



MMWR™

Morbidity and Mortality Weekly Report

www.cdc.gov/mmwr

Weekly

January 8, 2010 / Vol. 58 / No. 51 & 52

Multistate Outbreak of Human *Salmonella* Typhimurium Infections Associated with Aquatic Frogs – United States, 2009

During April–July 2009, the Utah Department of Health identified five cases of *Salmonella* Typhimurium infection with indistinguishable pulsed-field gel electrophoresis (PFGE) patterns, predominantly among children. In August, CDC began a multistate outbreak investigation to determine the source of the infections. This report summarizes the results of this ongoing investigation, which, as of December 30, had identified 85 *S. Typhimurium* human isolates with the outbreak strain from 31 states. In a multistate case-control study, exposure to frogs was found to be significantly associated with illness (63% of cases versus 3% of controls; matched odds ratio [mOR] = 24.4). Among 14 case-patients who knew the type of frog, all had exposure to an exclusively aquatic frog species, the African dwarf frog. Environmental samples from aquariums containing aquatic frogs in four homes of case-patients yielded *S. Typhimurium* isolates matching the outbreak strain. Preliminary traceback information has indicated these frogs likely came from the same breeder in California. Reptiles (e.g., turtles) and amphibians (e.g., frogs) have long been recognized as *Salmonella* carriers (1,2), and three multistate outbreaks of human *Salmonella* infections associated with turtle contact have occurred since 2006 (3,4). However, this is the first reported multistate outbreak of *Salmonella* infections associated with amphibians. Educational materials aimed at preventing salmonellosis from contact with reptiles should be expanded to include amphibians, such as aquatic frogs.

The five cases identified in July 2009 by the Utah Department of Health all had isolates indistinguishable by pulsed field gel electrophoresis and were identified with *Xba*I pattern JPXX01.0177. The cases had occurred during April–July. On September 29, PulseNet, the national molecular subtyping network for foodborne disease surveillance, identified a national increase of isolates with this PFGE pattern (37 isolates from 19 states in 60 days). Multiple-locus variable-number tandem

repeat analysis (MLVA) provided additional discrimination of the outbreak strain. For this investigation, a case was defined as *S. Typhimurium* infection with illness onset on or after April 1, 2009, with 1) PFGE pattern indistinguishable from the cluster-defining pattern and 2) MLVA pattern either matching that of the main outbreak strain, or MLVA unknown.

The multistate investigation began with in-depth, open-ended interviews of salmonellosis patients regarding exposures in the week before illness onset. A total of 11 interviews with patients were conducted through November. All 11 persons reported consumption of cheese-flavored crackers; eight reported exposure to aquatic animals, including fish and aquatic frogs.

As of December 30, 2009, *S. Typhimurium* isolates with the outbreak strain had been identified in 85 patients from 31 states, extending from Massachusetts to California, with week of illness onset ranging from March 22 to November 29 (Figure 1). Among the patients, 52% were male; median age was 5 years (range: 3 weeks–54 years), and 79% were aged <10 years. Among 47 patients with outcome information available, 16 (34%) had been hospitalized; no deaths were reported.



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The *MMWR* series of publications is published by Surveillance, Epidemiology, and Laboratory Services, Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services, Atlanta, GA 30333.

Suggested Citation: Centers for Disease Control and Prevention. [Article title]. *MMWR* 2009;58:[inclusive page numbers].

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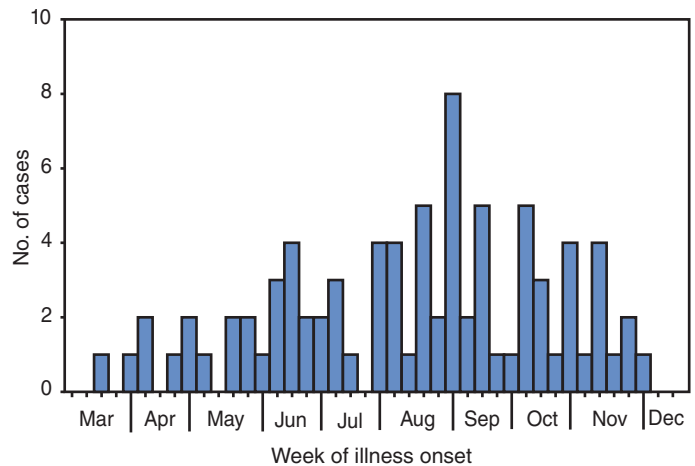
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FIGURE 1. Number (N = 83*) of cases of infection with the outbreak strain of *Salmonella* Typhimurium, by week of illness onset† — United States, 2009



* Reported as of December 30, 2009. Illnesses that began during the week of December 6 or later might not yet be reported. Two of 85 cases had no date for illness onset or isolation of organism from specimen and are not represented in this figure.

† Thirty-five illness onset dates were estimated from dates the outbreak strain was isolated from specimens.

Case-Control Study

To examine possible associations between illness and consumption of cheese crackers and exposure to aquatic pets, CDC conducted a nationwide case-control study during November 30–December 7. Patients infected with *S. Typhimurium* with the outbreak strain who had specimen collection dates after July 15 were enrolled. Controls were persons with recent infection of *Salmonella* strains other than the outbreak strain and matched to case-patients by age and county of residence. Exposure histories were collected for 7 days before illness onset for case-patients and for 7 days before interview for controls.

Investigators sought to match each case-patient with two controls. A total of 19 case-patients (18 with stool specimens and one with a urine specimen) and 31 matching controls were enrolled from 15 states. Case-patients were found to be significantly more likely than controls to have had exposure to an aquatic pet, including fish and frogs (74% of case-patients versus 35% of controls; mOR = 4.7 [95% confidence interval (CI) = 1.2–27.0]). More specifically, illness was found to be associated with exposure to frogs (63% of case-patients versus 3% of controls; mOR = 24.4 [CI = 4.0–infinity]). Exposure to fish was not statistically significant (58% of case-patients versus 29% of controls, mOR = 3.1 [CI = 0.8–14.2]). No association

* Persons interviewed included adult patients and parents or caretakers of children who were patients. They were asked: “Before this illness were you (or was your child) aware of any connection between reptile contact, such as contact with turtles or iguanas, and *Salmonella*?” and “Before this illness were you (or was your child) aware of any connection between amphibian contact, such as contact with frogs or salamanders, and *Salmonella*?”

was found between illness and consumption of any food item, including cheese crackers.

Among 39 patients interviewed as of December 9, including some of the 19 case-patients enrolled in the case-control study, 14 knew the type of frog involved in their exposure, and all 14 identified the frog as an African dwarf frog (Figure 2). When asked about potential for *Salmonella* infection, 19 of 36 (53%) patients reported awareness of association between contact with reptiles and *Salmonella* infection, but only 11 of 36 (31%) reported awareness of association with amphibians.* Among 20 patients from whom the information was available, the frog's aquarium was cleaned in the kitchen sink in the homes of six persons (30%) and in the bathroom sink in the homes of seven others (35%).

Environmental Testing and Traceback

Environmental samples taken from patient homes in four states yielded the outbreak strain of *S. Typhimurium*. The Colorado Department of Public Health obtained matched isolates from two African dwarf frogs, and from a rock and water in the aquarium containing the two frogs. The New Mexico Department of Health matched the outbreak strain with isolates from the filtration system, gravel, and water from an aquarium in a patient's home containing fish and a small water frog. The Ohio Department of Health matched the outbreak strain with isolates from a patient's deceased African dwarf frog, its water, and the lid and edge of its aquarium. The Utah Department of Health obtained matched isolates from a container used to clean African dwarf frogs in a patient's home.

Traceback investigations of frogs associated with positive environmental isolates have been completed. African dwarf frogs from the homes of the Colorado patient and the Utah patient were prizes from games at two different carnivals. The vendor who distributed the frogs to both carnivals was from Utah and identified the source as a breeder in California. Environmental sampling from the vendor's home (of aquarium filters and skin previously shed from African dwarf frogs) yielded multiple isolates matching the outbreak strain. The aquatic frog from the home of the New Mexico patient was purchased from a pet store chain, whose distributor identified the same breeder as the source for all of its aquatic frogs. The family of the Ohio patient purchased its African dwarf frog from a department store, whose distributor identified the breeder as the ultimate source of its frogs.

Environmental sampling from the breeder's California facility yielded *S. Typhimurium* isolates matching the outbreak strain. Positive samples were collected from multiple locations in the facility, including water tanks that contained African dwarf frogs and gravel in the water filtration system.

FIGURE 2. African dwarf frog



Photo/CDC

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Editorial Note: *Salmonella* illness remains a major public health problem in the United States, with an estimated 1.4 million human *Salmonella* infections, 15,000 hospitalizations, and 400 deaths annually (5). Although most *Salmonella* infections are foodborne, animal contact is an important source of human salmonellosis (6). Studies conducted during 1996–1997 determined that approximately 74,000 *Salmonella* infections each year in the United States resulted from reptile and amphibian exposure (1). The ongoing investigation described in this report documents the first multistate outbreak of *Salmonella* infections associated with amphibians. A case-control study described here found an association between infections and exposure to aquatic pet frogs such as African dwarf frogs. In addition, the outbreak strain was isolated from African dwarf frogs in two patient homes, from a container used to clean African dwarf frogs in a third home, and from water in an aquarium containing a small frog in a fourth home. Traceback investigations converged on a breeder in California; environmental sampling of the breeder's facility yielded the outbreak strain.

The most likely source of transmission in this outbreak was contact with water from the frogs' aquariums. Because African dwarf frogs are small and tend to rest at the bottom of aquariums where children have difficulty reaching them, direct

handling as the source of transmission is less likely. Amphibians are known carriers of *Salmonella* (2). African dwarf frogs are purely aquatic animals, typically <2 inches long from nose to tail stub, and sold as ornamental aquarium pets. In one study, 21% of aquarium frogs tested from 16 retailers were positive for *Salmonella* (2). Furthermore, *Salmonella* bacteria shed from frogs are readily recoverable from aquarium water where frogs are housed (2). *Salmonella* can survive for an extended period in the environment, and indirect transmission through environmental contamination might occur (1).

Although 53% of case-patients described in this report knew that *Salmonella* infection could be acquired from reptiles, including turtles, only 31% knew that *Salmonella* could be acquired from amphibians. These findings are consistent with anecdotal reports of persons buying frogs as pets as an alternative to pet turtles because of concern over salmonellosis. Human exposure to *Salmonella* from aquariums can occur in homes, but also in pet stores, retail stores, schools, or child care centers (7). Public education regarding the risk for illness associated with turtles and other reptiles should be expanded to include the risk for salmonellosis from aquatic pet frogs and other amphibians. Most notably, because children aged <5 years might be less likely to consistently practice proper hand hygiene, prevention and control measures should be emphasized for this age group.

Water contained in aquariums where frogs and other amphibians are housed is an ideal environment for *Salmonella* growth (1,2,8). Aquarium water should be changed regularly and aquariums should be cleaned frequently. However, in this investigation, in 30% of patient households, aquariums were cleaned in the kitchen sink, posing a risk for cross-contamination with food preparation areas (2). CDC has published guidelines for consumers on how to reduce the risk for *Salmonella* infection from amphibians and reptiles (available at <http://www.cdc.gov/salmonella/typh1209/index.html>). Preventive measures include washing hands thoroughly with soap and water after touching animals or cleaning aquariums. No regulations prohibit the sale of small frogs, but education measures might help reduce the risk for *Salmonella* transmission.

Acknowledgments

The findings in this report are based, in part, on contributions by A Kimura, MD, G Inami, F Ni, J Lidgard, California Dept of Health; R Reporter, MD, Los Angeles County Dept of Public Health; E Hedican, MPH, Minnesota Dept of Health; C Austin, DVM, L Saathoff, MPH, Illinois Dept of Public Health; S Short, Cuyahoga County Board of Health; P Fraker, Toledo-Lucas County Health Dept; T Vaughn, Kentucky Dept of Public Health; V Chiguluri, MPH, Shelby County Health Dept; state health departments in Alabama, Arizona, California, Colorado, Florida, Georgia, Idaho, Indiana, Illinois, Kentucky, Louisiana, Massachusetts, Maryland,

What is already known on this topic?

Salmonella infection can be acquired through contact with reptiles and amphibians in homes, petting zoos, parks, child day care facilities, and other locations.

What is added by this report?

An ongoing multistate outbreak of human *Salmonella* infection has been associated with exposure to aquatic pet frogs; this is the first reported multistate salmonellosis outbreak associated with exposure to amphibians.

What are the implications for public health practice?

Longstanding salmonellosis education efforts targeting reptiles (e.g., pet turtles) should be expanded to include amphibians, and consumers should follow CDC guidelines for proper maintenance of aquariums.

Michigan, Minnesota, Missouri, Mississippi, Nebraska, Nevada, New Jersey, New Mexico, New York, Ohio, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, and Wisconsin; and S Khan, Div of Foodborne, Bacterial, and Mycotic Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases, CDC.

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Patients Hospitalized with 2009 Pandemic Influenza A (H1N1) – New York City, May 2009

The first cases of 2009 pandemic influenza A (H1N1) in New York City occurred in April 2009, raising many questions about how best to contain the epidemic. To rapidly assess the severity of influenza illness and identify persons at highest risk for severe infection, the New York City (NYC) Department of

Health and Mental Hygiene (DOHMH) reviewed the medical charts of the first 99 patients with laboratory confirmed H1N1 admitted to any NYC hospital. The purpose of the review was to characterize the demographics of the first hospitalized patients, identify associated underlying medical conditions, describe the course and severity of disease, and examine the use of antiviral medications. This report summarizes the findings of this analysis. Approximately 60% of admitted patients were aged <18 years. The most commonly documented underlying condition was asthma, observed among 50% of patients aged <18 years and 46% of adult patients. Multiple underlying conditions were observed in 17% of patients (12% of children, 24% of adults). Patients treated with oseltamivir within 2 days of symptom onset had shorter median hospitalizations than those who did not (2 days versus 3 days [$p = 0.03$]). The findings of this assessment were used to inform immediate outbreak response measures in New York City. During such outbreaks, public education campaigns should encourage patients at high risk of severe illness to seek treatment promptly after symptom onset and should emphasize the importance of early antiviral therapy for patients with underlying risk conditions (1,2).

The subjects of the assessment were the first 99 patients with polymerase chain reaction-confirmed H1N1 influenza admitted to any NYC hospital during April 25–May 24, 2009. To conduct the assessment, DOHMH physicians used a modified abstraction form based on one developed by CDC to collect clinical and laboratory data from paper and electronic medical charts of the hospitalized patients. Reviewing physicians identified underlying conditions known to increase risk for severe influenza (1,2). Body mass index (BMI) was calculated using height and weight recorded in the chart; BMI percentile-for-age for patients aged 2–17 years was determined by using CDC growth charts (3) and the standard formula (4) was used for nonpregnant adults aged ≥ 18 years. Patients with BMI ≥ 30 were categorized as obese (4). Wilcoxon ranked-sum tests were conducted to compare median lengths of hospitalization among surviving patients (statistically significant results defined as $p < 0.05$).

Among the 99 hospitalized patients, 19 (19%) were aged <5 years, 39 (39%) were aged 5–17 years, and nine (9%) were aged ≥ 50 years. These proportions differed from the proportions for the same age groups in the general population (2007 census projections for New York City), which were 7%, 16%, and 29%, respectively, indicating that hospitalized patients were generally younger than the general population. Of the hospitalized patients, non-Hispanic Asians and whites were underrepresented compared with the NYC general population, and Hispanics were overrepresented (Table 1).

The most common presenting symptoms were fever and cough. A total of 95 patients (96%) had measured or subjective

TABLE 1. Characteristics of 99 patients hospitalized with 2009 pandemic influenza A (H1N1), New York City (NYC), May 2009

Characteristic	Hospitalized patients (N = 99)		NYC population* (N = 8,274,527)		Unadjusted chi-square p-value
	No.	(%)	No.	(%)	
Age (yrs)					
0–4	19	(19)	565,649	(7)	<0.001
5–17	39	(39)	1,330,691	(16)	<0.001
18–49	32	(32)	3,979,785	(48)	0.002
50–64	8	(8)	1,385,357	(17)	0.021
≥ 65	1	(1)	1,013,045	(12)	0.001
Gender					
Female	45	(45)	4,325,484	(52)	0.174
Male	54	(55)	3,949,043	(48)	0.174
Race/Ethnicity					
Asian, non-Hispanic	5	(5)	971,412	(12)	0.039
Black, non-Hispanic	26	(26)	1,979,191	(24)	0.585
Hispanic	38	(38)	2,269,971	(27)	0.015
White, non-Hispanic	12	(12)	2,928,832	(35)	<0.001
Unknown	18	(18)			

* NYC Department of Health and Mental Hygiene neighborhood population estimates, modified from U.S. Census Bureau vintage population estimates, 2007.

fever on admission; 56 (57%) had measured fever of $>100.4^{\circ}\text{F}$ (median maximum temperature: 102.2°F [39.0°C]; range: 97.0°F – 105.9°F [36.1°C – 41.1°C]) and 39 (39%) had subjective fever. A total of 89 (90%) reported cough. Additional presenting symptoms reported included runny nose (42%), shortness of breath (34%), headache (33%), vomiting (32%), and myalgias (31%). Elevated heart and respiratory rates for age were observed in 63 (64%) and 48 (48%) of patients, respectively. Abnormally high (20 patients) and low (seven patients) white blood cell counts were observed in 27 patients (27%). A total of 87 patients (88%) received at least one chest radiograph, of which 38 (44%) were read as abnormal. The most common abnormalities were single lower lobe infiltrates (24%), interstitial infiltrates (18%), and multilobar infiltrate (8%). Complications observed during hospitalizations included acute respiratory distress syndrome (ARDS) in three patients (3%), shock in three (3%), sepsis in five (5%), liver impairment in five (5%), and renal failure in five (5%).

Underlying medical conditions known to increase the risk of severe influenza or influenza complications (1,2) were observed in 73 patients (74%), including 37 children (64%) and 36 adults (88%), and 17 patients (17%), including seven children (12%) and 10 adults (24%), had more than one underlying condition (Table 2). The most commonly documented underlying condition was history of asthma, recorded for 29 patients aged <18 years (50%) and 19 adults (46%). Also recorded were chronic metabolic disorders including diabetes (11 patients [11%]), neurological disorders including neuromuscular disorders, seizure disorders, or cognitive dysfunction (10 patients [10%]), and immunosuppressive conditions, including HIV or medication-related conditions (five patients [5%]). Among

TABLE 2. Underlying conditions among 99 patients hospitalized with 2009 pandemic influenza A (H1N1), by age, New York City, May 2009

Condition	All ages (N = 99)		<18 yrs (n = 58)		≥18 yrs (n = 41)	
	No.	(%)	No.	(%)	No.	(%)
No underlying conditions associated with severe influenza	26	(26)	21	(36)	5	(12)
Single underlying condition associated with severe influenza	56	(57)	30	(52)	26	(63)
Asthma, ever diagnosed	36	(36)	23	(40)	13	(32)
Neurologic disorder*	4	(4)	1	(2)	3	(7)
Chronic metabolic disorder	5	(5)	1	(2)	4	(10)
Chronic cardiovascular disease (excluding hypertension)	1	(1)	1	(2)	0	(0)
Hemoglobinopathy, such as sickle cell disease	2	(2)	2	(3)	0	(0)
Renal disease	2	(2)	1	(2)	1	(2)
Immunosuppressive condition	2	(2)	1	(2)	1	(2)
Chronic lung disease	1	(1)	0	(0)	1	(2)
Pregnancy†	3	(3)	0	(0)	3	(7)
Multiple underlying conditions	17	(17)	7	(12)	10	(24)
Asthma plus at least one other underlying condition‡	12	(12)	6	(10)	6	(15)
Chronic metabolic disorder plus one other underlying condition¶	4	(4)	0	(0)	4	(10)
Renal disease plus immunosuppressive condition	1	(1)	1	(2)	0	(0)
Weight (body mass index [BMI])**						
Underweight (0 to <18.5)	5	(10)	5	(18)	0	(0)
Normal (18.5 to <25.0)	13	(27)	11	(39)	2	(10)
Overweight (25.0 to <30.0)	13	(27)	7	(25)	6	(30)
Obese (30.0 to 40.0)	13	(27)	5	(18)	8	(40)
Morbidly obese (>40.0)	4	(8)	0	(0)	4	(20)

* Neurologic disorders include neuromuscular disorders, seizure disorders, and cognitive dysfunction.

† Currently or within 10 days after delivery.

‡ Other conditions include neurologic disorders, chronic metabolic disorders, chronic cardiovascular disease, hemoglobinopathy, immunosuppressive conditions, renal disease, and pregnancy.

¶ Other conditions include neurologic disorders, chronic cardiovascular disease, and immunosuppressive conditions, excluding asthma.

** Among 48 patients for whom BMI was available. BMI was calculated using height and weight recorded in the chart, using CDC growth charts to determine BMI percentile-for-age for patients aged 2–17 years, CDC. Overweight and obesity: defining childhood overweight and obesity (available at <http://www.cdc.gov/obesity/childhood/defining.html>) and using the standard formula for nonpregnant adults (available at <http://www.cdc.gov/obesity/defining.html>).

the 24 female patients aged 15–49 years at the time of hospital admission, seven (29%) were pregnant or within 10 days after delivery, of whom four had additional underlying conditions. Among the 20 adults and 28 patients aged <18 years for whom information was available, 12 adults (60%) and five patients aged <18 years (18%) were obese. Underlying conditions (1,2) were observed in 11 of the obese adults and four of the obese patients aged <18 years.

Among 24 patients (24%) admitted to the intensive care unit (ICU), seven (29%) required mechanical ventilation. Median age of ICU patients was 19 years (range: 0–55 years). Patients admitted to the ICU had longer median lengths of stay (4 days, range: 1–29 days) compared with other hospitalized patients.

Four patients (4%) died. Three of those patients were obese. Underlying conditions among the four included asthma (two) and Down syndrome (one). One patient died on the day of admission, two other patients died within 4 days of admission, and the fourth patient died 41 days after admission.

Median length of time from symptom onset to admission was 2 days (range: 0–14). Among the 95 patients who survived

their hospitalization, a difference of 1 day for median length of hospitalization was observed for children compared with adults (2 days [range: 0–20] vs. 3 days [range: 1–29]; $p = 0.01$).

Antiviral treatment with oseltamivir was received by 76 patients (77%); three (4%) initiated treatment before hospitalization. Of the 76 patients who received antivirals, 36 (47%) began treatment within 2 days of symptom onset. Median time from onset of illness to treatment was 3 days (range: <24 hrs to 15 days). Patients who initiated antiviral treatment within the 2 days recommended by CDC (1) had shorter lengths of stay than those who initiated treatment later (median: 2 days versus 3 days; $p = 0.03$).

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Editorial Note: This review was conducted to assess rapidly, in the first days of the NYC H1N1 outbreak, the characteristics and severity of illness in hospitalized patients in New York City. All data were collected within 2 weeks and results were

available quickly to DOHMH to inform outbreak response measures. A key finding was that the first hospitalized patients in New York City were in younger age groups (91% of these patients were aged <50 years, and 59% were aged <18 years). Only one patient was aged ≥65 years, the most commonly hospitalized group for seasonal influenza (2). These findings were consistent with other descriptions of hospitalized persons with H1N1 (5), and contributed to a growing body of national epidemiologic data that later informed ACIP recommendations (6) regarding target groups for the forthcoming monovalent H1N1 vaccine.

The finding that prompt treatment with antiviral medications was associated with a shorter length of hospitalization did not definitively establish that more rapid treatment resulted in shorter hospitalization, in part because of a small sample size and possible confounding with other risk factors. However, the finding, along with CDC guidance concerning treatment of H1N1 influenza, generally supported DOHMH's public health messages that persons with underlying conditions should seek care as early as possible. This message was disseminated via press releases to the public, information published on the DOHMH website, and through electronic health alerts sent to NYC health-care providers.

Asthma was the most commonly noted underlying condition among H1N1 patients, observed for 50% of patients aged <18 years and 49% of adult patients (age adjusted). These proportions are higher than rates of asthma among NYC residents, as reported in the 2003 and 2007 NYC Community Health Survey (CHS) (7), in which 17% of children aged <18 years and 13% of adults were reported to have a history of asthma. Although the ascertainment methods for asthma history were different for the hospital assessment and the CHS, the finding suggested that asthma might be playing a role in the earliest hospitalizations for H1N1 influenza. Similarly, obesity was more common among H1N1 patients (56% of adults [age adjusted] where information was available) than NYC residents (22% of adult NYC residents on the 2007 CHS).

Although BMI was available for only 59% of patients aged >2 years, 92% of obese adults and 80% of obese patients aged <18 years had an underlying condition, potentially increasing the risk for severe influenza or complications. In addition, three of the four fatalities occurred in obese individuals. Whether obesity itself contributes to the risk of acquiring H1N1 influenza or to the risk of severe disease or death remains unclear but has been a focus of investigation during the H1N1 pandemic (8,9). To aid in future studies, all patients hospitalized with H1N1 influenza should have an objective measure of height and weight documented in their medical record.

What is already known on this topic?

In the early days of the 2009 pandemic influenza A (H1N1) outbreak, little was known regarding the risk factors or expected clinical course of H1N1 infection among hospitalized patients.

What is added by this report?

Detailed examination of hospitalization and patient outcome data during the initial outbreak of H1N1 influenza in New York City showed that 56% of adult patients hospitalized for H1N1 were obese, 92% of obese patients had other underlying medical conditions, and suggested that prompt antiviral therapy after symptom onset might be associated with shorter length of hospitalization.

What are the implications for public health practice?

This rapid assessment led to a greater understanding of the disease; results were used by New York City health authorities when issuing guidance to the public and providing information and health alerts to New York City health-care providers.

The findings in the report are subject to at least three limitations. First, during the review period some hospitalized patients might have had H1N1 but were not tested or confirmed, resulting in underreporting of cases. Second, despite the use of a standardized abstraction tool, incomplete information in the medical charts might have led to underreporting of some underlying illnesses and limited the ability to study their role in the development of severe influenza. Finally, patients hospitalized in the first weeks of the outbreak likely do not represent patients later hospitalized with H1N1 (>900 in New York City as of July 2009, after which surveillance was limited to sentinel hospitals and passive reporting).

Collecting data from the medical charts of hospitalized patients during the initial aspects of such epidemics can provide information useful to health departments for policy making or education or prevention campaigns, but the utility of such surveys must be balanced with the extensive resources required to collect such information. Currently, DOHMH is collecting clinical and laboratory data from patients with H1N1 infection at sentinel hospital sites. In particular, efforts are underway to collect height and weight to evaluate whether obesity is an independent risk factor for hospitalization. Public education campaigns should encourage patients at high risk of severe illness to be vaccinated, and should emphasize to medical providers the importance of early antiviral therapy for children aged <2 years and patients with underlying risk conditions (1).

Acknowledgments

This report is based, in part, on contributions by JM Norton, PhD, and S Lim, MS, and the DOHMH 2009 Pandemic Influenza

A (H1N1) Chart Abstraction Team, New York City Department of Health and Mental Hygiene.

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Outbreak of 2009 Pandemic Influenza A (H1N1) at a School — Hawaii, May 2009

The first cases of 2009 H1N1 pandemic influenza were reported by CDC on April 21, 2009 (1). Twenty-one days later, on May 12, the Hawaii Department of Health (HDOH) confirmed two pandemic H1N1 cases from the same school in Oahu. One case was in an 8th-grade student and the other in a 3rd-grade teacher. HDOH initiated an investigation to determine the extent of transmission at the school and among household contacts, and to help establish appropriate control strategies. This report summarizes the results of the investigation, which detected an outbreak of pandemic H1N1 cases at the school over the ensuing 3 weeks. A total of 16 cases were identified; all patients recovered with no hospitalizations or deaths. HDOH, the school, and the Hawaii Department of Education (HDOE) instituted an education campaign asking students and employees to stay home if ill. After consulting with HDOH, school officials decided not to close the school;

the outbreak ended after 19 days. This outbreak represented the first documented community transmission of pandemic H1N1 virus in Hawaii. The investigation contributed to the early understanding of the epidemiology of H1N1 influenza in Hawaii (e.g., that risk factors for infection would not be restricted to mainland or foreign travel) and the likely role that endemic transmission would play. Influenza activity in schools can serve to inform local public health officials of changing disease patterns, especially early in an epidemic.

HDOH conducts routine, year-round influenza surveillance, including participation in national laboratory surveillance, an outpatient influenza-like illness (ILI) surveillance network (ILINet), and pneumonia and influenza mortality surveillance, and uses the ILI case definition (i.e., illness with fever (temperature of $\geq 100^{\circ}\text{F}$ [$\geq 37.8^{\circ}\text{C}$]) and cough or sore throat in the absence of another known cause) (2). In Hawaii, laboratory-confirmed influenza and influenza outbreaks are reportable. Schools are required to report when absentee rates attributable to any illness exceed 10% of the student body. The majority of school reporting has been for ILI-related absenteeism, so HDOH incorporates school reporting for ILI-related absenteeism into influenza surveillance. During early May 2009, Hawaii sentinel physicians reported that the ILI rate in Hawaii was higher than the national rate (2.4% versus 1.7%, respectively) (3). Hawaii identified its first confirmed case of pandemic H1N1 on April 29, 2009. HDOH subsequently requested that all persons with ILI symptoms seek medical care and health-care providers test all such patients for influenza by collecting nasopharyngeal specimens for reverse transcription–polymerase chain reaction (RT-PCR). Positive specimens were submitted to HDOH for influenza subtyping by RT-PCR using CDC-approved primers. HDOH advised the public that persons experiencing symptoms consistent with influenza stay home from school/work for 7 days or 24 hours after fever resolution, whichever was longer (consistent with CDC recommendations at that time). A total of 42 confirmed cases, all associated with U.S. mainland travel, were identified before the school outbreak.

The school, a public Hawaiian immersion school enrolling 353 day students, comprises two adjacent campuses, one for K–8th grades (enrollment 235) and the other for 9th–12th grades (enrollment 118). Students reside in communities throughout Oahu, most riding school buses to campus. A school assembly is held twice a week. All students share one library, computer laboratory, and cafeteria. Only middle school students (7th and 8th grades) share common classes and participate together in daily athletics.

The initial two school cases of pandemic H1N1 were identified in an 8th-grade student and a 3rd-grade teacher on May 12. Their ILI onsets were May 1 and 7, respectively. The source

of their infections is unknown; neither traveled out-of-state in the 10 days before onset. HDOH immediately alerted the HDOE superintendent. The 8th-grade student experienced ILI onset on May 1 and continued attending school. Although his symptoms appeared to improve after 2 days, he reported fever (102.0°F [38.9°C]) recurrence 4 days after onset. A nasopharyngeal specimen was obtained for influenza RT-PCR testing on May 8. The 3rd-grade teacher visited her physician on May 8 (1 day after onset), and a nasopharyngeal specimen was obtained for influenza RT-PCR testing; she did not attend school after illness onset during school hours but did go in to school on a weekend day when school was not in session. Both specimens were reported positive for 2009 pandemic influenza A (H1N1) virus on May 12. On May 13, HDOH met with school staff to discuss mitigation options of school closure or continued self-isolation of other possible cases. The same day, HDOE provided students with a letter informing parents of the outbreak. On May 14, HDOH issued a press release reiterating the recommendation to stay home if ill. Per HDOH recommendations, HDOE decided to close the school only if a marked increase in hospitalizations or influenza-associated complications occurred or if school operations were affected by absenteeism. Neither of these conditions were met; the school did not close during this outbreak.

On May 12, HDOH launched an investigation to determine the sources of infection and extent of transmission. Confirmed cases, defined by laboratory identification of 2009 pandemic influenza A (H1N1) virus RNA by RT-PCR from a nasopharyngeal specimen, were ascertained by active and passive surveillance. HDOH interviewed the two initial patients and the parents of all students in the teacher's class. Continuing daily through June 4, the end of the school year, students were questioned about ILI symptoms, and the school health aide reported these students to HDOH. HDOH telephoned parents of ill students each day to identify any household contacts experiencing ILI symptoms and called through 7 days after onset of the last identified case in each household. All persons with ILI illness were interviewed and asked to undergo influenza testing. Interviewers used a standard questionnaire to collect demographic information, symptoms, medical history, clinical management information, and outcomes data. HDOH performed nasopharyngeal swabs for any person without health-care access.

Passive surveillance comprised daily review of HDOH pandemic H1N1 laboratory results. HDOH interviewed any person with confirmed pandemic H1N1 infection and a school affiliation. Household contacts with ILI also were interviewed and asked to undergo influenza testing.

During May 12–26, a total of 16 confirmed cases affiliated with the school were identified; cases occurred in 10 students,

one 3rd-grade teacher, and five household contacts of students (Table). The overall attack rate for confirmed cases among students was 2.8% (elementary school, 0.6%; middle school, 10.2%; and high school, 2.5%). Illness onset dates ranged from May 1 through May 17 (Figure). Median duration of reported fever was 6 days (range: 1–7 days). All persons recovered with no hospitalizations or deaths. Students with confirmed illness resided in six (18%) of 33 postal code areas on the island of Oahu. None traveled out of state in the 10 days before illness onset. Seven (44%) received seasonal influenza vaccine during the period October 2008–March 2009. Seven (44%) received antiviral medications.

HDOH reviewed student absentee rates before and during the outbreak. Overall absenteeism rates exceeded 10% on seven occasions during the 2 weeks before confirmation of the first case (Figure). Median daily absenteeism during April 23–May 13 was 13% (range: 7%–25%) for the entire school.

TABLE. Characteristics of 16 patients with confirmed 2009 pandemic influenza A (H1N1)* associated with a school outbreak — Hawaii, April 21–May 26, 2009

Characteristic†	No.	(%)§
Race		
Native Hawaiian	8	(50)
Multiple race	8	(50)
Sex		
Female	10	(63)
Male	6	(38)
School affiliation		
Elementary school student (3rd grade)	1	(6)
Middle school student (7th and 8th grades)	6	(38)
High school student (9th, 10th, 11th grades)	3	(19)
Teacher (3rd grade)	1	(6)
Household contact of a student	5	(31)
Signs and symptoms		
Cough	16	(100)
Fever¶	15	(94)
Headache	15	(94)
Rhinorrhea	15	(94)
Pharyngitis	12	(75)
Fatigue	11	(69)
Chills	10	(63)
Myalgias	10	(63)
Diarrhea	3	(19)
Arthralgia	3	(19)
Conjunctivitis	2	(13)
Dizziness	2	(13)
Dyspnea	1	(6)

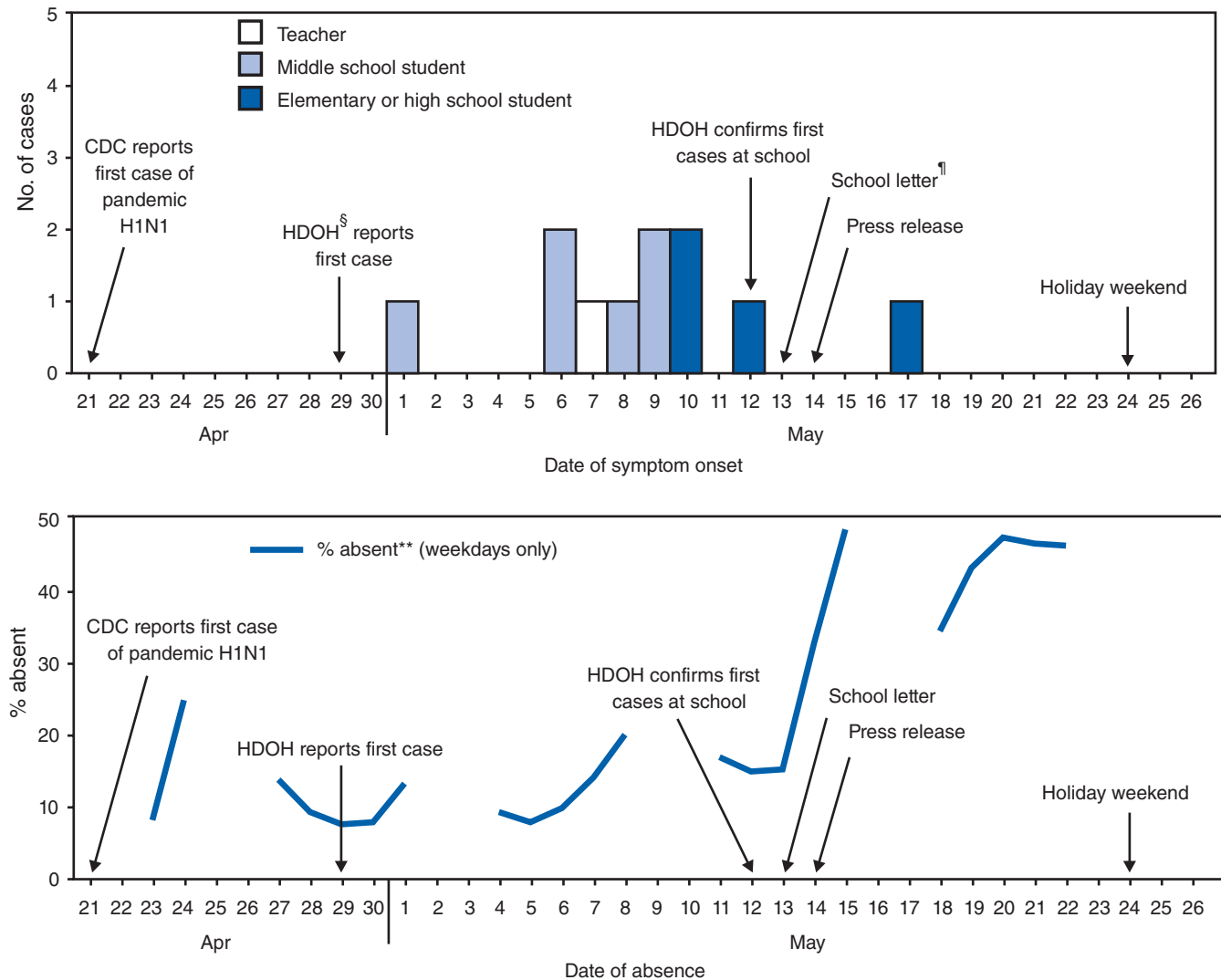
* Defined by laboratory identification of 2009 pandemic influenza A (H1N1) virus RNA by reverse transcription–polymerase chain reaction (RT-PCR) from a nasopharyngeal specimen

† Median age was 14 years (range: 8–54 years).

§ Totals for each category might not add to 100% because categories are not mutually exclusive or because of rounding.

¶ Subjective or measured (>100.0°F [>37.8°C]). Five confirmed cases had documented fever; median temperature: 102.5°F (39.2°C) (range: 101.2–104.2°F [38.4–40.1°C]). One case without documented or subjective fever was laboratory confirmed.

FIGURE. Number of confirmed cases of 2009 pandemic influenza A (H1N1)* and total percentage of students who were absent during a school-associated outbreak, by date of symptom onset† and date of absence — Hawaii, April 21–May 26, 2009



* Defined by laboratory identification of 2009 H1N1 pandemic influenza virus RNA by reverse transcription–polymerase chain reaction from a nasopharyngeal specimen.
 † Onset dates for five cases among household contacts not shown.
 § Hawaii Department of Health.
 ¶ Several parents kept healthy students home after the school letter went out on May 13, according to reports from school staff.
 ** Represents total percentage absent for the entire school (N = 353).

This increased to 35% (range: 16%–49%) during the 2 weeks after schoolwide outbreak notification. The proportion of these absences attributable to ILI was unknown because reasons for absence were not collected. HDOH had not been notified of the increased school absenteeism before the recognition of the initial two laboratory-confirmed cases.

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Editorial Note: This school outbreak provided the first evidence of community transmission of pandemic H1N1 influenza in Hawaii. The source of infection for the initial cases was never identified, and whether undetected infections occurred at the school before the initial cases were identified is unknown. Student absenteeism data suggest possible disease

activity before May 13, although this cannot be linked directly to ILI. The fact that the middle school students experienced the highest attack rate (10.2%) among all groups suggests that shared classrooms and activities among this group contributed to transmission.

In accordance with CDC guidance at the time (4), HDOH did not recommend school closure because routine school operations remained unaffected, the percentage of confirmed ill students was low, and recognized illnesses did not require hospitalization. Based on an estimated incubation period of 1–7 days for pandemic H1N1 infection (5), most cases in this outbreak resulted from exposure before HDOH initiated its investigation on May 12. No additional confirmed cases associated with this school were identified from May 19 to the scheduled summer closure on June 4, suggesting that transmission had ended. Asking students and staff to stay home if experiencing ILI symptoms possibly led to the increased absenteeism rate after May 13 and might have facilitated ending the outbreak.

The investigation of this school outbreak found pandemic H1N1 infections among residents of different communities without history of travel and provided the first clear evidence of community transmission within Hawaii. Early in a pandemic, schools with a wide geographic catchment area might serve either to accelerate spread because students (especially young school children) are a well-documented source of community influenza transmission (6) or represent markers for more widespread community transmission. Outbreaks in such widely representative schools might alert public health officials of a change in epidemiology and therefore warrant adjusting surveillance practices. In Toulouse District, France, a school outbreak of pandemic H1N1 occurred in June 2009 among students without history of travel, which led public health officials to broaden their surveillance efforts and incorporate communitywide sentinel sites (7). Because of this school outbreak, HDOH recognized local transmission would likely contribute substantially to the epidemiology of pandemic H1N1 in Hawaii and alerted the public that mainland or foreign travel were no longer the only risk factors.

The findings in this report are subject to at least three limitations. First, the investigation likely underestimated the actual case number because it relied on ILI reports from school staff to initiate case finding and interviewing; however, no cases were identified after May 26 by the school or laboratory reporting. Second, this investigation could not identify additional cases among school-associated persons who had ILI onset outside of school, did not seek medical care or receive testing, and whose illnesses were not reported to HDOH. Finally, some household

What is already known on this topic?

School-aged children have some of the highest reported rates of seasonal influenza infection, and early in the 2009 influenza pandemic A (H1N1), schools were among the first locations to experience large outbreaks.

What is added by this report?

This report describes the first school-associated outbreak in Hawaii, which was the first evidence for endemic transmission of H1N1 virus in the state.

What are the implications for public health practice?

Investigation of the outbreak helped the Hawaii Department of Health recognize the role that endemic transmission would play during the H1N1 epidemic in Hawaii. The epidemiology of the disease in schools can inform local public health officials of changing disease patterns, especially early in an epidemic.

contacts with ILI were not tested because they were identified more than 7 days after illness onset (8).

Health authorities, in close collaboration with HDOE and school staff, conveyed unified advice for school exclusion of persons experiencing ILI, which might have helped contain this outbreak. Clear, ongoing communication between education and public health authorities is especially important because guidance on school closures and other policies are updated and revised regularly. For example, since the time of this investigation, the period a person should stay out of school/work if ill has been revised to 24 hours after fever resolution without antipyretics (9). Current CDC guidance for responding to influenza in K–12 grade schools during the 2009–10 school year includes ensuring students and staff stay home when ill, separating ill persons if they become ill at school, proper hand hygiene and respiratory etiquette, and routine cleaning of common areas (10). The guidance also provides a framework for when to consider closing schools.

Acknowledgments

This report is based, in part, on contributions by Hawaii clinical commercial laboratories and the Hawaii Dept of Education.

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Announcement

National Influenza Vaccination Week – January 10–16, 2010

Each year during National Influenza Vaccination Week, the importance of influenza vaccination and the need for persons to receive vaccination throughout the entire October–May influenza season are highlighted. Influenza vaccination is the best way to prevent influenza and its severe complications.

This influenza season, with circulation of the 2009 pandemic influenza A (H1N1) virus, influenza activity early in the traditional season was much higher than normal. As of mid-November, an estimated 47 million persons in the United States had been infected with the H1N1 virus, resulting in an estimated 213,000 hospitalizations and 9,820 deaths (1). In contrast with previous influenza seasons, through November 14, approximately 87% of influenza-related deaths from the H1N1 virus had occurred among persons aged <65 years (1). Thus far this season, H1N1 viruses have predominated, but future waves of influenza activity might occur from either H1N1 or regular seasonal influenza viruses.

Influenza A (H1N1) 2009 monovalent vaccine is the best way to protect against H1N1 (2). As of December 29, 2009, approximately 116 million doses of vaccine had become available for distribution since vaccine shipping began in October. Most jurisdictions now are making vaccine available to all persons. H1N1 vaccination continues to be particularly important for pregnant women, household contacts and caregivers of infants aged <6 months, health-care and emergency medical services personnel, all persons aged 6 months–24 years, and persons aged 25–64 years with medical conditions associated with higher risk for complications from influenza. In addition, as in every influenza season, persons who want to reduce their

risk for seasonal influenza should receive the seasonal influenza vaccine (3). However, nearly all seasonal influenza vaccine has been distributed, and supplies are now limited.

Throughout the week of January 10–16, 2010, the Department of Health and Human Services, CDC, and other agencies will be highlighting the importance of influenza vaccination. On January 11, events will focus on communicating to the general public and health-care workers about the importance of influenza vaccination. January 12 events will highlight the importance of H1N1 vaccination for persons with chronic health conditions (particularly those aged 25–64 years) that put them at increased risk for serious influenza-related complications. On January 13, emphasis will be focused on pregnant women, children, and caregivers of infants aged <6 months. January 14 events will focus on young adults and college students, and January 15 events will highlight information for seniors.

Posters and other influenza educational materials are available to download for local printing and distribution at http://www.cdc.gov/flu/NIVW/daily_materials.htm. Other influenza-related tools and information for health-care professionals and patients are available at <http://www.flu.gov>.

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Announcement

National Birth Defects Prevention Month and Folic Acid Awareness Week

January is National Birth Defects Prevention Month. Birth defects affect approximately one in 33 newborns and are a leading cause of infant mortality in the United States (1,2). Lifetime care for all infants born in a single year with one or more of 17 severe birth defects has been estimated at \$6 billion (3).

This year, the focus is on diabetes and birth defects. Diabetes is often diagnosed in women during their childbearing years and can affect the health of both the mother and her unborn child. Poor control of diabetes in a woman who is pregnant increases the chances for birth defects and other problems for the baby (4). Proper health care before and during pregnancy can help prevent birth defects associated with risks, including

diabetes, and other poor outcomes, such as miscarriage or stillbirth.

January 4–10 is National Folic Acid Awareness Week. Consuming 400 μg of folic acid daily, before and during early pregnancy, will help reduce a woman's risk for pregnancy affected by a neural tube defect (5). Health-care professionals should encourage women who can become pregnant to consume folic acid daily through a vitamin supplement or enriched foods. Additional information regarding prevention of birth defects is available at <http://www.cdc.gov/ncbddd>.

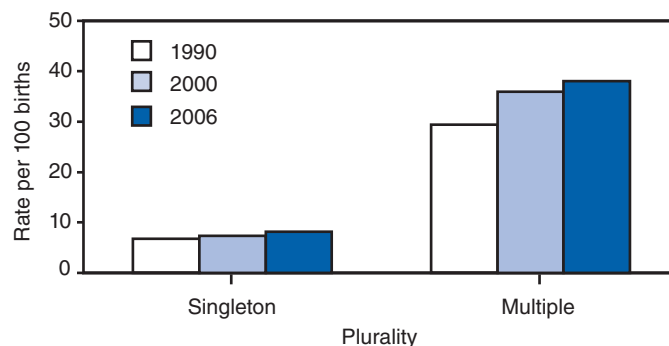
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QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Late Preterm Birth Rates,* by Plurality — United States, 1990, 2000, and 2006



* Births at 34–36 completed weeks' gestation per 100 total births.

During 1990–2006, most of the increase in overall preterm birth rates was attributed to late preterm births. During this period, the late preterm birth rate for singleton births increased 19%, from 6.8% to 8.1%; the late preterm birth rate for multiple births increased 30%, from 29.3% to 38.1%. In 2006, multiple births were nearly four times more likely to occur late preterm than singleton births. Although at less risk than infants born before 34 weeks' gestation, late preterm infants are at higher risk than those born at term (i.e., at 39–41 weeks' gestation) for complications at birth, long-term neurodevelopmental problems, and death in the first year of life.

SOURCES: Martin JA, Kirmeyer S, Osterman M, Sheperd RA. Born a bit too early: recent trends in late preterm births. NCHS data brief, no 24. Hyattsville, MD: US Department of Health and Human Services, National Center for Health Statistics; 2009. Available at <http://www.cdc.gov/nchs/data/databriefs/db24.pdf>. Accessed January 5, 2010.

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TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending December 26, 2009 (51st week)*

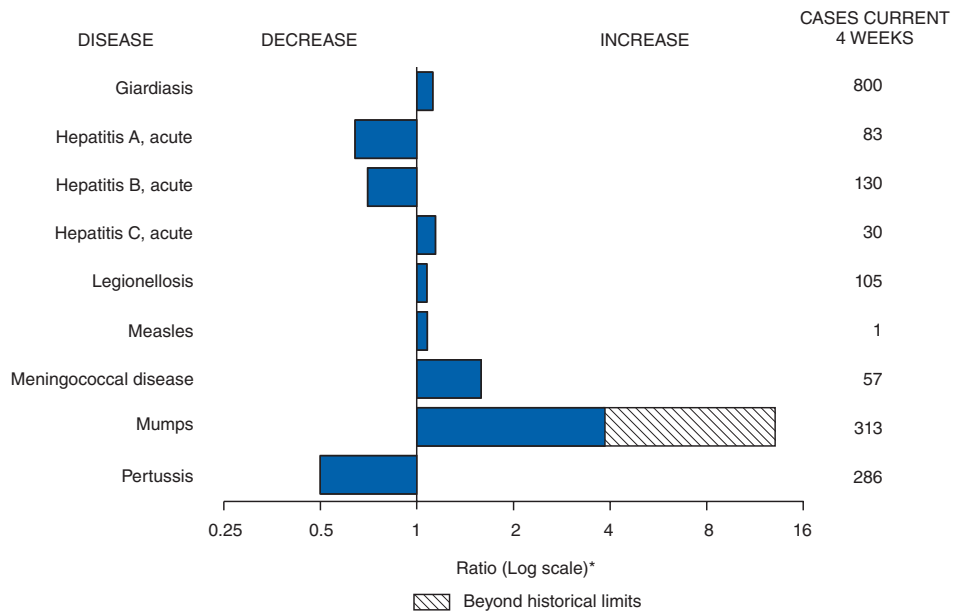
Disease	Current week	Cum 2009	5-year weekly average†	Total cases reported for previous years					States reporting cases during current week (No.)
				2008	2007	2006	2005	2004	
Anthrax	—	—	—	—	1	1	—	—	
Botulism:									
foodborne	—	12	1	17	32	20	19	16	
infant	1	56	2	109	85	97	85	87	OH (1)
other (wound and unspecified)	1	22	1	19	27	48	31	30	WA (1)
Brucellosis	4	97	3	80	131	121	120	114	NC (1), FL (2), CA (1)
Chancroid	—	23	1	25	23	33	17	30	
Cholera	—	8	0	5	7	9	8	6	
Cyclosporiasis§	1	121	2	139	93	137	543	160	NC (1)
Diphtheria	—	—	—	—	—	—	—	—	
Domestic arboviral diseases§,¶:									
California serogroup	—	39	0	62	55	67	80	112	
eastern equine	—	4	0	4	4	8	21	6	
Powassan	—	1	—	2	7	1	1	1	
St. Louis	—	10	—	13	9	10	13	12	
western equine	—	—	—	—	—	—	—	—	
Ehrlichiosis/Anaplasmosis§,**:									
<i>Ehrlichia chaffeensis</i>	5	789	20	1,137	828	578	506	338	OH (1), MD (1), NC (3)
<i>Ehrlichia ewingii</i>	—	6	—	9	—	—	—	—	
<i>Anaplasma phagocytophilum</i>	5	683	32	1,026	834	646	786	537	ME (1), MN (4)
undetermined	—	116	2	180	337	231	112	59	
<i>Haemophilus influenzae</i> ††									
invasive disease (age <5 yrs):									
serotype b	—	25	1	30	22	29	9	19	
nonserotype b	1	201	5	244	199	175	135	135	MN (1)
unknown serotype	6	213	5	163	180	179	217	177	OH (1), MN (1), GA (1), TN (1), ID (1), NV (1)
Hansen disease§	—	57	2	80	101	66	87	105	
Hantavirus pulmonary syndrome§	—	12	1	18	32	40	26	24	
Hemolytic uremic syndrome, postdiarrheal§	3	206	8	330	292	288	221	200	NC (1), TN (1), CA (1)
Hepatitis C viral, acute	6	810	24	878	845	766	652	720	NY (1), FL (1), TN (1), OK (1), WA (1), CA (1)
HIV infection, pediatric (age <13 years)§§	—	—	2	—	—	—	380	436	
Influenza-associated pediatric mortality§,¶¶	4	356	0	90	77	43	45	—	MA (1), FL (2), TX (1)
Listeriosis	7	739	21	759	808	884	896	753	NY (1), NC (1), KY (1), OK (1), WA (1), CA (2)
Measles***	—	61	1	140	43	55	66	37	
Meningococcal disease, invasive†††:									
A, C, Y, and W-135	4	261	7	330	325	318	297	—	MN (1), NC (2), TN (1)
serogroup B	4	140	5	188	167	193	156	—	MN (1), NC (3)
other serogroup	—	21	1	38	35	32	27	—	
unknown serogroup	11	450	17	616	550	651	765	—	NY (1), OH (1), NC (5), CA (4)
Mumps	36	977	19	454	800	6,584	314	258	NY (36)
Novel influenza A virus infections	—	§§§	0	2	4	N	N	N	
Plague	—	7	0	3	7	17	8	3	
Poliomyelitis, paralytic	—	—	—	—	—	—	1	—	
Polio virus infection, nonparalytic§	—	—	—	—	—	N	N	N	
Psittacosis§	—	8	0	8	12	21	16	12	
Q fever total§,¶¶¶:	3	84	3	124	171	169	136	70	
acute	2	70	2	110	—	—	—	—	MO (1), NC (1)
chronic	1	14	—	14	—	—	—	—	KY (1)
Rabies, human	—	4	0	2	1	3	2	7	
Rubella****	—	4	0	16	12	11	11	10	
Rubella, congenital syndrome	—	1	—	—	—	1	1	—	
SARS-CoV§,††††	—	—	—	—	—	—	—	—	
Smallpox§	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome§	—	124	4	157	132	125	129	132	
Syphilis, congenital (age <1 yr)	—	251	9	434	430	349	329	353	
Tetanus	—	12	1	19	28	41	27	34	
Toxic-shock syndrome (staphylococcal)§	2	78	3	71	92	101	90	95	NE (1), CA (1)
Trichinellosis	—	12	0	39	5	15	16	5	
Tularemia	2	78	3	123	137	95	154	134	PA (1), NC (1)
Typhoid fever	1	317	8	449	434	353	324	322	OH (1)
Vancomycin-intermediate <i>Staphylococcus aureus</i> §	—	69	1	63	37	6	2	—	
Vancomycin-resistant <i>Staphylococcus aureus</i> §	—	—	0	—	2	1	3	1	
Vibriosis (noncholera <i>Vibrio</i> species infections)§	3	578	5	492	549	N	N	N	FL (2), AL (1)
Yellow fever	—	—	—	—	—	—	—	—	

See Table I footnotes on next page.

TABLE I. (Continued) Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending December 26, 2009 (51st week)*

—: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts.
 * Incidence data for reporting year 2009 is provisional, whereas data for 2004 through 2008 are finalized.
 † Calculated by summing the incidence counts for the current week, the 2 weeks preceding the current week, and the 2 weeks following the current week, for a total of 5 preceding years. The total sum of incident cases is then divided by 25 weeks. Additional information is available at <http://www.cdc.gov/epo/dphsi/phs/files/5yearweeklyaverage.pdf>.
 § Not reportable in all states. Data from states where the condition is not reportable are excluded from this table, except starting in 2007 for the domestic arboviral diseases and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at <http://www.cdc.gov/epo/dphsi/phs/infdis.htm>.
 ¶ Includes both neuroinvasive and nonneuroinvasive. Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (ArboNET Surveillance). Data for West Nile virus are available in Table II.
 ** The names of the reporting categories changed in 2008 as a result of revisions to the case definitions. Cases reported prior to 2008 were reported in the categories: Ehrlichiosis, human monocytic (analogous to *E. chaffeensis*); Ehrlichiosis, human granulocytic (analogous to *Anaplasma phagocytophilum*), and Ehrlichiosis, unspecified, or other agent (which included cases unable to be clearly placed in other categories, as well as possible cases of *E. ewingii*).
 †† Data for *H. influenzae* (all ages, all serotypes) are available in Table II.
 §§ Updated monthly from reports to the Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Implementation of HIV reporting influences the number of cases reported. Updates of pediatric HIV data have been temporarily suspended until upgrading of the national HIV/AIDS surveillance data management system is completed. Data for HIV/AIDS, when available, are displayed in Table IV, which appears quarterly.
 ¶¶ Updated weekly from reports to the Influenza Division, National Center for Immunization and Respiratory Diseases. Since April 26, 2009, a total of 243 influenza-associated pediatric deaths associated with 2009 pandemic influenza A (H1N1) virus infection have been reported. Since August 30, 2009, a total of 225 influenza-associated pediatric deaths occurring during the 2009–10 influenza season have been reported. A total of 130 influenza-associated pediatric deaths occurring during the 2008–09 influenza season have been reported.
 *** No measles cases were reported for the current week.
 ††† Data for meningococcal disease (all serogroups) are available in Table II.
 §§§ CDC discontinued reporting of individual confirmed and probable cases of novel influenza A (H1N1) viruses infections on July 24, 2009. CDC will report the total number of novel influenza A (H1N1) hospitalizations and deaths weekly on the CDC H1N1 influenza website (<http://www.cdc.gov/h1n1flu>).
 ¶¶¶ In 2008, Q fever acute and chronic reporting categories were recognized as a result of revisions to the Q fever case definition. Prior to that time, case counts were not differentiated with respect to acute and chronic Q fever cases.
 **** No rubella cases were reported for the current week.
 †††† Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals December 26, 2009, with historical data



* 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.

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TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 26, 2009, and December 20, 2008 (51st week)*

Reporting area	Giardiasis					Gonorrhea					Haemophilus influenzae, invasive All ages, all serotypes†				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
United States	177	323	498	17,245	18,132	1,158	5,308	6,584	260,823	326,296	30	59	124	2,811	2,687
New England	6	30	64	1,602	1,617	67	97	301	4,974	5,088	—	3	16	182	172
Connecticut	—	6	15	269	321	38	48	275	2,430	2,487	—	0	12	50	41
Maine§	4	3	13	211	185	—	2	9	135	96	—	0	2	18	19
Massachusetts	—	12	36	672	661	27	37	112	1,934	2,066	—	2	5	89	79
New Hampshire	—	3	11	176	159	—	2	6	110	100	—	0	2	12	9
Rhode Island§	—	1	6	59	88	2	6	19	316	302	—	0	2	8	16
Vermont§	2	4	14	215	203	—	1	5	49	37	—	0	1	5	8
Mid. Atlantic	62	60	104	3,130	3,397	330	588	1,138	30,631	31,882	4	12	25	592	517
New Jersey	—	4	17	215	507	—	91	124	4,290	5,156	—	2	7	105	97
New York (Upstate)	48	24	81	1,337	1,201	119	102	664	5,761	5,951	2	3	20	155	151
New York City	7	15	26	780	833	97	212	366	10,833	10,067	—	2	11	118	87
Pennsylvania	7	15	34	798	856	114	191	274	9,747	10,708	2	4	10	214	182
E.N. Central	15	44	72	2,280	2,680	4	1,083	1,394	51,467	67,547	3	12	28	556	450
Illinois	—	9	18	446	688	—	338	524	15,569	20,204	—	3	9	143	151
Indiana	N	0	11	N	N	—	138	223	6,559	8,434	—	1	22	70	71
Michigan	—	11	24	613	602	—	272	501	14,183	16,633	—	0	3	24	29
Ohio	15	15	28	798	879	4	230	431	10,708	16,248	3	2	6	100	132
Wisconsin	—	9	19	423	511	—	86	143	4,448	6,028	—	3	20	219	67
W.N. Central	4	24	141	1,697	1,954	69	276	365	13,902	16,515	10	3	15	164	193
Iowa	1	6	15	291	320	—	31	47	1,543	1,645	—	0	0	—	2
Kansas	—	1	11	96	159	1	43	83	2,266	2,211	—	0	2	13	20
Minnesota	—	0	124	539	665	—	40	65	2,030	2,974	8	0	10	62	58
Missouri	3	9	27	509	454	68	125	173	6,362	7,793	2	1	4	58	71
Nebraska§	—	3	9	170	204	—	23	55	1,334	1,391	—	0	4	25	30
North Dakota	—	0	16	27	19	—	2	14	109	137	—	0	4	6	12
South Dakota	—	1	5	65	133	—	5	14	258	364	—	0	0	—	—
S. Atlantic	29	69	109	3,587	3,007	318	1,113	1,694	55,396	83,932	2	14	31	690	678
Delaware	—	0	3	27	42	26	18	37	950	1,001	—	0	1	4	8
District of Columbia	—	0	5	22	68	—	49	88	2,448	2,580	—	0	1	2	8
Florida	24	37	59	1,894	1,334	125	408	476	20,263	22,787	1	4	10	218	186
Georgia	1	10	67	805	679	—	228	876	10,094	15,183	1	3	9	149	138
Maryland§	3	5	13	267	280	26	112	208	5,820	6,425	—	1	6	93	91
North Carolina	N	0	0	N	N	—	0	175	—	15,690	—	0	17	69	76
South Carolina§	—	2	8	101	132	—	159	412	7,651	9,349	—	1	5	68	59
Virginia§	1	8	31	417	401	139	147	276	7,705	10,181	—	1	6	57	86
West Virginia	—	1	5	54	71	2	9	20	465	736	—	0	3	30	26
E.S. Central	2	8	22	391	492	138	495	687	24,866	29,867	2	3	9	156	145
Alabama§	—	4	11	183	275	—	136	184	6,406	9,518	—	1	4	37	24
Kentucky	N	0	0	N	N	—	72	156	3,795	4,494	—	0	5	19	8
Mississippi	N	0	0	N	N	56	138	252	6,831	7,240	—	0	1	5	14
Tennessee§	2	4	18	208	217	82	156	230	7,834	8,615	2	2	6	95	99
W.S. Central	6	7	22	410	447	8	874	1,555	43,628	49,833	5	2	22	114	110
Arkansas§	2	2	9	147	137	—	83	134	4,040	4,453	—	0	3	19	15
Louisiana	—	1	7	96	148	—	167	418	8,095	9,287	—	0	1	12	12
Oklahoma	4	3	18	167	162	—	61	612	4,307	4,705	5	1	20	78	73
Texas§	N	0	0	N	N	8	554	695	27,186	31,388	—	0	1	5	10
Mountain	8	27	59	1,491	1,606	37	175	243	8,502	11,330	3	5	11	233	282
Arizona	—	4	7	190	139	—	58	110	2,942	3,375	—	1	8	78	103
Colorado	6	8	26	475	552	—	41	106	2,261	3,639	1	1	6	69	54
Idaho§	1	3	10	199	201	—	2	8	95	181	1	0	1	5	12
Montana§	—	2	11	127	90	—	1	5	76	119	—	0	1	2	5
Nevada§	1	1	10	73	119	25	28	93	1,694	2,124	1	0	2	16	16
New Mexico§	—	2	8	105	104	11	22	52	1,095	1,309	—	0	3	28	48
Utah	—	5	12	259	354	1	5	12	267	461	—	1	2	32	40
Wyoming§	—	1	4	63	47	—	1	7	72	122	—	0	1	3	4
Pacific	45	51	130	2,657	2,932	187	541	764	27,457	30,302	1	2	8	124	140
Alaska	—	2	7	106	106	—	18	32	824	546	—	0	3	20	21
California	31	34	60	1,751	1,937	163	448	657	23,075	24,908	—	0	4	25	43
Hawaii	—	0	2	17	41	—	12	24	589	591	—	0	3	24	19
Oregon§	4	7	18	394	448	10	20	44	955	1,197	1	1	4	50	55
Washington	10	7	74	389	400	14	39	71	2,014	3,060	—	0	2	5	2
American Samoa	—	0	0	—	—	—	0	0	—	—	3	—	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	73	—	0	0	—	—
Puerto Rico	—	2	10	102	212	—	4	24	224	272	—	0	1	3	1
U.S. Virgin Islands	—	0	0	—	—	—	2	7	93	118	N	0	0	N	N

C.N.M.I.: Commonwealth of Northern Mariana Islands.

U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.

* Incidence data for reporting year 2009 is provisional.

† Data for *H. influenzae* (age <5 yrs for serotype b, nonserotype b, and unknown serotype) are available in Table I.

§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 26, 2009, and December 20, 2008 (51st week)*

Reporting area	Hepatitis (viral, acute), by type†										Legionellosis				
	A					B									
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
	Med	Max				Med	Max				Med	Max			
United States	22	36	89	1,813	2,460	22	61	197	2,971	3,755	20	53	158	3,069	3,029
New England	—	2	5	92	127	—	1	3	44	79	1	2	17	172	223
Connecticut	—	0	2	18	26	—	0	3	14	29	—	1	5	53	46
Maine§	—	0	1	1	18	—	0	2	15	14	1	0	3	10	11
Massachusetts	—	1	4	56	57	—	0	2	12	21	—	1	9	73	87
New Hampshire	—	0	1	7	12	—	0	1	3	8	—	0	2	10	30
Rhode Island§	—	0	1	8	12	—	0	0	—	4	—	0	4	19	44
Vermont§	—	0	1	2	2	—	0	0	—	3	—	0	1	7	5
Mid. Atlantic	1	5	10	247	322	1	5	17	292	429	6	15	69	1,092	1,005
New Jersey	—	1	5	55	82	—	1	6	66	117	—	2	13	155	145
New York (Upstate)	1	1	3	46	65	—	1	11	51	62	6	5	29	346	336
New York City	—	2	5	83	107	—	1	4	69	98	—	3	20	211	133
Pennsylvania	—	1	6	63	68	1	2	7	106	152	—	6	25	380	391
E.N. Central	—	4	18	245	329	1	6	21	360	509	2	9	34	580	650
Illinois	—	2	12	107	109	—	1	7	81	182	—	1	10	105	120
Indiana	—	0	4	15	19	—	1	18	56	49	—	1	4	44	56
Michigan	—	1	4	69	118	—	2	8	110	145	—	2	11	142	172
Ohio	—	0	3	36	50	1	1	13	85	116	2	4	17	279	264
Wisconsin	—	0	4	18	33	—	0	4	28	17	—	0	2	10	38
W.N. Central	—	2	16	109	238	1	3	16	167	88	—	2	6	106	139
Iowa	—	0	3	32	107	—	0	3	31	22	—	0	2	21	20
Kansas	—	0	1	7	15	—	0	2	5	8	—	0	1	3	2
Minnesota	—	0	12	21	37	—	0	11	26	14	—	0	4	12	23
Missouri	—	0	3	25	34	1	1	5	81	34	—	1	5	55	70
Nebraska§	—	0	3	20	41	—	0	2	22	9	—	0	2	12	21
North Dakota	—	0	2	1	—	—	0	1	—	1	—	0	3	2	—
South Dakota	—	0	1	3	4	—	0	1	2	—	—	0	1	1	3
S. Atlantic	11	8	14	415	385	9	16	32	862	947	5	10	21	545	486
Delaware	—	0	1	4	7	U	0	1	U	U	—	0	5	18	13
District of Columbia	U	0	0	U	U	U	0	0	U	U	—	0	2	9	16
Florida	3	3	9	176	144	3	6	13	297	329	3	3	10	194	144
Georgia	—	1	3	53	55	—	3	9	132	185	—	1	5	51	40
Maryland§	1	1	4	42	44	1	1	5	70	83	2	3	12	151	134
North Carolina	7	0	4	38	62	4	0	19	152	78	—	0	6	39	37
South Carolina§	—	1	4	57	19	—	1	4	50	69	—	0	2	13	12
Virginia§	—	1	3	40	49	1	1	10	91	120	—	1	5	61	61
West Virginia	—	0	2	5	5	—	0	19	70	83	—	0	2	9	29
E.S. Central	3	1	4	47	79	3	7	11	329	398	—	2	12	134	115
Alabama§	1	0	2	11	12	1	1	7	83	108	—	0	2	17	18
Kentucky	—	0	2	12	30	—	2	6	86	97	—	1	3	51	56
Mississippi	—	0	2	12	6	—	1	2	32	48	—	0	2	4	1
Tennessee§	2	0	2	12	31	2	2	5	128	145	—	1	9	62	40
W.S. Central	3	3	43	173	239	2	9	99	471	736	—	2	21	113	95
Arkansas§	—	0	1	8	10	—	1	5	48	62	—	0	1	8	14
Louisiana	—	0	1	3	12	—	0	4	33	91	—	0	2	4	10
Oklahoma	—	0	6	6	7	2	2	17	103	109	—	0	2	6	10
Texas§	3	3	37	156	210	—	6	76	287	474	—	2	19	95	61
Mountain	2	3	8	158	213	—	2	6	118	199	1	2	7	130	99
Arizona	—	1	4	71	114	—	1	3	42	79	1	1	4	50	25
Colorado	2	1	5	51	36	—	0	2	20	33	—	0	2	19	14
Idaho§	—	0	1	4	17	—	0	2	11	10	—	0	2	7	3
Montana§	—	0	1	6	1	—	0	0	—	2	—	0	2	7	4
Nevada§	—	0	2	10	12	—	0	3	29	43	—	0	1	11	13
New Mexico§	—	0	1	7	17	—	0	2	6	12	—	0	2	8	11
Utah	—	0	2	7	13	—	0	1	6	14	—	0	4	24	29
Wyoming§	—	0	1	2	3	—	0	2	4	6	—	0	2	4	—
Pacific	2	6	17	327	528	5	6	36	328	370	5	3	12	197	217
Alaska	—	0	1	3	5	—	0	1	4	10	—	0	1	1	3
California	2	5	16	259	433	4	4	28	236	267	4	3	10	155	172
Hawaii	—	0	2	6	19	—	0	1	5	7	—	0	1	1	8
Oregon§	—	0	2	19	25	—	1	4	41	41	—	0	2	15	18
Washington	—	1	4	40	46	1	1	8	42	45	1	0	4	25	16
American Samoa	—	0	0	—	—	—	0	0	—	—	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	2	18	24	—	0	5	22	49	—	0	1	1	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.
 U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
 * Incidence data for reporting year 2009 is provisional.
 † Data for acute hepatitis C, viral are available in Table I.
 § Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 26, 2009, and December 20, 2008 (51st week)*

Reporting area	Lyme disease					Malaria					Meningococcal disease, invasive† All groups				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
United States	174	302	1,918	29,054	33,091	6	22	46	1,144	1,192	19	17	48	872	1,107
New England	15	55	464	5,872	11,447	—	1	5	49	55	—	0	4	33	35
Connecticut	—	0	12	—	3,873	—	0	4	6	10	—	0	2	5	1
Maine§	13	8	76	889	891	—	0	1	2	1	—	0	1	4	6
Massachusetts	—	18	306	3,229	4,564	—	0	3	30	33	—	0	3	16	23
New Hampshire	—	14	89	1,156	1,590	—	0	1	3	4	—	0	1	3	4
Rhode Island§	—	1	78	212	130	—	0	1	5	2	—	0	1	4	1
Vermont§	2	4	40	386	399	—	0	1	3	5	—	0	1	1	—
Mid. Atlantic	143	172	1,401	16,468	13,653	1	6	13	295	318	1	2	6	95	124
New Jersey	—	37	376	4,050	3,450	—	0	1	1	65	—	0	2	8	16
New York (Upstate)	69	51	1,368	4,130	5,618	1	1	10	50	32	1	0	2	26	32
New York City	—	2	24	262	797	—	4	11	191	181	—	0	2	16	26
Pennsylvania	74	81	631	8,026	3,788	—	1	4	53	40	—	1	4	45	50
E.N. Central	—	17	215	2,337	2,310	—	2	10	140	149	1	3	9	145	203
Illinois	—	1	11	126	108	—	1	4	54	76	—	1	4	40	84
Indiana	—	1	6	61	41	—	0	3	15	5	—	0	3	32	26
Michigan	—	1	10	99	91	—	0	3	27	18	—	0	5	20	32
Ohio	—	1	5	55	45	—	1	6	37	29	1	1	3	43	40
Wisconsin	—	15	197	1,996	2,025	—	0	1	7	21	—	0	2	10	21
W.N. Central	5	5	336	301	1,098	—	1	8	68	71	2	1	9	77	95
Iowa	—	1	14	95	109	—	0	1	10	12	—	0	2	13	18
Kansas	—	0	2	14	16	—	0	1	4	9	—	0	2	8	8
Minnesota	5	0	326	169	952	—	0	8	32	28	2	0	4	15	25
Missouri	—	0	1	3	6	—	0	2	12	14	—	0	3	28	26
Nebraska§	—	0	3	19	12	—	0	1	8	8	—	0	1	10	12
North Dakota	—	0	10	—	—	—	0	1	1	—	—	0	3	1	3
South Dakota	—	0	1	1	3	—	0	1	1	—	—	0	1	2	3
S. Atlantic	9	61	236	3,746	4,235	2	6	17	333	296	10	2	9	158	153
Delaware	—	12	65	949	769	—	0	1	5	3	—	0	1	4	2
District of Columbia	—	0	5	20	73	—	0	2	8	7	—	0	0	—	—
Florida	5	2	11	119	86	1	1	7	90	62	—	1	4	51	50
Georgia	—	1	6	53	35	—	1	5	69	57	—	0	2	29	18
Maryland§	3	26	125	1,764	2,191	1	1	13	78	80	—	0	1	11	19
North Carolina	—	0	14	63	47	—	0	5	21	30	10	0	5	31	14
South Carolina§	—	0	3	35	28	—	0	1	4	9	—	0	1	11	22
Virginia§	1	10	61	573	872	—	1	5	56	46	—	0	2	15	23
West Virginia	—	0	33	170	134	—	0	1	2	2	—	0	2	6	5
E.S. Central	—	1	2	36	46	—	0	3	29	25	1	0	4	35	54
Alabama§	—	0	1	3	9	—	0	3	9	5	—	0	1	10	10
Kentucky	—	0	1	1	5	—	0	2	10	6	—	0	1	7	10
Mississippi	—	0	0	—	1	—	0	1	1	1	—	0	1	3	12
Tennessee§	—	0	2	32	31	—	0	3	9	13	1	0	2	15	22
W.S. Central	—	1	21	48	124	—	1	10	52	82	—	1	12	79	118
Arkansas§	—	0	0	—	—	—	0	1	4	1	—	0	2	9	15
Louisiana	—	0	0	—	3	—	0	1	3	4	—	0	3	11	24
Oklahoma	—	0	2	—	—	—	0	1	1	4	—	0	2	14	18
Texas§	—	1	21	48	121	—	1	9	44	73	—	1	9	45	61
Mountain	—	1	13	47	52	—	0	6	29	36	—	1	4	61	58
Arizona	—	0	2	7	8	—	0	2	9	15	—	0	2	14	9
Colorado	—	0	1	4	3	—	0	3	8	5	—	0	3	23	15
Idaho§	—	0	3	15	9	—	0	1	3	3	—	0	1	7	5
Montana§	—	0	13	3	4	—	0	3	5	—	—	0	2	4	4
Nevada§	—	0	1	4	12	—	0	0	—	5	—	0	1	3	7
New Mexico§	—	0	1	5	8	—	0	0	—	3	—	0	1	3	8
Utah	—	0	1	7	5	—	0	2	4	5	—	0	1	2	8
Wyoming§	—	0	1	2	3	—	0	0	—	—	—	0	2	5	2
Pacific	2	4	13	199	126	3	3	9	149	160	4	3	14	189	267
Alaska	—	0	1	3	6	—	0	1	2	6	—	0	2	6	8
California	2	2	10	147	71	3	2	6	114	119	4	2	8	114	191
Hawaii	N	0	0	N	N	—	0	1	1	3	—	0	1	4	5
Oregon§	—	0	4	34	38	—	0	2	11	4	—	0	6	42	39
Washington	—	0	12	15	11	—	0	3	21	28	—	0	7	23	24
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	3	—	0	0	—	—
Puerto Rico	N	0	0	N	N	—	0	1	3	2	—	0	0	—	3
U.S. Virgin Islands	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.

U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.

* Incidence data for reporting year 2009 is provisional.

† Data for meningococcal disease, invasive caused by serogroups A, C, Y, and W-135; serogroup B; other serogroup; and unknown serogroup are available in Table I.

§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 26, 2009, and December 20, 2008 (51st week)*

Reporting area	Pertussis					Rabies, animal					Rocky Mountain spotted fever				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
United States	43	270	1,697	13,204	11,170	5	64	140	3,525	4,083	4	23	179	1,379	2,332
New England	—	12	27	570	1,007	4	6	24	352	421	—	0	2	11	7
Connecticut	—	1	4	48	53	—	2	22	149	199	—	0	0	—	—
Maine†	—	1	10	78	47	3	1	4	55	61	—	0	2	5	1
Massachusetts	—	7	19	327	769	—	0	0	—	—	—	0	1	5	2
New Hampshire	—	1	7	75	42	1	0	3	33	56	—	0	0	—	1
Rhode Island†	—	0	7	31	84	—	1	7	51	33	—	0	0	—	3
Vermont†	—	0	1	11	12	—	1	5	64	72	—	0	1	1	—
Mid. Atlantic	9	21	64	1,087	1,203	—	11	23	569	916	—	1	29	67	124
New Jersey	—	3	12	151	225	—	0	0	—	—	—	0	1	—	84
New York (Upstate)	3	4	41	250	415	—	7	22	429	492	—	0	29	11	14
New York City	—	1	21	92	93	—	0	3	22	19	—	0	4	33	11
Pennsylvania	6	12	29	594	470	—	0	16	118	405	—	0	2	23	15
E.N. Central	13	55	238	2,906	1,970	—	2	19	219	255	—	1	7	88	149
Illinois	—	12	33	570	588	—	1	9	87	103	—	0	6	50	110
Indiana	—	6	158	317	112	—	0	6	21	10	—	0	3	13	6
Michigan	—	13	40	822	303	—	1	6	65	78	—	0	2	5	3
Ohio	13	18	57	1,065	781	—	0	5	46	64	—	0	4	18	30
Wisconsin	—	3	12	132	186	N	0	0	N	N	—	0	1	2	—
W.N. Central	2	30	872	1,661	1,420	—	7	18	325	305	—	3	27	340	436
Iowa	—	3	10	189	242	—	0	3	24	29	—	0	1	4	8
Kansas	—	3	9	146	93	—	1	6	60	65	—	0	1	2	—
Minnesota	—	0	808	165	226	—	0	11	61	64	—	0	2	4	—
Missouri	1	18	47	960	527	—	1	5	65	64	—	3	26	318	405
Nebraska†	1	3	11	142	264	—	1	6	77	34	—	0	2	12	20
North Dakota	—	0	24	29	1	—	0	9	11	25	—	0	1	—	—
South Dakota	—	0	6	30	67	—	0	4	27	24	—	0	0	—	3
S. Atlantic	9	29	71	1,538	998	—	26	111	1,594	1,606	1	8	27	453	935
Delaware	—	0	2	13	18	—	0	0	—	—	—	0	3	18	32
District of Columbia	—	0	1	3	7	—	0	0	—	—	—	0	0	—	6
Florida	5	8	29	498	302	—	0	95	154	138	1	0	2	11	16
Georgia	1	3	11	193	108	—	0	72	409	379	—	0	7	48	78
Maryland†	—	2	8	131	161	—	7	15	379	415	—	0	3	37	91
North Carolina	—	0	65	223	79	N	4	4	N	N	—	4	25	264	499
South Carolina†	3	4	18	247	138	—	0	0	—	—	—	0	5	18	56
Virginia†	—	3	24	198	174	—	10	26	536	597	—	1	8	53	147
West Virginia	—	0	5	32	11	—	3	6	116	77	—	0	1	4	10
E.S. Central	1	14	30	755	447	—	1	6	83	179	—	3	16	254	334
Alabama†	1	4	19	284	65	—	0	0	—	—	—	1	7	63	92
Kentucky	—	4	15	219	169	—	1	4	45	45	—	0	1	1	1
Mississippi	—	1	4	65	100	—	0	1	4	7	—	0	1	7	11
Tennessee†	—	3	9	187	113	—	0	4	34	127	—	3	14	183	230
W.S. Central	1	60	389	2,758	1,896	—	0	13	70	89	3	1	161	143	298
Arkansas†	—	5	38	265	158	—	0	10	36	45	3	0	61	64	68
Louisiana	—	1	8	90	89	—	0	0	—	—	—	0	1	2	6
Oklahoma	1	0	45	77	55	—	0	13	33	42	—	0	98	53	170
Texas†	—	51	304	2,326	1,594	—	0	1	1	2	—	0	6	24	54
Mountain	3	18	32	882	850	—	1	6	82	107	—	0	3	22	46
Arizona	—	4	12	220	216	N	0	0	N	N	—	0	1	7	17
Colorado	2	5	13	243	148	—	0	0	—	—	—	0	1	1	1
Idaho†	1	1	18	90	36	—	0	0	—	11	—	0	1	1	1
Montana†	—	0	6	55	84	—	0	4	25	13	—	0	2	8	3
Nevada†	—	0	3	9	28	—	0	1	1	12	—	0	0	—	3
New Mexico†	—	1	6	64	92	—	0	2	24	29	—	0	1	1	4
Utah	—	3	16	181	229	—	0	2	11	14	—	0	1	1	7
Wyoming†	—	0	5	20	17	—	0	4	21	28	—	0	1	3	10
Pacific	5	22	67	1,047	1,379	1	4	12	231	205	—	0	1	1	3
Alaska	—	1	6	48	270	—	0	2	12	15	N	0	0	N	N
California	1	10	22	463	519	1	4	12	204	177	—	0	1	1	—
Hawaii	—	0	3	26	19	—	0	0	—	—	N	0	0	N	N
Oregon†	—	3	15	245	177	—	0	3	15	13	—	0	0	—	3
Washington	4	5	58	265	394	—	0	0	—	—	—	0	0	—	—
American Samoa	—	0	0	—	—	N	0	0	N	N	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	N	0	0	N	N
Puerto Rico	—	0	1	1	—	—	1	3	38	58	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	N	0	0	N	N	N	0	0	N	N

C.N.M.I.: Commonwealth of Northern Mariana Islands.
 U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
 * Incidence data for reporting year 2009 is provisional.
 † Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 26, 2009, and December 20, 2008 (51st week)*

Reporting area	Streptococcal diseases, invasive, group A				<i>Streptococcus pneumoniae</i> , invasive disease, nondrug resistant† Age <5 years					
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max		
United States	26	97	239	4,756	5,294	28	33	122	1,717	1,823
New England	—	5	28	274	364	—	1	11	68	96
Connecticut	—	0	21	72	97	—	0	11	11	11
Maine§	—	0	2	18	27	—	0	1	6	2
Massachusetts	—	2	10	120	171	—	0	4	35	62
New Hampshire	—	0	4	35	29	—	0	2	11	11
Rhode Island§	—	0	2	11	27	—	0	1	1	10
Vermont§	—	0	3	18	13	—	0	1	4	—
Mid. Atlantic	9	16	43	946	1,045	5	4	33	235	229
New Jersey	—	2	7	124	188	—	0	4	38	70
New York (Upstate)	8	7	25	318	322	5	2	17	124	99
New York City	—	4	12	179	198	—	0	31	73	60
Pennsylvania	1	6	18	325	337	N	0	2	N	N
E.N. Central	2	15	42	851	959	—	6	18	276	327
Illinois	—	4	13	243	260	—	1	4	48	94
Indiana	—	2	23	128	127	—	0	13	37	31
Michigan	—	3	11	144	177	—	1	4	69	85
Ohio	2	3	13	207	254	—	1	6	77	62
Wisconsin	—	1	11	129	141	—	1	3	45	55
W.N. Central	—	6	37	373	372	7	2	12	153	109
Iowa	—	0	0	—	—	—	0	0	—	—
Kansas	—	0	5	37	37	N	0	1	N	N
Minnesota	—	0	34	171	172	7	0	10	88	43
Missouri	—	2	8	85	89	—	0	4	37	37
Nebraska§	—	1	3	42	41	—	0	2	16	9
North Dakota	—	0	4	17	10	—	0	3	5	9
South Dakota	—	0	3	21	23	—	0	2	7	11
S. Atlantic	8	21	49	1,095	1,119	7	6	18	330	360
Delaware	—	0	1	11	10	—	0	0	—	—
District of Columbia	—	0	3	13	14	N	0	0	N	N
Florida	5	5	12	275	262	1	1	6	73	69
Georgia	2	5	13	253	256	2	2	6	94	101
Maryland§	1	3	12	188	186	3	1	7	81	58
North Carolina	—	1	12	91	136	N	0	0	N	N
South Carolina§	—	1	5	71	74	1	1	4	46	71
Virginia§	—	3	9	155	141	—	0	4	23	48
West Virginia	—	0	4	38	40	—	0	3	13	13
E.S. Central	—	3	10	190	189	—	2	7	101	93
Alabama§	N	0	0	N	N	N	0	0	N	N
Kentucky	—	1	3	39	44	N	0	0	N	N
Mississippi	N	0	0	N	N	—	0	2	20	10
Tennessee§	—	3	9	151	145	—	1	6	81	83
W.S. Central	4	8	79	425	500	3	5	46	283	296
Arkansas§	—	0	3	20	11	—	0	4	26	15
Louisiana	—	0	3	11	18	—	0	3	13	14
Oklahoma	—	2	20	127	117	3	1	7	58	68
Texas§	4	5	59	267	354	—	3	34	186	199
Mountain	3	10	22	444	571	6	4	16	240	265
Arizona	1	3	7	155	195	2	2	10	118	115
Colorado	2	2	7	125	139	4	0	4	53	61
Idaho§	—	0	2	10	16	—	0	2	9	6
Montana§	N	0	0	N	N	N	0	0	N	N
Nevada§	—	0	1	5	13	—	0	0	—	6
New Mexico§	—	1	6	80	140	—	0	4	24	39
Utah	—	1	6	68	59	—	0	5	36	36
Wyoming§	—	0	1	1	9	—	0	0	—	2
Pacific	—	3	9	158	175	—	0	4	31	48
Alaska	—	1	4	37	40	—	0	3	23	29
California	N	0	0	N	N	N	0	0	N	N
Hawaii	—	2	8	121	135	—	0	2	8	19
Oregon§	N	0	0	N	N	N	0	0	N	N
Washington	N	0	0	N	N	N	0	0	N	N
American Samoa	—	0	0	—	30	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—
Puerto Rico	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	N	0	0	N	N

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U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.

* Incidence data for reporting year 2009 is provisional.

† Includes cases of invasive pneumococcal disease, in children aged <5 years, caused by *S. pneumoniae*, which is susceptible or for which susceptibility testing is not available (NNDSS event code 11717).

§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 26, 2009, and December 20, 2008 (51st week)*

Reporting area	West Nile virus disease†														
	Varicella (chickenpox)					Neuroinvasive				Nonneuroinvasive§					
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
United States	57	299	1,035	16,764	28,940	—	0	44	360	689	—	0	47	325	667
New England	—	6	26	349	1,690	—	0	0	—	7	—	0	0	—	3
Connecticut	—	0	11	—	846	—	0	0	—	5	—	0	0	—	3
Maine¶	—	0	12	105	269	—	0	0	—	—	—	0	0	—	—
Massachusetts	—	0	2	2	—	—	0	0	—	1	—	0	0	—	—
New Hampshire	—	3	10	195	261	—	0	0	—	—	—	0	0	—	—
Rhode Island¶	—	0	1	4	—	—	0	0	—	1	—	0	0	—	—
Vermont¶	—	0	7	43	314	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	6	29	55	1,506	2,356	—	0	2	7	50	—	0	1	1	20
New Jersey	N	0	0	N	N	—	0	1	2	6	—	0	0	—	4
New York (Upstate)	N	0	0	N	N	—	0	1	3	24	—	0	1	1	7
New York City	—	0	0	—	—	—	0	1	2	8	—	0	0	—	7
Pennsylvania	6	29	55	1,506	2,356	—	0	0	—	12	—	0	0	—	2
E.N. Central	33	116	232	6,090	7,646	—	0	4	9	44	—	0	3	4	20
Illinois	—	31	73	1,528	1,448	—	0	3	5	12	—	0	0	—	8
Indiana	—	7	30	379	—	—	0	1	2	3	—	0	1	2	1
Michigan	—	40	84	1,822	3,014	—	0	1	1	11	—	0	0	—	6
Ohio	33	36	88	1,902	2,335	—	0	0	—	14	—	0	2	2	1
Wisconsin	—	8	55	459	849	—	0	1	1	4	—	0	0	—	4
W.N. Central	2	13	114	861	1,291	—	0	5	26	51	—	0	11	73	134
Iowa	N	0	0	N	N	—	0	0	—	3	—	0	1	5	3
Kansas	—	2	19	183	472	—	0	1	4	14	—	0	2	8	17
Minnesota	—	0	0	—	—	—	0	1	1	2	—	0	1	3	8
Missouri	2	8	51	578	764	—	0	2	4	12	—	0	1	1	3
Nebraska¶	N	0	0	N	N	—	0	2	11	7	—	0	6	40	40
North Dakota	—	0	108	83	—	—	0	0	—	2	—	0	1	1	35
South Dakota	—	0	2	17	55	—	0	3	6	11	—	0	2	15	28
S. Atlantic	13	31	146	1,825	4,671	—	0	3	12	20	—	0	1	3	20
Delaware	—	0	2	12	47	—	0	0	—	—	—	0	0	—	1
District of Columbia	—	0	3	13	24	—	0	0	—	4	—	0	0	—	4
Florida	12	16	61	1,127	1,683	—	0	1	2	3	—	0	1	1	—
Georgia	N	0	0	N	N	—	0	1	4	4	—	0	0	—	4
Maryland¶	N	0	0	N	N	—	0	0	—	6	—	0	1	2	8
North Carolina	N	0	0	N	N	—	0	0	—	2	—	0	0	—	1
South Carolina¶	—	0	54	154	871	—	0	2	3	—	—	0	0	—	1
Virginia¶	—	0	119	28	1,370	—	0	1	3	—	—	0	0	—	1
West Virginia	1	9	32	491	676	—	0	0	—	1	—	0	0	—	—
E.S. Central	—	9	29	521	1,119	—	0	6	36	48	—	0	4	26	57
Alabama¶	—	9	27	516	1,105	—	0	0	—	11	—	0	0	—	7
Kentucky	N	0	0	N	N	—	0	1	3	3	—	0	0	—	—
Mississippi	—	0	2	5	14	—	0	5	29	22	—	0	4	22	43
Tennessee¶	N	0	0	N	N	—	0	2	4	12	—	0	1	4	7
W.S. Central	—	75	747	4,312	7,854	—	0	17	109	69	—	0	6	34	62
Arkansas¶	—	0	25	115	750	—	0	1	6	7	—	0	0	—	2
Louisiana	—	1	7	76	71	—	0	2	10	18	—	0	4	11	31
Oklahoma	N	0	0	N	N	—	0	2	8	4	—	0	2	2	5
Texas¶	—	72	721	4,121	7,033	—	0	14	85	40	—	0	4	21	24
Mountain	3	18	62	1,212	2,173	—	0	12	75	103	—	0	17	122	184
Arizona	—	0	0	—	—	—	0	4	12	62	—	0	2	8	52
Colorado	3	8	33	504	869	—	0	7	35	17	—	0	14	66	54
Idaho¶	N	0	0	N	N	—	0	3	9	4	—	0	5	29	35
Montana¶	—	0	16	105	328	—	0	1	2	—	—	0	1	4	5
Nevada¶	N	0	0	N	N	—	0	2	7	9	—	0	1	5	7
New Mexico¶	—	0	20	134	217	—	0	2	6	5	—	0	1	2	3
Utah	—	7	32	469	748	—	0	0	—	6	—	0	0	—	20
Wyoming¶	—	0	0	—	11	—	0	1	4	—	—	0	2	8	8
Pacific	—	1	6	88	140	—	0	12	86	297	—	0	11	62	167
Alaska	—	1	5	53	76	—	0	0	—	—	—	0	0	—	—
California	—	0	0	—	—	—	0	8	60	292	—	0	6	45	153
Hawaii	—	0	4	35	64	—	0	0	—	—	—	0	0	—	—
Oregon¶	N	0	0	N	N	—	0	1	1	3	—	0	3	6	13
Washington	N	0	0	N	N	—	0	6	25	2	—	0	3	11	1
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	63	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	6	26	405	585	—	0	0	—	—	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.

U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.

* Incidence data for reporting year 2009 is provisional. Data for HIV/AIDS, AIDS, and TB, when available, are displayed in Table IV, which appears quarterly.

† Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (ArboNET Surveillance).

Data for California serogroup, eastern equine, Powassan, St. Louis, and western equine diseases are available in Table I.

§ Not reportable in all states. Data from states where the condition is not reportable are excluded from this table, except starting in 2007 for the domestic arboviral diseases and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at <http://www.cdc.gov/epo/dphsi/phs/infdis.htm>.

¶ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending January 2, 2010 (52nd week)*

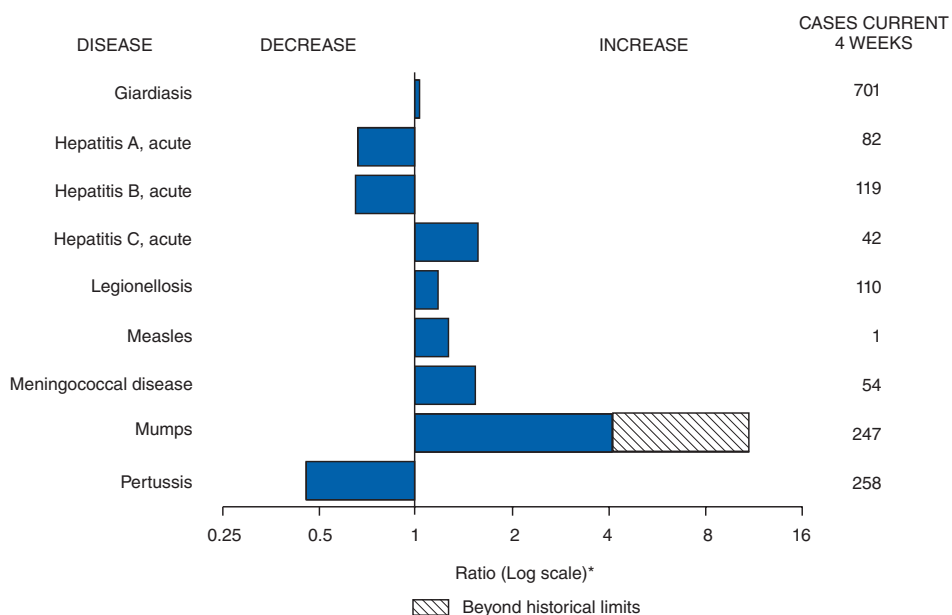
Disease	Current week	Cum 2009	5-year weekly average†	Total cases reported for previous years					States reporting cases during current week (No.)
				2008	2007	2006	2005	2004	
Anthrax	—	—	—	—	1	1	—	—	
Botulism:									
foodborne	—	12	0	17	32	20	19	16	
infant	—	57	2	109	85	97	85	87	
other (wound and unspecified)	1	23	1	19	27	48	31	30	CA (1)
Brucellosis	2	100	3	80	131	121	120	114	FL (2)
Chancroid	1	25	0	25	23	33	17	30	SC (1)
Cholera	—	8	0	5	7	9	8	6	
Cyclosporiasis§	2	123	2	139	93	137	543	160	FL (2)
Diphtheria	—	—	—	—	—	—	—	—	
Domestic arboviral diseases§,¶:									
California serogroup	—	41	0	62	55	67	80	112	
eastern equine	—	4	—	4	4	8	21	6	
Powassan	—	1	—	2	7	1	1	1	
St. Louis	—	10	—	13	9	10	13	12	
western equine	—	—	—	—	—	—	—	—	
Ehrlichiosis/Anaplasmosis§,**:									
<i>Ehrlichia chaffeensis</i>	8	801	19	1,137	828	578	506	338	NY (2), FL (1), TN (1), AR (4)
<i>Ehrlichia ewingii</i>	—	6	—	9	—	—	—	—	
<i>Anaplasma phagocytophilum</i>	4	690	29	1,026	834	646	786	537	NY (3), AL (1)
undetermined	—	122	2	180	337	231	112	59	
<i>Haemophilus influenzae</i> ††									
invasive disease (age <5 yrs):									
serotype b	—	25	1	30	22	29	9	19	
nonserotype b	1	203	5	244	199	175	135	135	FL (1)
unknown serotype	4	218	4	163	180	179	217	177	PA (1), GA (1), FL (1), TN (1)
Hansen disease§	1	59	2	80	101	66	87	105	FL (1)
Hantavirus pulmonary syndrome§	—	12	1	18	32	40	26	24	
Hemolytic uremic syndrome, postdiarrheal§	2	210	7	330	292	288	221	200	TN (1), CA (1)
Hepatitis C viral, acute	17	844	23	878	845	766	652	720	MI (1), IA (1), NC (10), FL (2), TN (1), OK (1), CO (1)
HIV infection, pediatric (age <13 years)§§	—	—	2	—	—	—	380	436	
Influenza-associated pediatric mortality§,¶¶	4	360	1	90	77	43	45	—	OH (2), FL (1), AZ (1)
Listeriosis	10	755	20	759	808	884	896	753	MA (1), NY (2), DE (1), NC (1), FL (4), CA (1)
Measles***	—	61	1	140	43	55	66	37	
Meningococcal disease, invasive†††:									
A, C, Y, and W-135	—	267	7	330	325	318	297	—	
serogroup B	1	143	5	188	167	193	156	—	OK (1)
other serogroup	1	22	1	38	35	32	27	—	WV (1)
unknown serogroup	6	455	19	616	550	651	765	—	NY (1), OR (1), CA (4)
Mumps	4	982	18	454	800	6,584	314	258	NY (3), FL (1)
Novel influenza A virus infections	—	§§§	—	2	4	N	N	N	
Plague	—	7	0	3	7	17	8	3	
Poliomyelitis, paralytic	—	—	—	—	—	—	1	—	
Polio virus infection, nonparalytic§	—	—	—	—	—	N	N	N	
Psittacosis§	1	9	0	8	12	21	16	12	FL (1)
Q fever total§,¶¶¶:	7	95	3	124	171	169	136	70	
acute	6	79	2	110	—	—	—	—	MI (1), MD (1), CO (1), CA (3)
chronic	1	16	—	14	—	—	—	—	OH (1)
Rabies, human	—	4	0	2	1	3	2	7	
Rubella****	—	4	0	16	12	11	11	10	
Rubella, congenital syndrome	—	1	—	—	—	1	1	—	
SARS-CoV§,††††	—	—	—	—	—	—	—	—	
Smallpox§	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome§	1	125	4	157	132	125	129	132	NC (1)
Syphilis, congenital (age <1 yr)	—	257	9	434	430	349	329	353	
Tetanus	1	14	1	19	28	41	27	34	PA (1)
Toxic-shock syndrome (staphylococcal)§	—	76	2	71	92	101	90	95	
Trichinellosis	—	12	0	39	5	15	16	5	
Tularemia	1	79	2	123	137	95	154	134	CA (1)
Typhoid fever	4	324	8	449	434	353	324	322	NC (2), FL (1), CA (1)
Vancomycin-intermediate <i>Staphylococcus aureus</i> §	—	70	0	63	37	6	2	—	
Vancomycin-resistant <i>Staphylococcus aureus</i> §	—	—	0	—	2	1	3	1	
Vibriosis (noncholera <i>Vibrio</i> species infections)§	12	593	5	492	549	N	N	N	NC (1), FL (9), CA (2)
Yellow fever	—	—	—	—	—	—	—	—	

See Table I footnotes on next page.

TABLE I. (Continued) Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending January 2, 2010 (52nd week)*

—: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts.
 * Incidence data for reporting year 2009 is provisional, whereas data for 2004 through 2008 are finalized.
 † Calculated by summing the incidence counts for the current week, the 2 weeks preceding the current week, and the 2 weeks following the current week, for a total of 5 preceding years. The total sum of incident cases is then divided by 25 weeks. Additional information is available at <http://www.cdc.gov/epo/dphsi/phs/files/5yearweeklyaverage.pdf>.
 § Not reportable in all states. Data from states where the condition is not reportable are excluded from this table, except starting in 2007 for the domestic arboviral diseases and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at <http://www.cdc.gov/epo/dphsi/phs/infdis.htm>.
 ¶ Includes both neuroinvasive and nonneuroinvasive. Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (ArboNET Surveillance). Data for West Nile virus are available in Table II.
 ** The names of the reporting categories changed in 2008 as a result of revisions to the case definitions. Cases reported prior to 2008 were reported in the categories: Ehrlichiosis, human monocytic (analogous to *E. chaffeensis*); Ehrlichiosis, human granulocytic (analogous to *Anaplasma phagocytophilum*), and Ehrlichiosis, unspecified, or other agent (which included cases unable to be clearly placed in other categories, as well as possible cases of *E. ewingii*).
 †† Data for *H. influenzae* (all ages, all serotypes) are available in Table II.
 §§ Updated monthly from reports to the Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Implementation of HIV reporting influences the number of cases reported. Updates of pediatric HIV data have been temporarily suspended until upgrading of the national HIV/AIDS surveillance data management system is completed. Data for HIV/AIDS, when available, are displayed in Table IV, which appears quarterly.
 ¶¶ Updated weekly from reports to the Influenza Division, National Center for Immunization and Respiratory Diseases. Since April 26, 2009, a total of 248 influenza-associated pediatric deaths associated with 2009 pandemic influenza A (H1N1) virus infection have been reported. Since August 30, 2009, a total of 229 influenza-associated pediatric deaths occurring during the 2009–10 influenza season have been reported. A total of 130 influenza-associated pediatric deaths occurring during the 2008–09 influenza season have been reported.
 *** No measles cases were reported for the current week.
 ††† Data for meningococcal disease (all serogroups) are available in Table II.
 §§§ CDC discontinued reporting of individual confirmed and probable cases of novel influenza A (H1N1) viruses infections on July 24, 2009. CDC will report the total number of novel influenza A (H1N1) hospitalizations and deaths weekly on the CDC H1N1 influenza website (<http://www.cdc.gov/h1n1flu>).
 ¶¶¶ In 2008, Q fever acute and chronic reporting categories were recognized as a result of revisions to the Q fever case definition. Prior to that time, case counts were not differentiated with respect to acute and chronic Q fever cases.
 **** No rubella cases were reported for the current week.
 †††† Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals January 2, 2010, with historical data



* 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.

Notifiable Disease Data Team and 122 Cities Mortality Data Team
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TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending January 2, 2010, and December 27, 2008 (52nd week)*

Reporting area	Lyme disease					Malaria					Meningococcal disease, invasive† All groups				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
United States	157	323	1,943	29,780	34,728	12	22	46	1,169	1,224	8	17	48	887	1,124
New England	5	64	478	6,314	11,567	—	1	5	54	56	—	0	4	34	36
Connecticut	—	0	11	—	3,885	—	0	4	6	10	—	0	2	5	1
Maine§	5	10	76	894	898	—	0	1	2	1	—	0	1	4	6
Massachusetts	—	26	321	3,662	4,579	—	0	3	35	33	—	0	3	17	23
New Hampshire	—	14	89	1,156	1,595	—	0	1	3	5	—	0	1	3	5
Rhode Island§	—	1	28	212	208	—	0	1	5	2	—	0	1	4	1
Vermont§	—	5	40	390	402	—	0	1	3	5	—	0	1	1	—
Mid. Atlantic	125	173	1,078	16,691	15,054	—	6	13	300	331	1	2	6	96	127
New Jersey	—	38	378	4,163	3,463	—	0	1	1	65	—	0	2	8	16
New York (Upstate)	48	51	272	4,179	6,986	—	1	4	50	42	1	0	2	27	33
New York City	—	2	24	262	803	—	4	11	195	184	—	0	2	16	28
Pennsylvania	77	82	631	8,087	3,802	—	1	4	54	40	—	1	4	45	50
E.N. Central	—	17	215	2,359	2,319	—	3	10	142	150	—	3	9	147	204
Illinois	—	1	11	126	108	—	1	4	54	76	—	1	4	40	85
Indiana	—	1	6	62	41	—	0	3	17	5	—	0	3	34	26
Michigan	—	1	10	99	91	—	0	3	27	18	—	0	5	20	32
Ohio	—	1	5	56	45	—	1	6	37	30	—	1	3	43	40
Wisconsin	—	15	197	2,016	2,034	—	0	1	7	21	—	0	2	10	21
W.N. Central	—	5	336	303	1,102	—	1	8	68	71	—	1	9	78	96
Iowa	—	1	14	96	109	—	0	1	10	12	—	0	2	14	18
Kansas	—	0	2	14	16	—	0	1	4	9	—	0	2	8	8
Minnesota	—	0	326	169	956	—	0	8	32	28	—	0	4	15	26
Missouri	—	0	1	3	6	—	0	2	12	14	—	0	3	28	26
Nebraska§	—	0	3	20	12	—	0	1	8	8	—	0	1	10	12
North Dakota	—	0	10	—	—	—	0	1	1	—	—	0	3	1	3
South Dakota	—	0	1	1	3	—	0	1	1	—	—	0	1	2	3
S. Atlantic	20	58	236	3,778	4,315	5	6	17	340	301	1	3	10	159	154
Delaware	1	12	65	952	772	—	0	1	5	3	—	0	1	4	2
District of Columbia	—	0	5	20	74	—	0	2	8	7	—	0	0	—	—
Florida	10	2	11	127	87	3	1	7	93	64	—	1	4	51	50
Georgia	—	1	6	53	35	—	1	5	69	57	—	0	2	29	18
Maryland§	3	27	125	1,775	2,205	2	1	13	80	80	—	0	1	11	19
North Carolina	—	0	14	63	47	—	0	5	21	30	—	0	10	31	14
South Carolina§	—	0	3	39	28	—	0	1	6	9	—	0	1	11	22
Virginia§	6	9	49	579	933	—	1	5	56	49	—	0	2	15	24
West Virginia	—	0	33	170	134	—	0	1	2	2	1	0	2	7	5
E.S. Central	—	1	2	36	46	3	0	3	32	26	—	0	4	36	55
Alabama§	—	0	1	3	9	—	0	3	9	5	—	0	1	11	10
Kentucky	—	0	1	1	5	3	0	2	13	6	—	0	1	7	10
Mississippi	—	0	0	—	1	—	0	1	1	1	—	0	1	3	12
Tennessee§	—	0	2	32	31	—	0	3	9	14	—	0	2	15	23
W.S. Central	—	1	13	48	145	—	1	10	52	89	1	1	12	80	119
Arkansas§	—	0	0	—	—	—	0	1	4	1	—	0	2	9	15
Louisiana	—	0	0	—	3	—	0	1	3	4	—	0	3	11	25
Oklahoma	—	0	2	—	—	—	0	1	1	4	1	0	2	15	18
Texas§	—	1	11	48	142	—	1	9	44	80	—	1	9	45	61
Mountain	—	1	13	44	52	—	0	6	29	36	—	1	4	63	60
Arizona	—	0	2	6	8	—	0	2	9	15	—	0	2	15	9
Colorado	—	0	1	1	3	—	0	3	8	5	—	0	3	24	16
Idaho§	—	0	3	15	9	—	0	1	3	3	—	0	1	7	6
Montana§	—	0	13	3	4	—	0	3	5	—	—	0	2	4	4
Nevada§	—	0	1	5	12	—	0	0	—	5	—	0	1	3	7
New Mexico§	—	0	1	5	8	—	0	0	—	3	—	0	1	3	8
Utah	—	0	1	7	5	—	0	2	4	5	—	0	1	2	8
Wyoming§	—	0	1	2	3	—	0	0	—	—	—	0	2	5	2
Pacific	7	4	13	207	128	4	3	9	152	164	5	3	14	194	273
Alaska	—	0	1	3	6	—	0	1	2	6	—	0	2	6	8
California	7	2	10	154	73	4	2	6	117	122	4	2	8	118	196
Hawaii	N	0	0	N	N	—	0	1	1	3	—	0	1	4	5
Oregon§	—	0	4	35	38	—	0	2	11	4	1	0	6	43	39
Washington	—	0	12	15	11	—	0	3	21	29	—	0	7	23	25
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	3	—	0	0	—	—
Puerto Rico	N	0	0	N	N	—	0	1	3	2	—	0	0	—	3
U.S. Virgin Islands	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.

U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.

* Incidence data for reporting year 2009 is provisional.

† Data for meningococcal disease, invasive caused by serogroups A, C, Y, and W-135; serogroup B; other serogroup; and unknown serogroup are available in Table I.

§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending January 2, 2010, and December 27, 2008 (52nd week)*

Reporting area	Streptococcal diseases, invasive, group A					<i>Streptococcus pneumoniae</i> , invasive disease, nondrug resistant† Age <5 years				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max		
United States	58	96	239	4,861	5,435	23	34	122	1,768	1,879
New England	9	4	28	287	369	1	1	11	73	99
Connecticut	8	0	21	80	97	—	0	11	11	11
Maine§	—	0	2	18	28	—	0	1	6	3
Massachusetts	—	2	10	124	172	1	0	4	40	64
New Hampshire	—	0	4	35	30	—	0	2	11	11
Rhode Island§	—	0	1	11	29	—	0	1	1	10
Vermont§	1	0	3	19	13	—	0	1	4	—
Mid. Atlantic	6	15	43	953	1,083	6	4	33	240	246
New Jersey	—	2	7	124	190	—	0	4	38	70
New York (Upstate)	6	7	16	324	347	6	2	9	129	116
New York City	—	4	12	180	200	—	0	31	73	60
Pennsylvania	—	5	18	325	346	N	0	2	N	N
E.N. Central	2	14	42	875	976	1	6	18	289	336
Illinois	—	4	13	243	268	—	1	4	48	97
Indiana	—	2	23	136	127	—	1	13	45	31
Michigan	—	3	11	150	182	—	1	4	72	87
Ohio	2	3	13	209	258	1	1	6	78	66
Wisconsin	—	2	11	137	141	—	1	3	46	55
W.N. Central	4	6	37	377	378	1	2	12	154	114
Iowa	—	0	0	—	—	—	0	0	—	—
Kansas	—	0	5	37	38	N	0	1	N	N
Minnesota	—	0	34	171	172	—	0	10	88	46
Missouri	3	2	8	88	92	—	0	4	37	38
Nebraska§	—	1	3	42	43	1	0	2	17	9
North Dakota	1	0	4	18	10	—	0	3	5	9
South Dakota	—	0	3	21	23	—	0	2	7	12
S. Atlantic	12	21	49	1,112	1,155	5	6	18	340	369
Delaware	—	0	1	11	10	—	0	0	—	—
District of Columbia	—	0	3	13	14	N	0	0	N	N
Florida	4	5	12	279	265	2	1	6	75	70
Georgia	2	5	13	256	269	—	2	6	95	104
Maryland§	2	3	12	190	194	2	1	7	84	59
North Carolina	—	1	12	91	136	N	0	0	N	N
South Carolina§	2	1	5	75	76	—	1	4	48	71
Virginia§	2	3	9	158	150	—	0	3	23	52
West Virginia	—	0	4	39	41	1	0	3	15	13
E.S. Central	—	3	10	191	193	—	2	7	103	96
Alabama§	N	0	0	N	N	N	0	0	N	N
Kentucky	—	1	3	39	45	N	0	0	N	N
Mississippi	N	0	0	N	N	—	0	2	21	12
Tennessee§	—	3	9	152	148	—	1	6	82	84
W.S. Central	14	7	79	440	519	7	5	46	292	302
Arkansas§	—	0	3	20	11	1	0	4	27	15
Louisiana	—	0	3	11	19	—	0	3	13	14
Oklahoma	1	2	20	128	122	1	1	7	59	69
Texas§	13	5	59	281	367	5	3	34	193	204
Mountain	11	9	22	458	584	2	4	16	245	269
Arizona	4	3	7	162	199	1	2	10	121	117
Colorado	7	2	7	132	143	1	1	4	55	61
Idaho§	—	0	2	10	16	—	0	2	9	6
Montana§	N	0	0	N	N	N	0	0	N	N
Nevada§	—	0	1	5	13	—	0	0	—	6
New Mexico§	—	1	6	80	144	—	0	4	24	40
Utah	—	1	6	68	60	—	0	5	36	37
Wyoming§	—	0	1	1	9	—	0	0	—	2
Pacific	—	3	9	168	178	—	0	4	32	48
Alaska	—	1	4	38	40	—	0	3	24	29
California	N	0	0	N	N	N	0	0	N	N
Hawaii	—	2	8	130	138	—	0	2	8	19
Oregon§	N	0	0	N	N	N	0	0	N	N
Washington	N	0	0	N	N	N	0	0	N	N
American Samoa	—	0	0	—	30	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—
Puerto Rico	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	N	0	0	N	N

C.N.M.I.: Commonwealth of Northern Mariana Islands.

U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.

* Incidence data for reporting year 2009 is provisional.

† Includes cases of invasive pneumococcal disease, in children aged <5 years, caused by *S. pneumoniae*, which is susceptible or for which susceptibility testing is not available (NNDSS event code 11717).

§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending January 2, 2010, and December 27, 2008 (52nd week)*

Reporting area	West Nile virus disease [†]														
	Varicella (chickenpox)					Neuroinvasive					Nonneuroinvasive [§]				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
	Med	Max				Med	Max				Med	Max			
United States	40	296	1,035	16,944	29,351	—	0	44	361	689	—	0	48	329	667
New England	—	6	19	349	1,716	—	0	0	—	7	—	0	0	—	3
Connecticut	—	0	0	—	857	—	0	0	—	5	—	0	0	—	3
Maine [¶]	—	0	12	105	269	—	0	0	—	—	—	0	0	—	—
Massachusetts	—	0	2	2	—	—	0	0	—	1	—	0	0	—	—
New Hampshire	—	3	10	195	271	—	0	0	—	—	—	0	0	—	—
Rhode Island [¶]	—	0	1	4	—	—	0	0	—	1	—	0	0	—	—
Vermont [¶]	—	0	7	43	319	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	13	28	55	1,537	2,396	—	0	2	7	50	—	0	1	1	20
New Jersey	N	0	0	N	N	—	0	1	2	6	—	0	0	—	4
New York (Upstate)	N	0	0	N	N	—	0	1	3	24	—	0	1	1	7
New York City	—	0	0	—	—	—	0	1	2	8	—	0	0	—	7
Pennsylvania	13	28	55	1,537	2,396	—	0	0	—	12	—	0	0	—	2
E.N. Central	18	117	232	6,205	7,730	—	0	4	9	44	—	0	3	4	20
Illinois	—	31	73	1,528	1,461	—	0	3	5	12	—	0	0	—	8
Indiana	—	7	30	392	—	—	0	1	2	3	—	0	1	2	1
Michigan	2	41	84	1,857	3,044	—	0	1	1	11	—	0	0	—	6
Ohio	16	36	88	1,916	2,365	—	0	0	—	14	—	0	2	2	1
Wisconsin	—	8	57	512	860	—	0	1	1	4	—	0	0	—	4
W.N. Central	—	12	114	863	1,304	—	0	5	26	51	—	0	11	73	134
Iowa	N	0	0	N	N	—	0	0	—	3	—	0	1	5	3
Kansas	—	2	19	183	477	—	0	1	4	14	—	0	2	8	17
Minnesota	—	0	0	—	—	—	0	1	1	2	—	0	1	3	8
Missouri	—	8	51	580	772	—	0	2	4	12	—	0	1	1	3
Nebraska [¶]	N	0	0	N	N	—	0	2	11	7	—	0	6	40	40
North Dakota	—	0	108	83	—	—	0	0	—	2	—	0	1	1	35
South Dakota	—	0	2	17	55	—	0	3	6	11	—	0	2	15	28
S. Atlantic	9	31	109	1,829	4,817	—	0	3	12	20	—	0	1	3	20
Delaware	—	0	2	12	47	—	0	0	—	—	—	0	0	—	1
District of Columbia	—	0	3	13	24	—	0	0	—	4	—	0	0	—	4
Florida	8	15	61	1,129	1,705	—	0	1	2	3	—	0	1	1	—
Georgia	N	0	0	N	N	—	0	1	4	4	—	0	0	—	4
Maryland [¶]	N	0	0	N	N	—	0	0	—	6	—	0	1	2	8
North Carolina	N	0	0	N	N	—	0	0	—	2	—	0	0	—	1
South Carolina [¶]	—	0	54	154	875	—	0	2	3	—	—	0	0	—	1
Virginia [¶]	—	0	9	28	1,489	—	0	1	3	—	—	0	0	—	1
West Virginia	1	9	32	493	677	—	0	0	—	1	—	0	0	—	—
E.S. Central	—	9	29	521	1,121	—	0	6	37	48	—	0	4	26	57
Alabama [¶]	—	9	27	516	1,107	—	0	0	—	11	—	0	0	—	7
Kentucky	N	0	0	N	N	—	0	1	3	3	—	0	0	—	—
Mississippi	—	0	2	5	14	—	0	5	30	22	—	0	4	22	43
Tennessee [¶]	N	0	0	N	N	—	0	2	4	12	—	0	1	4	7
W.S. Central	—	72	747	4,312	7,941	—	0	17	109	69	—	0	6	34	62
Arkansas [¶]	—	0	25	115	752	—	0	1	6	7	—	0	0	—	2
Louisiana	—	1	7	76	71	—	0	2	10	18	—	0	4	11	31
Oklahoma	N	0	0	N	N	—	0	2	8	4	—	0	2	2	5
Texas [¶]	—	71	721	4,121	7,118	—	0	14	85	40	—	0	4	21	24
Mountain	—	18	62	1,239	2,185	—	0	12	75	103	—	0	17	122	184
Arizona	—	0	0	—	—	—	0	4	12	62	—	0	2	8	52
Colorado	—	9	33	515	870	—	0	7	35	17	—	0	14	66	54
Idaho [¶]	N	0	0	N	N	—	0	3	9	4	—	0	5	29	35
Montana [¶]	—	0	16	105	331	—	0	1	2	—	—	0	1	4	5
Nevada [¶]	N	0	0	N	N	—	0	2	7	9	—	0	1	5	7
New Mexico [¶]	—	0	20	134	217	—	0	2	6	5	—	0	1	2	3
Utah	—	7	32	485	756	—	0	0	—	6	—	0	0	—	20
Wyoming [¶]	—	0	0	—	11	—	0	1	4	—	—	0	2	8	8
Pacific	—	1	6	89	141	—	0	12	86	297	—	0	12	66	167
Alaska	—	1	5	54	76	—	0	0	—	—	—	0	0	—	—
California	—	0	0	—	—	—	0	8	60	292	—	0	6	45	153
Hawaii	—	0	4	35	65	—	0	0	—	—	—	0	0	—	—
Oregon [¶]	N	0	0	N	N	—	0	1	1	3	—	0	4	10	13
Washington	N	0	0	N	N	—	0	6	25	2	—	0	3	11	1
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	63	—	0	0	—	—	—	0	0	—	—
Puerto Rico	1	6	26	407	588	—	0	0	—	—	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.
 U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
^{*} Incidence data for reporting year 2009 is provisional. Data for HIV/AIDS, AIDS, and TB, when available, are displayed in Table IV, which appears quarterly.
[†] Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (ArboNET Surveillance).
[‡] Data for California serogroup, eastern equine, Powassan, St. Louis, and western equine diseases are available in Table I.
[§] Not reportable in all states. Data from states where the condition is not reportable are excluded from this table, except starting in 2007 for the domestic arboviral diseases and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at <http://www.cdc.gov/epo/dphsi/phs/infdis.htm>.
[¶] Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

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