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Laboratory-Acquired Vaccinia Virus Infection — Virginia, 2008

Vaccinia virus (VACV) is the live viral component of smallpox vaccine. Inadvertent exposure to VACV can result in infection, and severe complications can occur in persons with underlying risk factors (e.g., pregnancy, immunodeficiencies, or dermatologic conditions) (*1*). The Advisory Committee on Immunization Practices (ACIP) recommends smallpox vaccination for laboratory workers who handle nonhighly attenuated VACV strains or other orthopoxviruses (e.g., monkeypox, cowpox, or variola) (*2*). On July 8, 2008, CDC was notified by a Virginia physician of a suspected case of inadvertent autoinoculation and VACV infection in an unvaccinated laboratory worker. This report describes the subsequent investigations conducted by the Virginia Department of Health and CDC to identify the source of infection and any cases of contact transmission. Of the patient's 102 possible contacts, seven had underlying risk factors for developing serious vaccinia infection. Investigators found no evidence of contact transmission and, based on the results of molecular typing, further concluded that the patient had been exposed to a VACV strain that had contaminated the seed stock from the laboratory where the patient worked. This case underscores the importance of adherence to ACIP vaccination recommendations for laboratory workers and use of safety precautions when working with nonhighly attenuated VACV (*3*).

Case Report

On July 5, 2008, a man in his twenties who worked in a laboratory at an academic institution in Virginia went to a local urgent care clinic. He reported swelling of cervical lymph nodes and pain and inflammation of his right earlobe associated with purulent discharge beginning July 2, followed on July 3 by a feverish feeling and swelling of his left eye with no change in his vision. The patient was prescribed cephalexin for presumed bacterial infection and prednisone for swelling. However, on July 6, his symptoms worsened, and he went to a hospital emergency department. The patient was given bacitracin for his eye and discharged. That night, he noted pustular lesions at similar stages of development on his right ear and left eye (Figure), and also on his chest, shoulder, left arm, and right leg.

On July 7, the patient returned to the emergency department with increasing eye pain and mild photophobia and received a diagnosis of right auricular/pinnal cellulitis and suspected periorbital cellulitis. Prednisone was discontinued, and he was admitted to the hospital for treatment with intravenous vancomycin, ceftriaxone, and pain medications. The same day, an ophthalmology consultation was obtained for left-sided severe preseptal cellulitis, confirmed by computed tomography scan. Biopsy of the conjunctival lesion revealed acute necrotizing

FIGURE. Left eye and right ear of a man with laboratory-acquired vaccinia virus infection — Virginia, 2008

Photos/Virginia Department of Health

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conjunctivitis. Slit lamp examination revealed no apparent corneal abrasions and a clear anterior chamber in the left eye, with slight loss of visual acuity. Because the patient's eye infection appeared consistent with keratitis, ceftriaxone was discontinued, vancomycin was continued, and the patient was started on piperacillin/tazobactam and clindamycin.

On July 8, an infectious disease physician who was consulted raised the possibility of suspected VACV infection, among other more common viral or bacterial etiologies, because of histopathologic changes noted in the patient's eye specimens. The consulting physician elicited from the patient that he worked in a cancer research laboratory that handled mice infected with VACV. The physician contacted CDC, which contacted the Virginia Department of Health. Upon further investigation, the patient was determined to have worked with VACV during June 26–28, 4–6 days before symptom onset. This information was inconsistent with the patient's statement during his initial interview on admission the previous day, when he said he recalled last working with VACV in mid-May. Specimens from the patient's eye, ear, arm, and chest were sent to the Virginia Laboratory Response Network. The patient met the CDC surveillance case definition for ocular vaccinia (*1*).

On July 9, a computed tomography scan revealed worsening of the left preseptal infectious process with intraorbital involvement. On July 10, pending receipt of viral testing, 800 mg acyclovir was administered to the patient intravenously. After receipt of diagnostic testing results, vaccinia immune globulin was not administered because the patient was improving. The patient went on to make a full recovery and returned to his laboratory work in August 2008.

Laboratory Analysis

On July 9, the Virginia Laboratory Response Network tested lesion scrapings from the patient using real-time polymerase chain reaction and detected the presence of nonvariola orthopoxvirus DNA signatures. CDC subsequently confirmed the VACV infection. However, molecular typing of VACV from the patient specimens, performed at CDC, indicated that the patient was infected with a strain (VACV Western Reserve strain) that differed from the VACV strain reportedly used in the laboratory's experiments (the recombinant construct OVA-vac). Because the patient and laboratory VACV strains did not match, investigators had to consider the possibility that the patient might have acquired his VACV infection from another source, most likely within the institution's laboratory complex.

Additional VACV specimens were collected both from the laboratory in which the patient worked and from other laboratories in the academic institution's research complex,

and an investigation was launched to identify the source of exposure. CDC analyzed samples of all the virus stocks used at the academic institution and detected a contaminant virus in the OVA-vac stock from the laboratory in which the patient worked that closely resembled the VACV strain isolated from the patient.

Occupational Health Investigation

During August 4–5, investigators interviewed three persons separately regarding experiments performed at the laboratory during June and July: the patient, the laboratory director, and a student who worked with the patient during June 26–28, when the patient's exposure to VACV was thought to have occurred. Although the academic institution's occupational health clinic annually provided education on workplace safety and offered smallpox vaccination to all laboratory workers who handled nonhighly attenuated VACV strains or other orthopoxviruses, neither the patient nor the student had plans to be vaccinated. The laboratory director was not up-to-date with his VACV vaccination (last vaccinated >10 years previously).

Representatives of the occupational health and biosafety team at the academic institution were interviewed to review their biosafety, VACV-use, and vaccination policies for laboratory personnel. Investigators found that safety protocols were in place. However, as a result of this incident, changes in laboratory procedures regarding VACV were made. Before the incident, the academic institution offered VACV counseling and vaccination only to personnel who specifically requested vaccination, even if the employee's written work profile indicated VACV use. As a result of the incident, the academic institution now offers counseling and education to all personnel with occupational exposure to VACV. Vaccination is then offered to laboratory workers without medical contraindications, and a declination form is completed for laboratory workers who decline the vaccine. In addition, changes have been made to the academic institution's laboratories to better reflect CDC biosafety recommendations (*4*).

Contact Investigation

Recognizing that inadvertent transmission of VACV can occur through contact with lesion exudates, investigators interviewed the patient to identify his potential close contacts from July 2, when symptoms began, through the period he was hospitalized. A close contact was defined as any person with direct physical contact with the patient or his linens, trash, or clinical specimens. Initially, 102 persons with possible exposure to the patient's lesions were identified: eight personal contacts, 12 laboratory workers, and 82 hospital workers.

Fifty-five (54%) of the 102 possible contacts were identified as potentially having contact with the patient's lesion exudates and were interviewed by the Virginia Department of Health or members of the institution's infection control staff regarding symptoms of possible VACV infection (e.g., fever, malaise, myalgia, and lymphadenopathy) and risk factors for severe infection. These 55 close contacts included eight personal contacts, 12 laboratory workers, and 35 hospital workers. All were asked to report any symptoms or illnesses for 14 days after their exposure. Seven of the 55 (four personal contacts and three hospital workers) had risk factors for severe infection (i.e., pregnancy, immunodeficiencies, or dermatologic conditions). However, no secondary VACV infections were detected.

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Editorial Note: In 1972, routine childhood vaccination against smallpox was halted because of a declining probability of smallpox importation, reduced likelihood of spread following importation, and occasional untoward side effects of vaccination (*5*). In 2003, members of the military, selected health-care workers, public health personnel, and first responders began receiving smallpox vaccinations as part of bioterrorism preparedness (*6*). From 1972 to 2003, laboratory workers were the only group recommended for periodic smallpox vaccination in the United States. ACIP currently recommends smallpox vaccination at least every 10 years for laboratory workers who handle cultures or animals infected with nonhighly attenuated VACV or other orthopoxviruses (e.g., monkeypox, cowpox, or variola)* (*7*).

Laboratory-acquired VACV infections are not nationally notifiable conditions but often are reported to CDC when virus confirmation is required for diagnosis. These laboratory-acquired infections typically occur in unvaccinated workers (*2*). During 2005–2007, five cases of laboratory-acquired VACV infection were reported to CDC (*1*). No known contact transmission of VACV was reported from these laboratory-acquired infections; however, instances of contact transmission of VACV from smallpox vaccinees to close contacts, including children and intimate partners, has occurred (*8*). Adherence to ACIP recommendations by laboratorians often is dependent on interpretations of the risks for VACV laboratory exposure

* Smallpox vaccination is no longer recommended for laboratory workers handling highly attenuated poxvirus strains because these strains either are unable to replicate or replicate poorly in mammalian host cells and, therefore, do not create productive infections in healthy persons.

by laboratory directors (who might not be fully aware of the pathogenic properties of VACV in humans), concerns over adverse events associated with vaccination, and the extent of VACV education provided to laboratory workers (*2*). After the incident described in this report, VACV laboratory procedures were changed, and counseling and education was extended to all laboratory workers with occupational exposure to VACV.

Laboratory-acquired exposure to VACV can be associated with a high inoculum and can occur through a route (e.g., ocular) with a high risk for complications (*9*). In the event of an exposure, the affected body part should be washed immediately; eyewash protocols should be followed for ocular exposure. The laboratory worker should then report the incident to the laboratory director or to the occupational health clinic. Depending on the timing and circumstances of the exposure and status of the inoculated site, administration of postexposure vaccination, vaccinia immune globulin, or antivirals might be indicated to attenuate adverse clinical outcomes associated with VACV infection (*7*).

Clinicians should maintain a high index of suspicion for VACV infection when evaluating vesiculopapular rashes in patients who are laboratory workers handling nonhighly attenuated VACV strains or are their close contacts. Suspected cases of VACV infection should be reported to state or local health departments for diagnostic guidance. Further characterization of viruses can be performed at specialized reference laboratories such as the poxvirus laboratory at CDC (telephone: 404-639-4129). Contact VACV transmission is uncommon (5.9 cases per 100,000 vaccinations) (*3,6,10*), and infection control measures are effective in preventing such transmission (*7*); therefore, contact investigations should be limited to persons who might have had contact with lesion exudates, whether or not they have risk factors for severe VACV infection.

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Fatalities Caused by Cattle — Four States, 2003–2008

During 2003–2007, deaths occurring in the production of crops and animals in the United States totaled 2,334; of these, 108 (5%) involved cattle as either the primary or secondary cause (*1*). During the same period, Iowa, Kansas, Missouri, and Nebraska accounted for 16% of the nation's approximately 985,000 cattle operations and 21% of the nation's cattle and calf herd (*2*). To better characterize cattle-caused deaths in these four states, investigators reviewed all such deaths occurring during the period 2003–2008 that were detected by two surveillance programs, the Iowa Fatality Assessment and Control Evaluation (IA FACE) and the Great Plains Center for Agricultural Health (GPCAH). This report summarizes that investigation, which identified 21 cattle-related deaths. These deaths occurred throughout the year, and decedents tended to be older (aged ≥60 years) (67%) and male (95%). Except in one case, the cause of death was blunt force trauma to the head or chest. Circumstances associated with these deaths included working with cattle in enclosed areas (33%), moving or herding cattle (24%), loading (14%), and feeding (14%). One third of the deaths were caused by animals that had previously exhibited aggressive behavior. To reduce the risk for death from cattle-caused injuries, farmers and ranchers should be aware of and follow recommended practices for safe livestock-handling facilities and proper precautions for working with cattle, especially cattle that have exhibited aggressiveness.

Data gathering and analysis were performed collaboratively by IA FACE (operated by the University of Iowa on behalf of the Iowa Department of Public Health) and GPCAH (part of the University of Iowa's College of Public Health). Both programs are funded by CDC and collect surveillance data on agricultural deaths.* IA FACE collects basic information on all

* Additional information about IA FACE is available at http://www.public-health.uiowa.edu/face. Information on GPCAH is available at http://www.public-health.uiowa.edu/gpcah.

traumatic occupational fatalities in Iowa as identified primarily through multisource surveillance of the media, including newspapers, radio, television, and the Internet. Once alerted to a potential occupational death, IA FACE requests reports from investigating authorities such as the local police and sheriff's departments, emergency medical services, and the medical examiner. GPCAH surveillance is based solely on reports from Iowa, Kansas, Missouri, and Nebraska newspapers and other periodicals. Since 2003, GPCAH has been building a press report database, which includes descriptive information about the victim, event, circumstances, and nature of the injuries in fatal and nonfatal farm and agricultural injury events within the four states.

In this analysis, cases were defined as occupational fatalities caused by cattle that occurred in Iowa, Kansas, Missouri, or Nebraska during 2003–2008. Fatalities that occurred when motor vehicles crashed into cattle on roadways (such as while cattle were being herded with an all-terrain vehicle or pickup truck in a pasture) were excluded.

Surveillance Results

A total of 21 deaths met the case definition for 2003–2008 (Table 1). Four fatalities occurred in 2003, two in 2004, six in 2005, and three each year during 2006–2008. During these years, eight of the fatalities occurred in Iowa, two in Kansas, seven in Missouri, and four in Nebraska. The 21 decedents ranged in age from 8 to 86 years, with a median age of 65 years (mean age: 61 years) (Table 2). Only one of the victims was female. One of the victims was a boy aged 8 years who was helping castrate cattle when he was crushed against a squeeze chute. One third of the deaths occurred in March and April.

The victims' most common activities at the time of death were working with and treating cattle in enclosed spaces such as pens and chutes (n = 7) and moving or sorting cattle toward pens, barns, or pastures (n = 5). Incidents also occurred while loading cattle into trucks or trailers (n = 3), feeding (n = 3), or working in an open pasture (n = 3).

Ten of the 21 fatalities involved attacks by individual bulls, six involved attacks by individual cows, and five involved multiple cattle. In seven attacks (whether witnessed or not), the bull or cow was known to have exhibited aggressive behavior in the past. In 16 of the cases, the animal was deemed to have purposefully struck the victim; five other deaths were caused by being crushed against a stationary object or struck by a gate (secondary to the action of cattle). All but one death resulted from blunt force trauma to the chest and/or head; one resulted from inadvertent injection of the antibiotic Micotil 300 (tilmicosin phosphate) from a syringe in the victim's pocket when he was knocked down by a cow.

Illustrative Case Reports

The following case summaries illustrate the most common circumstances of the cases identified for this report.

Case 1. In August 2005, a woman in Missouri aged 65 years was removing a dead, newborn calf from a pasture when a cow knocked her down, stomped her, and butted her while she was lying on the ground. The coroner reportedly stated that death resulted from blunt force trauma to the woman's head and chest. No autopsy was performed.

Case 2. In November 2005, a man in Iowa aged 65 years was helping his son sort beef cattle for loading onto a truck. He was attempting to guide one of the animals toward the truck when it turned into him, crushing him against the barn door. According to witnesses, he stopped breathing immediately. The medical examiner's report stated that death was caused by blunt force trauma to the man's chest.

Case 3. In April 2006, a man in Iowa aged 63 years was herding cattle into his dairy barn for milking when a bull came into the barn and repeatedly butted him, pinned him against a fence, and stomped him. According to the attending physician's death record, the man sustained multiple rib fractures, lacerated pulmonary arteries, and head injuries. The man's family said that the bull was known to be dangerous and had been threatening in the past.

Case 4. In August 2007, a man in Iowa aged 45 years who was working alone in a pasture was attacked by a bull that had been bottle-fed and raised by the family but, according to family members, had become more aggressive recently. The attack was not witnessed, but the man was able to call his wife for assistance on his cell phone before he died and told her he had been attacked. According to the state medical examiner's autopsy report, he died of blunt force injuries to the chest.

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Editorial Note: Large livestock are powerful, quick, protective of their territory and offspring, and especially unpredictable during breeding and birthing periods (*3–5*). Mothering livestock often protect their young aggressively. Dairy bulls, which have more frequent contact with humans than do beef cattle, are known to be especially possessive of their herd and occasionally disrupt daily feeding, cleaning, and milking routines (*5*). The findings in this report confirm earlier research substantiating the risk for death to farmers and ranchers from contact with cattle (*3,5–8*). Previously published reports have described the nature and frequency of cattle-related deaths and injuries. Among 739 patients admitted to a referral trauma center in Wisconsin during a 12-year period because of injuries incurred while farming, 30% involved injuries from

TABLE 1. Characteristics of cattle-caused fatalities — Iowa, Kansas, Missouri, and Nebraska, 2003–2008*†

Month and year	State	Decedent	Sex	Age (yrs)	Animal involved	Incident
Mar 2003	IA	Cattle farmer	Male	77	Beef cattle	Struck by gate when cattle charged while being herded
Oct 2004	IA	Cattle farmer	Male	48	Beef cattle	Pinned against barn wall while working with cattle
Nov 2004	IA	Dairy farmer	Male	77	Dairy bull	Attacked from behind by bull when feeding dairy cows
Sep 2005	IA	Veterinarian	Male	64	Beef bull	Attacked by bull when vaccinating and applying insecticide on cattle
Nov 2005	IA	Cattle farmer	Male	65	Beef cattle	Crushed against barn door when sorting cattle
Apr 2006	IA	Dairy farmer	Male	65	Dairy bull	Attacked by bull when herding cows for milking
Apr 2006	IA	Dairy farmer	Male	63	Dairy bull	Attacked by bull while moving cows into milking parlor
Aug 2007	IA	Cattle farmer	Male	45	Beef bull	Attacked by bull when alone in pasture
Apr 2003	KS	Cattle farmer	Male	86	Beef calves	Knocked steel gate on top of himself while loading calves onto a trailer
Jul 2005	KS	Cattle farmer	Male	74	Beef bull	Trampled by bull being moved from one pasture to another
Mar 2003	MO	Cattle farmer	Male	71	Beef cows	Found fatally injured in pen with two cows and newborn calf
Feb 2005	MO	Cattle farmer	Male	62	Beef cow	Kicked in head by cow
Aug 2005	MO	Cattle farmer	Female	65	Beef cow	Attacked by cow when removing dead calf from pasture
Dec 2005	MO	Cattle farmer	Male	53	Beef bull	Mauled by aggressive bull in pasture while retrieving cows
Jan 2006	MO	Dairy farmer	Male	39	Dairy bull	Mauled and crushed against barn wall by bull while feeding cows
Sep 2007	MO	Cattle farmer	Male	75	Beef bull	Gored while loading bull into trailer
Jan 2008	MO	Cattle farmer	Male	72	Beef bull	Rammed by bull while feeding cattle
Mar 2003	NE	Cattle farmer	Male	38	Beef cow	Injected with Micotil from syringe in his pocket when cow pushed him down
Mar 2007	NE	Cattle farmer	Male	47	Beef cow	Crushed in pen when attacked by cow with calf
May 2008	NE	Cattle farmer	Male	81	Beef cow	Attacked by cow while working in pen
Jun 2008	NE	Child§	Male	8	Beef cattle	Crushed while moving cattle through squeeze chute

* Based on cases identified through the Iowa Fatality Assessment and Control Evaluation (IA FACE) (operated by the University of Iowa on behalf of the Iowa Department of Public Health) and the Great Plains Center for Agricultural Health (GPCAH) (part of the University of Iowa's College of Public Health). IA FACE collects basic information on all traumatic occupational fatalities in Iowa as identified primarily through multisource surveillance (by IA FACE staff and professional colleagues across the state) of the media, including newspapers, radio, television, and the internet. Once alerted to a potential occupational death, IA FACE requests reports from investigating authorities such as the local police and sheriff's departments, emergency medical services, and medical examiner. GPCAH surveillance is based solely on reports from Iowa, Kansas, Missouri, and Nebraska newspapers and other periodicals. Additional information about IA FACE is available at http://www.public-health.uiowa.edu/face. Information on GPCAH is available at http://www.public-health.uiowa.edu/gpcah.

† Cases were defined as occupational fatalities caused by cattle that occurred in Iowa, Kansas, Missouri, or Nebraska during 2003–2008. Fatalities that occurred when motor vehicles crashed into cattle on roadways (such as while cattle were being herded with an all-terrain vehicle or pickup truck in a pasture) were excluded.

§ Child was killed while helping on the family farm.

farm animals (*6*). Working with bulls involves higher risk for injury. In a study of farm worker injuries based on surveillance data from New York, bulls were found to account for 25% of animal-related injuries (*7*). Among the deaths described in this report, four (19%) were caused by dairy bulls during feeding or milking operations.

Of the decedents mentioned in this report, 13 of 20 (65%) were men aged ≥60 years. The methodology used in this analysis did not allow the calculation of age-specific risks and could not determine whether this age and sex profile reflected the demographics of farmers involved in close contact with cattle in the four states, or a greater risk for death among older farmers and ranchers. A case-control study of Iowa livestock farmers found that use of a hearing aid (odds ratio [OR] = 5.4) and doctor-diagnosed arthritis or rheumatism (OR = 3.0) were significantly associated with injuries related to animals (*8*). Age-related reduced hearing and reduced ability to react might contribute to this risk. Because approximately one third of the deaths described in this report occurred when the farmer was working alone, some of these deaths might have been prevented if a coworker had been present to help observe cattle behavior and movement and to provide prompt aid in case of injury. This might be especially useful when working with bulls or cows known to be aggressive, given that seven of the deaths described in this report involved such cattle.

TABLE 2. Number and percentage of cattle-caused fatalities, by selected characteristics — Iowa, Kansas, Missouri, and Nebraska, 2003–2008*†

Characteristic	No.	(%)§
Sex of decedent		
Male	20	(95)
Female	1	(5)
Age group (yrs) of decedent		
<60	7	(33)
≥60	14	(67)
Operation/Activity		
Herding/Moving/Sorting	5	(24)
Loading	3	(14)
Feeding	3	(14)
Tending/Treating in enclosed area	7	(33)
Attacked in open pasture	3	(14)
Animal involved		
Bull	10	(48)
Cow with calf	3	(14)
Cow (no calf)	3	(14)
Multiple cattle	5	(24)
Total	**21**	**(100)**

* Based on cases identified through the Iowa Fatality Assessment and Control Evaluation (IA FACE) (operated by the University of Iowa on behalf of the Iowa Department of Public Health) and the Great Plains Center for Agricultural Health (GPCAH) (part of the University of Iowa's College of Public Health). IA FACE collects basic information on all traumatic occupational fatalities in Iowa as identified primarily through multisource surveillance (by IA FACE staff and professional colleagues across the state) of the media, including newspapers, radio, television, and the internet. Once alerted to a potential occupational death, IA FACE requests reports from investigating authorities such as the local police and sheriff's departments, emergency medical services, and medical examiner. GPCAH surveillance is based solely on reports from Iowa, Kansas, Missouri, and Nebraska newspapers and other periodicals. Additional information about IA FACE is available at http://www.public-health.uiowa.edu/face. Information on GPCAH is available at http://www.public-health.uiowa.edu/gpcah.

† Cases were defined as occupational fatalities caused by cattle that occurred in Iowa, Kansas, Missouri, or Nebraska during 2003–2008. Fatalities that occurred when motor vehicles crashed into cattle on roadways (such as while cattle were being herded with an all-terrain vehicle or pickup truck in a pasture) were excluded.

§ Percentages might not sum to 100% because of rounding.

The findings in this report are subject to at least two limitations. First, IA FACE surveillance, which involves more in-depth follow-up, only captured fatalities associated with work in Iowa. GPCAH surveillance, which is conducted in Iowa, Kansas, Missouri, and Nebraska, only captured accounts that appeared in newspapers or other periodicals. Therefore, reports from coroners or medical examiners, law enforcement, and emergency services were not obtained in Kansas, Missouri, or Nebraska. As a result, details about incidents in these three states often were limited (e.g., the age and sex of the decedent always were reported, but occasionally the decedent's activities and surroundings were not well reported). Second, reliance primarily on news reports means that some fatalities might go unreported. In Iowa, during 2003–2007, all seven of the fatalities caused by cattle that were documented by the state-based Census of Fatal Occupational Injuries (CFOI) of the U.S. Department of Labor's Bureau of Labor statistics also were captured through IA FACE and GPCAH surveillance. However, CFOI documented four cattle-caused fatalities in Kansas, seven in Missouri, and four in Nebraska, whereas GPCAH captured only two fatalities in Kansas, six in Missouri, and two in Nebraska. These data indicate that in states where only press clips were used to document agricultural fatalities, five out of 15 (33%) of the fatalities were unreported, suggesting a sensitivity of 67%. However, the advantage of using press reports is that more information regarding the circumstances of the deaths might be collected. In published studies, the sensitivity of newspapers as an injury surveillance source has varied according to the type of injury (*9*).

Previously published reports have recommended that cattle handling facilities be designed for optimum safety, such as the placing of sturdy barriers between cattle and persons, allowing for directed movement of cattle, and providing means for rapid exit from the cattle area (*10*). Information on safe cattle handling and safe cattle-handling facilities is available from the National Agricultural Safety Database at http://www.nasdonline.org/menu/topic/animals.html.

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Status of State Electronic Disease Surveillance Systems — United States, 2007

The National Electronic Disease Surveillance System (NEDSS) is a web-based system that uses standard health information technology (IT) codes to integrate disease surveillance systems, enabling them to transfer public health, laboratory, and clinical data securely from health-care providers to public health departments (*1*). Each jurisdictions' system consists of a base system and modules that can be used for specific surveillance purposes. States also use NEDSS-like or other electronic systems to conduct surveillance on specific diseases or conditions.* Until recently, no assessment had been done to describe the status and characteristics of state electronic disease surveillance systems. The Council of State and Territorial Epidemiologists (CSTE) conducted such an assessment in August 2007 in all 50 states. This report presents the results of that assessment, which indicated that, in 2007, state electronic disease surveillance systems varied widely and were in various stages of implementation. Each state had either custom-built systems or purchased systems that were customizable, with associated disease modules to meet its own surveillance needs. As interoperability becomes the standard for electronic data sharing, more states will face customization costs and the need to hire more technical specialists who can manage health information and exchange. Further collaboration and support from surveillance and health-care IT stakeholders with public health will be needed to improve the efficacy and quality of electronic disease surveillance systems.

States have developed their electronic disease surveillance systems in a multitude of ways, and states use a combination of vendor products, CDC electronic systems, and state-developed surveillance systems. Some electronic systems are disease specific (e.g., human immunodeficiency virus [HIV]/acquired immunodeficiency syndrome [AIDS] and tuberculosis [TB]), and others serve a particular purpose (e.g., outbreak management, electronic laboratory reporting).† In 2000, CDC developed the NEDSS Base System, a platform for disease-specific modules, which it supports and provides to states for use in surveillance. Except for the hardware costs, states using the NEDSS Base System generally incur only commercial software maintenance fees and licenses. States and vendors have developed enhancements that facilitate surveillance through electronic laboratory reporting, geographic information mapping, and outbreak management software.

In 2007, the NEDSS and Architecture Subcommittee of CSTE developed a survey to assess the status, progress, and features of the various electronic surveillance systems used by states nationwide. CSTE distributed the questionnaire electronically to NEDSS project managers or their designees in each state, who completed a series of multiple-choice questions on the operational status and integration levels of their systems and provided additional data on how their system software was developed. The questionnaire also asked respondents to provide vendor information and to comment on other aspects of their systems.

The assessment collected data on five NEDSS Base System, NEDSS-like, or separate, web-based electronic surveillance systems used by most states: communicable human diseases, HIV/AIDS, lead exposure, sexually transmitted diseases other than HIV/AIDS, and TB. The questionnaire also collected information about IT enhancements, such as electronic laboratory reporting, geographic information mapping, Master Patient Index,§ and outbreak management systems¶ to assess their level of potential integration with other systems and their development status.

For the assessment, CSTE defined "interoperability" as the extent to which the configuration of a surveillance system allowed exchange of information by electronically connecting various stand-alone, disease-specific modules within the state or allowed exchange of information among dissimilar systems in different states. CSTE defined "integration" as the extent to which a system included all of the separate disease modules in the same system.

All 50 states responded to the assessment questionnaire, but not all states answered all questions. Sixteen (32%) states

* The type of systems developed and implemented include federal (e.g., CDC's NEDSS Base System), state (e.g., Pennsylvania PA-NEDSS or Florida's Merlin System), and vendor (i.e., commercial off-the-shelf). The term NEDSS-like is commonly referred to state and vender developed system, but regardless of the term, each adheres to the principles of the NEDSS mission..

† Examples of CDC-created special use electronic surveillance systems include eHARS (human immunodeficiency virus/acquired immunodeficiency virus), STD*MIS (sexually transmitted diseases), and TIMS (tuberculosis surveillance).

§ Master Patient Index technology is used to maintain a master list of all patients in an area or organization. It provides a platform to correlate and cross-reference patient records across public health systems and registries.

¶ Outbreak management systems can generate questionnaires, perform analyses, issue reports, manage case and contact investigations, and perform other epidemiologic functions. It allows public health agencies respond to emergencies and outbreaks. Outbreak management systems often are used to manage patient tracking information for case follow-up.

reported using the NEDSS Base System as their general communicable disease electronic surveillance system. The remaining 34 (68%) states reported using some combination of commercial, CDC, or state-developed electronic surveillance systems to meet their needs. Among the 50 states, 39 (78%) reported that at least one aspect of their surveillance systems was under development or planned, and 35 (70%) reported that their system could send a message about communicable disease in Health Level Seven (HL7)** format to CDC. Among the 40 states with an operational electronic surveillance system (i.e., fully functional and currently in use) for general communicable disease surveillance, 23 (58%) reported having an integrated system, 15 (38%) had stand-alone systems, and two (5%) did not designate whether their system was integrated or stand alone. The 10 states without fully functional and operational systems were in the process of developing one or more aspects of their electronic disease surveillance system at the time of the assessment.

Results of the assessment indicated that web-based HIV/AIDS surveillance systems were mostly stand-alone systems (Table 1). Among 41 states, 17 (41%) reported having an operational and fully implemented web-based lead poisoning surveillance system. Among the 22 states with fully functional, web-based TB case-reporting systems, 11 (50%) were integrated and 11 (50%) were stand-alone systems. Eighteen (36%) of 50 states had developed their TB surveillance modules (TB case-management, TB case-reporting, and latent infection tracking) in-house, and TB surveillance systems in seven (14%) states were vendor developed. Fourteen (28%) of 50 states used a CDC-developed solution to meet their TB surveillance needs.

The three most commonly integrated modules were the automated electronic laboratory reporting module, the web-based manual electronic laboratory reporting module, and the Master Patient Index module. Automated and web-based manual electronic laboratory reporting modules differ in the labor involved in entering the information into the system. Automated systems do not require data entry into an online system, whereas the web-based electronic laboratory reporting modules do. These more recently developed modules were more commonly integrated into the general communicable disease systems than were stand-alone HIV/AIDS and TB surveillance modules. Among the 50 states, eight reported having functional outbreak management systems, among which four each had stand-alone systems and integrated systems. Outbreak management systems in 20 states were either under development or targeted for future development, and 22 states did not report having an outbreak management system. Four states reported having source code of the general communicable disease

TABLE 1. Number and percentage of states reporting components of fully operational and implemented electronic disease surveillance systems* — United States, 2007

Component (no. of states responding)	No.	(%)
General communicable disease surveillance (web-based) (40)		
Integrated†	23	(58)
Stand-alone	15	(38)
Unspecified	2	(5)
HIV/AIDS surveillance (web-based) (18)		
Integrated	1	(6)
Stand-alone	15	(83)
Unspecified	2	(11)
Tuberculosis case-reporting (web-based) (22)		
Integrated	11	(50)
Stand-alone	11	(50)
Lead poisoning surveillance (web-based) (17)		
Integrated	5	(29)
Stand-alone	11	(65)
Unspecified	1	(6)
Automated electronic laboratory reporting (28)		
Integrated	20	(71)
Stand-alone	4	(14)
Unspecified	4	(14)
Manual electronic laboratory reporting (web-based) (24)		
Integrated	15	(63)
Stand-alone	5	(21)
Unspecified	4	(17)
Master Patient Index§ (21)		
Integrated	9	(43)
Stand-alone	2	(10)
Unspecified	10	(48)
Outbreak management system¶ (8)		
Integrated	4	(50)
Stand-alone	4	(50)

* Operational and implemented electronic disease surveillance systems are systems that are routinely used by the state and are functional for surveillance purposes.
† Integration defined as configuration of a system to include all of the separate disease modules together in the same system.
§ Master Patient Index technology, which references all patients relating to an area or organization, is a source of user demographic data for other linked services and systems.
¶ Outbreak management systems can generate questionnaires, perform analyses, issue reports, manage case and contact investigations, and perform other epidemiologic functions. It allows public health agencies respond to emergencies and outbreaks. Outbreak management systems often are used to manage patient tracking information for case follow-up.

** States use HL7 format to transmit health-care data between computer systems. HL7 develops standards for structuring, encoding, and supporting patient care when data are exchanged electronically between computer applications. These standards ensure that the character of the data is not obscured or modified when sent electronically between health-care and state or local public health agencies. Additional information is available at http://www.hl7.org.

surveillance system available to the general public for use or modification from its original design free of charge and were willing to share state written code with any interested state or local health departments.

Among the 50 states, 13 (26%) reported achieving interoperability among two or more surveillance modules, and seven (14%) reported future plans for interoperability. Twenty-eight (56%) states were acquiring new technology and software and hardware required by the system to support interoperability, and one state did not respond to the question. Combined software and hardware costs ranged from $250,000 to $1 million for electronic disease surveillance systems, without additional customization. For most states, software costs were <$250,000 (Figure). The 29 states reporting hardware costs indicated approximate costs of <$250,000 to enable interoperation with another state system, without customization. Additional costs cited by respondents included annual licensing fees from software developers/vendors, security customization fees, and costs associated with tailoring a surveillance system to state or local needs (ranging from $20,000 to $50,000). The assessment indicated no clear association between software cost and state population.

States averaged two to three (range: 1–12) full-time equivalents (FTEs) for each IT role (Table 2). States with mid-sized to large populations reported more FTEs in each IT role than did smaller states, but most states generally had no more than four FTEs for each IT role. These roles were not discrete, and FTEs might have performed overlapping duties among the various roles.

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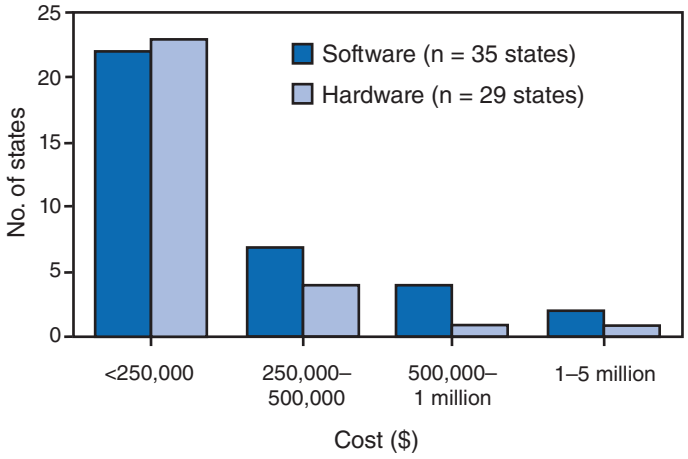
FIGURE. Approximate costs to deploy software and hardware for state electronic disease surveillance systems — United States, 2007



Editorial Note: This is the first assessment on the status of implementation of state electronic disease surveillance systems and to assess states' progress in improving various aspects of their surveillance systems. All information provided by the states was representative of their web-based electronic disease surveillance systems. IT enhancements were not necessarily web-based, although the manual web-based electronic laboratory reporting IT enhancement was designated as such. The results revealed substantial variation in how states developed their electronic disease surveillance systems, and also that they were strongly committed to making their surveillance systems interoperable. The assessment also revealed a shift toward integrated electronic disease surveillance systems and increased attempts to achieve interoperability among systems within states. As interoperability becomes the standard for electronic data sharing, more states will face customization costs and increasing demand for IT personnel in the workforce.

In this analysis, the most common stand-alone systems were HIV/AIDS and lead surveillance modules. Several policy and ethical reasons require that some surveillance systems have a lower level of integration than others (*2*). For example, special needs for patient privacy and data security might explain why the HIV/AIDS surveillance modules are stand alone in certain states. This assessment did not collect information on the data confidentiality concerns of specific electronic modules.

States will need to upgrade or replace aging electronic surveillance systems to continue meeting public health needs and to conform to current IT standards. Results from the assessment described in this report indicate that the financial costs of this will be substantial. Sufficient resources from surveillance and health-care IT stakeholders will be needed to support the growing electronic infrastructure and to improve the efficacy and quality of electronic disease surveillance systems.

The findings in this report are subject to at least two limitations. First, because the assessment did not ask states to indicate whether IT staff had multiple roles, the actual number of FTEs might be reported incorrectly if staff perform a variety of duties or overlap in the roles provided. Second, the use of self-report for data collection can lead to reporting bias. Respondents might not have been fully aware of the implementation or funding status of their states' electronic disease surveillance systems. However, the data were analyzed in aggregate so that no individual state's electronic surveillance systems were known or assessed. In addition, the state epidemiologist often either provided the responses to the assessment or was informed of the results of the assessment and had an opportunity to correct any inconsistencies in the results.

TABLE 2. Number of full-time equivalents (FTEs) allocated to information technology (IT) functions supporting disease surveillance among 49 states,* by state population and number of FTEs in each role† — United States, 2007

	State population (no. of states)							
	<1 million (n = 7)		1–5 million (n = 21)		>5–10 million (n = 13)		>10 million (n = 8)	
IT role	FTEs	No. states	FTEs	No. states	FTEs	No. states	FTEs	No. states
Application management/ Training/User support	1	7	1	10	1	2	1	1
			2	7	2	3	2	1
			4	1	3	1	3	3
			5	1	4	3	4	2
							5	1
Maintenance	1	4	1	14	1	4	1	2
	2	1	2	3	2	4	2	2
			3	2	3	1	3	2
							4	1
							11	1
Ongoing programming	1	2	1	9	1	4	—§	1
			2	1	2	2	2	2
			3	2	4	1	3	1
			5	1	5	1	9	1

* One state among 50 did not provide information on FTE allocations.
† IT role might not be discrete job assignment in each state, and the FTEs reported might perform more than one job function.
§ Number unknown.

CSTE plans to continue to evaluate the status and capacity of the states to use electronic disease surveillance systems. State health departments and NEDSS project managers are using these data to help find novel solutions for state electronic surveillance systems. The ultimate vision is to increase the connectivity of federal and state surveillance systems that can transfer appropriate public health, laboratory, and clinical data efficiently and securely over the Internet.

References

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2. Fairchild AL, Gable L, Gostin LO, Bayer R, Sweeney P, Janssen RS. Public goods, private data: HIV and the history, ethics, and uses of identifiable public health information. Public Health Rep 2007;122(Suppl 1):7–15.

TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending July 25, 2009 (29th week)*

Disease	Current week	Cum 2009	5-year weekly average†	Total cases reported for previous years 2008	2007	2006	2005	2004	States reporting cases during current week (No.)
Anthrax	—	—	—	—	1	1	—	—	
Botulism:									
foodborne	—	10	0	17	32	20	19	16	
infant	—	28	2	109	85	97	85	87	
other (wound and unspecified)	—	13	1	19	27	48	31	30	
Brucellosis	—	53	2	80	131	121	120	114	
Chancroid	—	22	1	25	23	33	17	30	
Cholera	—	2	0	5	7	9	8	6	
Cyclosporiasis§	5	65	8	139	93	137	543	160	FL (5)
Diphtheria	—	—	—	—	—	—	—	—	
Domestic arboviral diseases§,¶:									
California serogroup	—	2	4	62	55	67	80	112	
eastern equine	—	—	0	4	4	8	21	6	
Powassan	—	—	0	2	7	1	1	1	
St. Louis	—	4	0	13	9	10	13	12	
western equine	—	—	—	—	—	—	—	—	
Ehrlichiosis/Anaplasmosis§,**:									
Ehrlichia chaffeensis	30	283	26	1,137	828	578	506	338	NY (1), MO (4), NE (1), MD (2), VA (11), NC (4), TN (7)
Ehrlichia ewingii	—	—	0	9	—	—	—	—	
Anaplasma phagocytophilum	8	196	30	1,026	834	646	786	537	NY (7), WI (1)
undetermined	10	58	9	180	337	231	112	59	OH (1), MO (1), VA (2), TN (6)
Haemophilus influenzae,††									
invasive disease (age <5 yrs):									
serotype b	—	14	0	30	22	29	9	19	
nonserotype b	1	115	3	244	199	175	135	135	NV (1)
unknown serotype	1	131	3	163	180	179	217	177	NYC (1)
Hansen disease§	1	33	1	80	101	66	87	105	TN (1)
Hantavirus pulmonary syndrome§	—	6	1	18	32	40	26	24	
Hemolytic uremic syndrome, postdiarrheal§	3	96	7	330	292	288	221	200	GA (1), TN (1), CA (1)
Hepatitis C viral, acute	9	966	16	878	845	766	652	720	NY (2), MN (1), NE (1), FL (3), KY (1), CA (1)
HIV infection, pediatric (age <13 years)§§	—	—	3	—	—	—	380	436	
Influenza-associated pediatric mortality§,¶¶	2	98	0	90	77	43	45	—	FL (1), UT (1)
Listeriosis	11	306	21	759	808	884	896	753	NY (2), PA (1), OH (2), MO (1), NC (1), GA (2), CA (2)
Measles***	—	43	2	140	43	55	66	37	
Meningococcal disease, invasive†††:									
A, C, Y, and W-135	3	158	4	330	325	318	297	—	CT (1), FL (1), WA (1)
serogroup B	2	85	3	188	167	193	156	—	WA (2)
other serogroup	1	15	0	38	35	32	27	—	WA (1)
unknown serogroup	7	286	9	616	550	651	765	—	NY (1), NE (1), AZ (1), CA (4)
Mumps	4	192	14	454	800	6,584	314	258	NE (1), MD (1), CA (1), HI (1)
Novel influenza A virus infections§§§	—	43,771	—	2	4	N	N	N	
Plague	—	4	0	2	7	17	8	3	
Poliomyelitis, paralytic	—	—	—	—	—	—	1	—	
Polio virus infection, nonparalytic§	—	—	—	—	—	N	N	N	
Psittacosis§	—	6	0	8	12	21	16	12	
Q fever total§,¶¶¶:	2	45	3	124	171	169	136	70	
acute	2	40	1	110	—	—	—	—	MO (1), CO (1)
chronic	—	5	0	14	—	—	—	—	
Rabies, human	—	1	0	2	1	3	2	7	
Rubella****	—	1	0	16	12	11	11	10	
Rubella, congenital syndrome	—	1	—	—	—	1	1	—	
SARS-CoV§,††††	—	—	—	—	—	—	—	—	
Smallpox§	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome§	—	86	2	157	132	125	129	132	
Syphilis, congenital (age <1 yr)	—	98	8	434	430	349	329	353	
Tetanus	—	6	1	19	28	41	27	34	
Toxic-shock syndrome (staphylococcal)§	2	46	2	71	92	101	90	95	CA (2)
Trichinellosis	—	11	0	39	5	15	16	5	
Tularemia	5	30	5	123	137	95	154	134	CT (1), MO (1), NE (1), TN (1), CO (1)
Typhoid fever	2	176	8	449	434	353	324	322	TX (1), CA (1)
Vancomycin-intermediate *Staphylococcus aureus*§	2	33	0	63	37	6	2	—	NY (1), FL (1)
Vancomycin-resistant *Staphylococcus aureus*§	—	—	—	—	2	1	3	1	
Vibriosis (noncholera *Vibrio* species infections)§	11	169	9	492	549	N	N	N	GA (1), FL (3), TN (2), AL (1), CO (2), 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 July 25, 2009 (29th week)*

—: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts.

* Incidence data for reporting year 2008 and 2009 are provisional, whereas data for 2004, 2005, 2006, and 2007 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. Ninety-seven 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.

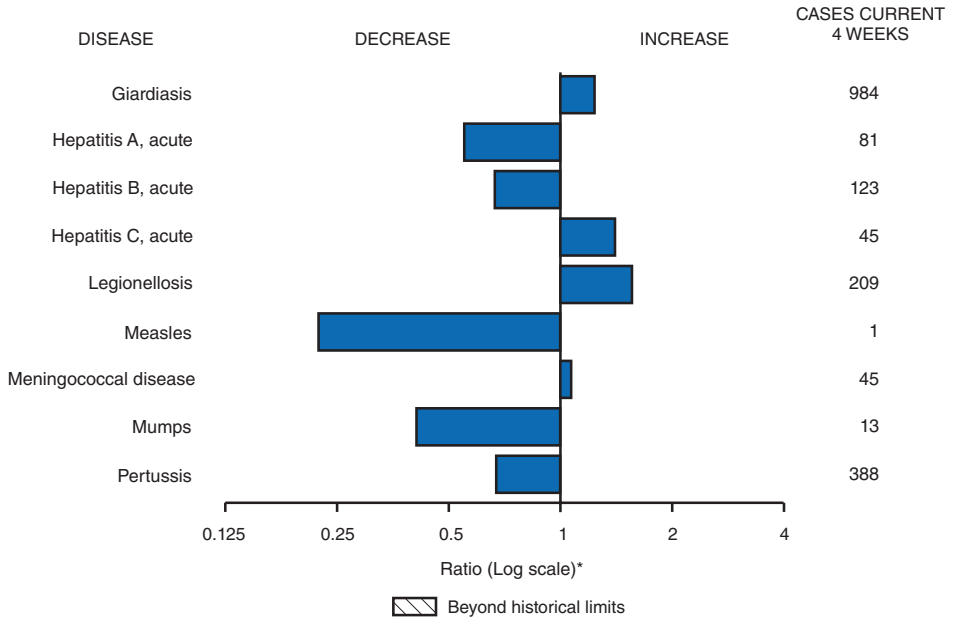
§§§ These cases were obtained from state and territorial health departments in response to the novel influenza A (H1N1) virus infections and include both confirmed and probable cases in addition to those reported to the National Notifiable Diseases Surveillance System (NNDSS). Because of the volume of cases and the method by which they are being collected, a 5-year weekly average for this disease is not calculated.

¶¶¶ 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 July 25, 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. Provisional cases of selected notifiable diseases, United States, weeks ending July 25, 2009, and July 19, 2008 (29th week)*

Reporting area	Chlamydia†					Coccidiodomycosis					Cryptosporidiosis				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 week		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
United States	13,927	22,828	25,700	609,845	649,493	231	148	473	5,585	3,695	127	119	482	2,869	2,599
New England	709	751	1,655	21,914	20,193	—	0	1	1	1	2	5	23	127	187
Connecticut	222	228	1,306	6,538	5,657	N	0	0	N	N	—	0	16	16	41
Maine§	—	49	72	1,307	1,366	N	0	0	N	N	—	0	6	14	14
Massachusetts	365	319	947	10,769	9,849	N	0	0	N	N	—	2	13	35	62
New Hampshire	2	31	63	717	1,117	—	0	1	1	1	1	1	4	26	37
Rhode Island§	101	60	244	1,941	1,553	—	0	0	—	—	—	0	3	4	4
Vermont§	19	21	53	642	651	N	0	0	N	N	1	1	7	32	29
Mid. Atlantic	2,701	2,887	6,734	85,783	81,313	—	0	0	—	—	22	13	35	339	315
New Jersey	301	431	846	12,308	12,323	N	0	0	N	N	—	0	4	8	19
New York (Upstate)	650	566	4,563	16,357	14,995	N	0	0	N	N	10	4	17	81	91
New York City	1,165	1,142	3,130	33,471	31,112	N	0	0	N	N	—	1	8	36	54
Pennsylvania	585	816	1,072	23,647	22,883	N	0	0	N	N	12	7	16	214	151
E.N. Central	1,600	3,477	4,382	90,637	106,722	—	0	4	22	32	18	27	126	657	684
Illinois	449	1,104	1,356	27,929	32,225	N	0	0	N	N	—	2	13	52	67
Indiana	390	405	713	12,597	11,967	N	0	0	N	N	—	3	17	99	88
Michigan	464	849	1,324	25,279	25,273	—	0	3	11	25	1	5	13	124	127
Ohio	85	793	1,300	15,357	25,313	—	0	2	11	7	16	9	59	215	130
Wisconsin	212	374	494	9,475	11,944	N	0	0	N	N	1	8	46	167	272
W.N. Central	77	1,324	1,552	34,373	36,661	—	0	1	3	1	22	17	68	417	374
Iowa	—	190	257	5,037	4,810	N	0	0	N	N	5	4	30	96	95
Kansas	—	182	533	5,083	4,995	N	0	0	N	N	—	1	8	40	28
Minnesota	1	268	338	6,690	7,978	—	0	0	—	—	14	4	14	117	91
Missouri	—	497	583	12,864	13,407	—	0	1	3	1	1	3	13	65	82
Nebraska§	17	96	219	2,476	2,933	N	0	0	N	N	2	2	8	43	49
North Dakota	—	24	60	552	1,021	N	0	0	N	N	—	0	10	6	1
South Dakota	59	58	85	1,671	1,517	N	0	0	N	N	—	2	9	50	28
S. Atlantic	1,937	4,362	5,730	106,343	130,204	—	0	1	5	2	20	21	49	501	421
Delaware	85	78	180	2,679	2,064	—	0	1	1	—	—	0	1	1	7
District of Columbia	—	128	227	3,849	3,880	—	0	0	—	—	—	0	2	—	8
Florida	605	1,394	1,597	40,045	39,797	N	0	0	N	N	8	8	35	164	177
Georgia	2	755	1,909	15,243	22,438	N	0	0	N	N	9	6	20	203	122
Maryland§	304	441	772	11,791	12,691	—	0	1	4	2	1	1	5	21	16
North Carolina	—	0	1,309	—	15,903	N	0	0	N	N	—	1	16	55	16
South Carolina§	628	530	1,429	13,432	14,652	N	0	0	N	N	2	1	6	23	26
Virginia§	313	616	924	17,307	17,035	N	0	0	N	N	—	1	4	28	37
West Virginia	—	70	101	1,997	1,744	N	0	0	N	N	—	0	3	6	12
E.S. Central	1,565	1,719	2,180	49,658	45,504	—	0	0	—	—	5	3	10	91	70
Alabama§	—	474	624	12,539	14,123	N	0	0	N	N	1	1	6	28	29
Kentucky	428	248	458	6,825	6,219	N	0	0	N	N	3	1	4	25	14
Mississippi	647	454	841	13,600	10,408	N	0	0	N	N	—	0	2	5	7
Tennessee§	490	570	809	16,694	14,754	N	0	0	N	N	1	1	5	33	20
W.S. Central	3,103	2,913	5,203	85,280	83,041	—	0	1	—	2	16	10	271	169	119
Arkansas§	—	275	418	7,746	7,930	N	0	0	N	N	—	1	10	19	17
Louisiana	410	434	1,134	12,980	12,004	—	0	1	—	2	—	1	5	12	25
Oklahoma	1,562	177	2,753	7,864	7,196	N	0	0	N	N	7	2	16	45	22
Texas§	1,131	1,959	2,527	56,690	55,911	N	0	0	N	N	9	7	258	93	55
Mountain	420	1,304	2,145	32,316	41,074	165	96	368	4,206	2,457	6	9	38	226	221
Arizona	74	398	627	7,053	13,667	164	94	366	4,151	2,392	—	1	10	22	23
Colorado	—	331	820	8,896	9,921	N	0	0	N	N	4	2	12	66	48
Idaho§	6	68	314	1,958	2,074	N	0	0	N	N	2	1	7	37	33
Montana§	56	56	88	1,677	1,712	N	0	0	N	N	—	0	4	15	29
Nevada§	105	175	366	5,281	5,482	1	1	3	35	32	—	0	4	8	8
New Mexico§	139	159	540	3,903	4,117	—	0	2	8	22	—	2	23	54	47
Utah	28	109	251	2,382	3,327	—	0	2	12	9	—	0	6	9	21
Wyoming§	12	34	97	1,166	774	—	0	1	—	2	—	0	2	15	12
Pacific	1,815	3,670	4,763	103,541	104,781	66	38	172	1,348	1,200	16	11	22	342	208
Alaska	—	116	233	4,726	2,599	N	0	0	N	N	—	0	2	4	1
California	1,497	2,866	3,599	80,637	81,487	66	38	172	1,348	1,200	12	6	15	192	118
Hawaii	—	117	247	3,205	3,237	N	0	0	N	N	—	0	1	1	1
Oregon§	—	201	631	5,219	5,606	N	0	0	N	N	1	2	8	106	43
Washington	318	383	557	9,754	11,852	N	0	0	N	N	3	1	7	39	45
American Samoa	—	0	0	—	73	N	0	0	N	N	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	3	8	—	103	—	0	0	—	—	—	0	0	—	—
Puerto Rico	136	128	333	4,324	4,090	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	8	17	205	393	—	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 2008 and 2009 are provisional. Data for HIV/AIDS, AIDS, and TB, when available, are displayed in Table IV, which appears quarterly.
† Chlamydia refers to genital infections caused by *Chlamydia trachomatis*.
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending July 25, 2009, and July 19, 2008 (29th 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	269	322	641	8,357	8,663	3,238	5,572	7,164	144,070	182,889	36	51	124	1,611	1,740
New England	8	23	64	538	751	98	97	301	2,718	2,812	8	3	16	95	95
Connecticut	—	6	14	135	176	45	48	275	1,259	1,251	8	0	12	37	20
Maine§	6	4	12	101	75	—	2	9	74	51	—	0	2	13	8
Massachusetts	—	9	27	150	317	51	37	112	1,117	1,230	—	1	5	32	47
New Hampshire	1	3	10	61	66	1	2	6	60	64	—	0	2	7	8
Rhode Island§	—	1	8	32	48	—	5	19	184	195	—	0	7	3	5
Vermont§	1	3	15	59	69	1	1	4	24	21	—	0	1	3	7
Mid. Atlantic	43	61	116	1,541	1,647	484	595	1,138	16,923	18,001	8	11	25	356	325
New Jersey	—	7	21	108	269	63	91	127	2,542	2,982	—	2	7	62	53
New York (Upstate)	24	24	81	642	546	96	106	664	2,860	3,356	4	2	20	79	92
New York City	4	16	30	396	445	226	210	577	6,277	5,540	2	2	11	81	58
Pennsylvania	15	16	46	395	387	99	190	267	5,244	6,123	2	4	10	134	122
E.N. Central	20	45	90	1,130	1,320	577	1,108	1,627	28,098	37,959	—	8	27	213	277
Illinois	—	9	32	207	366	154	362	499	8,509	11,064	—	3	9	77	86
Indiana	N	0	11	N	N	146	149	256	4,173	4,864	—	1	22	47	49
Michigan	4	12	22	305	282	165	294	493	8,224	9,361	—	0	3	15	16
Ohio	14	16	31	420	424	35	256	482	4,747	9,127	—	2	6	65	86
Wisconsin	2	9	19	198	248	77	96	149	2,445	3,543	—	0	4	9	40
W.N. Central	61	25	143	806	891	10	292	393	7,149	9,309	9	3	15	96	128
Iowa	13	6	18	157	160	—	31	53	851	863	—	0	0	—	2
Kansas	—	3	11	61	66	—	37	83	1,055	1,220	—	0	2	11	15
Minnesota	36	0	106	250	259	—	46	67	1,091	1,783	9	0	10	30	37
Missouri	7	7	22	202	239	—	136	184	3,232	4,438	—	1	4	32	49
Nebraska§	5	3	10	91	104	5	23	51	681	785	—	0	4	18	17
North Dakota	—	0	16	8	10	—	2	7	33	66	—	0	4	5	8
South Dakota	—	2	11	37	53	5	8	20	206	154	—	0	0	—	—
S. Atlantic	68	67	108	1,978	1,444	601	1,206	2,042	30,054	45,458	5	12	30	445	448
Delaware	1	0	3	17	25	37	16	35	510	638	—	0	1	3	6
District of Columbia	—	0	5	—	36	—	50	88	1,524	1,425	—	0	2	—	4
Florida	56	34	57	1,033	622	184	415	507	11,557	13,465	3	4	10	156	112
Georgia	—	14	67	515	343	—	253	876	5,165	8,162	2	3	9	94	90
Maryland§	2	5	10	131	135	98	119	212	3,103	3,421	—	1	6	53	72
North Carolina	N	0	0	N	N	—	0	542	—	7,075	—	1	17	48	44
South Carolina§	2	2	8	50	67	215	163	414	4,159	5,391	—	1	5	30	39
Virginia§	7	8	31	208	181	67	152	308	3,749	5,462	—	1	6	41	64
West Virginia	—	1	5	24	35	—	11	26	287	419	—	0	3	20	17
E.S. Central	4	8	22	180	230	495	514	771	14,279	16,461	1	3	9	100	91
Alabama§	1	4	12	81	130	—	150	216	3,441	5,581	1	0	4	24	15
Kentucky	N	0	0	N	N	124	80	153	1,962	2,438	—	0	5	15	6
Mississippi	N	0	0	N	N	206	145	253	4,271	3,833	—	0	1	—	11
Tennessee§	3	4	13	99	100	165	162	301	4,605	4,609	—	2	6	61	59
W.S. Central	8	9	22	201	177	680	918	1,358	24,616	28,566	—	2	22	74	81
Arkansas§	2	2	8	68	62	—	84	134	2,374	2,580	—	0	2	13	9
Louisiana	2	2	10	61	64	158	157	420	4,220	5,336	—	0	1	11	8
Oklahoma	4	3	18	72	51	201	69	616	2,596	2,652	—	1	20	49	58
Texas§	N	0	0	N	N	321	567	725	15,426	17,998	—	0	1	1	6
Mountain	28	26	62	654	711	45	174	313	3,951	6,656	4	5	11	152	200
Arizona	1	3	10	96	61	6	48	82	828	1,969	—	1	7	52	82
Colorado	20	9	27	225	258	—	56	158	1,382	2,050	3	1	6	50	38
Idaho§	3	3	14	72	77	—	2	13	52	91	—	0	2	2	10
Montana§	—	2	6	46	42	1	2	6	45	61	—	0	1	1	2
Nevada§	2	2	8	50	60	14	31	86	920	1,339	1	0	2	12	11
New Mexico§	—	1	8	48	50	18	23	52	561	788	—	0	3	15	30
Utah	—	6	18	86	144	2	5	15	115	300	—	1	2	19	27
Wyoming§	2	1	4	31	19	4	2	8	48	58	—	0	2	1	—
Pacific	29	54	130	1,329	1,492	248	562	775	16,282	17,667	1	2	8	80	95
Alaska	—	2	10	73	41	—	17	40	751	287	—	0	4	18	13
California	18	36	59	911	1,019	210	473	658	13,577	14,535	—	0	3	12	34
Hawaii	1	0	4	7	21	—	12	19	344	336	1	0	3	18	11
Oregon§	1	7	17	165	239	—	20	48	546	694	—	1	3	29	35
Washington	9	7	74	173	172	38	47	81	1,064	1,815	—	0	2	3	2
American Samoa	—	0	0	—	—	—	0	0	—	3	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	1	15	—	45	—	0	0	—	—
Puerto Rico	—	3	15	49	99	13	4	24	153	159	—	0	1	1	—
U.S. Virgin Islands	—	0	0	—	—	—	2	7	63	75	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 2008 and 2009 are 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 July 25, 2009, and July 19, 2008 (29th week)*

Reporting area	Hepatitis (viral, acute), by type† A: Current week	A: Previous 52 weeks Med	A: Previous 52 weeks Max	A: Cum 2009	A: Cum 2008	B: Current week	B: Previous 52 weeks Med	B: Previous 52 weeks Max	B: Cum 2009	B: Cum 2008	Legionellosis: Current week	Legionellosis: Previous 52 weeks Med	Legionellosis: Previous 52 weeks Max	Legionellosis: Cum 2009	Legionellosis: Cum 2008
United States	23	36	89	965	1,523	45	69	197	1,716	2,067	47	50	152	1,185	1,334
New England	—	1	8	35	75	—	1	4	17	46	2	2	18	43	83
Connecticut	—	0	4	12	14	—	0	3	7	17	2	1	5	27	15
Maine§	—	0	5	1	4	—	0	2	7	9	—	0	2	1	3
Massachusetts	—	0	2	14	39	—	0	2	1	13	—	0	6	6	37
New Hampshire	—	0	2	3	6	—	0	2	2	3	—	0	4	4	13
Rhode Island§	—	0	2	3	10	—	0	1	—	3	—	0	14	4	10
Vermont§	—	0	1	2	2	—	0	1	—	1	—	0	1	1	5
Mid. Atlantic	4	5	13	119	165	4	6	17	168	262	19	14	60	425	384
New Jersey	—	1	5	21	39	—	1	5	31	76	—	2	14	46	52
New York (Upstate)	3	1	4	29	35	2	1	11	37	35	12	5	24	136	108
New York City	—	2	6	32	54	—	1	4	33	57	—	2	17	82	55
Pennsylvania	1	1	4	37	37	2	2	8	67	94	7	6	35	161	169
E.N. Central	1	5	12	126	207	1	10	21	233	273	17	8	41	190	303
Illinois	1	1	9	51	78	—	2	7	27	100	—	1	13	9	41
Indiana	—	0	3	8	10	—	1	18	52	22	—	0	6	8	26
Michigan	—	1	5	36	74	1	3	8	77	74	—	2	12	47	89
Ohio	—	1	4	26	26	—	1	13	57	65	17	4	18	121	134
Wisconsin	—	0	3	5	19	—	0	4	20	12	—	0	6	5	13
W.N. Central	3	2	16	65	186	3	2	16	76	46	2	2	8	35	62
Iowa	—	0	3	15	86	—	0	3	14	12	—	0	2	10	9
Kansas	—	0	1	6	11	—	0	2	4	6	—	0	1	2	1
Minnesota	1	0	12	13	26	3	0	11	14	4	1	0	3	6	8
Missouri	—	0	3	14	22	—	1	5	33	19	1	0	7	10	30
Nebraska§	2	0	2	15	39	—	0	2	10	4	—	0	1	6	13
North Dakota	—	0	2	—	—	—	0	1	—	1	—	0	3	1	—
South Dakota	—	0	1	2	2	—	0	1	1	—	—	0	1	—	1
S. Atlantic	2	7	15	226	199	21	18	31	545	515	4	9	22	242	227
Delaware	—	0	1	3	5	U	0	1	U	U	—	0	5	8	6
District of Columbia	U	0	0	U	U	U	0	0	U	U	—	0	2	—	7
Florida	—	4	8	107	76	7	6	11	176	181	3	3	7	85	75
Georgia	1	1	4	35	28	6	3	9	85	97	—	1	5	27	19
Maryland§	1	0	4	24	25	1	1	5	43	47	1	2	10	58	60
North Carolina	—	1	7	22	35	6	1	19	128	49	—	0	7	32	11
South Carolina§	—	0	3	20	6	1	1	4	24	42	—	0	1	3	5
Virginia§	—	1	6	15	21	—	2	10	45	58	—	1	5	27	29
West Virginia	—	0	1	—	3	—	1	19	44	41	—	0	3	2	15
E.S. Central	—	1	5	23	42	3	7	11	166	206	—	2	5	53	69
Alabama§	—	0	2	6	5	1	2	7	52	56	—	0	2	6	8
Kentucky	—	0	2	4	15	2	2	7	45	55	—	1	3	23	34
Mississippi	—	0	1	5	4	—	0	3	7	22	—	0	1	1	1
Tennessee§	—	0	4	8	18	—	2	8	62	73	—	1	4	23	26
W.S. Central	—	3	43	73	150	7	11	99	244	418	—	2	21	42	38
Arkansas§	—	0	1	4	4	—	1	5	22	30	—	0	2	3	5
Louisiana	—	0	2	2	8	—	1	4	23	54	—	0	1	2	7
Oklahoma	—	0	6	1	7	—	2	17	50	51	—	0	6	3	3
Texas§	—	3	37	66	131	7	6	76	149	283	—	1	19	34	23
Mountain	3	3	8	90	142	1	3	9	75	110	2	2	8	55	40
Arizona	1	2	6	42	74	—	1	4	27	43	1	0	3	24	11
Colorado	2	0	5	27	25	—	0	3	15	17	1	0	2	6	3
Idaho§	—	0	1	2	14	—	0	2	4	4	—	0	1	—	2
Montana§	—	0	1	4	—	—	0	1	—	—	—	0	2	4	3
Nevada§	—	0	3	6	5	1	0	3	16	27	—	0	2	8	6
New Mexico§	—	0	1	5	14	—	0	2	5	7	—	0	2	—	3
Utah	—	0	2	4	7	—	0	3	5	7	—	0	3	12	12
Wyoming§	—	0	0	—	3	—	0	2	3	5	—	0	1	1	—
Pacific	10	7	18	208	357	5	7	36	192	191	1	3	13	100	128
Alaska	—	0	1	6	3	—	0	2	5	6	—	0	1	3	1
California	8	6	17	158	293	5	5	28	142	131	1	3	9	76	97
Hawaii	—	0	2	4	7	—	0	1	3	4	—	0	1	1	5
Oregon§	—	0	2	12	21	—	0	3	23	26	—	0	2	7	11
Washington	2	1	4	28	33	—	1	8	19	24	—	0	4	13	14
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	15	17	—	0	5	10	31	—	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 2008 and 2009 are 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 July 25, 2009, and July 19, 2008 (29th 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	582	539	1,831	9,569	15,371	18	22	46	541	573	13	17	48	544	772
New England	69	64	624	983	6,240	—	0	5	15	30	1	0	4	18	22
Connecticut	—	0	206	—	2,356	—	0	4	4	6	1	0	1	2	1
Maine§	44	7	73	260	90	—	0	1	1	1	—	0	1	3	4
Massachusetts	—	11	274	117	2,736	—	0	4	6	15	—	0	3	9	14
New Hampshire	—	14	101	415	861	—	0	1	1	3	—	0	1	1	2
Rhode Island§	—	0	78	54	108	—	0	1	1	1	—	0	1	2	1
Vermont§	25	5	41	137	89	—	0	1	2	4	—	0	1	1	—
Mid. Atlantic	435	237	1,401	6,176	5,780	2	5	17	129	139	1	2	5	61	82
New Jersey	1	36	181	1,541	2,255	—	0	4	—	30	—	0	2	8	10
New York (Upstate)	208	87	1,368	1,687	1,449	1	0	10	27	15	1	0	2	16	21
New York City	—	1	54	3	332	—	3	11	74	74	—	0	2	9	17
Pennsylvania	226	53	352	2,945	1,744	1	1	4	28	20	—	1	4	28	34
E.N. Central	10	19	152	554	1,203	5	3	5	72	90	—	3	8	90	133
Illinois	—	0	7	23	73	—	1	3	26	45	—	1	6	20	47
Indiana	—	0	6	8	17	—	0	1	8	4	—	0	4	22	17
Michigan	2	1	10	29	19	—	0	3	13	10	—	0	5	17	20
Ohio	2	1	6	18	10	5	0	2	22	20	—	0	3	25	31
Wisconsin	6	16	136	476	1,084	—	0	2	3	11	—	0	1	6	18
W.N. Central	—	5	336	90	250	1	1	7	32	35	1	1	9	42	70
Iowa	—	1	8	39	71	—	0	3	5	3	—	0	1	4	13
Kansas	—	0	4	11	5	—	0	2	3	3	—	0	2	8	3
Minnesota	—	1	326	28	168	—	0	7	13	16	—	0	4	9	21
Missouri	—	0	2	4	2	1	0	2	7	7	—	0	2	14	22
Nebraska§	—	0	3	7	2	—	0	1	3	6	1	0	1	5	9
North Dakota	—	0	10	—	—	—	0	0	—	—	—	0	3	—	1
South Dakota	—	0	1	1	2	—	0	1	1	—	—	0	1	2	1
S. Atlantic	60	65	223	1,614	1,751	10	6	15	178	153	1	2	9	101	110
Delaware	19	12	44	474	476	—	0	1	1	1	—	0	1	2	1
District of Columbia	—	0	5	—	35	—	0	2	—	2	—	0	0	—	—
Florida	1	1	6	23	21	4	1	7	50	25	1	1	4	37	39
Georgia	—	0	6	22	24	1	1	4	38	37	—	0	2	20	14
Maryland§	36	30	163	773	820	4	1	8	46	42	—	0	1	5	12
North Carolina	—	1	7	37	6	—	0	5	18	16	—	0	5	16	9
South Carolina§	—	0	3	14	14	—	0	1	1	5	—	0	1	8	16
Virginia§	4	13	61	219	268	1	1	4	23	24	—	0	2	9	15
West Virginia	—	1	17	52	87	—	0	1	1	1	—	0	2	4	4
E.S. Central	—	0	3	11	29	—	1	3	20	10	—	0	3	17	38
Alabama§	—	0	1	2	8	—	0	3	6	3	—	0	1	4	5
Kentucky	—	0	1	1	4	—	0	2	7	3	—	0	1	3	7
Mississippi	—	0	0	—	1	—	0	0	—	1	—	0	1	1	9
Tennessee§	—	0	3	8	16	—	0	3	7	3	—	0	1	9	17
W.S. Central	—	1	21	18	46	—	1	10	12	26	—	1	12	47	80
Arkansas§	—	0	0	—	—	—	0	1	1	—	—	0	2	5	13
Louisiana	—	0	1	—	1	—	0	1	1	2	—	0	3	9	17
Oklahoma	—	0	2	—	—	—	0	2	1	2	—	0	3	4	10
Texas§	—	1	21	18	45	—	1	10	9	22	—	1	9	29	40
Mountain	1	1	13	20	23	—	0	4	13	15	1	1	4	44	41
Arizona	—	0	2	2	3	—	0	2	3	5	1	0	2	10	5
Colorado	—	0	1	2	2	—	0	3	6	3	—	0	2	13	9
Idaho§	1	0	2	7	4	—	0	1	1	—	—	0	1	5	4
Montana§	—	0	13	1	2	—	0	1	1	—	—	0	2	4	4
Nevada§	—	0	2	7	4	—	0	1	—	4	—	0	2	4	7
New Mexico§	—	0	2	—	6	—	0	1	—	1	—	0	1	3	5
Utah	—	0	1	—	1	—	0	2	2	2	—	0	1	1	5
Wyoming§	—	0	1	1	1	—	0	0	—	—	—	0	2	4	2
Pacific	7	3	13	103	49	—	3	10	70	75	8	4	14	124	196
Alaska	—	0	2	3	3	—	0	1	3	3	—	0	2	2	4
California	7	2	6	90	31	—	2	8	52	57	4	2	8	79	147
Hawaii	N	0	0	N	N	—	0	1	1	2	—	0	1	3	3
Oregon§	—	0	3	7	15	—	0	2	7	4	—	1	7	27	23
Washington	—	0	12	3	—	—	0	3	7	9	4	0	6	13	19
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	2	—	1	—	0	0	—	—
Puerto Rico	N	0	0	N	N	—	0	1	1	2	—	0	1	—	2
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 2008 and 2009 are 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 July 25, 2009, and July 19, 2008 (29th 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	88	255	1,697	6,681	4,507	22	69	138	1,860	2,238	14	29	179	687	920
New England	—	16	33	246	525	6	8	15	182	203	—	0	2	4	3
Connecticut	—	0	4	13	32	—	3	10	80	99	—	0	0	—	—
Maine†	—	1	10	62	15	2	1	5	30	31	—	0	2	4	—
Massachusetts	—	9	26	105	415	—	0	0	—	—	—	0	1	—	1
New Hampshire	—	1	6	47	16	3	1	7	22	21	—	0	0	—	1
Rhode Island†	—	1	5	11	40	—	0	3	21	18	—	0	2	—	1
Vermont†	—	0	2	8	7	1	1	6	29	34	—	0	0	—	—
Mid. Atlantic	12	23	64	571	521	8	16	30	334	481	—	2	29	33	68
New Jersey	—	3	12	80	112	—	0	0	—	—	—	0	6	—	48
New York (Upstate)	2	6	41	107	171	8	8	20	216	252	—	0	29	4	8
New York City	—	0	21	48	47	—	0	2	—	11	—	0	4	19	6
Pennsylvania	10	11	33	336	191	—	6	17	118	218	—	0	2	10	6
E.N. Central	39	48	238	1,402	777	4	2	28	87	93	—	1	15	33	63
Illinois	—	14	45	251	112	3	1	20	35	33	—	1	10	19	48
Indiana	—	3	158	127	25	—	0	6	6	2	—	0	3	1	1
Michigan	3	10	21	317	112	1	1	9	27	35	—	0	1	4	2
Ohio	35	18	57	636	467	—	0	7	19	23	—	0	3	9	12
Wisconsin	1	4	10	71	61	N	0	0	N	N	—	0	0	—	—
W.N. Central	10	32	872	1,000	386	2	5	17	140	153	4	3	26	90	224
Iowa	—	5	21	98	63	—	0	5	9	12	—	0	1	2	5
Kansas	—	3	12	109	31	—	1	6	50	43	—	0	1	1	—
Minnesota	—	0	808	165	110	—	0	11	29	26	—	0	0	—	—
Missouri	8	15	51	511	132	2	1	8	21	21	4	3	24	81	212
Nebraska†	2	4	32	92	37	—	0	2	—	23	—	0	4	6	4
North Dakota	—	0	24	14	1	—	0	9	4	15	—	0	1	—	—
South Dakota	—	0	10	11	12	—	0	4	27	13	—	0	0	—	3
S. Atlantic	17	26	71	886	427	1	25	111	850	1,013	5	15	54	302	279
Delaware	—	0	3	8	6	—	0	0	—	—	—	0	3	5	17
District of Columbia	—	0	2	—	1	—	0	0	—	—	—	0	1	—	5
Florida	12	8	32	298	120	—	0	95	95	138	1	0	3	5	5
Georgia	—	3	11	106	42	—	5	71	225	219	—	1	5	21	42
Maryland†	1	3	10	59	55	—	6	13	166	255	—	1	7	26	34
North Carolina	—	0	65	199	77	N	2	4	N	N	1	9	36	195	106
South Carolina†	2	3	16	117	60	—	0	0	—	—	1	0	9	13	16
Virginia†	2	4	24	91	60	—	10	24	297	341	2	2	15	35	48
West Virginia	—	0	2	8	6	1	1	6	67	60	—	0	1	2	6
E.S. Central	4	13	33	405	161	1	2	7	64	100	5	4	19	129	149
Alabama†	2	3	19	154	23	—	0	0	—	—	3	1	7	27	36
Kentucky	—	5	15	119	32	1	1	4	30	20	—	0	0	—	1
Mississippi	—	1	4	24	67	—	0	2	—	2	—	0	1	5	7
Tennessee†	2	3	14	108	39	—	2	6	34	78	2	3	17	97	105
W.S. Central	4	54	389	1,254	603	—	0	7	31	61	—	2	161	79	114
Arkansas†	—	4	38	118	46	—	0	5	23	34	—	0	61	28	13
Louisiana	—	2	7	62	34	—	0	0	—	—	—	0	2	2	3
Oklahoma	—	0	45	17	19	—	0	6	7	25	—	0	98	38	80
Texas†	4	44	304	1,057	504	—	0	1	1	2	—	1	6	11	18
Mountain	2	16	31	453	495	—	2	9	51	37	—	1	3	15	18
Arizona	1	3	8	100	139	N	0	0	N	N	—	0	2	3	6
Colorado	1	5	12	160	83	—	0	0	—	—	—	0	1	—	—
Idaho†	—	1	5	42	21	—	0	2	—	4	—	0	1	—	—
Montana†	—	0	4	9	62	—	0	4	14	3	—	0	2	7	3
Nevada†	—	0	3	7	21	—	0	5	2	3	—	0	2	1	—
New Mexico†	—	1	10	30	28	—	0	2	15	18	—	0	1	1	2
Utah	—	4	19	104	132	—	0	6	3	2	—	0	1	1	2
Wyoming†	—	0	2	1	9	—	0	4	17	7	—	0	2	2	5
Pacific	—	22	98	464	612	—	5	13	121	97	—	0	1	2	2
Alaska	—	4	21	56	60	—	0	4	18	12	N	0	0	N	N
California	—	6	19	117	301	—	4	12	101	82	—	0	1	2	—
Hawaii	—	0	3	17	6	—	0	0	—	—	N	0	0	N	N
Oregon†	—	3	14	125	93	—	0	2	2	3	—	0	1	—	2
Washington	—	6	76	149	152	—	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	22	37	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	N	0	0	N	N	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 2008 and 2009 are 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 July 25, 2009, and July 19, 2008 (29th week)*

Reporting area	Salmonellosis					Shiga toxin-producing *E. coli* (STEC)†					Shigellosis				
	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	660	846	2,323	19,699	21,875	62	80	255	1,768	2,195	228	334	1,268	8,196	10,076
New England	1	25	246	828	1,319	—	3	52	103	141	—	2	24	76	129
Connecticut	—	0	220	220	491	—	0	52	52	47	—	0	19	19	40
Maine§	1	2	8	63	74	—	0	3	10	5	—	0	6	2	6
Massachusetts	—	16	41	263	587	—	1	9	15	63	—	2	9	40	70
New Hampshire	—	3	42	172	75	—	1	3	19	13	—	0	2	4	3
Rhode Island§	—	2	11	78	47	—	0	1	—	7	—	0	1	8	8
Vermont§	—	1	7	32	45	—	0	6	7	6	—	0	2	3	2
Mid. Atlantic	50	89	192	2,159	2,765	5	6	23	116	245	30	55	74	1,560	1,303
New Jersey	—	12	44	181	676	—	1	7	19	82	—	16	37	322	381
New York (Upstate)	33	24	65	593	645	5	3	12	55	70	10	5	23	118	365
New York City	2	19	49	542	635	—	1	5	36	27	—	9	23	229	461
Pennsylvania	15	29	78	843	809	—	0	8	6	66	20	20	57	891	96
E.N. Central	47	89	168	2,364	2,631	5	14	74	306	345	34	78	132	1,566	1,802
Illinois	—	24	50	552	788	—	1	10	62	63	—	14	34	316	552
Indiana	—	8	50	176	273	—	1	14	30	27	—	1	21	30	424
Michigan	4	18	38	501	496	—	3	43	72	70	—	5	24	129	62
Ohio	43	27	52	804	685	4	3	15	65	85	34	41	80	821	567
Wisconsin	—	13	30	331	389	1	3	16	77	100	—	11	42	270	197
W.N. Central	39	51	109	1,385	1,448	15	12	42	316	392	20	14	49	444	510
Iowa	4	7	16	217	233	4	2	21	88	90	—	3	12	44	90
Kansas	—	7	19	190	230	—	1	7	23	24	—	3	11	138	10
Minnesota	13	12	56	330	373	7	2	15	91	83	2	3	24	42	152
Missouri	17	11	48	260	371	1	2	11	52	92	18	3	33	202	154
Nebraska§	3	5	41	224	134	3	2	12	46	73	—	0	3	13	1
North Dakota	—	0	30	32	26	—	0	28	3	1	—	0	9	3	29
South Dakota	2	3	22	132	81	—	0	5	13	29	—	0	1	2	74
S. Atlantic	269	262	457	5,439	5,208	4	13	48	327	362	47	48	85	1,291	1,855
Delaware	1	2	8	44	79	—	0	2	8	7	3	0	8	49	7
District of Columbia	—	0	2	—	40	—	0	1	—	4	—	0	2	—	9
Florida	144	103	180	2,451	2,210	—	2	10	86	80	6	10	26	244	515
Georgia	62	38	96	961	1,002	1	1	8	36	42	25	13	30	367	731
Maryland§	14	16	35	373	412	1	2	11	43	54	9	6	13	206	38
North Carolina	19	27	106	741	460	—	2	21	70	39	1	6	27	240	60
South Carolina§	17	16	57	332	432	1	0	3	16	24	1	4	17	71	377
Virginia§	12	20	88	427	458	1	3	27	57	86	2	4	59	109	98
West Virginia	—	4	23	110	115	—	0	3	11	26	—	0	3	5	20
E.S. Central	46	53	140	1,201	1,422	3	5	12	117	138	6	22	58	516	1,173
Alabama§	20	15	49	336	379	2	1	4	28	40	1	4	12	89	277
Kentucky	10	10	18	239	228	—	2	7	38	36	1	2	25	131	201
Mississippi	6	13	57	282	439	—	0	1	6	3	—	1	6	17	250
Tennessee§	10	14	62	344	376	1	2	6	45	59	4	13	48	279	445
W.S. Central	52	89	1,333	1,729	2,866	3	4	139	66	175	49	76	967	1,522	2,175
Arkansas§	19	12	39	286	301	1	1	5	18	27	5	10	25	199	257
Louisiana	10	17	54	330	489	—	0	1	—	5	—	5	26	88	382
Oklahoma	18	14	102	294	314	2	0	82	12	17	19	5	61	145	58
Texas§	5	51	1,204	819	1,762	—	2	55	36	126	25	51	889	1,090	1,478
Mountain	42	57	106	1,436	1,691	8	10	40	228	244	10	27	54	611	408
Arizona	17	19	43	491	476	1	1	4	28	35	10	17	35	453	188
Colorado	14	12	26	341	410	4	3	18	94	72	—	2	11	47	46
Idaho§	1	3	9	87	94	1	2	15	34	48	—	0	2	5	5
Montana§	—	2	7	60	56	—	0	3	9	20	—	0	5	13	3
Nevada§	9	4	10	132	126	—	0	3	13	10	—	1	13	34	115
New Mexico§	—	6	22	141	326	—	1	4	17	27	—	3	12	48	35
Utah	—	7	19	141	162	—	1	9	28	23	—	1	3	11	13
Wyoming§	1	1	6	43	41	2	0	2	5	9	—	0	1	—	3
Pacific	114	125	537	3,158	2,525	19	9	31	189	153	32	29	82	610	721
Alaska	—	2	9	66	25	—	0	1	—	3	—	0	1	3	—
California	91	96	516	2,409	1,832	11	5	15	114	81	22	25	75	491	623
Hawaii	4	5	13	132	136	—	0	2	2	8	—	0	3	14	24
Oregon§	—	8	20	216	233	1	1	7	16	21	1	1	10	21	38
Washington	19	11	85	335	299	7	3	16	57	40	9	3	11	81	36
American Samoa	—	0	1	—	1	—	0	0	—	—	—	0	2	3	1
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	2	—	8	—	0	0	—	—	—	0	1	—	14
Puerto Rico	—	13	40	185	345	—	0	0	—	—	—	0	4	5	12
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 2008 and 2009 are provisional.
† Includes *E. coli* O157:H7; Shiga toxin-positive, serogroup non-O157; and Shiga toxin-positive, not serogrouped.
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending July 25, 2009, and July 19, 2008 (29th week)*

Reporting area	Streptococcal diseases, invasive, group A					*Streptococcus pneumoniae*, 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	49	100	239	3,361	3,651	15	34	122	1,037	1,108
New England	5	5	28	178	268	—	1	12	25	55
Connecticut	4	0	21	53	72	—	0	11	—	—
Maine§	1	0	2	13	20	—	0	1	2	1
Massachusetts	—	2	10	60	128	—	1	2	15	41
New Hampshire	—	1	4	30	16	—	0	2	6	7
Rhode Island§	—	0	2	9	20	—	0	2	—	6
Vermont§	—	0	3	13	12	—	0	1	2	—
Mid. Atlantic	7	19	42	681	760	2	5	33	159	143
New Jersey	—	2	6	60	139	—	1	4	28	41
New York (Upstate)	6	6	25	238	239	1	2	17	73	65
New York City	—	4	12	136	140	1	0	31	58	37
Pennsylvania	1	6	18	247	242	N	0	2	N	N
E.N. Central	6	16	42	650	724	2	6	18	152	202
Illinois	—	5	12	170	195	—	1	5	19	59
Indiana	—	3	23	111	93	—	0	13	20	20
Michigan	—	3	11	107	123	—	1	5	44	54
Ohio	5	4	13	167	201	2	1	6	48	36
Wisconsin	1	2	10	95	112	—	1	4	21	33
W.N. Central	4	6	37	280	271	9	2	11	90	56
Iowa	—	0	0	—	—	—	0	0	—	—
Kansas	—	1	5	37	31	N	0	1	N	N
Minnesota	—	0	34	118	127	9	0	10	50	13
Missouri	2	1	8	63	64	—	0	4	26	26
Nebraska§	—	1	3	32	25	—	0	1	5	6
North Dakota	—	0	4	11	8	—	0	3	4	5
South Dakota	2	0	3	19	16	—	0	2	5	6
S. Atlantic	14	22	47	750	727	—	6	16	203	213
Delaware	—	0	1	9	6	—	0	0	—	—
District of Columbia	—	0	2	—	8	N	0	0	N	N
Florida	7	5	12	179	162	—	1	6	48	39
Georgia	3	5	13	172	166	—	2	6	48	57
Maryland§	1	3	12	121	134	—	1	4	44	42
North Carolina	—	2	12	76	92	N	0	0	N	N
South Carolina§	1	1	5	48	41	—	1	6	33	35
Virginia§	2	3	9	116	91	—	0	4	18	35
West Virginia	—	1	4	29	27	—	0	3	12	5
E.S. Central	3	4	10	134	122	1	1	6	42	59
Alabama§	N	0	0	N	N	N	0	0	N	N
Kentucky	—	1	5	23	28	N	0	0	N	N
Mississippi	N	0	0	N	N	—	0	2	—	8
Tennessee§	3	3	9	111	94	1	1	6	42	51
W.S. Central	4	9	79	286	312	1	6	46	177	170
Arkansas§	1	0	2	13	7	—	0	4	18	10
Louisiana	—	0	3	9	13	—	0	3	13	10
Oklahoma	—	3	20	98	72	—	1	7	33	47
Texas§	3	6	59	166	220	1	4	34	113	103
Mountain	6	9	22	303	384	—	4	16	157	178
Arizona	2	3	7	100	134	—	2	10	82	83
Colorado	4	3	9	102	97	—	1	4	30	40
Idaho§	—	0	2	4	12	—	0	2	6	3
Montana§	N	0	0	N	N	N	0	0	N	N
Nevada§	—	0	1	5	6	—	0	1	—	2
New Mexico§	—	2	7	52	95	—	0	4	15	25
Utah	—	1	6	39	34	—	0	4	24	24
Wyoming§	—	0	1	1	6	—	0	1	—	1
Pacific	—	4	10	99	83	—	1	6	32	32
Alaska	—	1	4	27	17	—	0	5	27	21
California	N	0	0	N	N	N	0	0	N	N
Hawaii	—	3	8	72	66	—	0	2	5	11
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 2008 and 2009 are 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 July 25, 2009, and July 19, 2008 (29th week)*

Reporting area	*Streptococcus pneumoniae*, invasive disease, drug resistant†										Syphilis, primary and secondary				
	All ages					Aged <5 years									
	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	20	59	276	1,826	2,042	3	9	21	284	304	124	263	452	7,005	6,856
New England	2	1	48	32	45	—	0	5	1	6	5	5	15	181	173
Connecticut	—	0	48	—	—	—	0	5	—	—	1	1	5	36	12
Maine§	—	0	2	8	14	—	0	1	—	—	—	0	1	1	8
Massachusetts	—	0	1	1	—	—	0	1	1	—	3	4	11	124	132
New Hampshire	—	0	3	5	—	—	0	0	—	—	1	0	2	11	9
Rhode Island§	—	0	6	7	18	—	0	1	—	4	—	0	5	9	7
Vermont§	2	0	1	11	13	—	0	0	—	2	—	0	2	—	5
Mid. Atlantic	2	4	14	110	210	—	0	3	19	16	42	34	51	1,033	927
New Jersey	—	0	0	—	—	—	0	0	—	—	6	4	13	132	117
New York (Upstate)	2	1	10	49	42	—	0	2	10	5	3	2	8	68	83
New York City	—	0	4	3	88	—	0	2	—	—	26	22	36	637	566
Pennsylvania	—	1	8	58	80	—	0	2	9	11	7	6	12	196	161
E.N. Central	3	10	41	397	445	1	1	7	57	61	14	24	44	547	623
Illinois	N	0	0	N	N	N	0	0	N	N	12	8	19	155	238
Indiana	—	2	32	122	152	—	0	6	18	19	1	2	10	83	75
Michigan	—	0	2	18	15	—	0	1	2	2	1	3	18	133	118
Ohio	3	7	18	257	278	1	1	4	37	40	—	6	16	151	163
Wisconsin	—	0	0	—	—	—	0	0	—	—	—	1	4	25	29
W.N. Central	—	2	161	89	146	—	1	3	20	28	—	6	14	160	232
Iowa	—	0	0	—	—	—	0	0	—	—	—	0	2	12	12
Kansas	—	1	5	38	57	—	0	2	13	3	—	0	3	13	17
Minnesota	—	0	156	—	20	—	0	3	—	20	—	2	6	37	59
Missouri	—	1	5	39	64	—	0	1	5	2	—	3	10	76	137
Nebraska§	—	0	0	—	—	—	0	0	—	—	—	0	3	18	7
North Dakota	—	0	3	10	2	—	0	0	—	—	—	0	1	3	—
South Dakota	—	0	2	2	3	—	0	2	2	3	—	0	1	1	—
S. Atlantic	12	26	53	871	812	2	4	14	130	127	17	63	262	1,718	1,481
Delaware	—	0	2	13	3	—	0	0	—	—	—	0	3	22	8
District of Columbia	N	0	0	N	N	N	0	0	N	N	—	3	9	96	76
Florida	9	15	36	516	446	2	2	13	82	80	1	20	31	541	560
Georgia	3	8	25	260	279	—	1	5	41	39	—	14	227	367	297
Maryland§	—	0	1	4	4	—	0	0	—	1	4	6	16	164	188
North Carolina	N	0	0	N	N	N	0	0	N	N	12	8	19	299	154
South Carolina§	—	0	0	—	—	—	0	0	—	—	—	2	6	59	48
Virginia§	N	0	0	N	N	N	0	0	N	N	—	5	16	166	144
West Virginia	—	2	13	78	80	—	0	3	7	7	—	0	2	4	6
E.S. Central	1	5	25	186	226	—	1	3	27	42	24	22	36	624	576
Alabama§	N	0	0	N	N	N	0	0	N	N	—	8	16	235	245
Kentucky	—	1	5	51	55	—	0	2	7	9	2	1	10	31	49
Mississippi	—	0	3	—	27	—	0	1	—	8	11	3	18	114	75
Tennessee§	1	3	23	135	144	—	0	3	20	25	11	8	19	244	207
W.S. Central	—	1	6	64	72	—	0	3	13	12	16	50	80	1,358	1,140
Arkansas§	—	0	5	37	13	—	0	3	9	3	—	4	35	107	88
Louisiana	—	1	5	27	59	—	0	1	4	9	1	13	40	298	287
Oklahoma	N	0	0	N	N	N	0	0	N	N	—	1	7	30	45
Texas§	—	0	0	—	—	—	0	0	—	—	15	31	46	923	720
Mountain	—	2	7	75	85	—	0	3	16	11	2	8	18	161	365
Arizona	—	0	0	—	—	—	0	0	—	—	—	3	11	21	184
Colorado	—	0	0	—	—	—	0	0	—	—	—	1	5	50	97
Idaho§	N	0	1	N	N	N	0	1	N	N	—	0	2	3	2
Montana§	—	0	1	—	—	—	0	0	—	—	—	0	7	—	—
Nevada§	—	1	4	27	41	—	0	2	6	5	—	2	7	58	43
New Mexico§	—	0	0	—	—	—	0	0	—	—	2	1	5	27	22
Utah	—	1	6	39	44	—	0	3	9	6	—	0	2	—	15
Wyoming§	—	0	2	9	—	—	0	1	1	—	—	0	1	2	2
Pacific	—	0	1	2	1	—	0	1	1	1	4	46	67	1,223	1,339
Alaska	—	0	0	—	—	—	0	0	—	—	—	0	1	—	—
California	N	0	0	N	N	N	0	0	N	N	4	41	59	1,126	1,217
Hawaii	—	0	1	2	1	—	0	1	1	1	—	0	3	16	14
Oregon§	N	0	0	N	N	N	0	0	N	N	—	1	4	24	7
Washington	N	0	0	N	N	N	0	0	N	N	—	2	9	57	101
American Samoa	N	0	0	N	N	N	0	0	N	N	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	0	—	—	—	0	0	—	—	6	3	11	118	88
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 2008 and 2009 are provisional.
† Includes cases of invasive pneumococcal disease caused by drug-resistant *S. pneumoniae* (DRSP) (NNDSS event code 11720).
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending July 25, 2009, and July 19, 2008 (29th week)*

Reporting area	Varicella (chickenpox)					West Nile virus disease†									
						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	59	485	1,035	13,503	19,486	—	1	75	16	92	—	0	77	9	103
New England	1	12	46	173	1,037	—	0	2	—	—	—	0	1	—	2
Connecticut	—	0	21	—	522	—	0	2	—	—	—	0	1	—	2
Maine¶	—	0	11	—	162	—	0	0	—	—	—	0	0	—	—
Massachusetts	—	0	0	—	—	—	0	1	—	—	—	0	0	—	—
New Hampshire	1	4	11	126	167	—	0	0	—	—	—	0	0	—	—
Rhode Island¶	—	0	1	4	—	—	0	1	—	—	—	0	0	—	—
Vermont¶	—	3	17	43	186	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	11	38	58	966	1,540	—	0	8	1	2	—	0	4	—	—
New Jersey	N	0	0	N	N	—	0	2	—	—	—	0	1	—	—
New York (Upstate)	N	0	0	N	N	—	0	5	1	1	—	0	2	—	—
New York City	—	0	0	—	—	—	0	2	—	—	—	0	2	—	—
Pennsylvania	11	38	58	966	1,540	—	0	2	—	1	—	0	1	—	—
E.N. Central	20	151	254	4,016	4,749	—	0	8	—	3	—	0	3	—	2
Illinois	—	33	73	835	659	—	0	4	—	1	—	0	2	—	1
Indiana	—	0	19	173	—	—	0	1	—	1	—	0	1	—	—
Michigan	6	48	90	1,274	2,021	—	0	4	—	—	—	0	2	—	—
Ohio	8	42	91	1,370	1,529	—	0	3	—	1	—	0	1	—	—
Wisconsin	6	13	54	364	540	—	0	2	—	—	—	0	1	—	1
W.N. Central	5	22	114	643	777	—	0	6	2	8	—	0	21	3	23
Iowa	N	0	0	N	N	—	0	2	—	—	—	0	1	—	1
Kansas	—	6	22	176	304	—	0	2	—	4	—	0	3	—	4
Minnesota	—	0	0	—	—	—	0	2	1	—	—	0	4	—	1
Missouri	5	10	51	412	445	—	0	3	—	1	—	0	1	—	—
Nebraska¶	N	0	0	N	N	—	0	1	—	1	—	0	6	1	2
North Dakota	—	0	108	55	—	—	0	2	—	—	—	0	11	—	8
South Dakota	—	0	4	—	28	—	0	5	1	2	—	0	6	2	7
S. Atlantic	15	56	146	1,334	3,111	—	0	4	—	3	—	0	4	—	1
Delaware	—	0	4	2	25	—	0	0	—	—	—	0	1	—	—
District of Columbia	—	0	3	—	18	—	0	2	—	—	—	0	1	—	—
Florida	9	28	67	886	1,115	—	0	2	—	—	—	0	0	—	—
Georgia	N	0	0	N	N	—	0	1	—	—	—	0	1	—	1
Maryland¶	N	0	0	N	N	—	0	2	—	1	—	0	3	—	—
North Carolina	N	0	0	N	N	—	0	1	—	1	—	0	1	—	—
South Carolina¶	—	4	54	154	567	—	0	0	—	—	—	0	1	—	—
Virginia¶	—	4	119	28	938	—	0	0	—	—	—	0	1	—	—
West Virginia	6	9	32	264	448	—	0	0	—	1	—	0	0	—	—
E.S. Central	1	14	28	371	824	—	0	7	4	7	—	0	9	—	11
Alabama¶	1	14	28	370	814	—	0	3	—	—	—	0	2	—	1
Kentucky	N	0	0	N	N	—	0	1	—	—	—	0	0	—	—
Mississippi	—	0	1	1	10	—	0	4	3	3	—	0	8	—	7
Tennessee¶	N	0	0	N	N	—	0	2	1	4	—	0	3	—	3
W.S. Central	5	122	747	4,986	5,949	—	0	8	3	12	—	0	6	—	18
Arkansas¶	—	4	47	96	461	—	0	1	1	3	—	0	1	—	1
Louisiana	1	1	6	55	51	—	0	3	—	1	—	0	5	—	4
Oklahoma	N	0	0	N	N	—	0	1	—	2	—	0	1	—	3
Texas¶	4	115	721	4,835	5,437	—	0	6	2	6	—	0	4	—	10
Mountain	—	33	83	909	1,419	—	0	12	5	8	—	0	22	6	31
Arizona	—	0	0	—	—	—	0	10	3	5	—	0	8	1	—
Colorado	—	13	44	341	568	—	0	4	—	1	—	0	10	2	16
Idaho¶	N	0	0	N	N	—	0	1	1	1	—	0	6	—	7
Montana¶	—	3	20	105	213	—	0	0	—	—	—	0	2	—	—
Nevada¶	N	0	0	N	N	—	0	2	1	1	—	0	3	3	1
New Mexico¶	—	4	20	134	145	—	0	1	—	—	—	0	1	—	—
Utah	—	12	31	329	483	—	0	2	—	—	—	0	5	—	5
Wyoming¶	—	0	1	—	10	—	0	0	—	—	—	0	2	—	2
Pacific	1	3	12	105	80	—	0	38	1	49	—	0	23	—	15
Alaska	—	2	11	83	39	—	0	0	—	—	—	0	0	—	—
California	—	0	0	—	—	—	0	37	1	49	—	0	20	—	14
Hawaii	1	1	4	22	41	—	0	0	—	—	—	0	0	—	—
Oregon¶	N	0	0	N	N	—	0	2	—	—	—	0	4	—	1
Washington	N	0	0	N	N	—	0	1	—	—	—	0	1	—	—
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	1	3	—	55	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	9	23	274	378	—	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 2008 and 2009 are 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 III. Deaths in 122 U.S. cities,* week ending July 25, 2009 (29th week)

Reporting area	All causes, by age (years)						P&I† Total
	All Ages	≥65	45–64	25–44	1–24	<1	
New England	444	291	106	28	9	10	36
Boston, MA	107	59	31	11	2	4	7
Bridgeport, CT	U	U	U	U	U	U	U
Cambridge, MA	9	7	1	—	—	1	1
Fall River, MA	31	25	5	1	—	—	2
Hartford, CT	46	30	11	3	—	2	2
Lowell, MA	25	16	6	2	1	—	2
Lynn, MA	6	3	3	—	—	—	1
New Bedford, MA	21	15	5	1	—	—	3
New Haven, CT	27	20	5	1	—	1	3
Providence, RI	51	38	10	2	1	—	4
Somerville, MA	4	3	—	1	—	—	—
Springfield, MA	29	14	8	4	1	2	2
Waterbury, CT	23	17	5	1	—	—	4
Worcester, MA	65	44	16	1	4	—	5
Mid. Atlantic	1,786	1,217	411	106	22	30	89
Albany, NY	43	33	8	1	—	1	5
Allentown, PA	24	21	1	1	—	1	2
Buffalo, NY	62	42	13	5	1	1	3
Camden, NJ	24	18	3	2	1	—	—
Elizabeth, NJ	10	7	3	—	—	—	—
Erie, PA	47	33	11	2	—	1	—
Jersey City, NJ	23	12	8	2	1	—	2
New York City, NY	1,005	692	231	55	15	12	45
Newark, NJ	23	9	9	3	—	2	3
Paterson, NJ	13	7	4	2	—	—	1
Philadelphia, PA	148	75	48	19	1	5	10
Pittsburgh, PA§	32	25	6	1	—	—	2
Reading, PA	30	20	6	1	—	3	1
Rochester, NY	111	80	24	3	1	3	7
Schenectady, NY	16	14	1	1	—	—	1
Scranton, PA	29	21	7	1	—	—	—
Syracuse, NY	86	59	20	5	1	1	4
Trenton, NJ	21	17	2	1	1	—	—
Utica, NY	26	21	4	1	—	—	2
Yonkers, NY	13	11	2	—	—	—	1
E.N. Central	1,838	1,148	472	122	42	53	104
Akron, OH	45	28	13	3	1	—	1
Canton, OH	32	27	5	—	—	—	—
Chicago, IL	324	170	102	28	12	11	24
Cincinnati, OH	102	63	26	4	3	6	12
Cleveland, OH	234	158	55	15	1	5	5
Columbus, OH	162	102	46	8	2	4	6
Dayton, OH	81	53	16	9	2	1	4
Detroit, MI	157	73	61	12	5	6	9
Evansville, IN	54	41	9	2	1	1	9
Fort Wayne, IN	67	46	14	4	—	3	6
Gary, IN	7	3	3	—	—	1	—
Grand Rapids, MI	45	29	9	5	—	2	3
Indianapolis, IN	191	109	57	12	6	7	9
Lansing, MI	37	27	4	5	1	—	—
Milwaukee, WI	83	59	17	4	1	2	3
Peoria, IL	45	30	10	4	—	1	4
Rockford, IL	52	32	12	2	4	2	3
South Bend, IN	67	57	3	4	3	—	2
Toledo, OH	U	U	U	U	U	U	U
Youngstown, OH	53	41	10	1	—	1	4
W.N. Central	484	327	113	22	12	10	20
Des Moines, IA	U	U	U	U	U	U	U
Duluth, MN	30	19	8	3	—	—	2
Kansas City, KS	19	14	4	1	—	—	—
Kansas City, MO	110	61	30	7	9	3	4
Lincoln, NE	40	31	8	1	—	—	2
Minneapolis, MN	52	34	14	1	2	1	1
Omaha, NE	97	69	21	4	—	3	9
St. Louis, MO	15	11	2	1	—	1	1
St. Paul, MN	60	51	8	1	—	—	1
Wichita, KS	61	37	18	3	1	2	—
S. Atlantic	1,247	787	300	93	44	23	76
Atlanta, GA	162	99	37	15	8	3	8
Baltimore, MD	161	86	44	17	8	6	15
Charlotte, NC	104	62	27	11	3	1	5
Jacksonville, FL	140	95	30	6	7	2	15
Miami, FL	87	56	23	5	3	—	13
Norfolk, VA	40	25	10	3	—	2	—
Richmond, VA	77	47	24	3	3	—	—
Savannah, GA	68	43	19	5	—	1	5
St. Petersburg, FL	58	38	11	3	2	4	1
Tampa, FL	208	146	43	12	5	2	11
Washington, D.C.	123	76	29	12	5	1	2
Wilmington, DE	19	14	3	1	—	1	1
E.S. Central	792	489	215	46	23	19	49
Birmingham, AL	164	99	48	8	3	6	10
Chattanooga, TN	81	56	16	3	4	2	5
Knoxville, TN	82	51	24	5	1	1	3
Lexington, KY	69	45	20	3	—	1	3
Memphis, TN	184	106	53	17	7	1	17
Mobile, AL	62	37	20	4	1	—	2
Montgomery, AL	33	23	8	1	—	1	1
Nashville, TN	117	72	26	5	7	7	8
W.S. Central	1,341	841	318	115	38	29	64
Austin, TX	90	56	21	10	—	3	9
Baton Rouge, LA	48	30	10	6	2	—	—
Corpus Christi, TX	54	35	13	2	2	2	3
Dallas, TX	213	129	49	16	10	9	11
El Paso, TX	81	54	19	5	2	1	—
Fort Worth, TX	U	U	U	U	U	U	U
Houston, TX	353	199	93	40	11	10	11
Little Rock, AR	97	60	26	7	2	2	5
New Orleans, LA	U	U	U	U	U	U	U
San Antonio, TX	242	170	43	22	5	2	15
Shreveport, LA	51	38	9	2	2	—	5
Tulsa, OK	112	70	35	5	2	—	5
Mountain	938	592	227	69	28	21	63
Albuquerque, NM	123	80	25	11	6	1	8
Boise, ID	53	40	8	4	—	1	5
Colorado Springs, CO	91	65	17	7	1	1	—
Denver, CO	67	36	18	3	5	5	6
Las Vegas, NV	261	163	77	20	1	—	21
Ogden, UT	26	17	6	2	1	—	1
Phoenix, AZ	146	86	38	7	4	10	12
Pueblo, CO	29	23	5	—	1	—	1
Salt Lake City, UT	87	45	22	11	7	2	7
Tucson, AZ	55	37	11	4	2	1	2
Pacific	1,623	1,066	392	95	42	27	156
Berkeley, CA	13	8	3	1	—	1	1
Fresno, CA	128	87	32	5	4	—	14
Glendale, CA	36	27	7	—	—	2	5
Honolulu, HI	78	47	20	8	—	3	6
Long Beach, CA	58	39	17	1	1	—	11
Los Angeles, CA	229	129	58	21	12	9	22
Pasadena, CA	23	15	7	1	—	—	1
Portland, OR	101	65	26	7	3	—	7
Sacramento, CA	204	142	37	16	8	1	21
San Diego, CA	155	106	37	8	1	2	15
San Francisco, CA	88	56	19	7	3	3	13
San Jose, CA	199	135	49	9	4	2	21
Santa Cruz, CA	29	19	8	2	—	—	2
Seattle, WA	106	69	29	4	3	1	10
Spokane, WA	62	43	13	2	1	3	4
Tacoma, WA	114	79	30	3	2	—	3
Total¶	**10,493**	**6,758**	**2,554**	**696**	**260**	**222**	**657**

U: Unavailable. —:No reported cases.

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

† Pneumonia and influenza.

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

¶ Total includes unknown ages.

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