20	772	967	15	39	-	3
R.I.	1	4	1	1	186	320	4	6	-	-
Conn.	8	9	10	12	814	1,811	14	21	-	1
MID. ATLANTIC	168	163	79	70	5,644	5,641	181	315	7	18
Upstate N.Y.	56	42	35	22	3,535	2,050	31	43	1	4
N.Y. City	28	27	16	16	87	60	112	188	6	6
N.J.	18	15	8	13	407	1,835	20	48	-	1
Pa.	66	79	20	19	1,615	1,696	18	36	-	7
E.N. CENTRAL	167	192	41	63	59	644	99	139	3	10
Ohio	67	82	16	11	45	32	16	21	1	3
Ind.	14	13	6	5	14	18	9	14	2	4
Ill.	-	21	1	21	-	29	24	58	-	3
Mich.	63	41	14	19	-	5	39	29	-	-
Wis.	23	35	4	7	U	560	11	17	-	-
W.N. CENTRAL	38	43	10	11	181	284	48	29	3	4
Minn.	9	9	1	-	111	227	16	6	1	2
Iowa	8	8	1	1	29	24	2	5	-	-
Mo.	10	17	5	6	30	27	14	10	2	2
N. Dak.	-	1	1	-	-	-	1	-	-	-
S. Dak.	2	3	-	-	1	-	-	-	-	-
Nebr.	9	4	1	1	5	4	5	2	-	-
Kans.	-	1	1	3	5	2	10	6	-	-
S. ATLANTIC	136	131	61	53	913	761	261	233	2	5
Del.	7	5	-	2	114	133	2	1	-	-
Md.	24	28	12	9	503	465	86	95	-	3
D.C.	5	7	-	-	17	8	14	13	-	-
Va.	16	18	4	9	101	100	21	41	-	1
W. Va.	N	N	-	5	12	10	3	1	-	-
N.C.	7	7	5	2	95	29	16	12	-	-
S.C.	5	9	8	4	12	4	6	6	-	-
Ga.	10	10	13	11	1	-	59	38	-	1
Fla.	62	47	19	11	58	12	54	26	2	-
E.S. CENTRAL	23	48	10	18	35	46	17	27	-	2
Ky.	9	11	2	6	18	18	6	9	-	2
Tenn.	8	21	5	7	17	14	3	10	-	-
Ala.	6	12	3	5	-	7	3	4	-	-
Miss.	-	4	-	-	-	7	5	4	-	-
W.S. CENTRAL	8	19	11	30	16	70	11	71	2	1
Ark.	-	-	-	1	2	-	1	3	-	-
La.	1	6	-	-	1	5	3	5	-	-
Okla.	3	3	6	2	-	-	7	2	-	-
Tex.	4	10	5	27	13	65	-	61	2	1
MOUNTAIN	27	33	23	31	16	9	36	39	1	2
Mont.	3	-	-	-	-	-	1	2	-	-
Idaho	-	2	2	1	3	4	-	3	-	1
Wyo.	1	2	-	1	1	1	-	-	-	-
Colo.	4	11	4	9	2	-	19	20	-	-
N. Mex.	1	2	2	6	1	-	2	3	-	-
Ariz.	7	8	11	6	2	-	6	3	-	1
Utah	8	5	3	2	6	1	5	3	-	-
Nev.	3	3	1	6	1	3	3	5	1	-
PACIFIC	49	48	71	106	104	83	158	170	4	51
Wash.	5	7	8	7	8	6	15	5	-	15
Oreg.	N	N	8	6	13	9	7	13	-	2
Calif.	44	36	49	89	81	66	128	140	3	27
Alaska	-	1	-	-	2	2	2	1	-	-
Hawaii	-	4	6	4	N	N	6	11	1	7
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	-	2	1	-	N	N	-	4	-	1
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).
† Of 22 cases reported, 10 were indigenous and 12 were imported from another country.
§ Of 98 cases reported, 47 were indigenous and 51 were imported from another country.

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 14, 2002, and September 15, 2001 (37th Week)*

Reporting Area	Meningococcal Disease		Mumps		Pertussis		Rabies, Animal	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	1,259	1,763	190	174	5,195	3,701	4,262	5,179
NEW ENGLAND	76	82	7	1	425	319	654	536
Maine	7	2	-	-	8	-	43	47
N.H.	10	11	4	-	9	14	33	18
Vt.	4	5	-	-	85	26	80	49
Mass.	37	46	2	1	291	257	205	199
R.I.	5	3	-	-	10	5	55	49
Conn.	13	15	1	-	22	17	238	174
MID. ATLANTIC	123	188	18	21	267	251	804	944
Upstate N.Y.	37	50	2	3	196	113	509	582
N.Y. City	20	32	1	11	10	40	10	26
N.J.	23	31	-	2	3	13	121	149
Pa.	43	75	15	5	58	85	164	187
E.N. CENTRAL	160	269	18	22	621	568	112	120
Ohio	61	74	3	1	310	233	29	39
Ind.	25	31	2	1	76	56	27	2
Ill.	31	65	6	16	100	64	22	24
Mich.	31	58	6	2	41	52	34	38
Wis.	12	41	1	2	94	163	-	17
W.N. CENTRAL	116	112	12	7	491	188	296	284
Minn.	29	16	3	3	219	70	30	32
Iowa	16	21	1	-	125	18	60	67
Mo.	39	40	3	-	95	76	41	35
N. Dak.	-	5	1	-	-	-	12	33
S. Dak.	2	5	-	-	5	3	47	40
Nebr.	24	12	-	1	4	4	-	4
Kans.	6	13	4	3	43	17	106	73
S. ATLANTIC	220	276	23	28	308	182	1,789	1,763
Del.	6	3	-	-	2	-	24	30
Md.	7	35	5	4	49	30	168	357
D.C.	-	-	-	-	1	1	-	-
Va.	32	31	3	6	107	31	380	312
W. Va.	4	11	-	-	29	2	135	109
N.C.	25	58	1	3	29	51	522	421
S.C.	20	29	2	2	32	31	97	87
Ga.	29	39	4	8	17	18	284	309
Fla.	97	70	8	5	42	18	179	138
E.S. CENTRAL	69	112	12	6	170	101	96	178
Ky.	11	20	4	1	73	31	19	19
Tenn.	28	46	2	-	62	39	68	106
Ala.	18	30	3	-	28	27	9	51
Miss.	12	16	3	5	7	4	-	2
W.S. CENTRAL	159	264	16	9	1,329	348	91	857
Ark.	22	18	-	-	435	16	3	-
La.	24	65	1	2	6	5	-	7
Okla.	17	25	-	-	65	12	88	52
Tex.	96	156	15	7	823	315	-	798
MOUNTAIN	72	80	15	12	665	1,100	211	213
Mont.	2	4	-	1	4	30	14	31
Idaho	3	7	2	1	53	168	27	18
Wyo.	-	5	-	1	10	1	15	27
Colo.	21	30	2	3	263	236	35	-
N. Mex.	4	10	1	2	138	102	7	14
Ariz.	23	12	1	1	106	489	101	114
Utah	4	7	5	1	49	61	9	8
Nev.	15	5	4	2	42	13	3	1
PACIFIC	264	380	69	68	919	644	209	284
Wash.	51	52	-	1	329	108	-	-
Oreg.	36	49	N	N	164	41	5	3
Calif.	168	266	56	30	408	463	180	243
Alaska	3	2	-	1	4	3	24	38
Hawaii	6	11	13	36	14	29	-	-
Guam	-	-	-	-	-	-	-	-
P.R.	5	5	-	-	2	-	49	70
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	1	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 14, 2002, and September 15, 2001 (37th Week)*

Reporting Area	Rocky Mountain Spotted Fever		Rubella				Salmonellosis	
			Rubella		Congenital Rubella			
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	650	409	6	17	2	-	26,142	27,222
NEW ENGLAND	1	3	-	-	-	-	1,482	1,814
Maine	-	-	-	-	-	-	104	145
N.H.	-	1	-	-	-	-	91	135
Vt.	-	-	-	-	-	-	55	59
Mass.	-	2	-	-	-	-	820	1,051
R.I.	1	-	-	-	-	-	110	86
Conn.	-	-	-	-	-	-	302	338
MID. ATLANTIC	35	25	1	7	-	-	3,161	3,610
Upstate N.Y.	7	2	1	1	-	-	1,037	831
N.Y. City	8	1	-	5	-	-	918	907
N.J.	9	6	-	1	-	-	471	914
Pa.	11	16	-	-	-	-	735	958
E.N. CENTRAL	14	15	-	2	-	-	3,693	3,724
Ohio	10	1	-	-	-	-	966	1,008
Ind.	2	1	-	-	-	-	328	374
Ill.	-	12	-	2	-	-	1,157	1,075
Mich.	2	1	-	-	-	-	644	646
Wis.	-	-	-	-	-	-	598	621
W.N. CENTRAL	84	59	-	3	-	-	1,794	1,601
Minn.	-	-	-	-	-	-	421	454
Iowa	3	2	-	1	-	-	297	235
Mo.	76	55	-	1	-	-	646	423
N. Dak.	-	-	-	-	-	-	25	43
S. Dak.	-	2	-	-	-	-	70	116
Nebr.	4	-	-	-	-	-	116	124
Kans.	1	-	-	1	-	-	219	206
S. ATLANTIC	338	193	-	4	-	-	6,915	6,199
Del.	4	4	-	-	-	-	54	71
Md.	41	35	-	1	-	-	692	591
D.C.	-	-	-	-	-	-	50	60
Va.	24	16	-	-	-	-	749	1,011
W. Va.	1	-	-	-	-	-	93	87
N.C.	199	108	-	-	-	-	917	871
S.C.	44	18	-	2	-	-	444	589
Ga.	18	8	-	-	-	-	1,239	1,168
Fla.	7	4	-	1	-	-	2,677	1,751
E.S. CENTRAL	70	82	-	-	1	-	1,918	1,757
Ky.	5	2	-	-	-	-	241	264
Tenn.	50	54	-	-	1	-	499	426
Ala.	15	13	-	-	-	-	540	478
Miss.	-	13	-	-	-	-	638	589
W.S. CENTRAL	91	23	2	-	-	-	2,007	3,365
Ark.	30	5	-	-	-	-	637	550
La.	-	2	-	-	-	-	217	591
Okla.	61	16	-	-	-	-	330	301
Tex.	-	-	2	-	-	-	823	1,923
MOUNTAIN	12	9	-	-	-	-	1,593	1,536
Mont.	1	1	-	-	-	-	71	55
Idaho	-	1	-	-	-	-	102	104
Wyo.	3	2	-	-	-	-	43	53
Colo.	2	1	-	-	-	-	455	417
N. Mex.	1	1	-	-	-	-	218	192
Ariz.	-	-	-	-	-	-	427	422
Utah	-	3	-	-	-	-	135	162
Nev.	5	-	-	-	-	-	142	131
PACIFIC	5	-	3	1	1	-	3,579	3,616
Wash.	-	-	-	-	-	-	325	370
Oreg.	2	-	-	-	-	-	261	210
Calif.	3	-	3	-	-	-	2,748	2,746
Alaska	-	-	-	-	-	-	44	28
Hawaii	-	-	-	1	1	-	201	262
Guam	-	-	-	-	-	-	-	19
P.R.	-	-	-	3	-	-	138	692
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	25	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 14, 2002, and September 15, 2001 (37th Week)*

Reporting Area	Shigellosis		Streptococcal Disease, Invasive, Group A		*Streptococcus pneumoniae*, Drug Resistant, Invasive		*Streptococcus pneumoniae*, Invasive (<5 Years)	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	11,356	13,088	3,115	2,774	1,641	2,033	170	311
NEW ENGLAND	228	232	151	176	14	95	2	34
Maine	4	6	20	10	-	-	-	-
N.H.	8	4	30	N	-	-	N	N
Vt.	1	7	9	10	4	7	1	-
Mass.	143	162	78	57	N	N	N	N
R.I.	9	16	14	8	10	3	1	3
Conn.	63	37	-	91	-	85	-	31
MID. ATLANTIC	818	1,112	514	508	85	131	50	78
Upstate N.Y.	200	390	240	213	75	125	50	78
N.Y. City	278	306	127	141	U	U	U	U
N.J.	198	220	103	101	N	N	N	N
Pa.	142	196	44	53	10	6	-	-
E.N. CENTRAL	1,195	3,215	557	654	167	137	71	85
Ohio	460	2,152	175	164	33	-	3	-
Ind.	69	162	42	53	129	137	43	41
Ill.	426	428	105	213	2	-	-	44
Mich.	124	232	235	173	3	-	N	N
Wis.	116	241	-	51	N	N	25	-
W.N. CENTRAL	782	1,206	191	286	159	111	37	48
Minn.	164	327	99	130	48	50	37	40
Iowa	100	322	-	-	N	N	N	N
Mo.	124	235	38	58	6	9	-	-
N. Dak.	15	20	-	11	1	5	-	8
S. Dak.	150	183	11	9	1	3	-	-
Nebr.	161	58	16	32	26	14	N	N
Kans.	68	61	27	46	77	30	N	N
S. ATLANTIC	4,288	1,746	633	470	1,037	1,098	4	5
Del.	95	9	2	2	3	4	N	N
Md.	821	113	100	N	N	N	N	N
D.C.	40	44	6	15	48	5	1	3
Va.	676	217	61	62	N	N	N	N
W. Va.	8	8	16	18	36	37	3	2
N.C.	249	264	105	123	N	N	U	U
S.C.	71	205	29	9	142	223	N	N
Ga.	1,101	233	137	148	258	316	N	N
Fla.	1,227	653	177	93	550	513	N	N
E.S. CENTRAL	925	1,133	76	85	107	199	-	-
Ky.	97	468	15	31	12	23	N	N
Tenn.	53	73	61	54	95	175	N	N
Ala.	497	179	-	-	-	1	N	N
Miss.	278	413	-	-	-	-	-	-
W.S. CENTRAL	859	2,064	104	250	37	227	3	61
Ark.	150	443	5	-	6	14	-	-
La.	108	178	-	1	31	213	1	61
Okla.	336	40	36	36	N	N	2	-
Tex.	265	1,403	63	213	N	N	-	-
MOUNTAIN	544	680	443	288	35	32	3	-
Mont.	3	3	-	-	-	-	-	-
Idaho	7	26	6	7	N	N	N	N
Wyo.	6	5	7	8	9	5	-	-
Colo.	120	174	110	123	-	-	-	-
N. Mex.	105	86	78	61	25	25	-	-
Ariz.	240	278	213	86	-	-	N	N
Utah	26	46	29	3	1	-	3	-
Nev.	37	62	-	-	-	2	-	-
PACIFIC	1,717	1,700	446	57	-	3	-	-
Wash.	109	146	65	-	-	-	N	N
Oreg.	78	82	N	N	N	N	N	N
Calif.	1,487	1,419	326	-	N	N	N	N
Alaska	3	5	-	-	-	-	N	N
Hawaii	40	48	55	57	-	3	-	-
Guam	-	37	-	1	-	-	-	-
P.R.	5	15	N	N	-	-	N	N
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	-	-	U	U
C.N.M.I.	17	U	-	U	-	-	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 14, 2002, and September 15, 2001 (37th Week)*

Reporting Area	Syphilis				Tuberculosis		Typhoid Fever	
	Primary & Secondary		Congenital					
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	4,338	4,151	219	364	8,269	9,562	186	245
NEW ENGLAND	98	37	-	3	263	325	13	12
Maine	2	-	-	-	10	13	-	1
N.H.	3	1	-	-	9	11	-	1
Vt.	1	2	-	-	-	4	-	-
Mass.	66	19	-	2	149	169	9	9
R.I.	6	7	-	-	25	45	-	-
Conn.	20	8	-	1	70	83	4	1
MID. ATLANTIC	487	354	38	54	1,521	1,590	45	80
Upstate N.Y.	24	15	4	3	221	249	7	15
N.Y. City	293	195	16	27	779	779	23	33
N.J.	97	81	17	24	349	359	12	28
Pa.	73	63	1	-	172	203	3	4
E.N. CENTRAL	744	718	31	53	843	972	16	30
Ohio	100	63	1	2	133	188	6	3
Ind.	49	118	-	8	76	71	2	2
Ill.	209	239	23	34	419	457	1	16
Mich.	367	279	7	5	174	203	3	5
Wis.	19	19	-	4	41	53	4	4
W.N. CENTRAL	73	68	-	9	369	376	7	9
Minn.	34	27	-	2	158	163	3	5
Iowa	2	4	-	-	17	18	-	-
Mo.	19	16	-	5	102	97	1	4
N. Dak.	-	-	-	-	1	3	-	-
S. Dak.	-	-	-	-	9	10	-	-
Nebr.	3	3	-	-	17	27	3	-
Kans.	15	18	-	2	65	58	-	-
S. ATLANTIC	1,150	1,436	53	88	1,661	1,769	29	30
Del.	9	11	-	-	13	15	-	-
Md.	133	180	9	3	195	154	7	8
D.C.	58	25	1	2	-	51	-	-
Va.	46	79	1	4	131	176	1	8
W. Va.	2	-	-	-	24	22	-	-
N.C.	207	326	17	10	231	246	1	2
S.C.	83	184	5	19	123	130	-	-
Ga.	242	266	8	19	294	315	8	8
Fla.	370	365	12	31	650	660	12	4
E.S. CENTRAL	347	451	12	24	517	584	4	1
Ky.	66	34	3	-	101	90	4	-
Tenn.	127	242	3	14	206	214	-	1
Ala.	120	86	4	4	143	185	-	-
Miss.	34	89	2	6	67	95	-	-
W.S. CENTRAL	593	512	48	63	1,132	1,482	4	15
Ark.	21	29	1	6	93	102	-	-
La.	100	117	-	-	-	100	-	-
Okla.	48	47	2	5	94	101	-	-
Tex.	424	319	45	52	945	1,179	4	15
MOUNTAIN	203	157	11	21	241	383	10	8
Mont.	-	-	-	-	6	6	-	1
Idaho	1	1	1	-	8	7	-	-
Wyo.	-	1	-	-	2	3	-	-
Colo.	30	20	1	1	40	93	5	1
N. Mex.	23	13	-	2	21	44	1	-
Ariz.	138	111	9	18	133	145	-	1
Utah	5	7	-	-	18	25	2	1
Nev.	6	4	-	-	13	60	2	4
PACIFIC	643	418	26	49	1,722	2,081	58	60
Wash.	39	37	1	-	171	174	4	4
Oreg.	11	11	1	-	75	78	2	6
Calif.	586	359	23	49	1,330	1,694	51	47
Alaska	-	-	-	-	36	35	-	1
Hawaii	7	11	1	-	110	100	1	2
Guam	-	2	-	1	-	47	-	2
P.R.	162	192	12	9	33	95	-	-
V.I.	1	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	15	U	-	U	29	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE III. Deaths in 122 U.S. cities,* week ending September 14, 2002 (37th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	572	394	116	44	8	10	57
Boston, Mass.	175	102	47	18	5	3	23
Bridgeport, Conn.	32	26	5	-	-	1	4
Cambridge, Mass.	23	16	5	2	-	-	2
Fall River, Mass.	25	22	2	1	-	-	2
Hartford, Conn.	39	26	8	3	-	2	2
Lowell, Mass.	38	28	6	3	-	1	3
Lynn, Mass.	8	3	3	2	-	-	1
New Bedford, Mass.	42	35	4	2	1	-	7
New Haven, Conn.	31	24	5	1	1	-	1
Providence, R.I.	U	U	U	U	U	U	U
Somerville, Mass.	7	4	3	-	-	-	-
Springfield, Mass.	54	38	8	6	-	2	5
Waterbury, Conn.	25	20	1	4	-	-	2
Worcester, Mass.	73	50	19	2	1	1	5
MID. ATLANTIC	2,260	1,518	490	156	45	50	101
Albany, N.Y.	39	22	14	3	-	-	1
Allentown, Pa.	16	14	2	-	-	-	2
Buffalo, N.Y.	86	58	20	3	1	4	11
Camden, N.J.	28	12	6	8	2	-	1
Elizabeth, N.J.	16	11	5	-	-	-	-
Erie, Pa.	45	29	13	1	1	1	7
Jersey City, N.J.	33	16	13	-	2	2	-
New York City, N.Y.	1,100	751	243	72	18	16	31
Newark, N.J.	53	16	20	13	2	2	-
Paterson, N.J.	22	14	3	1	4	-	3
Philadelphia, Pa.	393	271	65	32	12	12	12
Pittsburgh, Pa.§	30	17	8	3	-	2	5
Reading, Pa.	15	12	3	-	-	-	-
Rochester, N.Y.	115	85	23	5	1	1	7
Schenectady, N.Y.	22	18	3	1	-	-	3
Scranton, Pa.	28	22	5	1	-	-	1
Syracuse, N.Y.	162	110	31	10	2	9	14
Trenton, N.J.	24	16	6	1	-	1	-
Utica, N.Y.	20	15	4	1	-	-	1
Yonkers, N.Y.	13	9	3	1	-	-	2
E.N. CENTRAL	1,658	1,149	317	110	48	34	108
Akron, Ohio	54	43	5	4	2	-	7
Canton, Ohio	29	24	3	2	-	-	5
Chicago, Ill.	U	U	U	U	U	U	U
Cincinnati, Ohio	82	53	20	7	-	2	2
Cleveland, Ohio	140	92	28	10	6	4	7
Columbus, Ohio	197	141	35	14	3	4	12
Dayton, Ohio	140	109	25	1	4	1	11
Detroit, Mich.	178	97	46	19	10	6	11
Evansville, Ind.	51	38	7	5	-	1	4
Fort Wayne, Ind.	56	38	14	3	1	-	3
Gary, Ind.	12	5	3	1	3	-	-
Grand Rapids, Mich.	45	30	8	4	2	1	7
Indianapolis, Ind.	180	119	36	15	7	3	8
Lansing, Mich.	39	29	6	2	2	-	1
Milwaukee, Wis.	134	95	29	5	3	2	12
Peoria, Ill.	38	26	10	1	-	1	1
Rockford, Ill.	66	47	9	8	1	1	4
South Bend, Ind.	48	41	5	1	-	1	2
Toledo, Ohio	101	68	18	8	2	5	9
Youngstown, Ohio	68	54	10	-	2	2	2
W.N. CENTRAL	548	368	102	40	15	23	32
Des Moines, Iowa	U	U	U	U	U	U	U
Duluth, Minn.	36	28	2	2	3	1	2
Kansas City, Kans.	60	34	14	7	3	2	1
Kansas City, Mo.	76	53	13	4	1	5	3
Lincoln, Nebr.	35	28	6	1	-	-	2
Minneapolis, Minn.	68	43	14	6	2	3	5
Omaha, Nebr.	93	64	19	7	1	2	8
St. Louis, Mo.	U	U	U	U	U	U	U
St. Paul, Minn.	71	47	14	6	1	3	4
Wichita, Kans.	109	71	20	7	4	7	7
S. ATLANTIC	1,235	776	282	111	25	41	66
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	183	93	56	21	7	6	10
Charlotte, N.C.	129	84	28	12	1	4	15
Jacksonville, Fla.	141	89	33	16	-	3	8
Miami, Fla.	63	44	12	5	1	1	1
Norfolk, Va.	57	34	13	7	2	1	-
Richmond, Va.	72	46	16	4	3	3	5
Savannah, Ga.	64	42	14	5	-	3	7
St. Petersburg, Fla.	62	47	7	5	3	-	6
Tampa, Fla.	234	166	45	17	5	1	8
Washington, D.C.	212	116	55	19	3	19	6
Wilmington, Del.	18	15	3	-	-	-	-
E.S. CENTRAL	918	595	199	82	21	19	61
Birmingham, Ala.	167	112	34	15	2	3	14
Chattanooga, Tenn.	109	76	24	6	1	2	2
Knoxville, Tenn.	100	54	22	17	5	2	-
Lexington, Ky.	56	40	9	4	-	2	4
Memphis, Tenn.	183	118	43	12	6	4	15
Mobile, Ala.	80	55	17	4	2	2	9
Montgomery, Ala.	49	37	6	4	1	1	8
Nashville, Tenn.	174	103	44	20	4	3	9
W.S. CENTRAL	1,497	926	317	129	74	50	85
Austin, Tex.	89	52	26	6	4	1	4
Baton Rouge, La.	48	31	8	5	4	-	1
Corpus Christi, Tex.	64	44	15	2	2	1	7
Dallas, Tex.	176	99	38	17	10	12	10
El Paso, Tex.	80	56	17	5	1	1	2
Ft. Worth, Tex.	121	76	26	9	3	7	9
Houston, Tex.	417	225	92	47	30	23	27
Little Rock, Ark.	80	49	18	7	4	2	-
New Orleans, La.	46	26	11	6	2	1	-
San Antonio, Tex.	188	122	39	16	10	-	7
Shreveport, La.	60	48	8	2	2	-	8
Tulsa, Okla.	128	98	19	7	2	2	10
MOUNTAIN	864	578	168	70	24	24	57
Albuquerque, N.M.	121	77	26	8	6	4	10
Boise, Idaho	32	25	5	1	1	-	1
Colo. Springs, Colo.	70	48	14	4	-	4	1
Denver, Colo.	102	62	19	13	1	7	6
Las Vegas, Nev.	236	157	50	22	6	1	16
Ogden, Utah	32	26	4	2	-	-	4
Phoenix, Ariz.	U	U	U	U	U	U	U
Pueblo, Colo.	33	24	8	1	-	-	3
Salt Lake City, Utah	115	77	16	9	8	5	8
Tucson, Ariz.	123	82	26	10	2	3	8
PACIFIC	1,786	1,243	350	119	38	35	94
Berkeley, Calif.	14	13	1	-	-	-	1
Fresno, Calif.	141	94	24	18	4	1	6
Glendale, Calif.	20	17	2	1	-	-	-
Honolulu, Hawaii	69	47	13	3	1	4	3
Long Beach, Calif.	60	32	19	4	3	2	7
Los Angeles, Calif.	412	289	74	26	14	9	-
Pasadena, Calif.	21	19	1	-	1	-	6
Portland, Oreg.	181	129	37	10	2	3	-
Sacramento, Calif.	176	114	45	13	1	3	16
San Diego, Calif.	186	132	31	14	5	4	16
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	202	155	31	10	1	5	22
Santa Cruz, Calif.	U	U	U	U	U	U	U
Seattle, Wash.	140	92	34	11	2	1	9
Spokane, Wash.	55	37	13	2	1	2	4
Tacoma, Wash.	109	73	25	7	3	1	4
TOTAL	11,338¶	7,547	2,341	861	298	286	661

U: Unavailable. -:No reported cases.

* Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of ≥100,000. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

† Pneumonia and influenza.

§ Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶ Total includes unknown ages.

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