

## Update on Cholera — Haiti, Dominican Republic, and Florida, 2010

On October 21, 2010, a cholera outbreak was confirmed by the Haitian National Public Health Laboratory (1). By November 19, the outbreak had reached every department of the country, and by December 17, a total of 121,518 cases of cholera, resulting in 63,711 hospitalizations and 2,591 deaths, had been reported. By November 16, additional cases of cholera had been confirmed in the neighboring Dominican Republic and in Florida. Several confirmed cases in the Dominican Republic and all confirmed U.S. cases were among travelers from Haiti. This report describes cases of cholera identified in the Dominican Republic and United States and provides recommendations to physicians regarding management of travel-related cases. Travelers who develop watery diarrhea within 5 days after returning from cholera-affected areas should seek health care and report their travel histories. Clinicians should enquire about recent travel when evaluating patients with diarrhea. When cholera is suspected, rehydration should be initiated immediately, a stool specimen should be collected for culture of *Vibrio cholerae*, and public health authorities should be notified.

### Dominican Republic

In the Dominican Republic, intensive surveillance for cholera-like illness and laboratory testing to confirm cases were initiated by the Ministry of Public Health on October 24, 2010. Suspected cases were defined as profuse watery diarrhea among persons aged  $\geq 5$  years, death in a person with acute watery diarrhea, or diarrhea among persons with an epidemiologic link to a laboratory-confirmed case. Suspected cases were reported to the Ministry's Division of Epidemiology. When possible, rectal swabs were collected from suspected cases, transported in Cary Blair media, and sent to the National Reference Laboratory for confirmation by isolation of *V. cholerae* and agglutination with *V. cholerae* O1 antiserum.

Through December 18, a total of 399 suspected cases were reported; laboratory testing was performed for at least 327 of these cases. *V. cholerae* O1 serotype Ogawa was identified in

59 cases; the majority of negative test results were attributed to other enteric pathogens for which testing is not performed routinely. Three confirmed cases were attributed to importation from Haiti, one each in the provinces of La Altagracia, Independencia and Monte Cristi. The remaining 56 confirmed cases occurred in the provinces of Santiago (19), San Juan (11), Elías Piña (10), Santo Domingo (10), Dajabón (two), Valverde (two), Independencia (one), and Monte Cristi (one). These 56 cases, with no known association with travel from Haiti, were attributed to local transmission (Figure). Of the 59 confirmed cases, 46 (78%) resulted in hospitalization; no fatalities have been confirmed.

Three separate outbreaks of cholera, involving 19 of the 59 confirmed cases, were identified and investigated in the Dominican Republic. In El Dique, a resource-poor neighborhood in the capital city of Santo Domingo, eight cases of cholera-like illness, including six confirmed cholera cases, were identified in two households; investigation suggested household transmission, although the vehicle of transmission was not determined. In a second outbreak in Navarrete, Santiago Province, preliminary investigation suggested that contaminated canal water was the source of infection for 29 cases of cholera-

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like illness (six confirmed). A third outbreak in Bánica, Elías Piña Province, occurred in a community along the banks of the Artibonite River near the Haitian border and resulted in nine cases (seven confirmed); drinking untreated river water was considered the most likely source of infection.

## United States

In the United States, cholera is a nationally notifiable disease. A confirmed case of cholera is defined by the Council of State and Territorial Epidemiologists as a clinically compatible illness in a person from whom toxigenic *V. cholerae* O1 or O139 has been isolated from stool or vomitus, or who has serologic evidence of recent infection.\* After the outbreak was confirmed in Haiti, to encourage early reporting of suspected cholera cases without waiting for laboratory confirmation, the Florida Department of Health created two working case classifications for surveillance purposes.† A probable case was defined as a clinically compatible illness in a person with a stool culture

that yielded *Vibrio* species and who recently traveled to Haiti or another affected area or who was linked epidemiologically to a confirmed case. A suspected case was defined as a clinically compatible illness in a person who recently traveled to Haiti or another affected area or who was linked epidemiologically to a confirmed case, but whose stool culture or serology results were pending. Case reporting guidelines were distributed to county health departments, and clinician advisories were developed and distributed.

As of December 18, a total of 13 cases had been investigated by the Florida Department of Health. *V. cholerae* O1 serotype Ogawa was isolated from stool specimens of five patients at Florida laboratories. All five developed symptoms during October 23–November 29, either while in Haiti or on the day of arrival in Florida from Haiti. The five patients with confirmed cases ranged in age from 9 to 84 years; four were female. One patient reported using community well water in Haiti for drinking and bathing, one had eaten several meals in family homes in Haiti, and one was a physician who had treated cholera patients in Haiti but might have had other exposures. In addition to diarrhea, reported symptoms included abdominal pain or cramping, vomiting, and lethargy or weakness.

\* Case definition available at [http://www.cdc.gov/ncphi/diss/nndss/casedef/cholera\\_current.htm](http://www.cdc.gov/ncphi/diss/nndss/casedef/cholera_current.htm).

† Available at [http://www.doh.state.fl.us/disease\\_ctrl/epi/acute/haiti\\_cholera\\_impact\\_surv\\_guidance\\_chds\\_v1.1.pdf](http://www.doh.state.fl.us/disease_ctrl/epi/acute/haiti_cholera_impact_surv_guidance_chds_v1.1.pdf).

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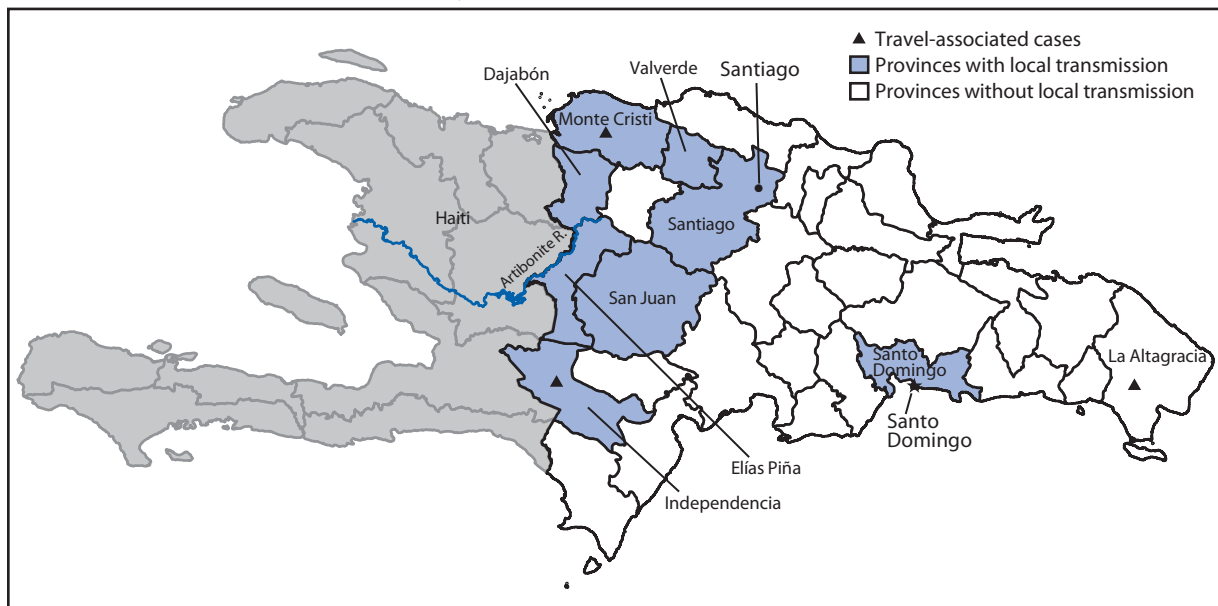
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FIGURE. Confirmed cholera cases (N = 59), by province — Dominican Republic, 2010\*



\*Through December 18, 2010.

Four of the five patients were hospitalized, including two who had been evaluated in an emergency department, discharged the same day, and readmitted 2–3 days later. A history of recent travel from Haiti had not been elicited on the first emergency department visit for one of those patients. All five patients with confirmed cholera received intravenous rehydration and oral antibiotics, including single doses of doxycycline or ciprofloxacin or multiday courses of doxycycline, tetracycline, azithromycin, or ciprofloxacin; three patients received two different antibiotics. Some treatment regimens were not consistent with recommendations. No secondary transmission was identified.

### Characterization of Isolates

Isolates from four confirmed cases in the Dominican Republic and all five Florida cases were sent to CDC for confirmation and additional characterization. All were confirmed as toxigenic *V. cholerae* O1, serotype Ogawa, biotype El Tor, and matched the Haiti outbreak strain by pulsed-field gel electrophoresis (2). Those isolates from Florida cases had the same antimicrobial susceptibility pattern as the Haiti outbreak strain (pending for Dominican Republic isolates). CDC's laboratory assessment of 380 cholera isolates subtyped since 2005 has indicated that isolates from the cases in Haiti, the Dominican Republic, and Florida are most similar to a strain previously characterized from South Asia and elsewhere.

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### Editorial Note

Less than 4 weeks after the Haitian National Public Health Laboratory first confirmed cholera in Haiti and before cholera had been identified in all 10 Haitian departments, confirmed cases were reported in the neighboring Dominican Republic and in a resident of Florida who had traveled to Haiti. Transnational spread of cholera is not uncommon. In late January 1991, an outbreak of cholera began in Peru and, by 1992, had spread to most other countries in Central and South America and to the United States (3). During 2000–2008, of 51 cholera cases in the United States reported to CDC, 29 (57%) were associated with international travel.<sup>§</sup>

<sup>§</sup> Information available at [http://www.cdc.gov/nationalsurveillance/cholera\\_vibrio\\_surveillance.html](http://www.cdc.gov/nationalsurveillance/cholera_vibrio_surveillance.html).

**What is already known on this topic?**

A cholera outbreak has spread rapidly through Haiti since October 2010. Transnational spread of cholera is not uncommon.

**What is added by this report?**

Cholera has now been confirmed in the Dominican Republic and Florida, and the strains are indistinguishable from the strain causing the outbreak in Haiti. Secondary spread in the Dominican Republic has been limited to date; in the United States, no transmission to household contacts has been reported.

**What are the implications for public health practice?**

Additional cases of cholera in travelers from Haiti are likely to occur in the United States, the Dominican Republic, and elsewhere. Clinicians should ask patients with diarrhea about their travel history. If cholera is suspected, clinicians should initiate rehydration, treat hospitalized patients with antibiotics, obtain a stool specimen for culture before starting antibiotic treatment (if indicated), and report the case to public health authorities.

Although transnational spread of cholera is caused most commonly by importation by travelers, it also has been associated with contaminated food that was imported commercially (4) or transported by travelers (5). Toxigenic *V. cholerae* also can be transported by ships' ballast water (6).

Travel between Haiti and other countries predominantly involves those countries where most expatriate Haitians reside (7). In November, of approximately 60,000 airline passenger seats available on direct flights from Haiti, 76% were on flights to the United States and U.S. territories, 17% to the Dominican Republic and other Caribbean islands, 4% to France, 2% to Canada, and 2% to Panama.¶ Substantial travel also occurs across the border between Haiti and the Dominican Republic.

More cholera cases associated with the current outbreak in Haiti are expected. In preparation for an anticipated increase in holiday travel, public health authorities in countries receiving travelers from Haiti should consider the need to heighten surveillance for cholera and educate clinicians to be vigilant for cholera-like illness in patients who have traveled from cholera-affected areas. CDC is distributing Travel Health Alert Notices to travelers from Haiti

¶ Information obtained December 3, 2010, from <https://www.airlineplanning.com>.

to the United States, advising them to seek health care promptly if they develop diarrhea within 5 days after arrival.

Although the risk for acquiring cholera during travel is low (8), travelers can reduce their risk for cholera and other enteric infections by drinking and using water that has been boiled or treated or is supplied in cans or bottles, eating only food that has been cooked and served hot, paying vigorous attention to handwashing with soap, and avoiding swimming or bathing in rivers. Health-care providers and persons traveling to Haiti or other cholera-affected countries should consult CDC,\*\* World Health Organization (WHO),†† or Pan American Health Organization (PAHO)§§ websites for general information about international travel and for specific information related to cholera. Neither cholera vaccine nor chemoprophylaxis is indicated for U.S. travelers to Haiti. CDC, the Haitian Ministry of Public Health and Population, PAHO, and other organizations are evaluating the potential role of cholera vaccines for populations in Haiti and other countries.

Physicians evaluating patients with diarrhea should obtain a travel history. If cholera is suspected, clinicians should initiate rehydration, treat hospitalized patients with antibiotics, obtain a stool specimen for culture before starting antibiotic treatment (if indicated), and report the case to public health authorities. The risk for person-to-person transmission is low, and isolation of cholera patients or quarantine of asymptomatic travelers from affected areas is not warranted. However, persons in sensitive occupations, such as food preparation, child care or health care, should not work while they have diarrhea.

The mainstay of cholera treatment is vigorous oral or intravenous rehydration. Antibiotics can reduce the volume and duration of diarrhea and should be given to hospitalized patients. A single dose of doxycycline by mouth (300 mg for nonpregnant adults; 2–4 mg/kg for children, not to exceed 300 mg) is the preferred regimen. A single dose of azithromycin (1 g by mouth) is recommended for pregnant women. Alternative therapies and additional guidance for clinicians are available from CDC¶¶ and PAHO.

\*\* Available at <http://wwwnc.cdc.gov/travel>.

†† Available at <http://www.who.int/ith/en>.

§§ Available at [http://new.paho.org/hq/index.php?option=com\\_content&task=view&id=4500&Itemid=3527&lang=en](http://new.paho.org/hq/index.php?option=com_content&task=view&id=4500&Itemid=3527&lang=en).

¶¶ Available at <http://www.cdc.gov/haiticholera/consider-cholera.htm>.

The Florida Department of Health provided advisories to clinicians, prompting correct referral of specimens to clinical laboratories. Because *Vibrio* species require special media for isolation, the laboratory should be notified to suspect cholera. Specific information on *V. cholerae* culture methods and specimen transport can be found at CDC's cholera website.<sup>\*\*\*</sup> In the United States, all suspected cholera isolates should be sent to state public health laboratories and from there to CDC for confirmation and additional characterization.

The potential for secondary transmission of cholera is low in countries where sanitation, water, and food production systems minimize the risk for fecal contamination. Only two instances of secondary transmission in the United States have been reported since 1965 (8,9). Spread within the Dominican Republic has been limited to date, as is typical in countries with improved water and sanitation infrastructure.<sup>†††</sup> Nonetheless, the risk for secondary and ongoing transmission of cholera remains high in populations with limited access to improved water sources and sanitation.

An increase in reported cases of cholera associated with holiday travel to cholera-affected areas is anticipated in the United States and other countries. Travelers are encouraged to take precautions, and providers should suspect cholera in patients with diarrhea and recent travel to cholera-affected areas. All suspected cases should be reported to public health authorities, and stool samples should be collected under appropriate conditions to increase the yield of *V. cholerae*. In 2009, 45 countries reported 221,226

cases of cholera to WHO (10). The persistence of cholera in any country puts other countries at risk. Until cholera is controlled around the world, importations to other countries probably will continue, and areas with poor water and sanitation infrastructure will be at risk for transmission. Public health authorities in unaffected countries should be vigilant in monitoring for cholera introductions and take public health actions to prevent its spread.

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<sup>\*\*\*</sup> Available at <http://www.cdc.gov/cholera/laboratory.html>.

<sup>†††</sup> Improved water and sanitation as defined by the World Health Organization and the United Nations Children's Fund Joint Monitoring Programme for Water Supply and Sanitation. Information available at <http://www.wssinfo.org/definitions-methods/watsan-categories>.

## Transmission of Multidrug-Resistant *Escherichia coli* Through Kidney Transplantation — California and Texas, 2009

On July 6, 2009, the Organ Procurement and Transplantation Network received notification of possible disease transmission. A transplant center in California (TCA) reported a kidney transplant recipient with *Escherichia coli* urinary tract infection and sepsis suspected to have been contracted from the donated kidney. Upon further investigation, a transplant center in Texas (TCB) reported that the recipient of the other kidney from the same donor developed a perinephric abscess caused by *E. coli*. The kidney grafts failed in both recipients; however, both recipients survived. *E. coli* isolates from both recipients demonstrated similar antimicrobial susceptibility profiles. Molecular typing studies conducted at CDC showed that the *E. coli* isolates from both kidney recipients were identical to an isolate from the donor's urine. On October 30, 2009, the Texas Department of State Health Services requested assistance from CDC to investigate this transplant-associated *E. coli* transmission and make recommendations to prevent future transmissions. The investigation identified gaps in communicating important donor information that might have adversely affected transplant outcomes. Each organ procurement organization (OPO) should establish protocols that clearly assign responsibilities for receiving, reviewing, and conveying any relevant donor information that becomes available subsequent to organ procurement.

### Organ Donor

The donor, a woman aged 56 years, was admitted to the intensive-care unit for a subarachnoid hemorrhage. She was found to have multiple cerebral artery aneurysms and underwent surgery with aneurysm clipping 2 days after admission. Postoperatively, she developed a spasm of the internal carotid artery and subsequent rupture of the vessel during emergent angioplasty. Attempts to stabilize the patient were unsuccessful, and she was pronounced brain dead 7 days after admission. Family consent was obtained to donate her organs, and medical management was assumed by OPO A. Organ recovery was performed on the ninth day after admission.

Three days before being pronounced brain dead and 5 days before organ recovery, the donor became

febrile, and urinalyses showed hematuria (red blood cell [RBC] count of 75–100/mm<sup>3</sup>), pyuria (white blood cell [WBC] count of >200/mm<sup>3</sup>, a few WBC clumps, and a large amount of leukocyte esterase), and bacteriuria (bacteria 2+ and positive for nitrite). A urine culture performed on the same day was positive for *E. coli* susceptible to ampicillin, ceftazidime, gentamicin, levofloxacin, nitrofurantoin, tobramycin, and trimethoprim/sulfamethoxazole (Table). Four days before organ recovery, the donor received ciprofloxacin for treatment of her urinary tract infection. After urine culture results were available, ciprofloxacin was changed to levofloxacin, which was administered 3 days to 1 day before organ recovery. Two days to 1 day before organ recovery, the patient was administered ceftazidime prophylactically in accordance with the OPO's procurement protocol.

A urine specimen collected 2 days before organ recovery showed improved hematuria (RBC count of 3–5/mm<sup>3</sup>), mild pyuria (WBC count of 5–10/mm<sup>3</sup>), and mild bacteriuria. At the time these laboratory results were available, OPO A collected the donor's urine for culture in accordance with its organ procurement protocol. The culture was sent to an outside commercial laboratory contracted by OPO A; the result was positive for multidrug-resistant *E. coli* (Table) and reported to OPO A 2 days after organ recovery.

### Left Kidney Recipient

The left kidney recipient, a woman aged 64 years with end-stage renal disease secondary to diabetes and hypertension, chronic hepatitis C infection, and a 4-year history of hemodialysis, had the transplant performed by TCA on the day the kidney was procured by OPO A. Her postoperative course was uneventful, and she was discharged on day 5 after transplant on trimethoprim/sulfamethoxazole, as well as antiviral, antifungal, and immunosuppressive medications. The patient was followed routinely in the postoperative clinic with adjustments in her medications for blood pressure and glucose control. Dosages were not available, except for 1 tablet of trimethoprim/sulfamethoxazole (160 mg trimethoprim and 800 mg sulfamethoxazole) administered on day 8 after

**TABLE. Culture results that were positive for *Escherichia coli* and results of antimicrobial susceptibility testing for kidney donor and recipients — California and Texas, 2009**

<i>E. coli</i> testing sequence	Donor		Left kidney recipient				Right kidney recipient*				
	Urine	Urine	Perfusate	Urine	Blood	Surgical wound	Perfusate	Urine	Blood	Perinephretic abscess	Surgical wound
Specimen type	Urine	Urine	Perfusate	Urine	Blood	Surgical wound	Perfusate	Urine	Blood	Perinephretic abscess	Surgical wound
Testing facility	Donor hospital	OPO A	OPO B	TCA	TCA	TCA	TCB	TCB	TCB	TCB	TCB
Day specimen collected	5 days before organ recovery	2 days before organ recovery	Transplant day	Day 27 post-transplant	Day 27 post-transplant	Nephrectomy day (Day 28 posttransplant)	Transplant day	Day 13 post-transplant	Day 13 post-transplant	Day 16 post-transplant	Day 16 post-nephrectomy
Day preliminary report available	—†	Organ recovery day	Day 2 post-transplant	—	—	—	—	—	Day 14 post-transplant	Day 16 post-transplant	—
Day final report available	Unknown	2 days after organ recovery	Day 3 post-transplant	Day 30 post-transplant (Day 2 post-nephrectomy)	Day 30 post-transplant (Day 2 post-nephrectomy)	Day 2 post-nephrectomy	Day 7 post-transplant	Day 16 post-transplant	Day 19 post-transplant	Day 22 post-transplant (Day 2 post-nephrectomy)	Day 22 post-nephrectomy
<b>Antimicrobial susceptibility<sup>§</sup></b>											
Amikacin			S	S	S	S	S	S	S	S	S
Amoxicillin/clavulanate	S			R							
Ampicillin/sulbactam							R	R	R	R	R
Ampicillin	S	R	R	R	R	R	R	R	R	R	R
Cefazolin	S	R	R	R	R	R	R	R	R	R	R
Cefepime			S	S	S	S	S	S	S	S	S
Cefotaxime				S	S	S					
Ceftazidime			R		I	I	R		R	R	R
Ceftriaxone		I	R	S			R	I	R	I	R
Cefuroxime							R	R	R	R	R
Cephalothin				R							
Ciprofloxacin					R	R					
Gentamicin	S	S	I	I	I	R	I	I	I	I	I
Imipenem			S	S	S	S					
Levofloxacin	S	R	R	R	R	R	R	R	R	R	R
Meropenem		S					S	S	S	S	S
Minocycline				S							
Nalidixic acid				R							
Nitrofurantoin	S	I		S				S			
Norfloxacin				R				R			
Piperacillin/tazobactam		R	S	S	S	S	S	S	S	S	S
Tobramycin	S		I	I	I	I	I	I	I	I	I
Ticarcillin/clavulanate				R							
Trimethoprim/sulfamethoxazole	S	R	R	R	R	R	R	R	R	R	R

**Abbreviations:** OPO A = organ procurement organization A; OPO B = organ procurement organization B; TCA = transplant center A (California); TCB = transplant center B (Texas); S = susceptible; R = resistant; I = intermediate.

\* Two additional cultures were performed that did not include antimicrobial susceptibility testing: a tissue culture (collected on day 20 posttransplant, final report available in 7 days) that grew moderate *E. coli* and an abdominal wound culture (collected on day 15 post-nephrectomy, final report available in 5 days) that grew scant *E. coli*.

† No preliminary report available.

§ Shaded cells indicate antimicrobials already being administered at the time specimens were collected for culture.

transplant. No fever was documented, and urinalyses performed during these visits were not suggestive of infection.

On day 26 posttransplant, the patient developed fever and chills and was evaluated in the emergency department. On this visit, her urinalysis was normal, but her creatinine had risen to 2.2 mg/dL from 1.0 mg/dL (normal: 0.6–1.2 mg/dL) on the previous day. Pseudoaneurysm at the arterial anastomosis site was diagnosed, and the recipient underwent left nephrectomy on day 28 after transplant. Urine culture 2 days after nephrectomy showed multidrug-resistant *E. coli* (Table). OPO A was contacted to assess the outcome of the donor’s right kidney transplant.

The left kidney recipient’s urine culture results showed the same multidrug-resistant *E. coli* as was identified in the donor urine 2 days after organ procurement. In addition, procurement of the left kidney and delivery to TCA was coordinated by a second OPO (OPO B), which collected perfusate solution in which the left kidney was immersed. Cultures of this perfusate solution were available to OPO B on day 3 after organ procurement and showed multidrug-resistant *E. coli* (Table). Neither of these culture results was documented in the left kidney recipient’s medical records. The recipient survived and was discharged on day 13 after nephrectomy.

## Right Kidney Recipient

The right kidney recipient was a woman aged 47 years with end-stage renal disease secondary to diabetes mellitus and hypertension and a history of hemodialysis. The transplant procedure was performed by TCB on the day of kidney procurement and the patient received perioperative ceftriaxone and kanamycin. One week after transplant, abdominal tenderness and an increase in creatinine were noted, and ultrasound and scintigraphy showed evidence of acute tubular necrosis (ATN). On the same day, cultures obtained by TCB from perfusate solution used for transporting the right kidney were reported to have scant growth of multidrug-resistant *E. coli* (Table). These culture results were not documented in the right kidney recipient's medical records. Kidney biopsy results on day nine after transplant were consistent with microangiopathy, early acute cellular rejection, and ATN; perinephric fluid collection was noted on a computerized tomography scan.

The patient was administered prophylactic trimethoprim/sulfamethoxazole during days 1–13 after transplant (80 mg trimethoprim and 400 mg sulfamethoxazole, 1 tablet daily). Her antimicrobials were changed to piperacillin/tazobactam on day 15, after a blood culture performed on day 13 indicated growth of *E. coli* with antimicrobial susceptibility identical to the perfusate culture isolate. On the same day, the patient complained of flank pain in the kidney area. A computerized tomography scan and Doppler sonogram indicated hemorrhagic fluid suggestive of pyelonephritis and perinephric hematoma in the transplanted kidney. Drainage of the perinephric abscess was performed on day 16 after transplant, and aspirate culture results showed the presence of *E. coli* with a resistance pattern identical to the isolates from the previous urine and perfusate cultures (Table).

On day 20 after transplant, a laparotomy was performed. An intraoperative biopsy of the transplanted kidney showed findings consistent with infection, including eosinophilic fibrillar glomeruli, thickened vessels, foci of interstitial fibrosis, and ATN suggestive of severe hemolytic uremic syndrome damage. The kidney was removed because of poor probability of future graft function. The patient developed a wound infection with multidrug-resistant *E. coli* with the same resistance pattern as the previous isolates;

### What is already known on this topic?

Transplant-transmitted bacterial infection can lead to catastrophic consequences in the organ recipient.

### What is added by this report?

*Escherichia coli* infection with multidrug resistance was transmitted from a donor to two transplant recipients, resulting in the loss of both transplanted kidneys; critical gaps were identified in communicating information regarding the donor's *E. coli* infection.

### What are the implications for public health practice?

Although transplantation of organs from donors with bacterial infection can be managed, transplant teams need to be aware of all donor test results so that appropriate antimicrobials can be used to treat the recipient and avoid complications of an infected organ. To improve organ transplant safety, each organ procurement organization (OPO) should have standard procedures to ensure timely and accurate communication of donor-related information between OPOs and transplant centers, including donor information that becomes available after organs are procured.

however, she recovered and was discharged 33 days after nephrectomy. Results of the donor urine culture obtained by OPO A were not documented in the right kidney recipient's chart (Table).

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### Editorial Note

Donor-derived infection in solid organ recipients is a serious concern, and can lead to catastrophic consequences, including graft loss and death of the organ recipient (1–3). However, bacterial infections are relatively common in donors, and transplantation of organs from donors with known bacterial infection is performed, provided that transplant teams are aware of the infection and appropriate antimicrobial therapy is initiated to treat the infection in donor and recipients (4–6).



Timely communication of important donor-related information is critical to ensure appropriate prophylactic antimicrobial therapy and prevent development of infection in organ recipients. This communication is especially important when a multidrug-resistant pathogen is involved, because these organisms might not be susceptible to standard empiric antimicrobial treatment regimens. Since transplantation must be done expeditiously to ensure organ viability, the results of some cultures and tests of specimens collected at the time of organ procurement sometimes become available only after the transplant has been performed (7). Culture results that are available after organ procurement must be communicated promptly to medical teams in transplant centers (8) so that timely and adequate antimicrobial prophylaxis or treatment is initiated in recipients.

In this investigation, several failures to communicate important information were identified. The results from the donor urine culture performed 5 days before organ recovery were entered incorrectly as negative by OPO A in both the donor chart that accompanied the donated organs and in DonorNet, a secure web-based computer system that provides donor information to transplant centers. Multiple cultures were obtained during the course of the organ procurement process by OPO A, OPO B, TCA, and TCB. Cultures from all four entities were positive for multidrug-resistant *E. coli*, and results were finalized within 2–7 days after organ procurement. However, because neither the OPOs nor the transplant centers maintained communication logs, no means existed to verify that these culture results were shared among the entities. In addition, no documentation was entered in the recipients' medical records of *E. coli* infection in the organ donor, and no change in the recipients' antimicrobial regimen was noted that might have indicated knowledge of this information. A failure was noted in communicating perfusate culture results from the TCB laboratory to the TCB transplant team, which resulted in delay in initiating appropriate antimicrobial treatment in the right kidney recipient.

Several measures can improve communication during organ procurement from deceased donors. In the package of accompanying documents that OPOs prepare for every donated organ (9), all positive test results (e.g., from urinalysis or blood or urine culture), should be highlighted to draw the attention of

physicians in transplant centers. To avoid transcription errors, OPOs should consider double-checking (by at least two OPO staff members) critical donor information against medical records in the donor's hospital. Any pending tests with results that could affect the organ recipient's safety (e.g., culture results) and the dates when these pending results will become available should be noted in documents accompanying the organ. Transplant center case coordinators should contact the OPO on the date of expected availability of laboratory results if the OPO has not already notified the transplant center of these results. All important new donor information should be documented in recipient medical records at transplant centers.

Each OPO should establish a standard protocol for receiving and conveying any relevant donor information that becomes available subsequent to organ procurement. At a minimum, these standard protocols should include establishment of clear lines of communication among designated personnel at the host OPO and all transplant centers, other involved OPOs, and tissue and eye banks, to enable prompt sharing of important information obtained after organ procurement with the medical teams responsible for care of transplant recipients. This information should include information obtained from medical records, family interviews, and laboratory testing. The protocol should include a mechanism to communicate new or updated information within 24 hours of availability of this information to the medical teams caring for the transplant recipients. OPOs should consider developing and maintaining surge capacity for updating pending results and rapidly communicating new medical and laboratory information to transplant centers, so that these functions can continue without interruption or delay even when organ procurement activity is increased above baseline for an OPO or a key point of contact is absent. In addition, communication logs to document transmission and receipt of information should be maintained by transplant centers, OPOs, and tissue and eye banks.

To avoid internal communication failures, transplant center case coordinators should follow up with hospital laboratories on all culture results. These results must be documented in patient's medical records.

### Acknowledgments

This report is based, in part, on contributions by R Heyn-Lamb, USC University Hospital, California, and D Seem, MPH, Div of Healthcare Quality Promotion, National Center for Emerging and Zoonotic Infectious Diseases, CDC.

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## **Salmonella** Montevideo Infections Associated with Salami Products Made with Contaminated Imported Black and Red Pepper — United States, July 2009–April 2010

In August and September 2009, PulseNet, the national molecular subtyping network for foodborne disease surveillance, detected a multistate cluster of *Salmonella* Montevideo infections with an indistinguishable pulse-field gel electrophoresis (PFGE) pattern (*Xba*I PFGE pattern J1XX01.0011). Cases were geographically dispersed, and the age and sex distributions were typical for reported *Salmonella* cases. Montevideo is the seventh most common *Salmonella* serotype in the United States; of 1,225 PFGE patterns in the PulseNet Montevideo database, the outbreak strain pattern is the most common. PulseNet monitored this pattern and detected an increase in the number of isolates in November 2009, leading CDC to begin coordinating a multistate investigation. This report summarizes the results of that investigation, which identified 272 cases from 44 states and the District of Columbia, with illness onset from July 1, 2009, to April 14, 2010. In a multistate case-control study, consumption of salami was associated with illness. Purchase information from membership card records helped determine specific brands of Italian-style meat products associated with cases. The outbreak strain was identified in salami products, one company A facility environmental sample, and sealed containers of black and red pepper used to produce company A salami products. This outbreak highlights the importance of preventing post-processing contamination of ready-to-eat products from raw ingredients such as spices.

### **Epidemiologic Investigation**

To detect associations between risk factors and illness, a structured questionnaire was used that asked whether patients had exposure to any of the approximately 300 food and animal items in the week before illness onset. Fifty-three questionnaires from patients in 18 states were completed during November 30–December 16, 2009. Most frequently reported foods included eggs, chicken, and bananas. When compared with the percentage of the population that report eating those specific foods, no hypothesis emerged. Next, open-ended interviews

of 16 patients from eight states were conducted from December 16, 2009, to January 14, 2010. Twelve patients (75%) reported consumption of any Italian-style meats in the week before illness onset, nine (75%) reported eating salami, and nine (58%) reported shopping at a national warehouse store chain. From December 18, 2009, to January 14, 2010, the Washington State Department of Health (WADOH) collected information from seven patients regarding food purchased at national warehouse chain using information obtained from membership cards\*; five of the seven patients purchased and consumed a company A salami product before illness onset. State health departments and CDC collected additional membership card information from patients. Among 35 patients with membership cards, 19 purchased company A salami products before illness onset: 16 purchased a company A salami variety package, and three purchased a company A salami deli tray. Both products contained pepper-coated salami.

State and local health departments and CDC conducted a case-control study during January 16–20, 2010. Case-patients who had specimen collection dates after September 15, 2009, were enrolled. Controls were well persons matched to cases by neighborhood.<sup>†</sup> Case-patients were asked about exposures a week before illness onset; controls were asked about exposures in the week before the interview. Forty-three case-patients and 43 controls were enrolled from 20 states. Case-patients were more likely than controls to report consumption of salami (matched odds ratio [mOR] = 8.0) (Table). Consumption of any Italian-style meat, including salami, capocollo, calabrese, or sopressata, was significantly associated with illness (mOR = 4.5). Adding freshly ground black pepper to foods was not associated with illness.

\* Membership cards used in this investigation were from a national warehouse store chain. Members must use their card to purchase products, and customer purchases can be tracked by the chain for sales and product safety purposes.

<sup>†</sup> Controls were matched using a reverse address directory protocol. Potential controls were selected by entering a neighboring street address and zip code of each patient into a reverse address search engine. The search engine will produce telephone numbers of residents in the same neighborhood as the case-patient.

**TABLE. Number and percentage of *Salmonella* Montevideo case-patients and controls reporting consumption of salami, any Italian style meat, or fresh ground pepper — United States, July 1, 2009–April 14, 2010**

Food item	Case-patients (n = 43)		Controls (n = 43)		mOR	(95% CI)
	No.	(%)	No.	(%)		
Salami	22	55.0	6	15.4	8.0	(1.9–71.1)
Any Italian style meat*	25	58.1	9	21.9	4.5	(1.7–14.7)
Freshly ground black pepper	26	66.7	28	70.0	0.8	(0.3–2.1)

**Abbreviations:** mOR = matched odds ratio; CI = confidence interval.

\* Includes salami, capocollo, calabrese, sopressata, and prosciutto.

As of April 30, 2010, a total of 272 patients from 44 states and the District of Columbia were reported; illness onset dates ranged from July 1 to April 14, 2010 (Figure).<sup>§</sup> Median age of patients was 37 years (range: <1–93 years); 53% (144 of 272) were female. Twenty-six percent (52 of 203) were hospitalized; no deaths were reported.

### Product Testing and Traceback

Initial testing conducted by a private laboratory of unopened company A salami purchased at retail found *Salmonella* Senftenberg, a different *Salmonella* serotype, with PFGE pattern JMPX01.0004. WADOH subsequently tested the bacterial culture from the private laboratory and identified *S. Senftenberg* as well as the outbreak strain of *S. Montevideo*. The State Hygienic Laboratory at the University of Iowa isolated the outbreak strain of *S. Montevideo* from leftover salami from a patient's home. In total, either the outbreak strain or *S. Senftenberg* was isolated from six open company A salami products collected from patients' homes and three sealed retail products. The products contained peppered salami, spicy sopressata, spicy calabrese, or prosciutto.

From July 1, 2009, to April 14, 2010, PulseNet identified 11 persons who had illness caused by *S. Senftenberg* with PFGE pattern JMPX01.0004. Among nine ill persons interviewed, two reported purchasing a recalled salami product during the week before illness onset. These cases were not included in the overall case count.

On January 23, 2010, company A voluntarily recalled approximately 1.3 million pounds of ready-to-eat salami products.<sup>¶</sup> On January 31, the recall was expanded, adding approximately 17,000 pounds

of product after *Salmonella* was isolated from an unopened retail company A peppered salami product collected by the Illinois Department of Public Health. Based on epidemiologic information provided by the Minnesota Department of Health, the U.S. Department of Agriculture Food Safety and Inspection Service (USDA-FSIS) collected additional salami products for testing and identified the outbreak strain. On February 16, the recall was expanded again to include approximately 115,000 pounds of salami products.

A multiagency investigation conducted by USDA-FSIS, the Food and Drug Administration (FDA), and the Rhode Island Department of Health (RIDOH) at company A revealed black and red pepper applied to salami products post-lethality\*\* was contaminated with *Salmonella*. Testing by RIDOH found the outbreak strain in 29% (five of 17) of black pepper samples and 9% (one of 11) of red pepper samples intended for use in production of company A salami products. FDA initiated investigations at pepper suppliers of company A: spice company B, spice company C, and spice company D. Samples of spice companies B and D pepper collected by FDA and RIDOH at company A tested positive for the outbreak strain. As a result, spice company B voluntarily recalled approximately 53,000 pounds of crushed red pepper on February 25, 2010, and spice company D voluntarily recalled two lots of black pepper totaling nearly 55,000 pounds on March 5, 2010. During March 1–30, a total of 12 additional recalls were issued by companies that received the initial pepper products associated with spice companies B and D.

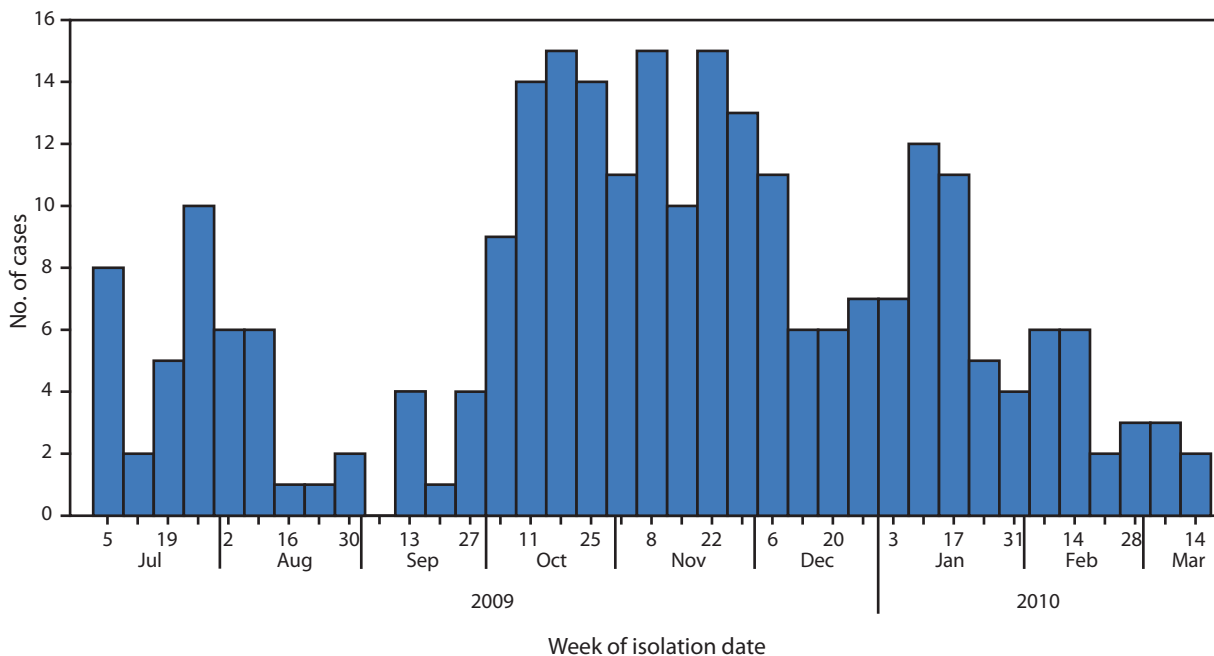
Pepper tracebacks revealed that the pepper originated from three Asian countries. Based on traceback

<sup>§</sup> If onset dates were not available, the date was estimated using the isolation date minus 3 days.

<sup>¶</sup> Additional information available at <http://www.fda.gov/safety/recalls/default.htm> and [http://www.fsis.usda.gov/fsis\\_recalls/index.asp](http://www.fsis.usda.gov/fsis_recalls/index.asp).

\*\* The lethality step for salami production is the fermenting and drying stages of the process. Ready-to-eat products can become contaminated if raw materials or ingredients, such as pepper, are added after the lethality step.

FIGURE. Number of infections (N = 272) with the outbreak strain of *Salmonella* Montevideo, by week of isolation date — United States, 2009–2010



information, no *S. Montevideo* was isolated from samples collected earlier in the distribution chain than company A. The number of *S. Montevideo* cases with the outbreak strain identified by PulseNet returned to the baseline of sporadic cases by early 2010.

#### Reported by

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#### Editorial Note

This nationwide outbreak of *Salmonella* Montevideo infections was associated with salami products containing contaminated imported black and red pepper. This outbreak highlights the importance of preventing product contamination between its production and its use and the potential for spices, such as pepper, to contaminate ready-to-eat products.

Several *Salmonella* outbreaks associated with salami and other fermented sausage products have been reported from Europe (2–6). However, these outbreaks were caused by insufficient curing time, low water activity, and high pH of the salami, allowing *Salmonella* to survive (2–6). In contrast, the outbreak described in this report was from contaminated pepper applied to salami after lethality steps. Although spices are sometimes known to harbor various fungi and bacteria, few reports have documented spices as being associated with human illness. Eight spice-associated *Salmonella* outbreaks occurred during 1973–2009, accounting for 1,656 human illnesses. In September 2008, an outbreak of *Salmonella* Rissen infections was associated with ground white pepper (J. Higa, CDC, personal communication, 2009). An increasing number of dried spice recalls have occurred over

**What is already known on this topic?**

*Salmonella* commonly causes foodborne illness; ingredient-driven outbreaks are difficult to detect.

**What is added by this report?**

Spice-associated outbreaks of foodborne illness have been reported with increasing frequency in the United States. Technologies such as PulseNet and detailed electronic purchase records maintained by some merchants can help detect the source of outbreaks during multistate investigations.

**What are the implications for public health practice?**

Spices should be considered as possible sources for any foodborne *Salmonella* outbreak in the United States, especially for widespread outbreaks. Membership and shopper cards used to maintain customer purchase databases can be powerful tools to link ill persons with specific food exposures.

the past several years, with only two during the 1990s and 16 during 2000–2004 (7). Effective methods exist to treat spices, including steam, ethylene oxide treatments, and irradiation. However, companies are not required to treat spices, and manufacturers are not required to use treated spices in their products. These methods have increased importance given the frequent use of spices in ready-to-eat foods and the potential for contaminated spices to cause widespread outbreaks. FDA is working with spice trade organizations and with other agencies to develop recommendations on spice safety standards and to safeguard against contaminated spices entering commerce.

Membership cards helped provide important brand-specific information in this investigation. During hypothesis generation, it was learned that many patients reported shopping at different locations of a national warehouse chain. This prompted WADOH to collect data on items purchased by patients based on membership card records. Information gathered from these cards, with patient permission, helped determine the brand name and purchase dates of implicated products. Based on this information, USDA-FSIS traced back lots of ingredients, which helped FDA identify lots of black

and red pepper used to produce the contaminated salami products. As this investigation demonstrates, membership and shopper cards can provide critical information to quickly identify potentially contaminated foods and should be considered for use in future foodborne disease outbreak investigations.

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## Update: Influenza Activity — United States, October 3–December 11, 2010

During October 3–December 11, 2010, influenza activity remained low in most regions of the United States. Influenza viruses characterized thus far in the influenza season are well matched to the strains included in the 2010–11 influenza vaccine. This report summarizes U.S. influenza activity\* during this period.

### Viral Surveillance

During October 3–December 11, approximately 140 World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System collaborating laboratories in the United States tested 42,497 respiratory specimens for influenza viruses; 2,807 (6.6%) were positive (Figure 1). Of these, 1,598 (57%) were influenza A viruses, and 1,209 (43%) were influenza B viruses. A total of 805 (50%) of the 1,598 influenza A viruses were subtyped; 679 (84%) of these were influenza A (H3) viruses, and 126 (16%) were 2009 influenza A (H1) viruses. Influenza virus–positive tests have been reported from 48 states and the District of Columbia and in all 10 of the surveillance regions since October 3. However, of the 2,807 influenza positive tests reported to CDC so far this season, most (1,778 [63%]) have been reported from Region 4 (southeastern United States). Region 4 is the only region where influenza B viruses have been reported more frequently than influenza A viruses. Influenza B viruses from Region 4 account for 1,034 (58%) of the influenza-positive tests reported from the region and 86% of all influenza B viruses reported for the country.

\*The CDC influenza surveillance system collects five categories of information from nine data sources: 1) viral surveillance (World Health Organization collaborating U.S. laboratories, the National Respiratory and Enteric Virus Surveillance System, and novel influenza A virus case reporting), 2) outpatient illness surveillance (U.S. Outpatient ILI Surveillance Network), 3) mortality (122 Cities Mortality Reporting System, Aggregate Hospitalization and Death Reporting Activity, and influenza-associated pediatric mortality reports), 4) hospitalizations (Emerging Infections Program and Aggregate Hospitalization and Death Reporting Activity), and 5) summary of geographic spread of influenza (state and territorial epidemiologist reports).

### Antigenic Characterization

WHO collaborating laboratories in the United States are requested to submit a subset of their influenza-positive respiratory specimens to CDC for further antigenic characterization. CDC has antigenically characterized 89 influenza viruses collected by U.S. laboratories during the 2010–11 season, including 13 2009 influenza A (H1N1), 26 influenza A (H3N2), and 50 influenza B viruses. All viruses were antigenically related to the components included in the 2010–11 influenza vaccine: A/California/7/2009-like (H1N1), A/Perth/16/2009-like (H3N2), and B/Brisbane/60/2008-like.

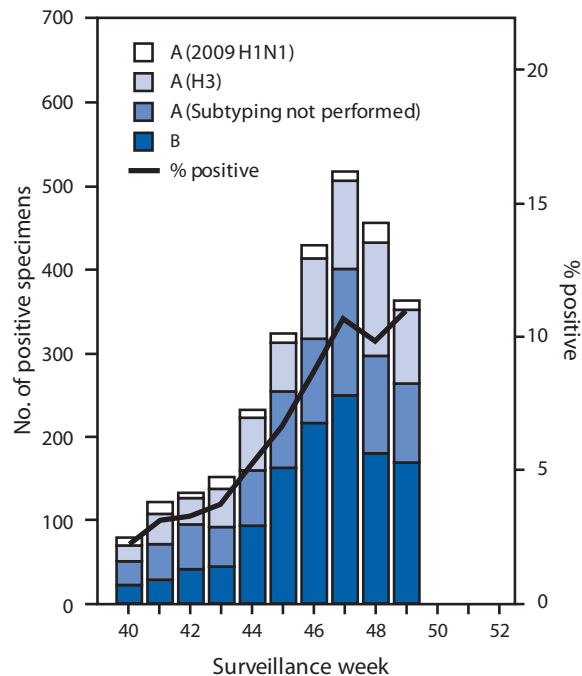
### Antiviral Resistance of Influenza Virus Isolates

Since October 1, a total of 104 influenza viruses have been tested for antiviral resistance. Of the 17 2009 influenza A (H1N1), 33 influenza A (H3N2), and 54 influenza B viruses tested, all were sensitive to both oseltamivir and zanamivir.

### Novel Influenza A Viruses

Three cases of human infection with a novel influenza A virus were reported during November and December, one each from Wisconsin, Pennsylvania, and Minnesota. Onset of the illnesses occurred in September, October, and November, respectively. All three patients were infected with swine-origin influenza A (H3N2) viruses. Two of the three cases occurred in adults, and the third occurred in a child. Two of the three patients were hospitalized; all three have fully recovered from their illness. The three cases are not related, and influenza viruses recovered from each of these cases were similar but not identical, indicating that they did not come from a common source. All three patients had either contact with swine or lived in areas close to swine farms. No evidence of human-to-human transmission of these viruses was identified in the first two cases, and investigation of the third case is ongoing.

**FIGURE 1. Number\* and percentage of respiratory specimens testing positive for influenza reported by World Health Organization and National Respiratory and Enteric Virus Surveillance System collaborating laboratories, by type, subtype, and surveillance week — United States, October 3–December 11, 2010**



\*N = 2,807.

### State-Specific Activity Levels

For the week ending December 11, influenza activity<sup>†</sup> was reported as regional in four states and Puerto Rico. Twenty states reported local activity, and 21 additional states as well as the District of Columbia and U.S. Virgin Islands reported sporadic activity. Five states and Guam reported no influenza activity. No states have reported geographically widespread influenza activity to date for the 2010–11 influenza season.

<sup>†</sup> Levels of activity are 1) no activity; 2) sporadic: isolated laboratory-confirmed influenza cases or a laboratory-confirmed outbreak in one institution, with no increase in activity; 3) local: increased ILI, or at least two institutional outbreaks (ILI or laboratory-confirmed influenza) in one region with recent laboratory evidence of influenza in that region; virus activity no greater than sporadic in other regions; 4) regional: increased ILI activity or institutional outbreaks (ILI or laboratory-confirmed influenza) in at least two but less than half of the regions in the state with recent laboratory evidence of influenza in those regions; and 5) widespread: increased ILI activity or institutional outbreaks (ILI or laboratory-confirmed influenza) in at least half the regions in the state, with recent laboratory evidence of influenza in the state.

### Outpatient Influenza-Like Illness

Since October 3, the weekly percentage of outpatient visits for influenza-like illness (ILI)<sup>§</sup> reported by the approximately 1,500 U.S. Outpatient ILI Surveillance Network (ILINet) weekly reporters in 50 states, New York City, Chicago, and the District of Columbia that comprise ILINet, has ranged from 1.1% to 1.9%, which is below the national baseline of 2.5% (Figure 2). On a regional level, only Region 4 has reported ILI at or above their respective region-specific baseline, and that was for a single week that ended on November 27.<sup>¶</sup>

Data collected in ILINet also are used to produce a measure of ILI activity by state. Activity levels are based on the percentage of outpatient visits in a state for ILI and are compared to the average percentage of ILI visits that occur during spring and fall weeks with little or no influenza virus circulation. Activity levels range from minimal, which would correspond to ILI activity from outpatient clinics being at or below the average, to high, which would correspond to ILI activity from outpatient clinics being much higher than the average. Because the clinical definition of ILI is very general, not all ILI is caused by influenza; however, when combined with laboratory data, the information on ILI activity provides a clear picture of influenza activity in the United States.

Since October 3, only two states, Georgia and Alabama, have experienced high levels of ILI activity. No other state has reported a level of activity higher than low.

### Aggregate Hospitalization and Death Reporting Activity (AHDRA)

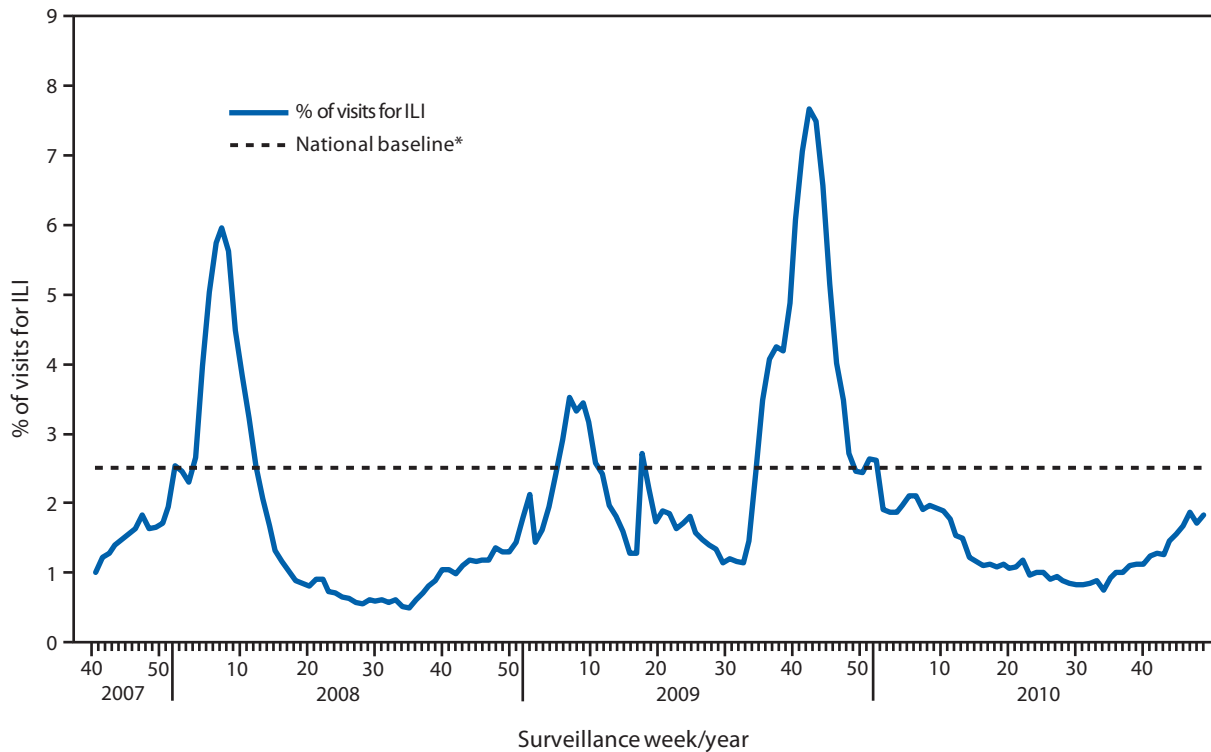
The AHDRA system, which was implemented during the 2009 pandemic and has continued on a voluntary basis for the 2010–11 influenza season, tracks weekly counts of laboratory-confirmed influenza-associated hospitalizations and deaths. An

<sup>§</sup> Defined as a temperature of  $\geq 100.0^{\circ}\text{F}$  ( $\geq 37.8^{\circ}\text{C}$ ), oral or equivalent, and cough or sore throat, in the absence of a known cause other than influenza.

<sup>¶</sup> The national and regional baselines are the mean percentage of visits for ILI during noninfluenza weeks for the previous three seasons plus two standard deviations. A noninfluenza week is a week during which  $< 10\%$  of specimens tested positive for influenza. National and regional percentages of patient visits for ILI are weighted on the basis of state population. Use of the national baseline for regional data is not appropriate.



FIGURE 2. Percentage of visits for influenza-like illness (ILI) reported by the U.S. Outpatient Influenza-Like Illness Surveillance Network (ILINet), by surveillance week — United States, September 30, 2007, through December 11, 2010



\*The national baseline is the mean percentage of visits for ILI during noninfluenza weeks for the previous three seasons plus two standard deviations. A noninfluenza week is a week during which <10% of specimens tested positive for influenza. Use of the national baseline for regional data is not appropriate.

average of 24 jurisdictions have provided reports on laboratory-confirmed influenza-associated hospitalizations, and an average of 22 jurisdictions have provided reports on laboratory-confirmed influenza-associated deaths per week this season. During October 3–December 11, a total of 497 laboratory-confirmed influenza-associated hospitalizations and 12 laboratory-confirmed influenza-associated deaths were reported to CDC.

### Pneumonia- and Influenza-Related Mortality

For the week ending December 11, pneumonia and influenza (P&I) was reported as an underlying or contributing cause of death for 6.9% of all deaths reported to the 122-Cities Mortality Reporting System. This percentage is below the epidemic threshold of 7.3% for that week. During October

3–December 11, the weekly percentage of deaths attributed to P&I ranged from 6.0% to 7.0%, remaining below the epidemic threshold.\*\*

### Influenza-Related Pediatric Mortality

Two influenza-related pediatric deaths have been reported for the 2010–11 season, one each from Texas and New York. One death was associated with an influenza A (H3) virus and the other with an influenza A virus for which the subtype was not determined. Both children were aged <5 years and had bacterial coinfections, but no chronic medical conditions were reported.

\*\* The seasonal baseline proportion of P&I deaths is projected using a robust regression procedure in which a periodic regression model is applied to the observed percentage of deaths from P&I that were reported by the 122 Cities Mortality Reporting System during the preceding 5 years. The epidemic threshold is 1.645 standard deviations above the seasonal baseline.

**Reported by**

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**Editorial Note**

Influenza activity in the United States during October 3–December 11 was low overall, with cocirculation of influenza A (H3N2), 2009 A (H1N1), and B viruses. Regional differences in influenza activity have been noted, with the highest levels seen in the southeastern states, where influenza B viruses have predominated. Influenza activity likely will continue to increase in the weeks ahead. During the 2009–10 season, as a result of pandemic 2009 influenza A (H1N1) circulation, influenza activity peaked unusually early (late October); however, during 22 of the 27 influenza seasons before the 2009–10 season, influenza activity peaked in January or later (1). Health-care providers should offer influenza vaccination throughout the influenza season to protect as many persons as possible from influenza virus infection and its complications.

Although influenza activity has been low nationwide, the first pediatric influenza-associated deaths of the 2010–11 season have been reported, and influenza-associated deaths also have been reported among adults through the AHDRA system. Health-care providers are reminded to consider influenza infection in the differential diagnosis of persons hospitalized with acute respiratory illness, including those with clinical or radiologically confirmed pneumonia. Influenza antiviral medication treatment is recommended for persons with suspected or laboratory-confirmed influenza illness who 1) are hospitalized; 2) have a severe, progressive, or complicated illness course; or 3) are at increased risk for influenza-related complications (e.g. persons with asthma, pregnant women, children aged <2 years, and adults aged ≥65 years) (2). If influenza diagnostic testing is performed, antiviral treatment should not be delayed pending test results because the benefit of

antiviral treatment is greatest when started within the first 2 days of illness (2,3). Additional information regarding use of influenza antiviral medications is available online.<sup>††</sup>

Health-care providers should be alerted to the possibility of bacterial coinfection among children and adults with influenza and request bacterial cultures if pneumonia is suspected. Clinicians should be aware of the possibility of coinfection with *Staphylococcus aureus* (including methicillin-resistant strains) in persons with influenza when choosing empiric antibiotic therapy for patients with suspected influenza-related pneumonia. In addition, health-care providers are asked to contact their local or state health department as soon as possible when deaths associated with laboratory-confirmed influenza occur among children.

Three human infections with swine-origin influenza A (H3N2) virus have been identified since October, increasing the total number of detections of human infections with this virus to six during 2009 and 2010. The increase in detection of this virus might have resulted, in part, from changes in testing methods implemented at state public health laboratories at the start of the 2009 influenza A (H1N1) pandemic to allow for detection of swine-origin influenza A viruses (4,5). Before the pandemic, recognition of swine-origin influenza A (H3N2) virus infection in humans was possible only for the small subset of viruses for which detailed antigenic or genetic analysis was performed. The continued detection of transmission of influenza viruses from swine to humans and the earlier detections of outbreaks in swine herds resulting from the transmission of 2009 H1N1 infection from humans (6) illustrates the importance of continued influenza surveillance among both human and animal populations. Thorough investigations of all cases of novel influenza virus infections are important to rule out sustained human-to-human transmission. Clinical laboratories that identify viruses that cannot be subtyped should contact their state laboratories. State or local health departments are urged to contact CDC immediately if they detect an influenza virus thought to be of animal origin or any influenza A virus that cannot be subtyped with the influenza reagents currently available.

<sup>††</sup> Available at <http://www.cdc.gov/flu/professionals/antivirals>.

CDC continues year-round influenza surveillance to provide information needed to ensure up-to-date recommendations regarding prevention and treatment of influenza. Influenza surveillance reports for the United States are posted online weekly during October–May and are available on the CDC website.<sup>§§</sup> Additional information regarding influenza viruses, surveillance, diagnosis, vaccine, and antiviral medications, and novel influenza A infections in humans also is available from CDC.<sup>¶¶</sup>

<sup>§§</sup> Available at <http://www.cdc.gov/flu/weekly/fluactivity.htm>.

<sup>¶¶</sup> Available at <http://www.cdc.gov/flu>.

### Acknowledgments

This report is based, in part, on data contributed by participating state and territorial health departments and state public health laboratories, World Health Organization collaborating laboratories, National Respiratory and Enteric Virus Surveillance System collaborating laboratories, the U.S. Outpatient ILI Surveillance Network, the Aggregate Hospitalization and Death Reporting Activity system, the Influenza Associated Pediatric Mortality Surveillance System, and the 122 Cities Mortality Reporting System.

### References

1. CDC. Update: influenza activity—United States, August 30, 2009–January 9, 2010. *MMWR* 2010;59:38–43.
2. CDC. 2010–2011 Influenza antiviral medications: summary for clinicians. Available at <http://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm>. Accessed December 16, 2010.
3. Jain S, Kamimoto L, Bramley AM, et al. Hospitalized patients with 2009 H1N1 influenza in the United States, April–June 2009. *N Engl J Med* 2009;361:1935–44.
4. Jernigan DB, Lindstrom SL, Johnson JR. Detecting 2009 pandemic influenza A (H1N1) virus infection: availability of diagnostic testing led to rapid pandemic response. *Clin Infect Dis* 2011;52(Suppl 1):S36–43.
5. Medical devices and flu emergencies. Emergency use authorization for CDC human influenza virus real-time RT-PCR detection and characterization panel with additional specimens and reagents. Available at <http://www.fda.gov/medicaldevices/safety/emergencysituations/ucm161496.htm>.
6. Pasma T, Joseph T. Pandemic (H1N1) 2009 infection in swine herds, Manitoba, Canada. *Emerg Infect Dis* 2010;16:706–8.

## Announcements

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### National Folic Acid Awareness Week

January 2–8, 2010, is National Folic Acid Awareness Week. In 1998, the Institute of Medicine recommended that, to reduce their risk for a pregnancy affected by neural tube defects, women capable of becoming pregnant should take 400 micrograms of synthetic folic acid daily from fortified foods or supplements, or a combination of the two, in addition to consuming food folate from a varied diet (1). Health-care professionals should encourage every woman who can become pregnant to consume 400 micrograms of folic acid daily. More information about folic acid, including free education materials and CDC activities, is available at <http://www.cdc.gov/folicacid>.

#### Reference

1. Institute of Medicine. Dietary reference intakes for thiamin, riboflavin, niacin, vitamin b6, folate, vitamin b12, pantothenic acid, biotin, and choline. Washington, DC: National Academies Press; 1998.

### Maternal & Child Health Epidemiology Capacity: Findings and Recommendations Available Online

The Council of State and Territorial Epidemiologists (CSTE) has released a new report on state-based maternal and child health epidemiology capacity in the United States at <http://www.cste.org/2009mcheca.pdf>. The report, *Maternal & Child Health Epidemiology Capacity: Findings and Recommendations*, updates findings from the 2002 report (1), reports findings from the 2009 CSTE National Assessment of Epidemiology Capacity (2), and provides recommendations for improving capacity.

This assessment reports that maternal and child health (MCH) epidemiology and surveillance capacity continues to increase. Approximately 55% of jurisdictions reported at least substantial MCH capacity, and the percentage of jurisdictions with minimal-to-no capacity progressively decreased to 12% in 2009. However, despite this trend, nearly half of states still lack substantial MCH capacity, citing additional staff as the most pressing need. Improving capacity in states that have minimal-to-no MCH epidemiology capacity is a recommended priority. Another priority is the need to increase involvement of MCH epidemiologists in program-level decision making.

Additional information is available from CSTE by e-mail ([atran@cste.org](mailto:atran@cste.org)) or telephone (770-458-3811).

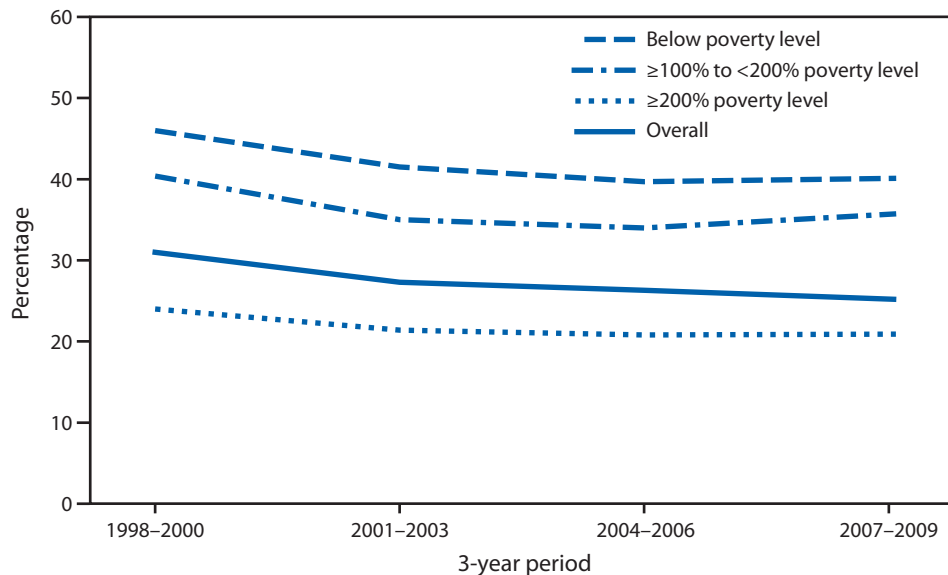
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1. Council of State and Territorial Epidemiologists. National Assessment of Epidemiologic Capacity in maternal and child health: findings and recommendations. Atlanta, GA: Council of State and Territorial Epidemiologists; 2002. Available at <http://www.cste.org/dnn/LinkClick.aspx?fileticket=2BIZG8p5Q%2fM%3d&tabid=175&mid=716>. Accessed December 9, 2010.
2. CDC. Assessment of epidemiology capacity in state health departments—United States, 2009. MMWR 2009;58:1373–7.

## QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

## Percentage of Adults Aged $\geq 65$ Years Who Have Lost All Their Natural Teeth,\* by Poverty Status<sup>†</sup> — National Health Interview Survey, United States, 1998–2009<sup>§</sup>



\* Based on response to the question, "Have you lost all of your upper and lower natural (permanent) teeth?" In 1998, separate questions were asked about upper and lower tooth loss.

<sup>†</sup> Poverty status is based on family income and family size using the U.S. Census Bureau poverty thresholds. Family income was imputed when information was missing, using multiple imputation methodology.

<sup>§</sup> Estimates are age adjusted using the projected 2000 U.S. population as the standard population and three age groups: 65–74 years, 75–84 years, and  $\geq 85$  years. Estimates are based on household interviews of a sample of the civilian, noninstitutionalized U.S. adult population and are presented as 3-year annual averages to increase reliability.

During 1998–2009, the percentage of older adults who had no natural teeth was higher among those in families with low income than in families with higher income. Among all income groups, the prevalence of no natural teeth was lower during 2007–2009 (25.3%) than during 1998–2000 (31.0%).

Source: CDC. National Health Interview Survey, 1998–2009. Available at <http://www.cdc.gov/nchs/nhis.htm>.

## Notifiable Diseases and Mortality Tables

TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending December 18, 2010 (50th week)\*

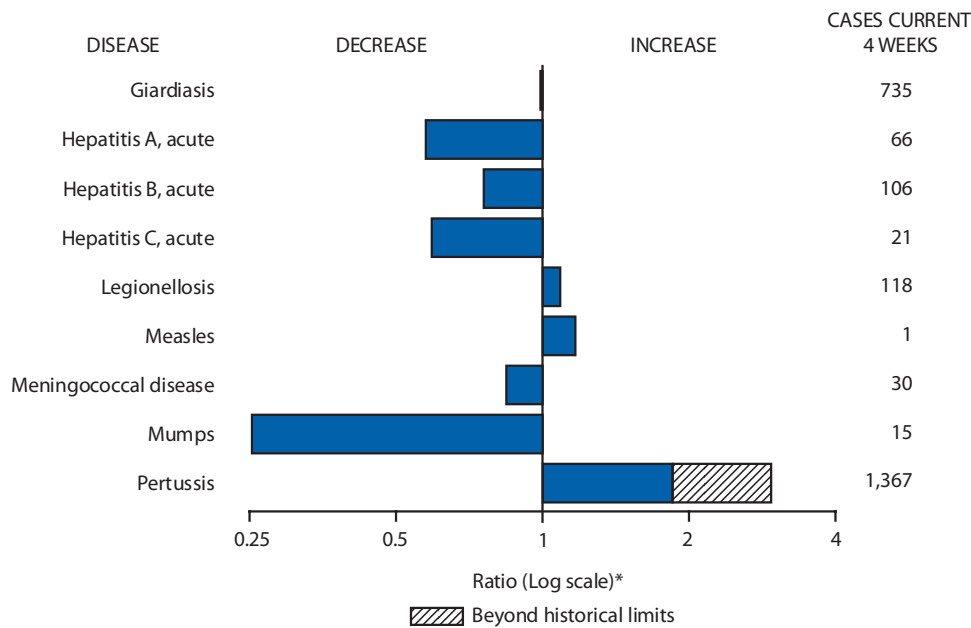
Disease	Current week	Cum 2010	5-year weekly average <sup>†</sup>	Total cases reported for previous years					States reporting cases during current week (No.)
				2009	2008	2007	2006	2005	
Anthrax	—	—	0	1	—	1	1	—	
Botulism, total	—	97	4	118	145	144	165	135	
foodborne	—	6	1	10	17	32	20	19	
infant	—	68	3	83	109	85	97	85	
other (wound and unspecified)	—	23	1	25	19	27	48	31	
Brucellosis	1	118	3	115	80	131	121	120	CA (1)
Chancroid	—	35	1	28	25	23	33	17	
Cholera	—	8	0	10	5	7	9	8	
Cyclosporiasis <sup>§</sup>	1	166	2	141	139	93	137	543	FL (1)
Diphtheria	—	—	—	—	—	—	—	—	
Domestic arboviral diseases <sup>§,¶</sup> :									
California serogroup virus disease	—	71	0	55	62	55	67	80	
Eastern equine encephalitis virus disease	—	10	—	4	4	4	8	21	
Powassan virus disease	—	5	—	6	2	7	1	1	
St. Louis encephalitis virus disease	—	8	0	12	13	9	10	13	
Western equine encephalitis virus disease	—	—	—	—	—	—	—	—	
<i>Haemophilus influenzae</i> ,** invasive disease (age <5 yrs):									
serotype b	1	16	1	35	30	22	29	9	NM (1)
nonsertotype b	1	148	6	236	244	199	175	135	AL (1)
unknown serotype	2	243	5	178	163	180	179	217	ND (1), MD (1)
Hansen disease <sup>§</sup>	—	57	2	103	80	101	66	87	
Hantavirus pulmonary syndrome <sup>§</sup>	—	17	1	20	18	32	40	26	
Hemolytic uremic syndrome, postdiarrheal <sup>§</sup>	2	216	8	242	330	292	288	221	CA (2)
HIV infection, pediatric (age <13 yrs) <sup>††</sup>	—	—	3	—	—	—	—	380	
Influenza-associated pediatric mortality <sup>§,§§</sup>	—	59	2	358	90	77	43	45	
Listeriosis	3	730	21	851	759	808	884	896	FL (1), CA (2)
Measles <sup>¶¶</sup>	—	59	1	71	140	43	55	66	
Meningococcal disease, invasive <sup>***</sup> :									
A, C, Y, and W-135	—	224	7	301	330	325	318	297	
serogroup B	1	103	5	174	188	167	193	156	WA (1)
other serogroup	—	9	1	23	38	35	32	27	
unknown serogroup	5	388	14	482	616	550	651	765	OH (1), MO (1), FL (1), AL (1), CA (1)
Mumps	5	2,515	70	1,991	454	800	6,584	314	ND (1), TX (3), CA (1)
Novel influenza A virus infections <sup>†††</sup>	—	4	0	43,774	2	4	NN	NN	
Plague	—	2	0	8	3	7	17	8	
Poliomyelitis, paralytic	—	—	0	1	—	—	—	1	
Polio virus Infection, nonparalytic <sup>§</sup>	—	—	—	—	—	—	NN	NN	
Psittacosis <sup>§</sup>	—	4	0	9	8	12	21	16	
Q fever, total <sup>§,§§§</sup>	—	112	3	114	120	171	169	136	
acute	—	86	2	94	106	—	—	—	
chronic	—	26	0	20	14	—	—	—	
Rabies, human	—	1	0	4	2	1	3	2	
Rubella <sup>¶¶¶</sup>	—	6	0	3	16	12	11	11	
Rubella, congenital syndrome	—	—	—	2	—	—	1	1	
SARS-CoV <sup>§,****</sup>	—	—	—	—	—	—	—	—	
Smallpox <sup>§</sup>	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome <sup>§</sup>	1	152	4	161	157	132	125	129	NY (1)
Syphilis, congenital (age <1 yr) <sup>††††</sup>	—	206	8	423	431	430	349	329	
Tetanus	—	8	1	18	19	28	41	27	
Toxic-shock syndrome (staphylococcal) <sup>§</sup>	1	71	3	74	71	92	101	90	MO (1)
Trichinellosis	—	4	0	13	39	5	15	16	
Tularemia	—	105	2	93	123	137	95	154	
Typhoid fever	3	391	8	397	449	434	353	324	NC (1), CA (2)
Vancomycin-intermediate <i>Staphylococcus aureus</i> <sup>§</sup>	—	85	1	78	63	37	6	2	
Vancomycin-resistant <i>Staphylococcus aureus</i> <sup>§</sup>	—	1	0	1	—	2	1	3	
Vibriosis (noncholera <i>Vibrio</i> species infections) <sup>§</sup>	6	741	7	789	588	549	NN	NN	OH (1), NC (1), FL (1), WA (1), CA (2)
Viral hemorrhagic fever <sup>§§§§</sup>	—	1	—	NN	NN	NN	NN	NN	
Yellow fever	—	—	—	—	—	—	—	—	

See Table I footnotes on next page.

**TABLE I. (Continued) Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending December 18, 2010 (50th week)\***

—: No reported cases. N: Not reportable. NN: Not Nationally Notifiable Cum: Cumulative year-to-date counts.  
 \* Case counts for reporting year 2010 are provisional and subject to change. For further information on interpretation of these data, see <http://www.cdc.gov/ncphi/diss/nndss/phs/files/ProvisionalNationa%20NotifiableDiseasesSurveillanceData20100927.pdf>.  
 † 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. Additional information is available at <http://www.cdc.gov/ncphi/diss/nndss/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, STD data, TB data, and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at <http://www.cdc.gov/ncphi/diss/nndss/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.  
 \*\* Data for *H. influenzae* (all ages, all serotypes) are available in Table II.  
 †† Updated monthly from reports to the Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Implementation of HIV reporting influences the number of cases reported. Updates of pediatric HIV data have been temporarily suspended until upgrading of the national HIV/AIDS surveillance data management system is completed. Data for HIV/AIDS, when available, are displayed in Table IV, which appears quarterly.  
 ††† Updated weekly from reports to the Influenza Division, National Center for Immunization and Respiratory Diseases. Since October 3, 2010, two influenza-associated pediatric deaths occurred during the 2010–11 influenza season. Since August 30, 2009, a total of 282 influenza-associated pediatric deaths occurring during the 2009–10 influenza season have been reported.  
 †††† No measles cases were reported for the current week.  
 ††††† Data for meningococcal disease (all serogroups) are available in Table II.  
 †††††† CDC discontinued reporting of individual confirmed and probable cases of 2009 pandemic influenza A (H1N1) virus infections on July 24, 2009. During 2009, four cases of human infection with novel influenza A viruses, different from the 2009 pandemic influenza A (H1N1) strain, were reported to CDC. The three cases of novel influenza A virus infection reported to CDC during 2010 were identified as swine influenza A (H3N2) virus and are unrelated to the 2009 pandemic influenza A (H1N1) virus. Total case counts for 2009 were provided by the Influenza Division, National Center for Immunization and Respiratory Diseases (NCIRD).  
 ††††††† In 2009, 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.  
 †††††††††† Updated weekly from reports to the Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention.  
 ††††††††††† There was one case of viral hemorrhagic fever reported during week 12. The one case report was confirmed as lassa fever. See Table II for dengue hemorrhagic fever.

**FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals December 18, 2010, with historical data**



\* Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

**Notifiable Disease Data Team and 122 Cities Mortality Data Team**  
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 Michael S. Wodajo      Lenee Blanton

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending December 18, 2010, and December 19, 2009 (50th week)\*

Reporting area	<i>Chlamydia trachomatis</i> infection					Cryptosporidiosis				
	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009
		Med	Max				Med	Max		
<b>United States</b>	10,376	23,888	26,354	1,157,633	1,201,487	43	120	342	7,348	7,131
<b>New England</b>	574	759	1,396	38,406	38,888	—	7	77	435	441
Connecticut	—	187	736	9,585	11,212	—	0	71	71	38
Maine†	—	49	69	1,996	2,356	—	1	7	74	50
Massachusetts	448	401	695	19,896	18,601	—	3	8	156	173
New Hampshire	68	46	114	2,415	2,053	—	1	5	52	81
Rhode Island†	19	66	120	3,312	3,508	—	0	2	13	22
Vermont†	39	23	51	1,202	1,158	—	1	5	69	77
<b>Mid. Atlantic</b>	1,416	3,372	5,045	162,824	152,190	7	15	38	815	797
New Jersey	—	516	691	25,340	23,440	—	0	4	37	53
New York (Upstate)	709	696	2,530	33,764	30,420	4	3	16	209	206
New York City	—	1,209	2,738	57,635	56,707	—	2	6	98	80
Pennsylvania	707	943	1,092	46,085	41,623	3	8	26	471	458
<b>E.N. Central</b>	822	3,491	3,971	169,768	192,399	7	30	122	1,939	1,680
Illinois	23	745	1,182	36,918	59,119	—	4	21	265	151
Indiana	—	357	797	18,311	21,289	—	3	10	143	277
Michigan	539	930	1,419	46,790	44,609	1	5	18	311	279
Ohio	134	995	1,101	47,102	47,010	6	7	24	443	375
Wisconsin	126	426	513	20,647	20,372	—	9	57	777	598
<b>W.N. Central</b>	499	1,371	1,556	66,280	68,415	1	22	83	1,258	1,069
Iowa	8	202	270	9,859	9,146	—	4	24	326	204
Kansas	26	189	235	9,174	10,272	—	2	9	130	101
Minnesota	—	283	345	12,925	13,872	—	0	16	98	325
Missouri	377	503	620	25,111	25,095	—	4	30	359	181
Nebraska†	88	94	173	4,663	5,267	1	3	26	227	116
North Dakota	—	30	89	1,622	1,852	—	0	18	31	13
South Dakota	—	62	77	2,926	2,911	—	1	6	87	129
<b>S. Atlantic</b>	3,691	4,725	5,664	233,537	243,183	11	18	51	987	1,102
Delaware	91	84	220	4,271	4,529	—	0	1	8	12
District of Columbia	—	94	177	4,570	6,449	—	0	1	7	7
Florida	707	1,464	1,738	71,845	70,928	4	7	19	373	442
Georgia	418	628	1,217	31,325	38,563	2	5	31	287	332
Maryland†	290	453	710	22,401	22,829	—	1	3	35	42
North Carolina	676	756	1,563	38,667	40,000	4	0	12	82	112
South Carolina†	846	529	748	26,676	25,967	1	1	8	88	59
Virginia†	663	596	902	30,145	30,387	—	2	8	91	80
West Virginia	—	73	117	3,637	3,531	—	0	3	16	16
<b>E.S. Central</b>	169	1,746	2,414	83,126	90,645	2	5	19	316	223
Alabama†	—	505	757	24,827	25,311	1	2	13	158	64
Kentucky	169	264	614	13,574	13,166	—	1	6	82	65
Mississippi	—	384	780	18,404	23,133	—	0	3	22	18
Tennessee†	—	563	783	26,321	29,035	1	1	5	54	76
<b>W.S. Central</b>	803	3,007	4,578	151,956	156,470	6	7	39	440	556
Arkansas†	272	275	392	12,101	14,032	—	0	3	31	57
Louisiana	428	322	1,073	16,308	26,808	—	1	6	64	55
Oklahoma	103	257	1,374	14,125	13,680	3	1	8	83	123
Texas†	—	2,241	3,194	109,422	101,950	3	5	30	262	321
<b>Mountain</b>	593	1,450	1,912	72,629	77,279	4	10	29	533	549
Arizona	326	513	713	24,958	24,850	—	1	3	34	33
Colorado	75	348	560	16,426	19,275	—	2	8	130	134
Idaho†	135	69	200	3,936	3,645	4	2	7	93	96
Montana†	29	61	82	2,947	2,895	—	1	4	48	56
Nevada†	—	173	329	8,818	9,810	—	0	6	31	25
New Mexico†	—	162	453	7,650	8,912	—	2	12	117	141
Utah	—	121	176	5,933	5,974	—	1	5	64	39
Wyoming†	28	38	81	1,961	1,918	—	0	2	16	25
<b>Pacific</b>	1,809	3,648	5,350	179,107	182,018	5	12	28	625	714
Alaska	41	113	148	5,398	5,023	—	0	1	5	7
California	1,273	2,784	4,406	136,619	139,477	3	7	18	361	436
Hawaii	—	112	158	5,488	5,879	—	0	1	1	1
Oregon	193	214	468	11,222	10,815	1	3	13	175	183
Washington	302	406	661	20,380	20,824	1	1	8	83	87
<b>Territories</b>										
American Samoa	—	0	0	—	—	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—
Guam	—	8	31	323	331	—	0	0	—	—
Puerto Rico	—	92	265	4,950	7,151	N	0	0	N	N
U.S. Virgin Islands	—	11	29	548	482	—	0	0	—	—

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

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

\* Case counts for reporting year 2010 are provisional and subject to change. For further information on interpretation of these data, see <http://www.cdc.gov/ncphi/diss/nndss/phs/files/ProvisionalNationa%20NotifiableDiseasesSurveillanceData20100927.pdf>. Data for HIV/AIDS, AIDS and TB, when available, are displayed in Table IV, which appears quarterly.

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



TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 18, 2010, and December 19, 2009 (50th week)\*

Reporting area	Dengue Virus Infection									
	Dengue Fever <sup>†</sup>					Dengue Hemorrhagic Fever <sup>‡</sup>				
	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009
	Med	Max				Med	Max			
<b>United States</b>	—	6	36	469	NN	—	0	2	5	NN
<b>New England</b>	—	0	3	9	NN	—	0	0	—	NN
Connecticut	—	0	0	—	NN	—	0	0	—	NN
Maine <sup>¶</sup>	—	0	2	6	NN	—	0	0	—	NN
Massachusetts	—	0	0	—	NN	—	0	0	—	NN
New Hampshire	—	0	0	—	NN	—	0	0	—	NN
Rhode Island <sup>¶</sup>	—	0	0	—	NN	—	0	0	—	NN
Vermont <sup>¶</sup>	—	0	1	3	NN	—	0	0	—	NN
<b>Mid. Atlantic</b>	—	2	12	134	NN	—	0	1	1	NN
New Jersey	—	0	0	—	NN	—	0	0	—	NN
New York (Upstate)	—	0	0	—	NN	—	0	0	—	NN
New York City	—	1	12	115	NN	—	0	1	1	NN
Pennsylvania	—	0	2	19	NN	—	0	0	—	NN
<b>E.N. Central</b>	—	0	5	41	NN	—	0	1	1	NN
Illinois	—	0	0	—	NN	—	0	0	—	NN
Indiana	—	0	2	11	NN	—	0	0	—	NN
Michigan	—	0	2	9	NN	—	0	0	—	NN
Ohio	—	0	2	16	NN	—	0	0	—	NN
Wisconsin	—	0	2	5	NN	—	0	1	1	NN
<b>W.N. Central</b>	—	0	2	17	NN	—	0	0	—	NN
Iowa	—	0	1	2	NN	—	0	0	—	NN
Kansas	—	0	1	1	NN	—	0	0	—	NN
Minnesota	—	0	2	13	NN	—	0	0	—	NN
Missouri	—	0	0	—	NN	—	0	0	—	NN
Nebraska <sup>¶</sup>	—	0	0	—	NN	—	0	0	—	NN
North Dakota	—	0	1	1	NN	—	0	0	—	NN
South Dakota	—	0	0	—	NN	—	0	0	—	NN
<b>S. Atlantic</b>	—	2	17	216	NN	—	0	1	2	NN
Delaware	—	0	0	—	NN	—	0	0	—	NN
District of Columbia	—	0	0	—	NN	—	0	0	—	NN
Florida	—	2	14	176	NN	—	0	1	2	NN
Georgia	—	0	2	11	NN	—	0	0	—	NN
Maryland <sup>¶</sup>	—	0	0	—	NN	—	0	0	—	NN
North Carolina	—	0	1	4	NN	—	0	0	—	NN
South Carolina <sup>¶</sup>	—	0	3	10	NN	—	0	0	—	NN
Virginia <sup>¶</sup>	—	0	3	13	NN	—	0	0	—	NN
West Virginia	—	0	1	2	NN	—	0	0	—	NN
<b>E.S. Central</b>	—	0	2	7	NN	—	0	0	—	NN
Alabama <sup>¶</sup>	—	0	2	4	NN	—	0	0	—	NN
Kentucky	—	0	1	1	NN	—	0	0	—	NN
Mississippi	—	0	1	1	NN	—	0	0	—	NN
Tennessee <sup>¶</sup>	—	0	1	1	NN	—	0	0	—	NN
<b>W.S. Central</b>	—	0	1	4	NN	—	0	1	1	NN
Arkansas <sup>¶</sup>	—	0	0	—	NN	—	0	1	1	NN
Louisiana	—	0	0	—	NN	—	0	0	—	NN
Oklahoma	—	0	1	4	NN	—	0	0	—	NN
Texas <sup>¶</sup>	—	0	0	—	NN	—	0	0	—	NN
<b>Mountain</b>	—	0	2	17	NN	—	0	0	—	NN
Arizona	—	0	1	6	NN	—	0	0	—	NN
Colorado	—	0	0	—	NN	—	0	0	—	NN
Idaho <sup>¶</sup>	—	0	1	3	NN	—	0	0	—	NN
Montana <sup>¶</sup>	—	0	1	3	NN	—	0	0	—	NN
Nevada <sup>¶</sup>	—	0	1	4	NN	—	0	0	—	NN
New Mexico <sup>¶</sup>	—	0	1	1	NN	—	0	0	—	NN
Utah	—	0	0	—	NN	—	0	0	—	NN
Wyoming <sup>¶</sup>	—	0	0	—	NN	—	0	0	—	NN
<b>Pacific</b>	—	0	5	24	NN	—	0	0	—	NN
Alaska	—	0	0	—	NN	—	0	0	—	NN
California	—	0	5	11	NN	—	0	0	—	NN
Hawaii	—	0	0	—	NN	—	0	0	—	NN
Oregon	—	0	0	—	NN	—	0	0	—	NN
Washington	—	0	2	13	NN	—	0	0	—	NN
<b>Territories</b>										
American Samoa	—	0	0	—	NN	—	0	0	—	NN
C.N.M.I.	—	—	—	—	NN	—	—	—	—	NN
Guam	—	0	0	—	NN	—	0	0	—	NN
Puerto Rico	—	109	536	9,865	NN	—	1	3	49	NN
U.S. Virgin Islands	—	0	0	—	NN	—	0	0	—	NN

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

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

\* Case counts for reporting year 2010 are provisional and subject to change. For further information on interpretation of these data, see <http://www.cdc.gov/ncphi/diss/nndss/phs/files/ProvisionalNationa%20NotifiableDiseasesSurveillanceData20100927.pdf>. Data for HIV/AIDS, AIDS and TB, when available, are displayed in Table IV, which appears quarterly.<sup>†</sup> Dengue Fever includes cases that meet criteria for Dengue Fever with hemorrhage, other clinical, and unknown case classifications.<sup>‡</sup> DHF includes cases that meet criteria for dengue shock syndrome (DSS), a more severe form of DHF.<sup>¶</sup> Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 18, 2010, and December 19, 2009 (50th week)\*

Reporting area	Ehrlichiosis/Anaplasmosis <sup>†</sup>														
	<i>Ehrlichia chaffeensis</i>					<i>Anaplasma phagocytophilum</i>					Undetermined				
	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009
	Med	Max				Med	Max				Med	Max			
<b>United States</b>	1	8	181	584	916	6	11	309	781	939	1	1	35	101	167
<b>New England</b>	—	0	1	7	54	—	1	8	84	270	—	0	2	8	2
Connecticut	—	0	0	—	—	—	0	5	26	17	—	0	2	6	—
Maine <sup>§</sup>	—	0	1	4	6	—	0	2	16	15	—	0	0	—	—
Massachusetts	—	0	0	—	9	—	0	1	—	98	—	0	0	—	—
New Hampshire	—	0	1	3	4	—	0	3	18	19	—	0	1	2	1
Rhode Island <sup>§</sup>	—	0	1	—	34	—	0	7	24	121	—	0	0	—	1
Vermont <sup>§</sup>	—	0	0	—	1	—	0	0	—	—	—	0	0	—	—
<b>Mid. Atlantic</b>	—	1	15	50	193	5	3	17	216	305	1	0	2	5	46
New Jersey	—	0	1	—	101	—	0	1	1	70	—	0	0	—	—
New York (Upstate)	—	0	15	29	55	5	3	17	212	224	1	0	1	5	7
New York City	—	0	3	20	10	—	0	1	3	9	—	0	0	—	1
Pennsylvania	—	0	1	1	27	—	0	0	—	2	—	0	1	—	38
<b>E.N. Central</b>	—	0	4	32	85	1	4	39	379	281	—	1	7	62	71
Illinois	—	0	2	12	33	—	0	2	7	6	—	0	2	3	3
Indiana	—	0	0	—	—	—	0	0	—	—	—	0	3	28	36
Michigan	—	0	1	2	6	—	0	0	—	—	—	0	1	4	—
Ohio	—	0	3	6	14	—	0	1	2	1	—	0	0	—	2
Wisconsin	—	0	1	12	32	1	4	39	370	274	—	0	4	27	30
<b>W.N. Central</b>	—	1	13	126	154	—	0	261	16	59	—	0	30	11	21
Iowa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Kansas	—	0	1	6	6	—	0	0	—	1	—	0	0	—	—
Minnesota	—	0	6	—	2	—	0	261	—	52	—	0	30	—	8
Missouri	—	1	13	118	144	—	0	3	16	5	—	0	3	11	13
Nebraska <sup>§</sup>	—	0	1	2	2	—	0	0	—	1	—	0	0	—	—
North Dakota	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
South Dakota	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
<b>S. Atlantic</b>	—	4	19	251	261	—	1	7	61	17	—	0	2	7	2
Delaware	—	0	3	17	22	—	0	1	4	2	—	0	0	—	—
District of Columbia	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Florida	—	0	2	8	12	—	0	1	3	3	—	0	0	—	—
Georgia	—	0	4	22	18	—	0	1	2	1	—	0	1	1	—
Maryland <sup>§</sup>	—	0	3	24	44	—	0	2	15	4	—	0	2	3	—
North Carolina	—	2	13	103	64	—	0	4	25	3	—	0	0	—	—
South Carolina <sup>§</sup>	—	0	2	4	12	—	0	1	1	—	—	0	0	—	—
Virginia <sup>§</sup>	—	1	13	72	88	—	0	2	11	4	—	0	1	3	2
West Virginia	—	0	1	1	1	—	0	0	—	—	—	0	1	—	—
<b>E.S. Central</b>	—	0	10	86	136	—	0	2	18	3	—	0	1	7	24
Alabama <sup>§</sup>	—	0	3	11	9	—	0	2	7	1	—	0	0	—	—
Kentucky	—	0	2	16	12	—	0	0	—	—	—	0	0	—	—
Mississippi	—	0	1	3	6	—	0	1	1	—	—	0	0	—	—
Tennessee <sup>§</sup>	—	0	6	56	109	—	0	2	10	2	—	0	1	7	24
<b>W.S. Central</b>	—	0	141	30	30	—	0	23	7	2	—	0	1	1	—
Arkansas <sup>§</sup>	—	0	34	11	4	—	0	6	3	—	—	0	0	—	—
Louisiana	—	0	1	1	—	—	0	0	—	—	—	0	0	—	—
Oklahoma	—	0	105	15	24	—	0	16	2	1	—	0	0	—	—
Texas <sup>§</sup>	—	0	2	3	2	—	0	1	2	1	—	0	1	1	—
<b>Mountain</b>	—	0	0	—	—	—	0	0	—	—	—	0	0	—	1
Arizona	—	0	0	—	—	—	0	0	—	—	—	0	0	—	1
Colorado	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Idaho <sup>§</sup>	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Montana <sup>§</sup>	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Nevada <sup>§</sup>	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
New Mexico <sup>§</sup>	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Utah	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Wyoming <sup>§</sup>	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
<b>Pacific</b>	1	0	1	2	3	—	0	0	—	2	—	0	1	—	—
Alaska	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
California	1	0	1	2	3	—	0	0	—	2	—	0	1	—	—
Hawaii	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Oregon	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Washington	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
<b>Territories</b>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
American Samoa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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

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## MMWR Morbidity and Mortality Weekly Report

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 18, 2010, and December 19, 2009 (50th week)\*

Reporting area	Hepatitis (viral, acute), by type														
	A					B					C				
	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009
		Med	Max				Med	Max				Med	Max		
<b>United States</b>	13	30	69	1,471	1,885	35	62	204	2,976	3,150	5	14	44	793	725
<b>New England</b>	—	2	5	89	104	—	1	5	50	53	—	1	4	41	65
Connecticut	—	0	3	28	18	—	0	2	19	16	—	0	4	27	52
Maine†	—	0	1	7	1	—	0	2	13	15	—	0	0	—	2
Massachusetts	—	1	5	44	68	—	0	2	9	17	—	0	2	12	10
New Hampshire	—	0	1	2	7	—	0	2	7	5	N	0	0	N	N
Rhode Island†	—	0	4	8	8	U	0	0	U	U	U	0	0	U	U
Vermont†	—	0	0	—	2	—	0	1	2	—	—	0	1	2	1
<b>Mid. Atlantic</b>	1	4	10	198	262	3	5	10	271	318	1	2	6	105	95
New Jersey	—	0	3	14	65	—	1	5	66	93	—	0	2	15	7
New York (Upstate)	1	1	4	58	44	2	1	6	54	51	1	1	4	58	45
New York City	—	1	5	74	87	—	1	4	79	70	—	0	1	1	5
Pennsylvania	—	1	4	52	66	1	1	5	72	104	—	0	3	31	38
<b>E.N. Central</b>	1	4	9	206	280	—	9	17	443	423	—	2	8	121	88
Illinois	—	1	3	46	123	—	2	5	88	115	—	0	1	2	6
Indiana	—	0	2	17	17	—	1	5	51	72	—	0	2	23	20
Michigan	—	1	5	70	72	—	3	6	123	127	—	1	5	80	33
Ohio	1	1	5	47	36	—	2	6	87	86	—	0	1	8	26
Wisconsin	—	0	3	26	32	—	2	8	94	23	—	0	2	8	3
<b>W.N. Central</b>	—	1	13	76	115	—	2	15	116	137	—	0	11	25	22
Iowa	—	0	3	11	36	—	0	2	14	36	—	0	1	—	10
Kansas	—	0	2	11	12	—	0	2	10	6	—	0	2	3	1
Minnesota	—	0	12	15	21	—	0	13	8	25	—	0	9	12	6
Missouri	—	0	2	23	21	—	1	3	71	44	—	0	2	8	—
Nebraska†	—	0	4	12	21	—	0	2	12	22	—	0	1	2	3
North Dakota	—	0	3	3	1	—	0	0	—	—	—	0	1	—	1
South Dakota	—	0	1	1	3	—	0	1	1	4	—	0	0	—	1
<b>S. Atlantic</b>	8	7	14	339	410	16	16	40	846	861	—	4	7	168	169
Delaware	—	0	1	7	4	—	0	2	23	33	U	0	0	U	U
District of Columbia	—	0	1	1	1	—	0	1	3	10	—	0	1	2	1
Florida	6	3	7	141	165	8	6	11	293	289	—	1	5	55	51
Georgia	—	1	3	38	50	1	3	7	144	140	—	0	2	11	31
Maryland†	1	0	3	24	45	—	1	6	72	71	—	0	3	28	23
North Carolina	—	0	5	47	40	7	1	16	101	101	—	1	3	42	22
South Carolina†	—	0	3	24	61	—	1	4	54	53	—	0	1	1	1
Virginia†	1	1	6	49	39	—	2	14	94	94	—	0	2	12	10
West Virginia	—	0	5	8	5	—	0	14	62	70	—	0	5	17	30
<b>E.S. Central</b>	—	1	5	45	43	7	8	13	354	338	1	3	8	151	101
Alabama†	—	0	2	8	11	—	1	4	63	87	—	0	1	6	9
Kentucky	—	0	5	23	12	5	2	8	129	88	1	2	6	104	61
Mississippi	—	0	1	2	9	—	1	3	35	32	U	0	0	U	U
Tennessee†	—	0	2	12	11	2	2	8	127	131	—	1	4	41	31
<b>W.S. Central</b>	—	3	19	136	187	7	9	109	473	562	2	1	14	73	59
Arkansas†	—	0	1	2	12	—	0	4	41	62	—	0	0	—	2
Louisiana	—	0	2	12	6	1	1	3	46	71	—	0	1	9	8
Oklahoma	—	0	1	1	6	4	2	19	94	101	1	0	12	33	14
Texas†	—	2	18	121	163	2	5	87	292	328	1	0	3	31	35
<b>Mountain</b>	—	3	8	137	159	—	3	8	131	129	1	1	5	52	52
Arizona	—	1	5	60	66	—	0	2	30	41	U	0	0	U	U
Colorado	—	1	3	35	50	—	0	5	40	26	—	0	1	12	27
Idaho†	—	0	2	7	5	—	0	1	6	11	1	0	2	11	7
Montana†	—	0	1	4	6	—	0	1	1	1	—	0	1	2	1
Nevada†	—	0	2	14	15	—	0	3	38	34	—	0	1	6	5
New Mexico†	—	0	1	5	8	—	0	1	5	7	—	0	2	11	6
Utah	—	0	1	9	7	—	0	1	8	5	—	0	2	10	6
Wyoming†	—	0	3	3	2	—	0	1	3	4	—	0	0	—	—
<b>Pacific</b>	3	5	17	245	325	2	6	20	292	329	—	1	6	57	74
Alaska	—	0	1	4	2	—	0	1	4	4	U	0	0	U	U
California	3	4	16	200	257	2	4	16	203	232	—	0	4	23	42
Hawaii	—	0	2	4	9	—	0	1	3	6	U	0	0	U	U
Oregon	—	0	2	17	17	—	1	3	38	44	—	0	3	15	17
Washington	—	0	2	20	40	—	1	4	44	43	—	0	6	19	15
<b>Territories</b>															
American Samoa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	6	22	7	—	1	6	43	57	—	0	7	37	49
Puerto Rico	—	0	2	14	21	—	0	2	18	34	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 18, 2010, and December 19, 2009 (50th week)\*

Reporting area	Legionellosis					Lyme disease					Malaria				
	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009
		Med	Max				Med	Max				Med	Max		
<b>United States</b>	25	57	115	3,082	3,360	102	396	2,336	27,405	35,914	14	27	89	1,424	1,347
<b>New England</b>	—	3	15	234	198	14	121	495	8,048	12,258	—	2	4	69	59
Connecticut	—	1	6	50	53	—	42	211	2,659	4,138	—	0	1	1	6
Maine†	—	0	4	12	9	14	11	76	702	879	—	0	1	6	2
Massachusetts	—	2	10	119	94	—	39	216	2,988	5,213	—	1	3	47	38
New Hampshire	—	0	5	21	14	—	23	68	1,218	1,393	—	0	2	5	4
Rhode Island†	—	0	4	23	21	—	1	40	149	234	—	0	1	7	5
Vermont†	—	0	2	9	7	—	4	27	332	401	—	0	1	3	4
<b>Mid. Atlantic</b>	8	14	45	843	1,157	54	169	733	12,171	15,601	—	7	17	387	397
New Jersey	—	2	11	93	213	—	47	216	3,144	4,930	—	0	4	1	97
New York (Upstate)	5	5	19	288	343	36	47	577	2,801	3,954	—	1	6	73	48
New York City	—	2	15	147	222	—	2	12	98	1,046	—	4	14	255	199
Pennsylvania	3	6	18	315	379	18	83	383	6,128	5,671	—	1	3	58	53
<b>E.N. Central</b>	7	11	42	685	706	2	24	323	3,013	2,946	1	2	9	140	172
Illinois	—	1	15	120	132	—	1	17	123	136	—	1	7	52	69
Indiana	1	2	6	103	60	—	1	7	69	82	—	0	2	8	25
Michigan	1	2	20	169	164	—	1	13	92	101	—	0	4	29	31
Ohio	5	4	15	229	276	2	0	9	39	57	1	0	5	41	37
Wisconsin	—	1	11	64	74	—	21	296	2,690	2,570	—	0	1	10	10
<b>W.N. Central</b>	1	2	19	111	115	—	2	1,395	120	292	1	1	11	69	73
Iowa	—	0	1	—	23	—	1	10	80	107	—	0	2	13	10
Kansas	—	0	2	12	7	—	0	1	6	18	1	0	2	12	8
Minnesota	—	0	16	35	12	—	0	1,380	—	158	—	0	11	3	32
Missouri	1	0	4	39	58	—	0	1	1	3	—	0	3	22	13
Nebraska†	—	0	2	9	12	—	0	2	9	5	—	0	2	15	8
North Dakota	—	0	1	7	1	—	0	15	23	—	—	0	1	1	1
South Dakota	—	0	2	9	2	—	0	1	1	1	—	0	2	3	1
<b>S. Atlantic</b>	5	10	27	531	579	29	56	176	3,683	4,323	3	7	42	408	351
Delaware	1	0	3	17	19	6	11	32	617	973	—	0	1	2	5
District of Columbia	—	0	4	16	23	—	0	4	30	61	1	0	2	11	17
Florida	—	3	9	168	184	2	2	10	102	105	—	3	7	130	89
Georgia	—	1	4	55	58	—	0	2	11	40	1	0	5	46	67
Maryland†	2	2	6	110	153	7	24	103	1,580	2,015	1	1	22	98	77
North Carolina	2	1	7	58	59	—	1	9	84	94	—	0	13	49	30
South Carolina†	—	0	2	14	13	—	0	3	28	42	—	0	1	5	6
Virginia†	—	1	10	79	61	14	18	79	1,110	824	—	1	5	64	58
West Virginia	—	0	3	14	9	—	0	32	121	169	—	0	2	3	2
<b>E.S. Central</b>	—	2	10	128	140	—	1	4	44	39	—	0	3	31	32
Alabama†	—	0	2	21	19	—	0	1	2	3	—	0	1	9	9
Kentucky	—	0	4	27	52	—	0	1	5	1	—	0	3	8	10
Mississippi	—	0	3	10	4	—	0	0	—	—	—	0	2	2	4
Tennessee†	—	1	6	70	65	—	0	4	37	35	—	0	2	12	9
<b>W.S. Central</b>	1	3	14	144	133	—	2	44	99	231	1	1	31	81	70
Arkansas†	—	0	2	14	8	—	0	0	—	—	—	0	1	2	5
Louisiana	—	0	3	9	15	—	0	1	2	—	—	0	1	5	7
Oklahoma	—	0	4	13	6	—	0	2	—	—	—	0	1	5	1
Texas†	1	2	10	108	104	—	2	42	97	231	1	1	30	69	57
<b>Mountain</b>	1	3	10	159	143	—	0	3	26	56	2	1	4	64	48
Arizona	—	1	6	60	43	—	0	1	2	6	2	0	2	27	10
Colorado	—	1	5	34	30	—	0	1	3	1	—	0	3	21	26
Idaho†	1	0	1	8	7	—	0	2	8	16	—	0	1	3	3
Montana†	—	0	1	4	8	—	0	1	4	3	—	0	1	3	5
Nevada†	—	0	2	19	14	—	0	1	2	13	—	0	1	6	—
New Mexico†	—	0	2	9	9	—	0	2	5	5	—	0	1	1	—
Utah	—	0	2	20	28	—	0	1	2	9	—	0	1	3	4
Wyoming†	—	0	2	5	4	—	0	0	—	3	—	0	0	—	—
<b>Pacific</b>	2	5	19	247	189	3	4	10	201	168	6	3	19	175	145
Alaska	—	0	2	2	1	—	0	1	6	7	1	0	1	5	2
California	2	4	19	207	146	3	3	7	131	108	2	2	13	117	110
Hawaii	—	0	1	1	1	N	0	0	N	N	—	0	1	1	1
Oregon	—	0	3	14	17	—	1	4	50	38	—	0	3	14	11
Washington	—	0	4	23	24	—	0	3	14	15	3	0	5	38	21
<b>Territories</b>															
American Samoa	—	0	0	—	—	N	0	0	N	N	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	1	1	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	1	—	3	N	0	0	N	N	—	0	2	4	5
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. NN: Not Nationally Notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.

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

## MMWR Morbidity and Mortality Weekly Report

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 18, 2010, and December 19, 2009 (50th week)\*

Reporting area	Meningococcal disease, invasive†					Pertussis					Rabies, animal				
	All groups														
	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009
	Med	Max				Med	Max				Med	Max			
<b>United States</b>	6	15	43	724	921	277	443	1,756	20,127	14,832	16	63	143	3,150	4,927
<b>New England</b>	—	0	3	18	34	1	8	22	469	617	4	4	13	216	344
Connecticut	—	0	1	3	6	—	1	8	107	55	—	0	9	59	149
Maine <sup>§</sup>	—	0	1	4	4	1	1	5	48	80	2	1	4	61	53
Massachusetts	—	0	2	6	16	—	5	13	252	350	—	0	0	—	—
New Hampshire	—	0	0	—	3	—	0	2	19	76	1	0	5	14	33
Rhode Island <sup>§</sup>	—	0	0	—	4	—	0	9	26	45	—	0	4	31	43
Vermont <sup>§</sup>	—	0	1	5	1	—	0	4	17	11	1	1	3	51	66
<b>Mid. Atlantic</b>	—	1	4	70	103	46	34	135	1,797	1,162	2	19	41	995	553
New Jersey	—	0	2	17	18	—	3	9	132	234	—	0	0	—	—
New York (Upstate)	—	0	3	12	23	33	11	79	685	236	2	9	19	485	429
New York City	—	0	2	16	17	—	0	9	78	92	—	1	12	120	24
Pennsylvania	—	0	2	25	45	13	12	63	902	600	—	8	24	390	100
<b>E.N. Central</b>	1	2	9	123	164	58	102	174	4,992	3,066	—	2	27	226	220
Illinois	—	0	3	19	46	—	16	47	875	623	—	1	11	114	82
Indiana	—	0	3	26	34	—	9	26	526	372	—	0	0	—	25
Michigan	—	0	4	23	20	13	27	57	1,401	851	—	1	5	67	66
Ohio	1	0	2	32	42	45	30	80	1,738	1,052	—	0	12	45	47
Wisconsin	—	0	3	23	22	—	8	21	452	168	—	0	0	—	—
<b>W.N. Central</b>	1	1	5	52	85	25	36	627	2,340	2,160	—	4	16	243	373
Iowa	—	0	3	10	15	—	12	33	614	226	—	0	3	26	34
Kansas	—	0	2	7	14	—	3	9	160	237	—	1	4	59	73
Minnesota	—	0	2	2	13	14	0	601	712	482	—	0	9	26	60
Missouri	1	0	4	26	27	10	8	44	564	999	—	1	6	66	65
Nebraska <sup>§</sup>	—	0	2	5	11	—	4	13	211	138	—	1	4	51	77
North Dakota	—	0	1	2	1	1	0	30	51	29	—	0	5	15	11
South Dakota	—	0	1	—	4	—	0	5	28	49	—	0	0	—	53
<b>S. Atlantic</b>	1	2	7	130	162	19	29	78	1,588	1,572	9	21	70	1,051	2,055
Delaware	—	0	1	2	2	—	0	4	14	13	—	0	0	—	—
District of Columbia	—	0	0	—	—	—	0	2	11	7	—	0	0	—	—
Florida	1	1	5	58	52	7	5	28	310	490	—	0	57	71	161
Georgia	—	0	2	13	31	—	4	18	229	221	—	0	6	—	396
Maryland <sup>§</sup>	—	0	1	9	11	2	3	8	131	147	—	6	14	346	378
North Carolina	—	0	2	15	31	—	0	32	132	205	—	0	5	—	461
South Carolina <sup>§</sup>	—	0	1	12	11	4	5	19	340	252	—	0	0	—	—
Virginia <sup>§</sup>	—	0	2	19	18	6	5	29	296	205	9	11	25	557	543
West Virginia	—	0	2	2	6	—	1	21	125	32	—	1	7	77	116
<b>E.S. Central</b>	1	1	3	42	34	7	15	34	751	785	—	3	7	141	137
Alabama <sup>§</sup>	1	0	1	8	11	1	4	8	190	294	—	1	4	49	—
Kentucky	—	0	2	17	6	—	5	14	263	223	—	0	4	21	45
Mississippi	—	0	1	5	3	—	1	8	76	75	—	0	1	1	4
Tennessee <sup>§</sup>	—	0	2	12	14	6	4	11	222	193	—	1	4	70	88
<b>W.S. Central</b>	—	1	9	82	87	48	57	753	2,863	3,199	—	0	30	69	892
Arkansas <sup>§</sup>	—	0	1	6	9	—	3	29	183	340	—	0	7	28	41
Louisiana	—	0	4	14	18	—	1	3	39	147	—	0	0	—	—
Oklahoma	—	0	7	16	14	—	0	41	91	75	—	0	30	41	33
Texas <sup>§</sup>	—	1	7	46	46	48	48	681	2,550	2,637	—	0	7	—	818
<b>Mountain</b>	—	1	6	55	64	41	27	119	1,680	979	—	1	8	80	105
Arizona	—	0	2	14	13	2	7	16	398	263	—	0	5	—	—
Colorado	—	0	4	21	24	39	4	108	584	225	—	0	0	—	—
Idaho <sup>§</sup>	—	0	1	5	7	—	3	15	184	95	—	0	2	11	8
Montana <sup>§</sup>	—	0	1	2	5	—	1	16	104	59	—	0	3	17	25
Nevada <sup>§</sup>	—	0	1	8	5	—	0	7	32	24	—	0	2	8	6
New Mexico <sup>§</sup>	—	0	1	3	3	—	2	11	131	76	—	0	2	13	26
Utah	—	0	1	1	2	—	4	13	237	215	—	0	2	10	13
Wyoming <sup>§</sup>	—	0	1	1	5	—	0	2	10	22	—	0	4	21	27
<b>Pacific</b>	2	3	16	152	188	32	54	212	3,647	1,292	1	3	12	129	248
Alaska	—	0	1	1	6	—	0	6	41	57	—	0	2	12	13
California	1	2	13	101	112	15	34	184	2,796	680	1	1	12	103	224
Hawaii	—	0	1	1	5	—	0	6	43	45	—	0	0	—	—
Oregon	—	1	2	31	42	1	6	16	317	247	—	0	2	14	11
Washington	1	0	7	18	23	16	6	38	450	263	—	0	0	—	—
<b>Territories</b>															
American Samoa	—	0	0	—	—	—	0	0	—	—	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	2	—	0	0	—	—
Puerto Rico	—	0	0	—	1	—	0	1	3	1	1	1	3	41	39
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. NN: Not Nationally Notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.

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† 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).



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TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 18, 2010, and December 19, 2009 (50th week)\*

Reporting area	Spotted Fever Rickettsiosis (including RMSF) <sup>†</sup>									
	Confirmed					Probable				
	Current week	Previous 52 weeks		Cum 2010	Cum 2009	Current week	Previous 52 weeks		Cum 2010	Cum 2009
	Med	Max				Med	Max			
<b>United States</b>	—	2	11	147	145	2	26	421	1,506	1,235
<b>New England</b>	—	0	0	—	2	—	0	1	3	11
Connecticut	—	0	0	—	—	—	0	0	—	—
Maine <sup>§</sup>	—	0	0	—	—	—	0	1	2	5
Massachusetts	—	0	0	—	1	—	0	0	—	6
New Hampshire	—	0	0	—	—	—	0	1	1	—
Rhode Island <sup>§</sup>	—	0	0	—	—	—	0	0	—	—
Vermont <sup>§</sup>	—	0	0	—	1	—	0	0	—	—
<b>Mid. Atlantic</b>	—	0	1	3	12	—	1	4	60	95
New Jersey	—	0	0	—	2	—	0	1	—	60
New York (Upstate)	—	0	1	2	—	—	0	3	18	14
New York City	—	0	1	1	1	—	0	4	30	7
Pennsylvania	—	0	0	—	9	—	0	3	12	14
<b>E.N. Central</b>	—	0	1	4	9	—	1	9	91	81
Illinois	—	0	1	2	1	—	0	5	33	48
Indiana	—	0	1	2	3	—	0	5	43	10
Michigan	—	0	0	—	4	—	0	1	1	1
Ohio	—	0	0	—	—	—	0	2	13	18
Wisconsin	—	0	0	—	1	—	0	1	1	4
<b>W.N. Central</b>	—	0	4	18	19	—	4	21	333	255
Iowa	—	0	0	—	1	—	0	1	4	4
Kansas	—	0	1	2	1	—	0	0	—	—
Minnesota	—	0	1	—	2	—	0	0	—	2
Missouri	—	0	4	14	7	—	4	20	325	245
Nebraska <sup>§</sup>	—	0	1	2	8	—	0	1	3	4
North Dakota	—	0	0	—	—	—	0	1	1	—
South Dakota	—	0	0	—	—	—	0	0	—	—
<b>S. Atlantic</b>	—	1	9	86	67	1	9	60	508	373
Delaware	—	0	1	1	—	—	0	3	21	18
District of Columbia	—	0	1	1	—	—	0	0	—	1
Florida	—	0	1	4	1	1	0	2	12	7
Georgia	—	1	6	59	52	—	0	0	—	—
Maryland <sup>§</sup>	—	0	1	3	3	—	0	5	54	37
North Carolina	—	0	3	13	7	—	3	48	272	242
South Carolina <sup>§</sup>	—	0	1	1	3	—	0	2	18	15
Virginia <sup>§</sup>	—	0	2	4	1	—	2	12	131	51
West Virginia	—	0	0	—	—	—	0	0	—	2
<b>E.S. Central</b>	—	0	3	19	9	1	5	29	384	255
Alabama <sup>§</sup>	—	0	1	5	3	—	1	8	76	64
Kentucky	—	0	2	6	1	—	0	0	—	—
Mississippi	—	0	0	—	—	—	0	3	16	9
Tennessee <sup>§</sup>	—	0	2	8	5	1	4	20	292	182
<b>W.S. Central</b>	—	0	3	6	9	—	1	408	115	141
Arkansas <sup>§</sup>	—	0	2	2	—	—	0	110	64	70
Louisiana	—	0	0	—	—	—	0	1	2	2
Oklahoma	—	0	3	3	7	—	0	287	26	46
Texas <sup>§</sup>	—	0	1	1	2	—	0	11	23	23
<b>Mountain</b>	—	0	1	3	17	—	0	2	12	24
Arizona	—	0	0	—	11	—	0	1	2	12
Colorado	—	0	1	1	1	—	0	1	1	—
Idaho <sup>§</sup>	—	0	0	—	—	—	0	1	5	1
Montana <sup>§</sup>	—	0	1	2	4	—	0	1	1	6
Nevada <sup>§</sup>	—	0	0	—	—	—	0	0	—	1
New Mexico <sup>§</sup>	—	0	0	—	—	—	0	1	1	1
Utah	—	0	0	—	—	—	0	1	1	1
Wyoming <sup>§</sup>	—	0	0	—	1	—	0	1	1	2
<b>Pacific</b>	—	0	2	8	1	—	0	0	—	—
Alaska	N	0	0	N	N	N	0	0	N	N
California	—	0	2	7	1	—	0	0	—	—
Hawaii	N	0	0	N	N	N	0	0	N	N
Oregon	—	0	1	1	—	—	0	0	—	—
Washington	—	0	0	—	—	—	0	0	—	—
<b>Territories</b>										
American Samoa	N	0	0	N	N	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—
Guam	N	0	0	N	N	N	0	0	N	N
Puerto Rico	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—

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<sup>†</sup> Illnesses with similar clinical presentation that result from Spotted fever group rickettsia infections are reported as Spotted fever rickettsioses. Rocky Mountain spotted fever (RMSF) caused by *Rickettsia rickettsii*, is the most common and well-known spotted fever.

<sup>§</sup> Contains data reported through the National Electronic Disease Surveillance System (NEDSS).









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