



# MMWR™

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### National Black HIV/AIDS Awareness Day — February 7, 2009

February 7 is National Black HIV/AIDS Awareness Day, which seeks to increase awareness of the disproportionate effects of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) among blacks living in the United States. In 2006, blacks accounted for approximately 12% of the adolescent and adult U.S. population but 46.1% of the number estimated to be living with HIV (1). For 2006, estimates of HIV incidence show that blacks had the highest rates of new infections (115.7 per 100,000 population for males and 55.7 per 100,000 population for females) of any racial/ethnic population (2). Among black females, high-risk heterosexual contact accounted for 83% of the new infections. Among black males, male-to-male sexual contact accounted for 63% of the new infections (3).

In 2006, a higher percentage of blacks reported having been tested for HIV during the preceding 12 months than did Hispanics and whites (22% versus 13% and 8%, respectively) (4). Nonetheless, HIV testing should be promoted and increased among blacks because persons who are aware of their HIV infection are less likely to transmit it to others.

Information regarding National Black HIV/AIDS Awareness Day is available at <http://www.cdc.gov/features/blackhivaidsawareness>. Information regarding blacks and HIV/AIDS is available at <http://www.cdc.gov/hiv/topics/aa/index.htm>.

#### References

1. CDC. HIV prevalence estimates—United States, 2006. *MMWR* 2008;57:1073–6.
2. CDC. Subpopulation estimates from the HIV incidence surveillance system—United States, 2006. *MMWR* 2008;57:985–9.
3. CDC. Trends in HIV/AIDS diagnoses among men who have sex with men—33 states, 2001–2006. *MMWR* 2008;57:681–6.
4. CDC. Persons tested for HIV—United States. *MMWR* 2008;57:845–9.

### HIV Infection Among Young Black Men Who Have Sex with Men — Jackson, Mississippi, 2006–2008

In the United States, black men who have sex with men (MSM) account for a disproportionate number of new cases of human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) (1). From 2001 to 2006, the number of HIV/AIDS cases among black MSM aged 13–24 years in 33 states increased 93% (2). In 2006, more new AIDS cases among black MSM were diagnosed in the South\* than in all other U.S. census regions combined (3). In November 2007, the Mississippi State Department of Health (MSDH) reported to CDC an increase in the number of young black MSM who received diagnoses of HIV infection at a sexually transmitted disease (STD) clinic in Jackson, Mississippi. MSDH and CDC conducted a survey of 29 young black MSM in the three-county Jackson area who received diagnoses of HIV infection during January 2006–April 2008 to characterize risk behavior and HIV testing behavior. This report summarizes the results of that survey, which found that, during the 12 months before receiving their HIV infection diagnosis, 20 (69%) of the 29 participants had unprotected anal intercourse, but only

\* Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

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three (10%) of the 29 thought they were likely or very likely to acquire HIV infection in their lifetimes. Additional investigations are needed to determine whether this sample is illustrative of other groups of black MSM at high risk for HIV infection, especially in the South. Targeted interventions that decrease HIV risk behaviors among black MSM should be developed, implemented, and evaluated to reduce HIV transmission.

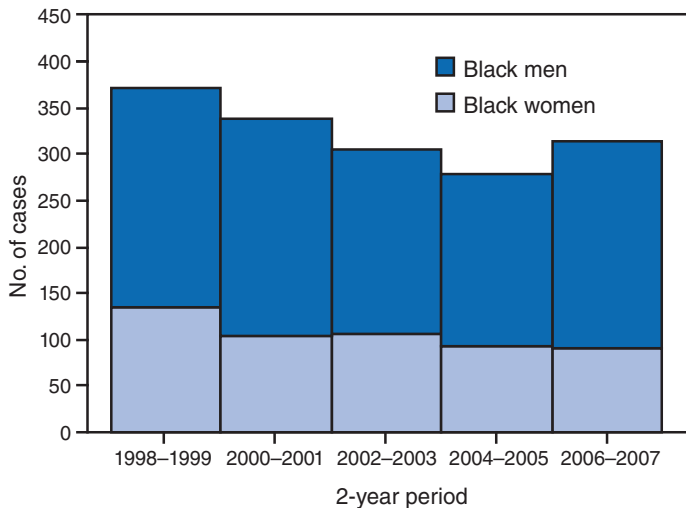
Mandatory, confidential, name-based HIV case surveillance has been conducted in Mississippi using the HIV/AIDS Reporting System since 1988; cases of confirmed HIV infection are reported to state surveillance staff members, who then enter information about patient demographics, HIV risk behavior, laboratory results, and clinical status into the reporting system. After an increase in new HIV cases among young black MSM was noted by clinicians at an STD clinic in Jackson in November 2007, a review of HIV surveillance data was conducted. This review indicated that the number of newly diagnosed HIV cases among all black men in the Jackson area (Hinds, Madison, and Rankin counties) increased 20%, from 185 during 2004–2005 to 222 during 2006–2007 (Figure 1). Among black MSM aged 17–25 years in the Jackson area, the number of HIV cases increased from 22 to 32 (45%) during the same period (Figure 2).

To characterize risk behavior and HIV testing behavior among HIV-infected young black MSM, during February–April 2008, MSDH and CDC first identified all black males aged 16–25 years who had received diagnoses of HIV infection during January 2006–April 2008 and who lived in, or received their diagnosis in, the three-county Jackson area. These potential participants were identified by state surveillance staff members using the HIV/AIDS Reporting System and recruited for the survey by telephone, mail, or in person. Participation was voluntary; persons who completed the survey received a \$25 gift card. Surveys were completed on a computer questionnaire at the STD clinic or, in some cases, at a location convenient to participants. The survey was self-administered; participants read the questions on the screen of a laptop or handheld computer and marked their answers. The survey included questions on sexual identity and behavior, condom use, HIV testing, drug use, and perceived risk for HIV infection.<sup>†</sup> Analysis was limited to MSM (i.e., persons who self-identified as men who had ever had anal sex with a man).

A total of 86 potential participants were identified initially. Of these, 40 (47%) were located and interviewed. Of the 46 not interviewed, 31 could not be contacted, three had moved from the area, one was deceased, one declined to participate, one did not arrive for the scheduled interview, and nine had

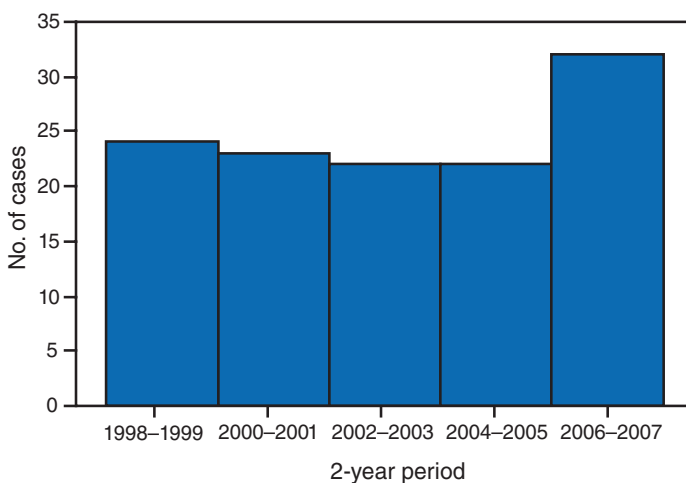
<sup>†</sup> Participants were asked, “At the time of your first positive HIV test, what did you think were your chances of getting HIV in your lifetime? Very unlikely, unlikely, equally likely and unlikely, likely, or very likely?”

**FIGURE 1.** Number of newly diagnosed cases of human immunodeficiency virus (HIV) infection among black males and black females aged  $\geq 13$  years, by 2-year period — Jackson, Mississippi, area (Hinds, Madison, and Rankin counties), 1998–1999 to 2006–2007



**SOURCE:** Mississippi HIV/AIDS Reporting System.

**FIGURE 2.** Number of newly diagnosed cases of human immunodeficiency virus (HIV) infection among black men aged 17–25 years who have sex with men, by 2-year period — Jackson, Mississippi, area (Hinds, Madison, and Rankin counties), 1998–1999 to 2006–2007



**SOURCE:** Mississippi HIV/AIDS Reporting System.

no recorded reason for not being interviewed. Of the 40 interviewed, 29 (73%) self-identified as MSM and were included in the analysis. Of the 11 persons not included, seven did not report ever having anal sex with a man, three responded “don’t know” or “refuse to answer” to a majority of the questions, and one self-identified as transgender.

Of the 29 black MSM surveyed, the median age at HIV diagnosis was 22 years (range: 17–25 years). A total of 19 men (66%) self-identified as gay/homosexual, seven (24%) as bisexual, two (7%) as straight/heterosexual, and one (3%) as questioning (Table). Twenty (69%) reported having unprotected anal intercourse with a male partner during the 12 months before their first positive HIV test, and 16 (55%) reported having male sex partners aged  $\geq 26$  years during that period. Of the 16 participants aged  $\leq 22$  years, nine (56%) reported having male sex partners aged  $\geq 26$  years. Twenty-six participants (three did not respond) reported a median of 3.5 male sex partners (range: 1–11) during the 12 months before their first positive HIV test. Three (10%) of the 29 surveyed reported having a female sex partner in the 12 months before receiving their HIV diagnoses, and 16 (55%) reported concurrent sexual relationships.<sup>§</sup>

Six (21%) of those surveyed reported having no HIV test during the 2 years before their first positive HIV test, and five (17%) reported having one test. At the time of their first positive HIV test, three of the 29 thought they were likely or very likely to acquire HIV infection during their lifetime; 15 (52%) thought acquiring HIV infection was unlikely or very unlikely (Table).

None of the 29 reported injection drug use in the 12 months before receiving their HIV diagnosis. Twelve (41%) reported using marijuana; three (10%) reported using ecstasy and/or powdered cocaine (Table).

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**Editorial Note:** This investigation identified multiple HIV risk and testing behaviors among a localized group of 29 young black MSM recently confirmed positive for HIV infection. Twenty of the young black MSM (69%) reported unprotected anal intercourse in the 12 months before HIV diagnosis, nearly double the percentage (38%) of black MSM aged 18–24 years who reported unprotected anal intercourse during the preceding 12 months in a large behavioral surveillance system survey conducted during 2004–2005 (National HIV Behavioral Surveillance System, CDC, unpublished data, 2009). In addition, 16 (55%) of the young black MSM

<sup>§</sup> Defined as reporting more than one sexual partner during the same week and/or answering “yes” to the question, “Was there ever a time (during the 12 months before your first positive HIV test) when you were sexually involved with one person and also had sex with one or more other partners?”

**TABLE. Selected characteristics of 29 black men aged 17–25 years who have sex with men and who were confirmed positive for human immunodeficiency virus (HIV) infection\* — Mississippi State Department of Health/CDC Investigation, Jackson, Mississippi, area (Hinds, Madison, and Rankin counties), 2006–2008**

Characteristic	No.	(%)†
<b>Sexual identity and behavior</b>		
Self-reported sexual identity at time of first positive HIV test		
Gay/homosexual	19	(66)
Bisexual	7	(24)
Straight/heterosexual	2	(7)
Questioning	1	(3)
No. of male sex partners during 12 months before first positive HIV test		
1	6	(21)
2	3	(10)
3–5	10	(34)
≥6	7	(24)
Missing response	3	(10)
Any male partner aged ≥26 years during 12 months before first positive HIV test?		
Yes	16	(55)
No	10	(34)
Missing response	3	(10)
Any concurrent sexual relationship during 12 months before first positive HIV test?§		
Yes	16	(55)
No	13	(45)
Any unprotected anal intercourse during 12 months before first positive HIV test?		
Yes	20	(69)
No	6	(20)
Missing response	3	(10)
Any female partner during 12 months before first positive HIV test?		
Yes	3	(10)
No	26	(90)
<b>HIV testing and risk</b>		
No. of HIV tests during 2 years before first positive HIV test		
0	6	(21)
1	5	(17)
2–3	7	(24)
≥4	11	(38)
Self-perceived lifetime risk for HIV at time of diagnosis		
Unlikely or very unlikely	15	(52)
Equally likely and unlikely	11	(38)
Likely or very likely	3	(10)
<b>Drug use</b>		
Use of marijuana during 12 months before first positive HIV test?		
Yes	12	(41)
No	17	(59)
Use of another noninjection drug during 12 months before first positive HIV test?		
Yes¶	3	(10)
No	26	(90)

\* During January 2006–April 2008.

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

§ Defined as a “yes” response to either 1) two sex partners in the same week or 2) having sex with one person while sexually involved with another.

¶ Respondents reported using ecstasy and/or powdered cocaine.

reported having male sex partners aged ≥26 years. Having sex with partners who are older than themselves increases the risk for HIV infection among young black MSM (4).

The behaviors presented in this report are derived from a small number of participants in one area and might not represent the behaviors of young black MSM in other areas. However, a 2003 investigation of HIV infection among young black MSM in North Carolina also revealed high prevalence of HIV risk behaviors (5). The findings in this report might be illustrative of behaviors contributing to HIV acquisition, particularly in the South. Further research is needed to understand behaviors and other factors associated with the increasing numbers of HIV infections among black MSM in the South and elsewhere in the United States.

Eleven (38%) of those surveyed reported having no HIV test or only one HIV test during the 2 years before HIV diagnosis. Current CDC guidelines recommend HIV testing at least once each year for sexually active MSM (6). Although young black MSM are more likely to be HIV infected than MSM of other racial/ethnic groups, they are less likely to know that they are infected (7). Among persons who are HIV infected, being aware of one's HIV diagnosis has been associated with a reduction in risk behaviors (8). Increasing the number of young black MSM who are aware of their HIV infection might reduce transmission.

Although many interventions that aim to reduce risk behavior have been developed and studied, few are known to be effective among young black MSM.¶ CDC currently disseminates two HIV prevention interventions specifically developed for black MSM.\*\* Further research must address reducing unprotected anal intercourse, understanding risks related to partner selection and sexual networks, and improving HIV testing rates.

The findings in this report are subject to at least two limitations. First, the survey asked about behaviors in the 12 months before HIV diagnosis, a period more than 2 years before the interview for 11 (38%) of those surveyed, who received their HIV diagnoses in 2006. These persons might have had poorer recall of risk behavior than those who received HIV diagnoses more recently. Second, the findings might not be representative of all HIV-infected young black MSM in the Jackson area because the sample size was small and 53% of the potential participants who were initially identified were not interviewed, primarily because they could not be located.

Reducing HIV transmission among young black MSM is challenging because of many factors, including sexual network patterns, sexual partnering with older men, high prevalence

¶ Additional information available at <http://www.cdc.gov/hiv/topics/research/prs/evidence-based-interventions.htm>.

\*\*Additional information available at <http://www.effectiveinterventions.org>.

of STDs, lack of awareness of one's HIV status, homophobia, HIV-related stigma and discrimination, and socioeconomic issues. CDC's Heightened National Response to the HIV/AIDS Crisis among African Americans aims to reduce HIV/AIDS in this population by expanding the reach of prevention services, increasing opportunities for diagnosis and treatment, developing new prevention interventions,<sup>††</sup> and mobilizing broader community action.<sup>§§</sup> In the United States, reducing the toll of HIV/AIDS on young black MSM will require a combination of strategies, including culturally specific behavioral interventions, expanded testing programs, and comprehensive campaigns to combat stigma.

### Acknowledgments

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### References

1. CDC. Subpopulation estimates from the HIV incidence surveillance system—United States, 2006. *MMWR* 2008;57:985–9.
2. CDC. Trends in HIV/AIDS diagnoses among men who have sex with men—33 states, 2001–2006. *MMWR* 2008;57:681–6.
3. CDC. HIV/AIDS surveillance in men who have sex with men. Available at <http://www.cdc.gov/hiv/topics/surveillance/resources/slides/msm/index.htm>.
4. Bingham TA, Harawa NT, Johnson DE, Secura GM, MacKellar DA, Valleroy LA. The effect of partner characteristics on HIV infection among African American men who have sex with men in the Young Men's Survey, Los Angeles, 1999–2000. *AIDS Educ Prev*. 2003;15(1 Suppl A):39–52.
5. Marks G, Crepaz N, Senterfitt JW, Janssen RS. Meta-analysis of high-risk sexual behavior in persons aware and unaware they are infected with HIV in the United States: implications for HIV prevention programs. *J Acquir Immune Defic Syndr* 2005;39:446–53.
6. CDC. Revised guidelines for HIV counseling, testing, and referral. *MMWR* 2001;50(No. RR-19):1–67.
7. CDC. HIV prevalence, unrecognized infection, and HIV testing among men who have sex with men—five U.S. cities, June 2004–April 2005. *MMWR* 2005;54:597–601.
8. CDC. HIV transmission among black college student and non-student men who have sex with men—North Carolina, 2003. *MMWR* 2004;53:731–4.

## Respiratory and Ocular Symptoms Among Employees of a Hotel Indoor Waterpark Resort — Ohio, 2007

During January–March 2007, the Warren County Combined Health District (WCCHD) received 665 reports of respiratory and eye irritation from patrons and lifeguards at a hotel indoor waterpark resort in Ohio. Tests revealed normal water chemistry and air chlorine concentrations, and exposure to airborne trichloramine in the waterpark was suspected as the cause of the symptoms. Because of the number of symptom reports and WCCHD's limited ability to measure trichloramine, the district requested an investigation by CDC's National Institute for Occupational Safety and Health (NIOSH). This report describes the results of that investigation, which revealed that trichloramine concentrations in the waterpark ranged from below the limit of detection to 1.06 mg/m<sup>3</sup>, and some concentrations were at levels that have been reported to cause irritation symptoms ( $\geq 0.5$  mg/m<sup>3</sup>) (1). Lifeguards reported significantly more work-related symptoms (e.g., cough, wheezing, shortness of breath, chest tightness, and eye irritation) than unexposed hotel employees. Lifeguards also reported significantly more eye irritation and cough on days when hotel occupancy was high versus low. Insufficient air movement and distribution likely led to accumulation of trichloramine and exacerbation of symptoms. Based on recommendations to increase air movement and distribution at pool deck level, hotel management modified the ventilation system extensively, and subsequently no new cases were reported to WCCHD. The results of this investigation emphasize the importance of appropriate design and monitoring of ventilation and water systems in preventing illness in indoor waterparks.

The indoor waterpark measures approximately 80,000 square feet and has a maximum occupancy of 3,746 persons. It contains 11 waterslides, two activity pools, two hot tubs, a wave pool, a leisure river, a four-story interactive play system, and several features that splash, spray, and aerate large amounts of water. Water flows by gravity through the main drains and gutter systems from the pool into designated surge tanks. The water is pumped out of the surge tanks and filtered. An automated chemical controller tests and adjusts the water's pH and chlorine concentration as needed by adding a sodium hypochlorite solution (to disinfect) and sulfuric acid (for pH).

The indoor waterpark opened in December 2006. Within 1 month, WCCHD had received 79 reports of eye and respiratory irritation from patrons and employees. Symptoms included red, burning, or itchy eyes; itchy or runny nose;

<sup>††</sup> Additional information available at <http://www.cdc.gov/hiv/topics/aa/resources/factsheets/pdf/aa.pdf>.

<sup>§§</sup> Additional information available at <http://www.cdc.gov/hiv/topics/aa/cdc.htm>.

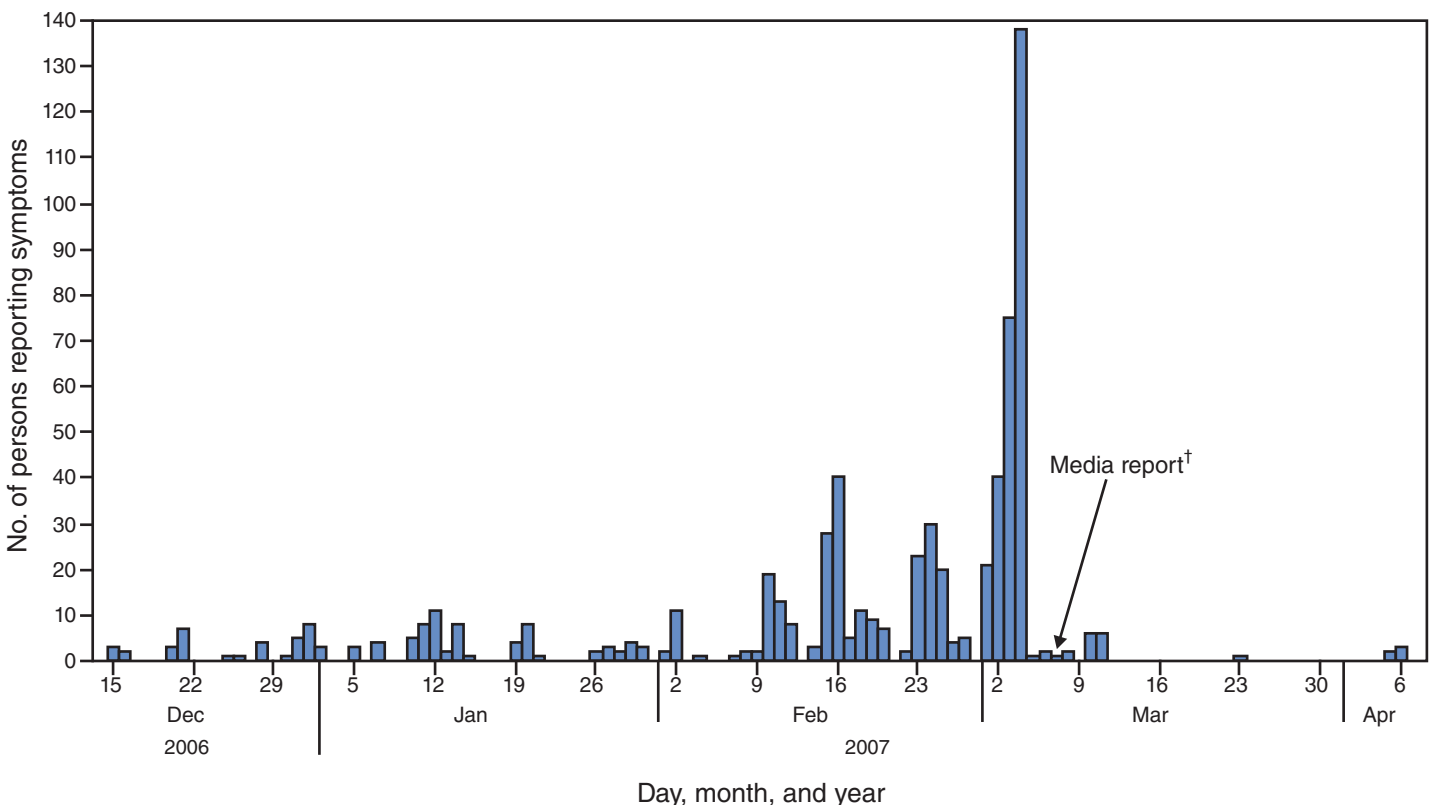
cough; wheezing; shortness of breath; chest tightness; and sore throat. Initial tests revealed normal water chemistry and air chlorine concentrations. In February and March 2007, management added additional air distribution outlets to the ventilation system, increased the frequency of water chemistry checks, and added more fresh water to all systems; however WCCHD continued to receive health complaints. By March 2007, WCCHD had received an additional 586 symptom reports (Figure). A marked increase in reported symptoms with onset of March 4 might be attributed to media coverage; on March 7, a family reported symptoms to the local media, and the ensuing media coverage resulted in a marked increase in telephone calls to the local health department with reports of symptoms with earlier onset dates. WCCHD's concern over the number of reports and limited technical resources prompted a technical assistance request to NIOSH, which focused its investigation on resort employees.

The investigation began in early March 2007. Initially, NIOSH investigators interviewed 10 lifeguards. All 10 reported having a cough during work at the waterpark that improved on

days off work. Seven reported eye irritation, and three reported nose irritation. Symptoms were worse when the number of persons using the waterpark was high. In March and April 2007, investigators reviewed the facility water chemistry logs and tested pool water on 2 separate days at multiple locations for pH and free and total chlorine. Investigators also reviewed facility plans to assess water and ventilation system designs. To assess the effect of the number of occupants in the pools (bather load) on trichloramine air concentrations, investigators collected 99 trichloramine area air samples on 2 high bather load days (more than 1,000 guests) and 1 low bather load day (fewer than 100 guests). Because no direct counting of bathers was possible, the number of persons booked at the hotel (i.e., hotel occupancy) was used as a proxy for bather load.

During March 20–April 24, 2007, NIOSH investigators conducted a survey of lifeguards working inside the waterpark (exposed) and hotel employees working outside the waterpark (unexposed). All participants filled out an initial questionnaire during this period concerning demographics, work and medical history, and work-related symptoms occurring during the

**FIGURE. Number of patrons and employees\* reporting respiratory symptoms or irritation of eyes or skin at a hotel indoor waterpark resort, by date of symptom onset — Ohio, December 2006–April 2007**



\* N = 665.

† The marked increase in reported symptoms with onset of March 4 might be attributed to media coverage; on March 7, a family reported symptoms to the local media, and the ensuing media coverage resulted in a marked increase in telephone calls to the local health department with reports of symptoms with earlier onset dates.

preceding month. Symptoms were considered work-related if they occurred on work days and improved on days off work. Lifeguards also completed an additional questionnaire about symptoms experienced during their shift on each day of trichloramine air sampling. Employees were defined as having asthma if they reported having asthma currently, it was diagnosed by a health professional, and it began before starting work at the waterpark.

Using data from the initial questionnaire, prevalence ratios (PRs) with 95% confidence intervals (CIs) were calculated to compare work-related symptoms during the preceding month for exposed and unexposed employees. Generalized linear models were used to compare respiratory symptoms for the exposure groups while controlling for smoking status and asthma. Using data from the questionnaires filled out on days of air sampling, work-related symptoms for lifeguards on days of high occupancy were compared with symptoms on days of low occupancy. Because some lifeguards filled out this questionnaire on more than 1 day of air sampling, generalized estimating equations were used to account for possible correlations between responses. The analyses involving respiratory symptoms for lifeguards on high and low occupancy days were adjusted for smoking status, and employees with asthma were excluded.

Seventy (68%) of 103 lifeguards working inside the waterpark and 74 (75%) of 99 employees working outside the waterpark completed the initial questionnaire. Lifeguards had significantly higher prevalences of work-related symptoms than unexposed employees (Table 1). Lifeguards also had significantly more work-related cough (PR = 2.2; CI = 1.1–4.5) and eye irritation (PR = 2.0; CI = 1.2–3.2) on days when hotel occupancy was high (Table 2). No other symptoms were significantly more prevalent on high occupancy days.

A total of 99 area air samples for trichloramine were taken at approximately 3–4 feet above pool deck level over 3 separate sampling days: March 20 (high occupancy day 1), April 14 (high occupancy day 2), and April 24, 2007 (low occupancy day). Twenty-four of the samples were quantifiable (i.e., concentrations could be determined); the remaining samples were found at trace levels (i.e., trichloramine was detected but levels were too low to quantify) or trichloramine was not detected. All quantifiable samples were collected on high occupancy days, and 13 (54%) of the 24 exceeded 0.5 mg/m<sup>3</sup>, the level at which irritation symptoms have been documented (1). The highest trichloramine concentration found was 1.06 mg/m<sup>3</sup>. On the low occupancy day, no samples were quantifiable. However, on this day, the lowest level at which investigators could quantify samples was substantially higher than on the other days (2).

**TABLE 1. Number and percentage of employees at a hotel indoor waterpark resort who reported work-related symptoms during the preceding month,\* by symptom and exposure status — Ohio, 2007**

Symptom	Exposed (i.e., lifeguards)†		Unexposed (i.e., hotel employees working outside the waterpark)		Prevalence ratio (95% CI)§
	No.	(%)	No.	(%)	
Sore throat	22/69	(32)	2/74	(3)	11.8 (2.9–48.3)
Cough	48/69	(70)	5/74	(7)	10.2 (4.3–24.2)**
Wheezing	20/69	(29)	2/74	(3)	9.7 (2.4–40.2)**
Eye irritation	51/70	(73)	6/74	(8)	9.0 (4.1–19.6)
Shortness of breath	26/68	(38)	4/74	(5)	6.7 (2.5–18.2)**
Chest tightness	19/68	(28)	3/74	(4)	6.7 (2.1–21.4)**
Nose irritation	33/69	(48)	10/74	(14)	3.5 (1.9–6.6)

\* Symptoms experienced on any days or evenings that the employee worked during the month before filling out the initial questionnaire, and which improved on days off work; analysis restricted to questionnaires received during March 20–April 2, 2007.

† Denominator varies because of missing data for some symptoms reported.

§ Confidence interval.

\*\* Generalized linear models were used to compare respiratory symptoms for the exposure group while controlling for smoking status and asthma. Employees were defined as having asthma if they reported having asthma currently, it was diagnosed by a health professional, and it began before starting work at the waterpark.

**TABLE 2. Number and percentage of lifeguards at a hotel indoor waterpark resort who reported work-related symptoms,\* by symptom and level of hotel occupancy† — Ohio, 2007**

Symptom	High occupancy day 1 (n = 14)		High occupancy day 2 (n = 29)		Low occupancy day (n = 27)	
	No.	(%)	No.	(%)	No.	(%)
Cough§	9	(64)	16	(55)	6	(22)
Eye irritation	9	(64)	20	(69)	9	(33)
Nose irritation	4	(29)	10	(34)	4	(15)
Wheezing§	1	(7)	7	(24)	2	(7)
Shortness of breath§	2	(14)	6	(21)	4	(15)
Chest tightness§	3	(21)	5	(17)	0	
Sore throat	6	(43)	2	(7)	4	(15)
Blurry or foggy vision	—¶		9	(31)	0	
Blue-gray vision	—¶		3	(10)	1	(4)
Halo vision	—¶		3	(10)	0	

\* Symptoms experienced at work, starting at beginning, middle, or end of shift.

† High occupancy (more than 1,000 guests) versus low occupancy (fewer than 100 guests). Because no direct counting of bathers was possible, the number of persons booked at the hotel (i.e., hotel occupancy) was used as a proxy for bather load.

§ Adjusted for smoking status.

¶ This information was not collected on the initial version of the questionnaire and therefore is missing for this day.

Water chemistry tests at the waterpark met state standards. However, review of the ventilation and water system designs identified several areas of concern. In the children's pool water system, the spray features drew water directly from the surge tank, bypassing the filtration and chemical treatment system. In

addition, the ventilation system might not have provided sufficient air movement and distribution to guarantee adequate capture and removal of air contaminants, including trichloramine, at the pool surface and deck levels. Concerns also included the high placement of air supply and return ducts. Furthermore, recirculation of air during winter months might have resulted in increased concentrations of airborne contaminants, including trichloramine. The ventilation system recirculates up to 33% of indoor air when outdoor temperatures fall below 40°F (4°C), which occurred in January and February 2007. NIOSH recommended that the indoor waterpark modify its water and ventilation systems to address the identified design concerns that could help reduce the amount of airborne contaminants, including trichloramine. Subsequently, substantial ventilation system modifications were made by repositioning air supply and return ducts closer to the pool deck.

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**Editorial Note:** Chloramines are disinfection by-products formed when chlorine combines with nitrogen-containing compounds such as sweat and urine. They include monochloramine, dichloramine, and trichloramine. Trichloramine is the main chloramine compound present above chlorinated water surfaces (3) and has been suspected as the cause of outbreaks of eye and respiratory irritation at indoor pools (4,5). Increased bather load has been associated with increased trichloramine levels (6), most likely because of increased nitrogen compounds from bathers. Other factors affecting airborne trichloramine concentration include water chemistry, air recirculation, and aerosolization of water contaminants from splashing and spraying (1,7). This investigation identified airborne trichloramine exposure as the likely cause of ocular and respiratory symptoms experienced by lifeguards and patrons. This conclusion is supported by the detection of trichloramine at or exceeding levels known to cause irritation symptoms, the significant excess of work-related symptoms among lifeguards compared with unexposed hotel employees, and the significant excess of work-related cough and eye irritation among lifeguards on high occupancy days. In March, when the resort began circulating outside air into the waterpark, the number of reported symptoms decreased markedly.

Trichloramine is a strong mucous membrane irritant (8) and has been associated with eye and respiratory tract irritation and asthma in swimmers and pool attendants (7). One study found that nonswimmers did not report symptoms

until the trichloramine concentration reached 0.5 mg/m<sup>3</sup>, and all nonswimmers reported symptoms at 0.7 mg/m<sup>3</sup> (1). The World Health Organization recommends an airborne trichloramine concentration of 0.5 mg/m<sup>3</sup> as a provisional value (9). Currently, no NIOSH or Occupational Safety and Health Administration (OSHA) occupational exposure limits exist for airborne trichloramine.

The findings in this report are subject to at least three limitations. First, the chloramine analytical methods used by NIOSH are still in development, and limitations exist in quantifying trichloramine at low concentrations (2). Second, personal samplers for trichloramine could not be placed on lifeguards because the sampling equipment could interfere with rescue duties or get wet and malfunction. This limited the ability to evaluate the association between trichloramine concentrations and symptoms. Finally, ventilation measurements using standard airflow evaluation techniques, such as smoke visualization and tracer gas testing, were difficult given the large size of the waterpark. Instead, ventilation system designs were reviewed and compared with relevant standards and guidelines.

Indoor waterparks have extensive splash features that introduce potentially more risk for recreational water-related illness than typical indoor pools. These complex environments require a holistic approach to reduce symptoms caused by the aerosolization of water contaminants. Means of controlling contaminant production include increasing fresh water dilution, keeping combined chlorine levels as low as possible, and reducing activation time of splash features. In addition, proper ventilation design can provide adequate air movement and contaminant capture (10).

The first hotel indoor waterpark resort opened in the United States in 1994. By 2007, an estimated 184 facilities had been established. This industry is fast growing, and clinicians, public health officials, managers, and employees need to be aware of the risks and understand the importance of controlling contaminant production and proper ventilation design in reducing irritation symptoms.

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#### References

1. Hery M, Hecht G, Gerber JM, Gendre JC, Hubert G, Rebuffaud J. Exposure to chloramines in the atmosphere of indoor swimming pools. *Ann Occup Hyg* 1995;39:427-39.



- Chen L, Dang B, Mueller C, et al. Health hazard evaluation report: investigation of employee symptoms at an indoor waterpark. Cincinnati, OH: US Department of Health and Human Services, CDC, National Institute for Occupational Safety and Health; 2008. Report no. HETA2007-0163-3062. Available at <http://www.cdc.gov/niosh/hhe/reports/pdfs/2007-0163-3062.pdf>.
- Holzwarth G, Balmer RG, Soni L. The fate of chlorine and chloramines in cooling towers. *Water Res* 1984;18:1421–7.
- Bowen AB, Kile JC, Otto C, et al. Outbreaks of short-incubation ocular and respiratory illness following exposure to indoor swimming pools. *Env Health Pers* 2007;115:267–71.
- Kaydos-Daniels SC, Beach MJ, Shwe T, Magri J, Bixler D. Health effects associated with indoor swimming pools: a suspected toxic chloramine exposure. *Public Health* 2008;122:195–200.
- Jacobs JH, Spaan S, van Rooy GB, et al. Exposure to trichloramine and respiratory symptoms in indoor swimming pool workers. *Eur Respir J* 2007;29:690–8.
- Massin N, Bohadana AB, Wild P, Hery M, Toamain JP, Hubert G. Respiratory symptoms and bronchial responsiveness in lifeguards exposed to nitrogen trichloride in indoor swimming pools. *Occup Environ Med* 1998;55:258–63.
- Barbee SJ, Thackara JW, Rinehart WE. Acute inhalation toxicology of nitrogen trichloride. *Am Ind Hyg Assoc J* 1983;44:145–6.
- World Health Organization. Guidelines for safe recreational water environments. Volume 2: swimming pools and similar environments. Geneva, Switzerland: World Health Organization; 2006. Available at [http://www.who.int/water\\_sanitation\\_health/bathing/srwe2full.pdf](http://www.who.int/water_sanitation_health/bathing/srwe2full.pdf).
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers. Heating, ventilating, and air-conditioning applications. ASHRAE handbook. Atlanta, GA: American Society of Heating, Refrigerating, and Air-Conditioning Engineers; 2007.

## Multistate Outbreak of *Salmonella* Infections Associated with Peanut Butter and Peanut Butter-Containing Products — United States, 2008–2009

On January 29, this report was posted as an MMWR Early Release on the MMWR website (<http://www.cdc.gov/mmwr>).

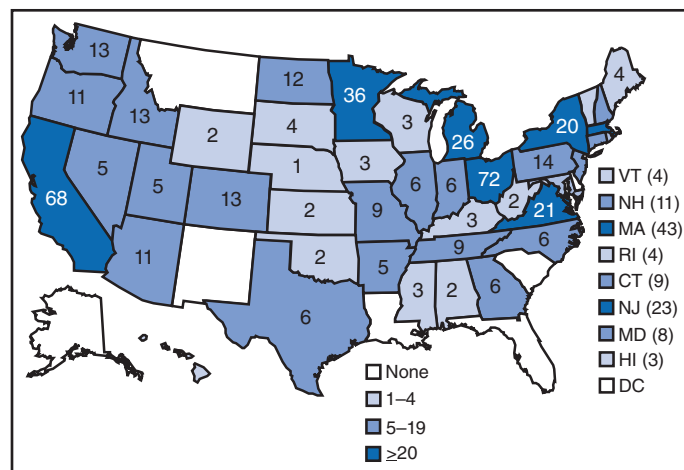
On November 25, 2008, an epidemiologic assessment began of a growing cluster of *Salmonella* serotype Typhimurium isolates that shared the same pulsed-field gel electrophoresis (PFGE) pattern in PulseNet.\* As of January 28, 2009, 529 persons from 43 states (Figure 1) and one person from Canada had been reported infected with the outbreak strain. This report is an interim summary of results from ongoing epidemiologic studies and recall and control activities by CDC, the Food and Drug Administration (FDA), and state and local public health agencies. Confirmed, reported onset of illness dates have ranged from September 1, 2008, to January 16, 2009. A total

of 116 patients were reported hospitalized, and the infection might have contributed to eight deaths. Sequential case-control studies have indicated significant associations between illness and consumption of any peanut butter (matched odds ratio [mOR] = 2.53), and specific brands of prepackaged peanut butter cracker (mOR = 12.25), but no association with national brand jarred peanut butter sold in grocery stores. Epidemiologic and laboratory findings indicate that peanut butter and peanut paste produced at one plant are the source of the outbreak. These products also are ingredients in many foods produced and distributed by other companies. This outbreak highlights the complexities of “ingredient-driven” outbreaks and the importance of rapid outbreak detection and investigation. Consumers are advised to discard and not eat products that have been recalled (Box).

### Initial Outbreak Investigation

On November 10, 2008, CDC’s PulseNet staff noted a small and highly dispersed multistate cluster of 13 *S. Typhimurium* isolates with an unusual PFGE pattern (*Xba*I PFGE pattern JPXX01.1818) reported from 12 states. On November 25, CDC’s OutbreakNet team, working with state and local partners, began an epidemiologic assessment of that cluster, which had increased to 35 isolates. On December 2, CDC and state and local partners began an assessment of a second cluster of 41 *S. Typhimurium* isolates. The PFGE patterns of the second cluster (*Xba*I pattern JPXX01.0459/JPXX01.1825) were very similar to the patterns in the first cluster and were first noted by

FIGURE 1. Number of laboratory-confirmed cases (N = 529)\* of *Salmonella* Typhimurium infection with the outbreak strain associated with peanut butter and peanut butter-containing products — United States, 2008–2009



\* Cases reported as of January 28, 2009. Cases reported in the previous 3 weeks might not yet be reported.

\*The national molecular subtyping network for foodborne disease surveillance.

**BOX. Recommendations for consumers regarding peanut butter and peanut-containing products associated with a multistate outbreak of *Salmonella* Typhimurium infections — United States, 2008–2009.**

- Consumers should not eat any peanut butter or peanut-containing products that have been recalled.
- Consumers who have recalled products in their homes should discard those products.
- Consumers also should avoid eating products made with peanut butter or peanut paste if they are unsure whether these products have been recalled. National brands of jarred peanut butter sold in grocery stores have not been implicated in this outbreak.
- Persons with pets should know that certain pet foods and pet treats can contain peanut butter, including dog biscuits and bird food. Persons with a recalled pet product in the home should not feed the product to their pet or other animals.
- To determine whether a product has been recalled, consumers can search the list of recalled products at the Food and Drug Administration (FDA) website (<http://www.fda.gov/oc/opacom/hottopics/salmonellatyph.html>) or telephone the consumer hotline number on the product packaging to get information directly from the product manufacturer.
- Consumers without Internet access can telephone 1-800-CDC-INFO (1-800-232-4636), 24 hours a day, 7 days a week, for product recall information from the FDA website and for other information on salmonellosis.
- Persons who think they might have become ill from eating peanut butter or peanut-containing products should consult their health-care providers. Infants, elderly persons, and persons with impaired immune systems are more likely than others to develop severe illness.

PulseNet on November 24, as a cluster of 27 isolates that had subsequently increased to 41 isolates. None of these patterns were seen previously in the PulseNet *S. Typhimurium* database. Testing with a second PFGE enzyme (*BlnI*) showed that isolates from both clusters had the same pattern (JPXA26.0462) and were indistinguishable by multilocus variable-number tandem-repeat analysis, a different PulseNet subtyping method. The outbreak strain has the phage type 3 and is fully susceptible to all antimicrobials in the National Antibiotic Resistance

Monitoring System panel for gram-negative bacteria.<sup>†</sup> The clusters also appeared similar epidemiologically, so the two patterns were grouped together as a single outbreak strain, and the investigations were merged. The outbreak strain did not exist in the National VetNet database, which contains PFGE patterns of *Salmonella* isolates from raw meat and poultry products, and which CDC and the U.S. Department of Agriculture's Food Safety and Inspection Service monitor.

A case was defined as a laboratory-confirmed infection of *S. Typhimurium* with the outbreak strain in a person with illness onset date (or, if that date was not known, with date of isolation of *Salmonella*) on or after September 1, 2008. As of January 28, 2009, onset dates were known for 424 of 529 patients and ranged from September 1, 2008, to January 16, 2009 (Figure 2). Although numbers of reported cases have decreased in recent weeks, the outbreak appears to be ongoing. The median age of patients was 16 years, with an age range of <1 to 98 years; 21% were aged <5 years, and 15% were aged >59 years. Of those patients, 48% were female, 116 (22%) were hospitalized, and the infection might have contributed to eight deaths in patients aged ≥59 years from Minnesota (three deaths), Virginia (two), Idaho (one), North Carolina (one), and Ohio (one). A median of 16 days elapsed from the day the illness began to the date the PFGE pattern was uploaded to PulseNet (Figure 2).

The initial epidemiologic investigation included detailed open-ended interviews with patients. Patient interviews were conducted by CDC and state and local health departments using a questionnaire with approximately 300 food items. Early interviews, case reports, and identification of small clusters of cases suggested a possible association with institutional settings, although noninstitutionalized patients often reported consumption of peanut butter of multiple brands. In the initial investigation, among the most frequently reported food exposures in the 7 days before illness began, 86% of patients interviewed reported they were likely to have eaten chicken and 77% were likely to have eaten peanut butter. By comparison, the frequencies in the general public of eating these items were 85% for chicken and 59% for peanut butter in a 2006–2007 FoodNet<sup>§</sup> food consumption survey (1).

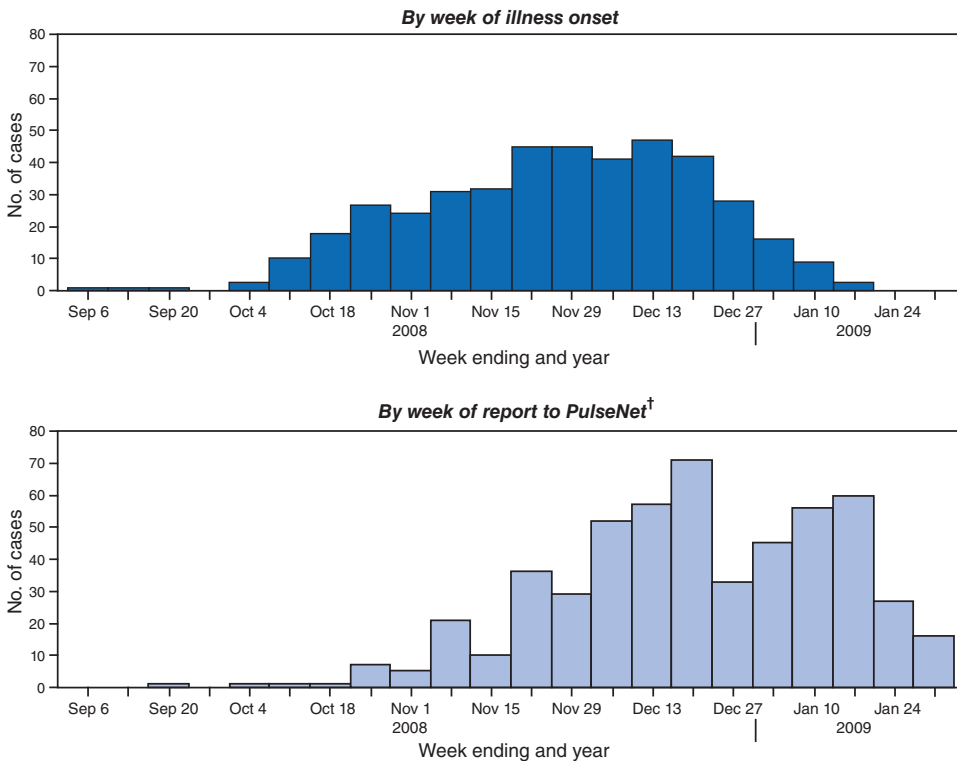
### Association with Peanut Butter

Many affected state health departments, including the Minnesota Department of Health (MDH), conducted intensive investigations of patients infected with the outbreak strain. By December 28, MDH had learned from patient interviews that some patients infected with the outbreak strain lived or

<sup>†</sup> Includes amikacin, amoxicillin-clavulanic acid, ampicillin, cefoxitin, ceftiofur, ceftriaxone, chloramphenicol, ciprofloxacin, gentamicin, kanamycin, nalidixic acid, streptomycin, sulfisoxazole, tetracycline, and trimethoprim-sulfamethoxazole.

<sup>§</sup> Foodborne diseases active surveillance network.

**FIGURE 2. Number of laboratory-confirmed cases (N = 529)\* of *Salmonella* Typhimurium infection with the outbreak strain associated with peanut butter and peanut butter-containing products — United States, 2008–2009**



\* Cases reported as of January 28, 2009. Cases beginning in the most recent 3 weeks might not yet be reported.

† The national molecular subtyping network for foodborne disease surveillance.

ate meals in one of at least three institutions (two long-term-care facilities and one elementary school). A review of menus and invoices by MDH and the Minnesota Department of Agriculture (MDA) revealed that the institutions had a common food distributor in North Dakota, and the only food common to the three institutions was King Nut creamy peanut butter. By January 9, 2009, six additional cases in six other institutions were identified by MDH; each of those institutions had received King Nut peanut butter. An open container of King Nut peanut butter was collected from one of the institutions, a long-term-care facility, on January 5 for testing at MDA. On January 9, the MDA laboratory reported isolation of *Salmonella* from the King Nut peanut butter sample. This was confirmed on January 12 as *S. Typhimurium* of the outbreak strain.

On January 3 and 4, 2009, data were gathered for a case-control study by CDC and state and local health departments to identify whether illness was associated with eating specific food items; 70 cases and 178 controls were enrolled from 12 participating states. For this study, a case was defined as infection with the outbreak strain of *S. Typhimurium* in a

person without preceding diarrheal illness in household members and who did not live in an institutional setting, with illness onset (or, if that date was not known, with date of isolation of *Salmonella*) on or after November 1, 2008. Controls recruited using a reverse-digit-dialing system were well persons, matched by case neighborhood and age category (i.e., <18 years or ≥18 years). Food histories were sought for the 7 days before illness onset for case-patients and 7 days before interview for controls. The median ages for case-patients and controls were 18 and 16 years, respectively. By January 9, preliminary analysis found that case-patients were significantly more likely than controls to have eaten any peanut butter in the 7 days before illness began (69% of case-patients versus 48% of controls, mOR = 2.53, 95% confidence interval [CI] = 1.26–5.31, p=0.007). Illness also was associated with eating any of a group of previously frozen chicken products (i.e., chicken nuggets, chicken strips, and other breaded and stuffed chicken products)

(35% of case-patients versus 14% of controls, mOR = 4.61, CI = 1.67–14.68, p=0.002), but not with any individual chicken product; no individual frozen chicken product type was reported eaten by more than 10% of case-patients. Illness was not associated with eating roasted peanuts or national brands of jarred peanut butter sold in grocery stores.

On January 16, the Connecticut Department of Public Health Laboratory isolated the outbreak strain of *S. Typhimurium* from a previously unopened 5-pound container of King Nut creamy peanut butter. As of January 28, 16 clusters of cases, each with at least two patients infected with the outbreak strain, were reported in five states. All clusters were in institutional facilities. King Nut was the only brand of peanut butter used in the 16 facilities.

All versions of King Nut peanut butter were produced by Peanut Corporation of America (PCA) at a single facility in Blakely, Georgia. An environmental investigation at the PCA plant was initiated by FDA and the Georgia Department of Agriculture on January 9, and a CDC epidemiologist joined the investigation team on January 10. King Nut peanut butter was distributed in bulk packaging to institutions, food service

industries, and private label food companies. King Nut peanut butter was not known to be sold directly to consumers or distributed for retail sale in grocery stores.

On January 22, MDA found that a previously unopened container of King Nut peanut butter collected from the North Dakota distributor yielded *Salmonella* serotype Tennessee with a PFGE pattern that was indistinguishable from an outbreak strain in the multistate outbreak in 2006–2007 caused by contaminated peanut butter (2).

### Association with Peanut Butter–Containing Products

Ongoing patient interviews indicated that many patients did not eat peanut butter in institutions, but had eaten various other peanut butter–containing products. FDA investigators reported that the PCA facility in Blakely produced peanut butter and also peanut paste (also made from ground roasted peanuts) and other peanut products, which were sold to many food companies for use as an ingredient in peanut butter–containing foods; these peanut butter–containing products are widely distributed in the United States and also are distributed in at least 23 other countries and non-U.S. territories.<sup>‡</sup>

During January 17–19, a second case-control study was conducted by CDC and state and local health departments to further assess these exposures; 93 cases and 399 controls were enrolled from 35 participating states. For this study, a case was defined as infection with the outbreak strain of *S. Typhimurium* in a person without preceding diarrheal illness in household members and who did not live in an institutional setting, with illness onset (or, if that date was not known, with date of isolation of *Salmonella*) on or after December 1, 2008. Controls were well persons, matched by case neighborhood and frequency matched by age groups (i.e., 0 to <6 years, 6 to <18 years, 18 to <40 years, and ≥40 years), who were recruited using a reverse-digit–dialing system. Controls were interviewed about the same exposure period as their matched case-patient (i.e., 7 days before the onset of the case diarrheal illness). Median ages of case-patients and controls were 17 and 39 years, respectively. Preliminary analysis found that patients were more likely than controls to have eaten prepackaged peanut butter crackers in the 7 days before illness began [73% case-patients versus 17% controls, mOR = 12.25, CI = 5.51–30.9,  $p \leq 0.0001$ ]. Two cracker brands were individually associated: Austin [43% case-patients versus 3% controls,

mOR = 29.68, CI = 8.95–154.66,  $p \leq 0.0001$ ] and Keebler [20% case-patients versus 4% controls, mOR = 5.38, CI = 1.74–18.32,  $p = 0.003$ ] peanut butter crackers. Both Austin and Keebler brand peanut butter crackers are made at one plant, which is known to receive peanut paste from PCA. No evidence was discovered of an epidemiologic association with eating roasted peanuts.

Intact packages of Austin brand Toasty peanut butter crackers that had been purchased in the United States were obtained from the home of a patient in Canada by the Canadian Food Inspection Agency. Culture of a composite sample of the crackers yielded the outbreak strain of *S. Typhimurium*. *Salmonella* resembling the outbreak strain was isolated by a private laboratory from three intact packages of Austin brand Toasty peanut butter crackers obtained from a patient's home in Oregon.

### Control Measures

On January 9, PCA voluntarily stopped production of peanut butter and peanut paste at the Blakely, Georgia, facility. On January 10, King Nut Company issued a voluntary recall of specific lot numbers of peanut butter manufactured by PCA and distributed under King Nut and Parnell's Pride labels. On January 16, PCA announced a voluntary recall of all peanut butter and peanut paste produced in its Blakely facility since July 1, 2008. On January 28, the PCA recall was expanded to include all peanuts and peanut products processed at this plant since January 1, 2007. In addition to peanut butter and peanut paste, the expanded recall includes dry- and oil-roasted peanuts, granulated peanuts, and peanut meal. On January 28, 2009, the facility reported that production of all peanut products had stopped. The latest information on the PCA recall can be found on the FDA website.\*\*

To date, FDA inspectors have traced the shipments of these products to approximately 2,100 accounts and sub-accounts. FDA is working to identify additional products that might be affected and to track the ingredient supply chain of those products to remove them from the marketplace. On January 14, the Kellogg Company announced a precautionary hold on Austin and Keebler brands of peanut butter crackers, and on January 16, voluntarily recalled these products produced after July 1, 2008. As of January 28, at least 431 peanut butter–containing products had been recalled by 54 companies

<sup>‡</sup> As of January 27, 2009, FDA was aware of distribution in the following countries and non-U.S. territories: Aruba, Australia, the Bahamas, Bermuda, Canada, the Cayman Islands, Haiti, Italy, Jamaica, Japan, Korea, Malaysia, Mexico, the Netherlands, New Zealand, Norway, St. Maarten, St. Vincent and the Grenadines, Singapore, Slovenia, Spain, the Turks and Caicos Islands, and the United Kingdom..

\*\* Information on the PCA recall is available from FDA at [http://www.fda.gov/oc/po/firmrecalls/peanutcorp401\\_09.html](http://www.fda.gov/oc/po/firmrecalls/peanutcorp401_09.html) and at <http://www.fda.gov/oc/opa-com/hottopics/salmonellatyph.html>. The latest update on the epidemiologic investigation is available at <http://www.cdc.gov/salmonella/typhimurium>.

†† The current list of recalled products with a searchable format can be found on the FDA website (<http://www.accessdata.fda.gov/scripts/peanutbutterrecall/index.cfm>).

that had used ingredients produced by the PCA facility after July 1, 2008.<sup>††</sup>

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**Editorial Note:** Each year, approximately 40,000 laboratory-confirmed cases of *Salmonella* infections are reported to the National *Salmonella* Surveillance System.<sup>§§</sup> *S. Typhimurium* is the most commonly reported serotype. In 2006, 19% of all reported salmonellosis cases for which a serotype was identified were caused by the *Typhimurium* serotype (3). This outbreak likely is considerably larger than the 529 laboratory-confirmed cases reported to CDC; only an estimated 3% of *Salmonella* infections are laboratory confirmed and reported to surveillance systems (4). During 2003–2007, an annual average of 18 outbreaks caused by *S. Typhimurium* were reported to CDC.<sup>¶¶</sup> The rates of hospitalization and mortality observed in the current outbreak are typical for *Salmonella*, and this strain does not appear to be unusually virulent.

The epidemiologic and laboratory findings from this continuing investigation indicate that peanut butter and peanut paste produced at the PCA plant are the source of the outbreak. More specifically, the outbreak was caused by contaminated peanut butter used in institutions, and by peanut butter and peanut paste used as ingredients in food products. The second case-control study indicated a particular risk with peanut butter crackers, but this does not exonerate other peanut-containing products.

After one brand of peanut butter served in institutions was implicated by epidemiologic and laboratory evidence, the investigation was expanded to include food items that use peanut butter and peanut paste made in the same factory as ingredients in peanut butter-containing products. This

was an ingredient-driven outbreak, in which a contaminated ingredient affected many different products that are distributed through various channels and consumed in various settings. Peanut butter and peanut paste are common ingredients in cookies, crackers, cereal, candy, ice cream, pet treats, and other foods. Mass food distribution can lead to widely distributed nationwide outbreaks. The large number of products and brands recalled already, and the large quantities of some products recalled, makes this one of the largest recalls in the United States.

This is the second outbreak caused by contaminated peanut butter in the United States. The first outbreak was caused by contamination of a commercially distributed brand of peanut butter with *S. Tennessee* during 2006–2007 (2). Only one other previous outbreak associated with peanut butter has been reported; an outbreak of *Salmonella* serotype Mbandaka infections in Australia in 1996 (5).

The detection of a *S. Tennessee* isolate with a PFGE pattern that is indistinguishable from the 2006–2007 strain in a recently manufactured container of King Nut peanut butter is notable. However, the *S. Tennessee* strain is not associated with an increase in illnesses now. The implicated plant in 2006–2007 is located approximately 70 miles from the PCA plant in Blakely. A possible association between the two outbreaks warrants further investigation. The relationship of the *S. Tennessee* finding to the current outbreak is being investigated further.

The mechanism of contamination for the current outbreak have not yet been determined. However, the recurring problem of *Salmonella* associated with contaminated peanut butter highlights the importance of including a kill step for harmful pathogens during manufacture (e.g., proper roasting) and of preventing contamination of peanut butter after the initial roasting process. *Salmonella* organisms persist indefinitely in high-fat, low-water-activity foods such as peanut butter (6), and in such foods, *Salmonella* can withstand temperatures as high as 194°F (90°C) for 50 minutes (7). Typically, peanuts for peanut butter are roasted at approximately 350°F (180°C), a temperature that should be sufficient to kill *Salmonella* in a short period. However, some temperatures used in processing peanut butter or paste in other products might be inadequate to eliminate *Salmonella* introduced after the initial peanut roasting.

When this outbreak was first detected, its source was not immediately apparent. A likely source of the current outbreak emerged only after several weeks of detailed case interviews, investigations of local clusters of illness, and joint epidemiologic efforts across states. Rapid traceback of the first implicated product to its point of manufacture was critical in unraveling the entire outbreak. Rapid investigation of apparently localized

<sup>§§</sup> The National *Salmonella* Surveillance System collects information on serotypes of *Salmonella* isolates reported through the Public Health Laboratory Information System, an electronic reporting system. Additional information is available at <http://www.cdc.gov/ncidod/dbmd/phlisdata/salmonella.htm>.

<sup>¶¶</sup> Data from CDC's Electronic Foodborne Outbreak Reporting System (eFORS), unpublished data; 2008. Cases reported as of January 29, 2009. Cases beginning in the most recent 3 weeks might not yet be reported.

outbreaks can provide critical clues to solving large and dispersed national outbreaks. This outbreak illustrates again the central importance of the capacity to perform *Salmonella* serotyping and molecular subtyping in public health laboratories for detecting and investigating outbreaks, and the critical value of rapid epidemiologic and regulatory investigative capacity.

### Acknowledgments

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### References

1. CDC. Foodborne Diseases Active Surveillance Network (FoodNet) population survey data. Atlanta, GA: US Department of Health and Human Services, CDC; 2006–2007. Available at <http://www.cdc.gov/foodnet>.
2. CDC. Multistate outbreak of *Salmonella* serotype Tennessee infections associated with peanut butter—United States, 2006–2007. *MMWR* 2007;21:521–4.
3. CDC. Public Health Laboratory Information Service (PHLIS) surveillance data: *Salmonella* annual summary, 2006. Atlanta, GA: US Department of Health and Human Services, CDC; 2008. Available at [www.cdc.gov/ncidod/dbmd/phlisdata/salmonella.htm](http://www.cdc.gov/ncidod/dbmd/phlisdata/salmonella.htm).
4. Voetsch AC, Van Gilder TJ, Angulo FJ, et al. FoodNet estimate of the burden of illness caused by nontyphoidal *Salmonella* infections in the United States. *Clin Infect Dis* 2004;38:S127–34.
5. Scheil W, Cameron S, Dalton C, Murray C, Wilson D. A South Australian *Salmonella* Mbandaka outbreak investigation using a database to select controls. *Aust N Z J Public Health* 1998;22:536–9.
6. Mattick KL, Jorgensen F, Legan JD, Lappin-Scott HM, Humphrey TJ. Habituation of *Salmonella* spp. at reduced water activity and its effect on heat tolerance. *Appl Environ Microbiol* 2001;66:4921–5.
7. Shachar D, Yaron S. Heat tolerance of *Salmonella enterica* serovars Agona, Enteritidis, and Typhimurium in peanut butter. *J Food Protect* 2006;69:2687–91.

### Notice to Readers

#### Epi Info Training

Emory University's Rollins School of Public Health and CDC's Office of the Workforce and Career Development will cosponsor two training courses for Epi Info in March 2009: a basic level course, March 9–11, and an intermediate to advanced level course, March 12–14. Courses will be held at Emory University in Atlanta, Georgia, and tuition will be charged.

These courses are designed for practitioners of epidemiology and computing who wish to develop software applications using Epi Info for Windows. The basic course covers MakeView, Analysis, Enter, Epi Map, and Epi Report. The intermediate to advanced course covers importing and converting other data formats; creating relational databases; advanced check-coding and using Epi Info functions; advanced analysis including linear regression, logistic regression, Kaplan Meier, Cox proportional hazards, complex sample frequencies, tables and means; special topics on Epi Map and Epi Report; and issues related to participants' projects.

Additional information and applications are available by mail: Emory University, Rollins School of Public Health, 1518 Clifton Road NE, Room 746, Atlanta, GA 30322; by fax: 404-727-4590; online: <http://www.sph.emory.edu/epicourses>; or by e-mail: [pvaleri@sph.emory.edu](mailto:pvaleri@sph.emory.edu).

**Errata: Vol. 57, Nos. 51 & 52**

In the report, “Reduced Hospitalizations for Acute Myocardial Infarction After Implementation of a Smoke-Free Ordinance — City of Pueblo, Colorado, 2002–2006,” on page 1376, in the table, sex-specific rates were calculated using a denominator of total person-years for both sexes combined. The corrected table calculating sex-specific rates using a sex-specific denominator follows.

**Erratum: Vol. 58, No. 2**

In the report, “State-Specific Smoking-Attributable Mortality and Years of Potential Life Lost — United State, 2000–2004,” an error occurred in Table 2 on page 32. The heading over the three right columns of the figure should read “Change in SAM rates.”

**TABLE. Number and rate\* of hospitalizations for acute myocardial infarction (AMI) before and after smoking ordinance, by sex and area — city of Pueblo, Pueblo County outside city of Pueblo limits, and El Paso County, Pueblo Heart Study, January 2002–June 2006†**

Area	Pre-implementation period <sup>§</sup>		Phase I post-implementation period <sup>¶</sup>		Phase II post-implementation period <sup>**</sup>		Relative rate (RR) for AMI (Phase I vs. pre-implementation)	Relative rate for AMI (Phase II vs. Phase I)	Relative rate for AMI (Phase II vs. pre-implementation)
	No.	Rate	No.	Rate	No.	Rate	RR (95% CI <sup>††</sup> )	RR (95% CI)	RR (95% CI)
<b>City of Pueblo (intervention area)</b>									
Male	233	310	175	233	157	209	0.75 (0.61–0.90)	0.90 (0.69–1.10)	0.67 (0.52–0.82)
Female	166	207	116	145	80	100	0.70 (0.53–0.87)	0.69 (0.51–0.87)	0.48 (0.36–0.60)
Total	399	257	291	187	237	152	0.73 (0.64–0.82)	0.81 (0.67–0.96)	0.59 (0.49–0.70)
<b>Pueblo County outside city of Pueblo limits (comparison area)</b>									
Male	55	147	55	147	63	169	1.00 (0.58–1.42)	1.15 (0.64–1.65)	1.15 (0.59–1.70)
Female	34	93	21	57	29	79	0.62 (0.28–0.95)	1.38 (0.70–2.06)	0.85 (0.38–1.32)
Total	89	135	76	115	92	139	0.85 (0.56–1.14)	1.21 (0.80–1.62)	1.03 (0.68–1.39)
<b>El Paso County (comparison area)</b>									
Male	872	201	849	196	815	188	0.97 (0.87–1.08)	0.96 (0.84–1.08)	0.93 (0.84–1.03)
Female	427	99	392	91	415	96	0.92 (0.78–1.05)	1.06 (0.90–1.21)	0.97 (0.84–1.10)
Total	1,299	157	1,241	150	1,230	149	0.96 (0.87–1.04)	0.99 (0.91–1.08)	0.95 (0.87–1.03)

\* Per 100,000 sex-specific or total person-years. Based on U.S. Census Bureau population data for 2006.

† Because of receipt of routinely amended coding data from the Colorado Hospital Association, certain data points for the pre-implementation and Phase I post-implementation periods differ from those published previously (Bartecchi C, Alsever RN, Nevin-Woods C, et al. Reduction in the incidence of acute myocardial infarction associated with a citywide smoking ordinance. *Circulation* 2006;114:1490–6).

§ January 2002–June 2003.

¶ July 2003–December 2004.

\*\* January 2005–June 2006.

†† Confidence interval.

**TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending January 31, 2009 (4th week)\***

Disease	Current week	Cum 2009	5-year weekly average†	Total cases reported for previous years					States reporting cases during current week (No.)
				2008	2007	2006	2005	2004	
Anthrax	—	—	—	—	1	1	—	—	
Botulism:									
foodborne	1	1	0	14	32	20	19	16	WA (1)
infant	—	2	1	99	85	97	85	87	
other (wound and unspecified)	—	2	0	21	27	48	31	30	
Brucellosis	1	2	2	80	131	121	120	114	FL (1)
Chancroid	3	3	0	28	23	33	17	30	TX (1), AK (2)
Cholera	—	—	0	3	7	9	8	6	
Cyclosporiasis§	2	5	1	130	93	137	543	160	FL (2)
Diphtheria	—	—	—	—	—	—	—	—	
Domestic arboviral diseases§,¶:									
California serogroup	—	—	—	41	55	67	80	112	
eastern equine	—	—	—	3	4	8	21	6	
Powassan	—	—	—	1	7	1	1	1	
St. Louis	—	—	0	10	9	10	13	12	
western equine	—	—	—	—	—	—	—	—	
Ehrlichiosis/Anaplasmosis§,**:									
<i>Ehrlichia chaffeensis</i>	3	9	1	867	828	578	506	338	MD (1), NC (2)
<i>Ehrlichia ewingii</i>	—	—	—	9	—	—	—	—	
<i>Anaplasma phagocytophilum</i>	—	—	1	554	834	646	786	537	
undetermined	—	—	0	72	337	231	112	59	
<i>Haemophilus influenzae</i> ,††									
invasive disease (age <5 yrs):									
serotype b	1	2	0	27	22	29	9	19	NY (1)
nonserotype b	1	9	3	176	199	175	135	135	NC (1)
unknown serotype	4	20	4	188	180	179	217	177	PA (1), MO (1), NC (1), GA (1)
Hansen disease§	—	1	2	72	101	66	87	105	
Hantavirus pulmonary syndrome§	—	—	0	16	32	40	26	24	
Hemolytic uremic syndrome, postdiarrheal§	—	4	1	242	292	288	221	200	
Hepatitis C viral, acute	3	35	14	841	845	766	652	720	IN (1), MI (1), CA (1)
HIV infection, pediatric (age <13 years)§§	—	—	3	—	—	—	380	436	
Influenza-associated pediatric mortality§,¶¶	1	3	1	88	77	43	45	—	NYC (1)
Listeriosis	4	27	9	691	808	884	896	753	PA (1), LA (1), WA (2)
Measles***	—	1	0	132	43	55	66	37	
Meningococcal disease, invasive†††:									
A, C, Y, and W-135	1	3	6	310	325	318	297	—	WA (1)
serogroup B	1	3	3	164	167	193	156	—	WA (1)
other serogroup	—	—	1	30	35	32	27	—	
unknown serogroup	7	29	16	592	550	651	765	—	OH (1), MI (1), MN (1), MO (1), NC (1), FL (1), AR (1)
Mumps	5	19	9	402	800	6,584	314	258	PA (1), MO (1), NC (1), AZ (1), AK (1)
Novel influenza A virus infections	—	—	—	1	4	N	N	N	
Plague	—	—	0	1	7	17	8	3	
Poliomyelitis, paralytic	—	—	—	—	—	—	1	—	
Polio virus infection, nonparalytic§	—	—	—	—	—	N	N	N	
Psittacosis§	—	—	0	10	12	21	16	12	
Q fever total§,§§§:	2	2	1	94	171	169	136	70	
acute	1	1	0	82	—	—	—	—	OH (1)
chronic	1	1	—	12	—	—	—	—	OH (1)
Rabies, human	—	—	0	1	1	3	2	7	
Rubella¶¶¶	—	—	0	16	12	11	11	10	
Rubella, congenital syndrome	—	—	—	—	—	1	1	—	
SARS-CoV§,****	—	—	—	—	—	—	—	—	
Smallpox§	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome§	1	2	3	135	132	125	129	132	OH (1)
Syphilis, congenital (age <1 yr)	—	—	7	246	430	349	329	353	
Tetanus	—	—	0	15	28	41	27	34	
Toxic-shock syndrome (staphylococcal)§	—	4	1	71	92	101	90	95	
Trichinellosis	—	1	0	37	5	15	16	5	
Tularemia	—	1	0	110	137	95	154	134	
Typhoid fever	—	13	5	402	434	353	324	322	
Vancomycin-intermediate <i>Staphylococcus aureus</i> §	—	3	0	36	37	6	2	—	
Vancomycin-resistant <i>Staphylococcus aureus</i> §	—	—	—	—	2	1	3	1	
Vibriosis (noncholera <i>Vibrio</i> species infections)§	—	11	1	451	549	N	N	N	
Yellow fever	—	—	—	—	—	—	—	—	

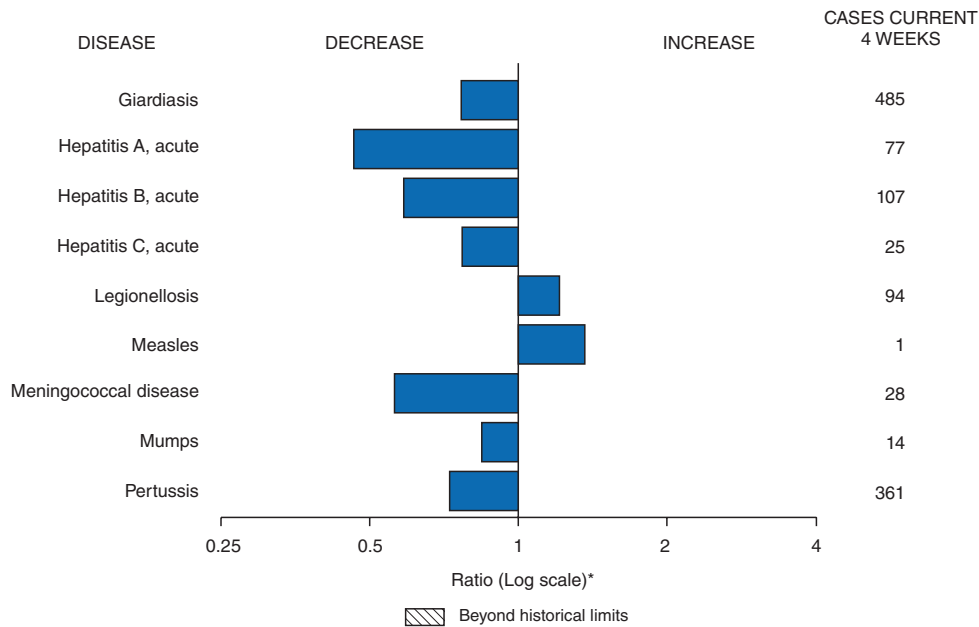
See Table I footnotes on next page.



**TABLE I. (Continued) Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending January 31, 2009 (4th week)\***

—: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts.  
 \* Incidence data for reporting year 2008 and 2009 are provisional, whereas data for 2004, 2005, 2006, and 2007 are finalized.  
 † Calculated by summing the incidence counts for the current week, the 2 weeks preceding the current week, and the 2 weeks following the current week, for a total of 5 preceding years. Additional information is available at <http://www.cdc.gov/epo/dphsi/phs/files/5yearweeklyaverage.pdf>.  
 § Not notifiable in all states. Data from states where the condition is not notifiable are excluded from this table, except starting in 2007 for the domestic arboviral diseases and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at <http://www.cdc.gov/epo/dphsi/phs/infdis.htm>.  
 ¶ Includes both neuroinvasive and nonneuroinvasive. Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (ArboNET Surveillance). Data for West Nile virus are available in Table II.  
 \*\* The names of the reporting categories changed in 2008 as a result of revisions to the case definitions. Cases reported prior to 2008 were reported in the categories: Ehrlichiosis, human monocytic (analogous to *E. chaffeensis*); Ehrlichiosis, human granulocytic (analogous to *Anaplasma phagocytophilum*), and Ehrlichiosis, unspecified, or other agent (which included cases unable to be clearly placed in other categories, as well as possible cases of *E. ewingii*).  
 †† Data for *H. influenzae* (all ages, all serotypes) are available in Table II.  
 §§ Updated monthly from reports to the Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Implementation of HIV reporting influences the number of cases reported. Updates of pediatric HIV data have been temporarily suspended until upgrading of the national HIV/AIDS surveillance data management system is completed. Data for HIV/AIDS, when available, are displayed in Table IV, which appears quarterly.  
 ¶¶ Updated weekly from reports to the Influenza Division, National Center for Immunization and Respiratory Diseases. Three influenza-associated pediatric deaths occurring during the 2008-09 influenza season have been reported.  
 \*\*\* No measles cases were reported for the current week.  
 ††† Data for meningococcal disease (all serogroups) are available in Table II.  
 §§§ In 2008, Q fever acute and chronic reporting categories were recognized as a result of revisions to the Q fever case definition. Prior to that time, case counts were not differentiated with respect to acute and chronic Q fever cases.  
 ¶¶¶ No rubella cases were reported for the current week.  
 \*\*\*\* Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases.

**FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals January 31, 2009, with historical data**



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

**Notifiable Disease Data Team and 122 Cities Mortality Data Team**  
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**TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending January 31, 2009, and January 26, 2008 (4th week)\***

Reporting area	Chlamydia†					Coccidioidomycosis					Cryptosporidiosis				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 week		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
<b>United States</b>	12,757	21,565	25,084	59,944	75,167	111	122	318	477	702	46	104	456	181	255
<b>New England</b>	693	707	1,416	2,139	2,252	—	0	1	—	—	—	5	20	6	49
Connecticut	188	210	1,061	281	242	N	0	0	N	N	—	0	3	3	38
Maine§	68	51	72	243	194	N	0	0	N	N	—	0	6	1	—
Massachusetts	382	324	623	1,200	1,427	N	0	0	N	N	—	1	9	—	6
New Hampshire	13	41	64	125	176	—	0	1	—	—	—	1	4	2	3
Rhode Island§	42	55	208	218	201	—	0	0	—	—	—	0	3	—	—
Vermont§	—	17	52	72	12	N	0	0	N	N	—	1	7	—	2
<b>Mid. Atlantic</b>	3,257	2,755	5,084	10,368	8,490	—	0	0	—	—	6	13	34	26	34
New Jersey	662	414	576	1,148	1,720	N	0	0	N	N	—	0	2	—	2
New York (Upstate)	670	532	1,980	1,520	839	N	0	0	N	N	4	4	17	12	4
New York City	1,371	1,067	3,410	4,969	2,810	N	0	0	N	N	—	1	6	3	10
Pennsylvania	554	794	1,074	2,731	3,121	N	0	0	N	N	2	5	15	11	18
<b>E.N. Central</b>	1,139	3,481	4,285	6,869	14,107	—	1	3	1	3	7	25	126	33	57
Illinois	54	1,068	1,411	1,149	4,473	N	0	0	N	N	—	2	13	—	7
Indiana	281	377	713	1,179	1,428	N	0	0	N	N	—	3	12	1	5
Michigan	680	828	1,226	3,067	3,238	—	0	3	—	2	3	5	13	9	14
Ohio	76	796	1,261	900	3,279	—	0	2	1	1	4	6	59	18	19
Wisconsin	48	305	615	574	1,689	N	0	0	N	N	—	9	46	5	12
<b>W.N. Central</b>	763	1,271	1,696	3,449	4,464	—	0	2	—	—	5	16	68	16	25
Iowa	—	174	239	346	662	N	0	0	N	N	—	4	30	—	8
Kansas	263	181	529	602	216	N	0	0	N	N	2	1	8	2	1
Minnesota	—	263	339	271	1,202	—	0	0	—	—	2	4	15	5	6
Missouri	370	488	566	1,690	1,727	—	0	2	—	—	1	3	13	4	2
Nebraska§	53	84	244	281	294	N	0	0	N	N	—	2	8	2	4
North Dakota	—	34	58	3	167	N	0	0	N	N	—	0	2	—	1
South Dakota	77	55	85	256	196	N	0	0	N	N	—	1	9	3	3
<b>S. Atlantic</b>	1,734	3,604	6,328	9,940	12,971	1	0	1	1	—	24	18	47	69	40
Delaware	98	69	150	390	248	—	0	1	—	—	1	0	2	1	1
District of Columbia	—	127	201	239	516	—	0	0	—	—	—	0	2	—	1
Florida	—	1,368	1,571	3,542	4,529	N	0	0	N	N	8	8	35	24	18
Georgia	7	529	1,307	389	1,894	N	0	0	N	N	6	5	13	24	11
Maryland§	190	444	693	1,446	1,201	1	0	1	1	—	—	1	4	3	—
North Carolina	—	0	478	—	1,215	N	0	0	N	N	9	0	16	14	—
South Carolina§	877	475	3,041	1,825	1,915	N	0	0	N	N	—	1	4	1	5
Virginia§	537	621	1,059	1,897	1,220	N	0	0	N	N	—	1	4	1	1
West Virginia	25	60	102	212	233	N	0	0	N	N	—	0	3	1	3
<b>E.S. Central</b>	753	1,581	2,302	5,206	5,392	—	0	0	—	—	—	2	9	4	10
Alabama§	48	434	547	918	1,885	N	0	0	N	N	—	1	6	2	6
Kentucky	225	245	373	1,084	851	N	0	0	N	N	—	0	4	—	2
Mississippi	—	413	1,048	1,434	787	N	0	0	N	N	—	0	2	1	1
Tennessee§	480	536	792	1,770	1,869	N	0	0	N	N	—	1	6	1	1
<b>W.S. Central</b>	2,532	2,776	3,528	9,767	10,062	—	0	1	—	—	—	6	164	1	5
Arkansas§	267	278	455	1,189	930	N	0	0	N	N	—	0	7	—	1
Louisiana	375	417	775	1,227	1,034	—	0	1	—	—	—	1	5	—	—
Oklahoma	40	142	391	244	845	N	0	0	N	N	—	1	16	1	3
Texas§	1,850	1,924	2,338	7,107	7,253	N	0	0	N	N	—	3	149	—	1
<b>Mountain</b>	507	1,158	1,803	2,860	4,477	79	86	181	345	409	1	8	37	8	17
Arizona	365	470	650	1,387	1,498	77	86	180	342	400	1	1	9	2	3
Colorado	86	239	588	756	1,312	N	0	0	N	N	—	1	12	—	4
Idaho§	—	63	314	34	153	N	0	0	N	N	—	1	5	2	6
Montana§	24	57	87	79	253	N	0	0	N	N	—	1	3	2	1
Nevada§	—	176	415	277	825	2	0	6	3	2	—	0	1	—	—
New Mexico§	—	132	455	194	423	—	0	3	—	3	—	1	23	2	3
Utah	—	0	171	2	—	—	0	2	—	4	—	0	6	—	—
Wyoming§	32	31	58	131	13	—	0	1	—	—	—	0	4	—	—
<b>Pacific</b>	1,379	3,698	4,459	9,346	12,952	31	33	159	130	290	3	8	22	18	18
Alaska	56	85	182	281	240	N	0	0	N	N	—	0	1	1	—
California	1,055	2,878	3,307	7,352	9,820	31	33	159	130	290	3	5	14	12	13
Hawaii	—	102	164	208	396	N	0	0	N	N	—	0	1	—	—
Oregon§	268	185	631	672	772	N	0	0	N	N	—	1	4	3	5
Washington	—	404	527	833	1,724	N	0	0	N	N	—	1	13	2	—
American Samoa	—	0	14	—	20	N	0	0	N	N	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	4	24	—	5	—	0	0	—	—	—	0	0	—	—
Puerto Rico	252	117	333	559	232	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	13	23	—	33	—	0	0	—	—	—	0	0	—	—

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

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

\* Incidence data for reporting year 2008 and 2009 are provisional. Data for HIV/AIDS, AIDS, and TB, when available, are displayed in Table IV, which appears quarterly.

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

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

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending January 31, 2009, and January 26, 2008 (4th week)\*

Reporting area	Giardiasis					Gonorrhea					Haemophilus influenzae, invasive All ages, all serotypes†				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
<b>United States</b>	161	303	590	660	958	2,705	5,894	6,807	15,074	22,527	32	47	81	155	255
<b>New England</b>	4	24	49	32	102	101	97	265	258	326	—	2	8	3	16
Connecticut	—	5	14	9	29	49	50	237	75	47	—	0	7	—	—
Maine§	3	3	12	11	5	4	2	6	8	5	—	0	2	2	2
Massachusetts	—	8	17	—	36	40	38	67	148	242	—	0	5	—	11
New Hampshire	—	2	11	2	11	3	2	6	7	4	—	0	1	—	1
Rhode Island§	—	1	8	2	9	5	5	13	18	28	—	0	7	1	—
Vermont§	1	3	13	8	12	—	1	3	2	—	—	0	3	—	2
<b>Mid. Atlantic</b>	29	60	108	131	180	547	615	989	2,141	1,952	6	10	17	31	50
New Jersey	—	6	14	—	35	63	96	167	207	494	—	1	5	—	15
New York (Upstate)	24	21	51	60	34	126	116	423	344	274	3	3	13	11	11
New York City	3	15	29	40	55	220	199	633	921	387	—	1	6	2	7
Pennsylvania	2	15	46	31	56	138	213	268	669	797	3	4	10	18	17
<b>E.N. Central</b>	19	48	88	97	177	369	1,200	1,650	2,374	5,325	5	7	17	23	39
Illinois	—	11	32	7	51	15	361	485	398	1,657	—	2	7	1	16
Indiana	N	0	0	N	N	88	147	284	433	645	—	1	12	6	2
Michigan	2	12	22	20	32	222	314	657	1,094	1,207	—	0	2	1	3
Ohio	17	17	31	61	64	22	271	531	256	1,328	5	2	6	15	14
Wisconsin	—	8	20	9	30	22	80	176	193	488	—	0	2	—	4
<b>W.N. Central</b>	12	28	143	61	67	184	318	425	929	1,197	2	3	15	12	17
Iowa	—	6	18	—	21	—	29	50	46	141	—	0	1	—	1
Kansas	4	3	11	11	6	61	41	130	164	58	—	0	3	—	1
Minnesota	—	0	106	—	1	—	54	92	47	290	—	0	10	3	—
Missouri	5	8	22	29	22	97	150	193	547	595	1	1	6	7	10
Nebraska§	3	4	10	15	11	13	26	47	79	89	1	0	2	2	4
North Dakota	—	0	3	—	2	—	2	6	—	13	—	0	3	—	1
South Dakota	—	2	10	6	4	13	8	20	46	11	—	0	0	—	—
<b>S. Atlantic</b>	62	54	88	176	161	413	1,265	2,007	2,818	4,496	11	12	25	52	71
Delaware	2	1	3	3	3	19	19	44	65	93	—	0	2	—	1
District of Columbia	—	1	5	—	1	—	54	101	127	167	—	0	2	—	1
Florida	51	24	57	129	71	—	445	522	1,095	1,674	2	3	9	20	16
Georgia	7	9	27	7	38	4	193	475	130	759	1	2	8	12	26
Maryland§	2	5	12	14	13	32	118	212	349	445	2	1	6	7	15
North Carolina	N	0	0	N	N	—	0	831	—	—	6	1	9	9	2
South Carolina§	—	2	6	4	9	215	180	829	537	773	—	1	7	—	4
Virginia§	—	7	19	18	21	134	182	486	467	531	—	1	7	—	5
West Virginia	—	1	5	1	5	9	14	26	48	54	—	0	3	4	1
<b>E.S. Central</b>	—	8	22	5	22	223	547	837	1,767	2,130	1	2	8	6	16
Alabama§	—	4	12	2	13	13	166	218	342	814	—	0	2	1	4
Kentucky	N	0	0	N	N	53	89	153	346	362	—	0	1	—	—
Mississippi	N	0	0	N	N	—	140	401	466	293	—	0	2	—	1
Tennessee§	—	3	13	3	9	157	163	297	613	661	1	2	6	5	11
<b>W.S. Central</b>	4	7	20	15	13	684	930	1,296	2,963	3,788	3	2	8	6	5
Arkansas§	—	2	8	1	5	70	87	167	338	299	—	0	2	—	—
Louisiana	2	2	10	6	4	138	168	317	470	598	—	0	1	1	—
Oklahoma	2	3	9	8	4	15	47	124	90	375	3	1	7	5	5
Texas§	N	0	0	N	N	461	606	729	2,065	2,516	—	0	2	—	—
<b>Mountain</b>	5	27	62	46	85	51	191	322	330	833	4	5	14	17	32
Arizona	3	3	8	14	11	48	63	93	171	253	3	2	11	12	13
Colorado	—	10	27	9	33	—	56	99	104	221	—	1	5	2	4
Idaho§	1	3	14	8	6	—	3	13	—	11	1	0	4	1	—
Montana§	—	1	9	9	2	1	2	7	1	5	—	0	1	—	1
Nevada§	1	1	8	1	5	—	35	129	31	221	—	0	2	—	2
New Mexico§	—	1	7	2	9	—	22	47	19	120	—	0	4	1	5
Utah	—	6	18	3	16	—	0	11	—	—	—	1	5	1	7
Wyoming§	—	0	3	—	3	2	2	9	4	2	—	0	2	—	—
<b>Pacific</b>	26	52	118	97	151	133	597	759	1,494	2,480	—	2	6	5	9
Alaska	—	2	10	4	5	5	11	19	46	29	—	0	2	2	—
California	19	35	56	73	115	93	492	633	1,224	2,055	—	0	3	—	3
Hawaii	—	1	4	1	1	—	11	22	24	43	—	0	2	2	—
Oregon§	—	8	18	9	28	35	22	48	89	115	—	1	4	1	6
Washington	7	8	76	10	2	—	56	90	111	238	—	0	2	—	—
American Samoa	—	0	0	—	—	—	0	1	—	1	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	1	15	—	2	—	0	0	—	—
Puerto Rico	—	2	13	1	7	10	4	25	16	19	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	2	6	—	7	N	0	0	N	N

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

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

\* Incidence data for reporting year 2008 and 2009 are provisional.

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

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

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending January 31, 2009, and January 26, 2008 (4th week)\*

Reporting area	Hepatitis (viral, acute), by type†										Legionellosis				
	A					B					Previous 52 weeks				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
	Med	Max				Med	Max				Med	Max			
<b>United States</b>	34	44	76	97	186	33	68	93	163	245	20	44	145	126	136
<b>New England</b>	—	1	5	—	13	—	1	7	1	3	—	2	16	3	3
Connecticut	—	0	4	—	2	—	0	7	1	—	—	0	5	2	1
Maine§	—	0	2	—	2	—	0	2	—	1	—	0	2	—	—
Massachusetts	—	0	4	—	8	—	0	1	—	2	—	0	2	—	—
New Hampshire	—	0	2	—	—	—	0	2	—	—	—	0	5	—	—
Rhode Island§	—	0	2	—	1	—	0	1	—	—	—	0	14	1	—
Vermont§	—	0	1	—	—	—	0	1	—	—	—	0	1	—	2
<b>Mid. Atlantic</b>	3	5	12	10	28	4	8	14	12	42	3	14	59	31	34
New Jersey	—	1	4	1	8	—	2	7	—	20	—	1	8	1	7
New York (Upstate)	2	1	4	4	4	4	1	6	9	2	2	5	20	13	3
New York City	—	2	6	1	9	—	1	6	—	5	—	2	12	1	6
Pennsylvania	1	1	6	4	7	—	2	8	3	15	1	6	33	16	18
<b>E.N. Central</b>	—	6	16	11	31	1	8	15	30	29	3	10	40	26	41
Illinois	—	2	10	2	12	—	3	6	—	7	—	1	10	—	8
Indiana	—	0	4	—	1	—	1	4	—	—	—	1	6	1	—
Michigan	—	2	7	4	13	—	2	6	7	7	—	2	16	4	15
Ohio	—	1	4	5	2	1	2	13	23	13	3	4	18	20	16
Wisconsin	—	0	2	—	3	—	0	1	—	2	—	0	3	1	2
<b>W.N. Central</b>	1	4	16	6	22	3	2	7	11	6	1	2	9	1	6
Iowa	—	1	7	—	12	—	0	2	—	—	—	0	2	—	2
Kansas	—	0	3	—	2	—	0	3	—	1	1	0	1	1	—
Minnesota	1	0	8	1	1	1	0	5	1	—	—	0	4	—	—
Missouri	—	1	3	5	1	1	1	4	8	5	—	1	7	—	—
Nebraska§	—	0	5	—	5	1	0	2	2	—	—	0	4	—	4
North Dakota	—	0	0	—	—	—	0	1	—	—	—	0	0	—	—
South Dakota	—	0	1	—	1	—	0	0	—	—	—	0	1	—	—
<b>S. Atlantic</b>	13	7	15	31	28	22	17	34	59	77	8	8	22	36	26
Delaware	—	0	1	—	—	—	0	1	—	3	—	0	2	—	—
District of Columbia	U	0	0	U	U	U	0	0	U	U	—	0	2	—	1
Florida	8	2	8	18	13	11	6	12	24	21	2	3	7	13	12
Georgia	2	1	4	5	4	1	3	8	11	12	—	0	4	5	3
Maryland§	1	1	4	6	6	—	2	4	3	8	1	2	10	7	5
North Carolina	2	0	9	2	—	9	0	17	16	17	5	0	7	11	1
South Carolina§	—	0	3	—	—	—	1	4	—	9	—	0	2	—	1
Virginia§	—	1	5	—	4	—	2	7	3	3	—	1	4	—	2
West Virginia	—	0	1	—	1	1	1	4	2	4	—	0	3	—	1
<b>E.S. Central</b>	1	1	9	4	3	—	7	13	8	22	1	2	10	7	7
Alabama§	—	0	2	1	1	—	2	6	2	7	—	0	2	—	—
Kentucky	—	0	3	—	2	—	2	5	1	7	—	1	4	1	5
Mississippi	1	0	2	2	—	—	1	3	1	—	—	0	1	—	—
Tennessee§	—	0	6	1	—	—	3	8	4	8	1	1	5	6	2
<b>W.S. Central</b>	2	5	12	3	6	2	13	23	17	21	—	1	9	1	2
Arkansas§	—	0	1	—	—	—	0	4	—	1	—	0	2	—	—
Louisiana	—	0	2	—	1	—	1	4	1	4	—	0	2	1	—
Oklahoma	—	0	3	—	—	1	2	8	4	—	—	0	6	—	—
Texas§	2	4	11	3	5	1	8	19	12	16	—	1	5	—	2
<b>Mountain</b>	1	4	12	8	11	—	3	12	1	16	2	2	8	12	7
Arizona	1	2	11	7	6	—	1	5	1	10	—	0	3	8	2
Colorado	—	0	3	1	2	—	0	3	—	2	—	0	2	—	2
Idaho§	—	0	3	—	1	—	0	2	—	—	—	0	1	—	—
Montana§	—	0	1	—	—	—	0	1	—	—	—	0	1	—	—
Nevada§	—	0	3	—	—	—	0	3	—	2	2	0	2	4	1
New Mexico§	—	0	3	—	2	—	0	2	—	1	—	0	1	—	—
Utah	—	0	2	—	—	—	0	3	—	1	—	0	2	—	2
Wyoming§	—	0	1	—	—	—	0	1	—	—	—	0	0	—	—
<b>Pacific</b>	13	9	24	24	44	1	6	32	24	29	2	4	10	9	10
Alaska	—	0	1	—	—	—	0	2	1	—	—	0	1	1	—
California	13	7	24	23	37	1	5	20	22	23	2	3	8	8	9
Hawaii	—	0	2	1	1	—	0	1	—	1	—	0	1	—	—
Oregon§	—	0	2	—	6	—	0	3	1	5	—	0	2	—	1
Washington	—	1	5	—	—	—	1	12	—	—	—	0	3	—	—
American Samoa	—	0	0	—	—	—	0	0	—	—	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	2	1	—	—	0	5	—	4	—	0	1	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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

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

\* Incidence data for reporting year 2008 and 2009 are provisional.

† Data for acute hepatitis C, viral are available in Table I.

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

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending January 31, 2009, and January 26, 2008 (4th week)\*

Reporting area	Lyme disease				Malaria				Meningococcal disease, invasive† All serotypes						
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
<b>United States</b>	42	446	1,454	255	487	13	20	44	43	64	9	18	48	35	68
<b>New England</b>	—	45	260	14	75	—	0	6	1	3	—	0	3	—	4
Connecticut	—	0	0	—	—	—	0	3	—	—	—	0	1	—	—
Maine§	—	5	73	—	—	—	0	1	—	—	—	0	1	—	—
Massachusetts	—	10	114	—	53	—	0	2	—	3	—	0	3	—	4
New Hampshire	—	13	141	7	20	—	0	2	—	—	—	0	0	—	—
Rhode Island§	—	0	0	—	—	—	0	1	—	—	—	0	0	—	—
Vermont§	—	4	40	7	2	—	0	1	1	—	—	0	0	—	—
<b>Mid. Atlantic</b>	20	250	1,005	112	271	3	4	14	6	14	—	2	6	2	7
New Jersey	1	31	211	10	84	—	0	0	—	—	—	0	2	—	3
New Jersey (Upstate)	8	99	870	22	13	2	0	7	4	1	—	0	3	—	1
New York City	—	0	4	—	5	—	3	10	—	10	—	0	2	1	2
Pennsylvania	11	94	533	80	169	1	1	3	2	3	—	1	5	1	1
<b>E.N. Central</b>	—	11	146	15	27	1	2	7	3	21	2	3	9	8	14
Illinois	—	1	12	—	2	—	1	5	—	12	—	1	5	—	7
Indiana	—	0	8	—	—	—	0	2	—	—	—	0	4	—	1
Michigan	—	1	10	1	2	—	0	2	—	3	1	0	3	1	3
Ohio	—	1	5	1	1	1	0	2	3	6	1	1	4	7	2
Wisconsin	—	9	129	13	22	—	0	3	—	—	—	0	2	—	1
<b>W.N. Central</b>	—	8	156	—	1	—	1	10	2	—	2	2	8	5	6
Iowa	—	1	8	—	1	—	0	3	—	—	—	0	3	—	3
Kansas	—	0	1	—	—	—	0	2	1	—	—	0	2	—	1
Minnesota	—	4	152	—	—	—	0	8	1	—	1	0	7	2	—
Missouri	—	0	1	—	—	—	0	3	—	—	1	0	3	3	1
Nebraska§	—	0	2	—	—	—	0	2	—	—	—	0	1	—	1
North Dakota	—	0	1	—	—	—	0	0	—	—	—	0	1	—	—
South Dakota	—	0	1	—	—	—	0	0	—	—	—	0	1	—	—
<b>S. Atlantic</b>	20	62	218	96	102	6	4	15	18	16	2	3	10	9	10
Delaware	4	12	37	15	32	—	0	1	1	—	—	0	1	—	—
District of Columbia	—	2	11	—	4	—	0	2	—	—	—	0	0	—	—
Florida	3	2	10	11	1	1	1	7	5	5	1	1	3	4	4
Georgia	—	0	3	1	—	2	1	5	3	5	—	0	2	1	1
Maryland§	11	28	157	59	56	1	1	7	3	5	—	0	4	—	1
North Carolina	2	0	7	2	—	1	0	7	3	—	1	0	3	3	—
South Carolina§	—	0	2	2	—	—	0	1	1	—	—	0	3	—	3
Virginia§	—	13	53	6	7	1	1	3	2	1	—	0	2	1	1
West Virginia	—	1	11	—	2	—	0	0	—	—	—	0	1	—	—
<b>E.S. Central</b>	—	0	5	1	1	2	0	2	3	2	—	1	6	—	7
Alabama§	—	0	2	—	—	—	0	1	—	1	—	0	2	—	—
Kentucky	—	0	2	—	—	—	0	1	—	1	—	0	1	—	4
Mississippi	—	0	1	—	—	—	0	1	—	—	—	0	2	—	—
Tennessee§	—	0	3	1	1	2	0	2	3	—	—	0	3	—	3
<b>W.S. Central</b>	—	2	8	—	—	—	1	11	—	1	1	2	7	2	3
Arkansas§	—	0	0	—	—	—	0	0	—	—	1	0	2	1	—
Louisiana	—	0	1	—	—	—	0	1	—	—	—	0	3	1	2
Oklahoma	—	0	0	—	—	—	0	2	—	—	—	0	3	—	1
Texas§	—	2	8	—	—	—	1	11	—	1	—	1	5	—	—
<b>Mountain</b>	—	0	16	1	—	—	0	3	—	2	—	1	4	2	7
Arizona	—	0	2	—	—	—	0	2	—	1	—	0	2	—	—
Colorado	—	0	1	1	—	—	0	1	—	1	—	0	1	—	1
Idaho§	—	0	1	—	—	—	0	1	—	—	—	0	1	1	1
Montana§	—	0	16	—	—	—	0	0	—	—	—	0	1	—	—
Nevada§	—	0	2	—	—	—	0	3	—	—	—	0	1	1	1
New Mexico§	—	0	2	—	—	—	0	1	—	—	—	0	1	—	1
Utah	—	0	1	—	—	—	0	1	—	—	—	0	1	—	3
Wyoming§	—	0	1	—	—	—	0	0	—	—	—	0	1	—	—
<b>Pacific</b>	2	4	16	16	10	1	3	10	10	5	2	5	19	7	10
Alaska	—	0	2	—	—	—	0	2	—	—	—	0	2	1	—
California	2	3	8	15	10	—	2	8	8	3	—	3	19	2	8
Hawaii	N	0	0	N	N	—	0	1	—	1	—	0	1	—	—
Oregon§	—	1	3	1	—	—	0	2	1	1	—	1	3	1	2
Washington	—	0	10	—	—	1	0	7	1	—	2	0	5	3	—
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	2	—	—	—	0	0	—	—
Puerto Rico	N	0	0	N	N	—	0	1	1	—	—	0	1	—	—
U.S. Virgin Islands	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—

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

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

\* Incidence data for reporting year 2008 and 2009 are provisional.

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

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

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending January 31, 2009, and January 26, 2008 (4th week)\*

Reporting area	Pertussis					Rabies, animal					Rocky Mountain spotted fever				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
<b>United States</b>	110	184	407	527	505	68	103	168	131	361	16	32	146	43	15
<b>New England</b>	4	9	32	10	107	4	6	20	11	14	—	0	2	—	1
Connecticut	—	0	4	—	8	3	3	17	7	7	—	0	0	—	—
Maine†	3	1	5	7	1	1	5	2	1	N	0	0	N	N	
Massachusetts	—	7	20	—	95	N	0	0	N	N	—	0	0	—	1
New Hampshire	—	1	4	1	1	—	0	3	—	3	—	0	1	—	—
Rhode Island†	—	0	7	—	1	N	0	0	N	N	—	0	2	—	—
Vermont†	1	0	2	2	1	—	1	6	2	3	—	0	0	—	—
<b>Mid. Atlantic</b>	11	18	42	50	66	7	33	67	19	66	—	1	9	—	3
New Jersey	—	1	6	—	6	—	0	0	—	—	—	0	2	—	2
New York (Upstate)	4	7	31	10	9	7	9	20	19	18	—	0	8	—	—
New York City	—	0	4	—	13	—	0	2	—	2	—	0	2	—	1
Pennsylvania	7	9	35	40	38	—	21	52	—	46	—	0	2	—	—
<b>E.N. Central</b>	36	35	189	161	101	1	3	28	2	1	—	2	15	—	1
Illinois	—	8	44	30	13	—	1	21	1	1	—	1	11	—	1
Indiana	1	1	27	6	1	—	0	2	—	—	—	0	3	—	—
Michigan	6	6	14	33	9	1	0	8	1	—	—	0	1	—	—
Ohio	29	10	176	91	68	—	1	7	—	—	—	0	4	—	—
Wisconsin	—	2	7	1	10	N	0	0	N	N	—	0	1	—	—
<b>W.N. Central</b>	16	17	118	148	64	—	3	13	—	3	—	4	32	1	1
Iowa	—	3	21	—	8	—	0	5	—	1	—	0	2	—	—
Kansas	2	1	13	5	2	—	0	0	—	—	—	0	0	—	—
Minnesota	—	2	26	—	—	—	0	10	—	—	—	0	0	—	—
Missouri	10	6	50	124	47	—	1	8	—	—	—	4	31	1	1
Nebraska†	4	2	33	17	5	—	0	0	—	—	—	0	4	—	—
North Dakota	—	0	1	—	—	—	0	7	—	1	—	0	0	—	—
South Dakota	—	0	7	2	2	—	0	2	—	1	—	0	1	—	—
<b>S. Atlantic</b>	28	18	44	96	47	52	34	88	83	256	15	13	71	38	5
Delaware	1	0	3	4	—	—	0	0	—	—	—	0	5	—	—
District of Columbia	—	0	1	—	2	—	0	0	—	—	—	0	2	—	—
Florida	8	6	20	35	5	2	0	3	5	137	—	0	3	—	—
Georgia	—	1	8	1	3	47	5	42	47	18	—	1	8	1	1
Maryland†	1	2	8	7	10	—	7	17	6	32	1	1	7	5	3
North Carolina	16	0	16	35	18	1	9	16	12	25	14	3	55	30	1
South Carolina†	—	2	11	8	3	—	0	0	—	—	—	1	9	—	—
Virginia†	2	3	22	6	—	—	10	24	9	44	—	2	15	2	—
West Virginia	—	0	2	—	—	2	1	9	4	—	—	0	1	—	—
<b>E.S. Central</b>	3	8	29	19	25	—	3	7	4	8	—	3	23	2	2
Alabama†	—	1	5	3	7	—	0	0	—	—	—	1	8	1	1
Kentucky	—	2	11	8	2	—	0	4	4	2	—	0	1	—	—
Mississippi	1	1	5	2	14	—	0	1	—	1	—	0	3	—	—
Tennessee†	2	2	14	6	2	—	2	6	—	5	—	2	19	1	1
<b>W.S. Central</b>	3	30	161	14	12	1	1	11	3	3	—	2	41	1	1
Arkansas†	—	1	20	—	5	1	0	6	2	3	—	0	14	1	—
Louisiana	1	1	7	2	—	—	0	0	—	—	—	0	1	—	1
Oklahoma	2	0	21	3	—	—	0	10	1	—	—	0	26	—	—
Texas†	—	26	154	9	7	—	0	1	—	—	—	1	6	—	—
<b>Mountain</b>	5	15	34	18	55	—	1	8	—	3	—	1	3	—	1
Arizona	3	3	10	6	13	N	0	0	N	N	—	0	2	—	—
Colorado	—	3	7	6	23	—	0	0	—	—	—	0	1	—	—
Idaho†	—	1	5	4	—	—	0	0	—	—	—	0	1	—	—
Montana†	—	0	11	—	4	—	0	2	—	—	—	0	1	—	—
Nevada†	2	0	7	2	1	—	0	4	—	—	—	0	2	—	—
New Mexico†	—	1	8	—	—	—	0	3	—	2	—	0	1	—	1
Utah	—	4	17	—	11	—	0	6	—	—	—	0	1	—	—
Wyoming†	—	0	2	—	3	—	0	3	—	1	—	0	2	—	—
<b>Pacific</b>	4	25	80	11	28	3	3	13	9	7	1	0	1	1	—
Alaska	2	3	21	8	9	—	0	4	2	4	N	0	0	N	N
California	—	8	23	—	6	3	3	12	7	3	1	0	1	1	—
Hawaii	1	0	2	1	2	—	0	0	—	—	N	0	0	N	N
Oregon†	—	3	10	—	8	—	0	3	—	—	—	0	1	—	—
Washington	1	6	69	2	3	—	0	0	—	—	N	0	0	N	N
American Samoa	—	0	0	—	—	N	0	0	N	N	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	N	0	0	N	N
Puerto Rico	—	0	0	—	—	1	1	5	1	1	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	N	0	0	N	N	N	0	0	N	N

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

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

\* Incidence data for reporting year 2008 and 2009 are provisional.

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

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending January 31, 2009, and January 26, 2008 (4th week)\*

Reporting area	Salmonellosis					Shiga toxin-producing <i>E. coli</i> (STEC) <sup>†</sup>					Shigellosis				
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
<b>United States</b>	382	903	1,486	1,731	2,443	16	83	251	103	182	163	431	611	876	1,013
<b>New England</b>	4	17	63	49	578	—	3	14	1	56	—	2	7	2	46
Connecticut	—	0	23	23	484	—	0	1	1	44	—	0	1	1	38
Maine <sup>§</sup>	1	3	8	9	9	—	0	3	—	2	—	0	6	—	—
Massachusetts	—	11	52	—	67	—	0	11	—	6	—	1	5	—	5
New Hampshire	1	2	10	5	8	—	1	3	—	2	—	0	1	1	1
Rhode Island <sup>§</sup>	1	2	9	9	6	—	0	3	—	—	—	0	1	—	1
Vermont <sup>§</sup>	1	1	7	3	4	—	0	3	—	2	—	0	2	—	1
<b>Mid. Atlantic</b>	32	89	177	158	262	2	6	192	7	17	12	44	96	74	81
New Jersey	—	12	30	—	68	—	0	3	1	4	—	12	38	16	34
New York (Upstate)	18	26	60	46	36	2	3	188	5	3	2	11	35	6	7
New York City	2	20	53	35	76	—	1	5	1	7	—	13	35	22	29
Pennsylvania	12	28	78	77	82	—	1	8	—	3	10	4	23	30	11
<b>E.N. Central</b>	48	93	194	204	270	3	11	74	8	24	55	76	121	236	250
Illinois	—	25	72	11	89	—	1	10	—	2	—	19	35	12	94
Indiana	—	9	53	5	12	—	1	14	—	2	—	9	39	1	68
Michigan	5	17	38	39	61	—	2	43	2	6	—	3	20	15	4
Ohio	43	27	65	131	66	3	3	17	5	4	52	42	80	186	57
Wisconsin	—	14	50	18	42	—	4	20	1	10	3	7	33	22	27
<b>W.N. Central</b>	28	49	151	102	114	1	12	60	14	15	7	17	40	16	45
Iowa	—	8	16	—	24	—	2	21	—	5	—	3	12	—	5
Kansas	5	7	31	15	11	—	1	7	1	2	3	1	5	6	—
Minnesota	9	13	70	26	18	—	3	21	4	3	2	5	25	5	2
Missouri	10	14	48	42	41	—	2	11	6	3	2	3	14	4	22
Nebraska <sup>§</sup>	4	4	13	11	15	1	2	30	3	2	—	0	3	1	—
North Dakota	—	0	7	—	—	—	0	1	—	—	—	0	5	—	2
South Dakota	—	2	9	8	5	—	1	4	—	—	—	0	9	—	14
<b>S. Atlantic</b>	147	245	457	648	550	3	14	50	40	23	40	58	100	166	213
Delaware	—	2	9	1	4	—	0	2	—	1	1	0	1	2	—
District of Columbia	—	1	4	—	6	—	0	1	—	1	—	0	3	—	1
Florida	94	97	174	295	318	1	2	11	13	12	24	14	34	55	90
Georgia	33	43	86	101	63	—	1	7	5	—	9	19	48	38	79
Maryland <sup>§</sup>	5	13	36	39	43	1	2	10	8	2	2	2	8	15	4
North Carolina	10	24	106	153	1	1	1	19	13	—	3	3	27	35	—
South Carolina <sup>§</sup>	5	18	55	30	50	—	0	4	—	2	1	8	32	7	32
Virginia <sup>§</sup>	—	19	59	25	40	—	3	25	1	1	—	4	44	14	7
West Virginia	—	3	6	4	25	—	0	3	—	4	—	0	3	—	—
<b>E.S. Central</b>	10	58	138	87	162	—	5	21	5	13	9	34	67	45	169
Alabama <sup>§</sup>	—	15	46	27	52	—	1	17	1	3	—	7	18	8	38
Kentucky	—	9	18	15	27	—	1	7	—	3	—	3	24	3	24
Mississippi	—	14	57	8	38	—	0	2	—	1	—	4	18	—	64
Tennessee <sup>§</sup>	10	14	60	37	45	—	2	7	4	6	9	19	47	34	43
<b>W.S. Central</b>	21	135	265	71	94	—	6	27	—	9	28	95	215	212	68
Arkansas <sup>§</sup>	5	11	40	20	15	—	1	3	—	1	2	11	27	5	3
Louisiana	5	17	50	18	35	—	0	1	—	—	5	11	25	13	23
Oklahoma	5	14	36	12	12	—	1	19	—	—	3	3	11	11	7
Texas <sup>§</sup>	6	92	190	21	32	—	5	12	—	8	18	65	188	183	35
<b>Mountain</b>	15	59	110	94	157	1	10	39	5	21	5	21	53	63	57
Arizona	7	20	44	43	44	—	1	5	4	2	2	12	34	43	25
Colorado	—	12	43	13	38	—	3	18	—	2	—	2	11	4	15
Idaho <sup>§</sup>	3	3	14	13	9	1	2	15	1	9	—	0	2	—	—
Montana <sup>§</sup>	—	2	8	5	3	—	0	3	—	4	—	0	1	—	—
Nevada <sup>§</sup>	2	3	9	13	18	—	0	2	—	—	3	4	13	13	11
New Mexico <sup>§</sup>	—	6	33	1	28	—	1	6	—	3	—	2	10	3	3
Utah	3	7	19	6	8	—	1	9	—	1	—	1	3	—	1
Wyoming <sup>§</sup>	—	1	4	—	9	—	0	1	—	—	—	0	1	—	2
<b>Pacific</b>	77	112	522	318	256	6	9	54	23	4	7	28	82	62	84
Alaska	1	1	4	6	2	—	0	1	—	—	—	0	1	—	—
California	62	81	508	260	204	4	6	39	20	3	7	26	74	55	75
Hawaii	3	4	15	21	22	—	0	2	1	1	—	1	3	1	3
Oregon <sup>§</sup>	—	7	20	12	26	—	1	8	—	—	—	1	10	4	6
Washington	11	12	137	19	2	2	2	38	2	—	—	1	25	1	—
American Samoa	—	0	1	—	1	—	0	0	—	—	—	0	0	—	1
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	2	—	—	—	0	0	—	—	—	0	3	—	1
Puerto Rico	5	9	29	9	42	—	0	1	—	—	—	0	4	—	2
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 notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.

\* Incidence data for reporting year 2008 and 2009 are provisional.

<sup>†</sup> Includes *E. coli* O157:H7; Shiga toxin-positive, serogroup non-O157; and Shiga toxin-positive, not serogrouped.<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 January 31, 2009, and January 26, 2008 (4th week)\*

Reporting area	Streptococcal diseases, invasive, group A				<i>Streptococcus pneumoniae</i> , invasive disease, nondrug resistant† Age <5 years					
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max		
<b>United States</b>	41	84	182	270	421	13	34	55	76	165
<b>New England</b>	—	4	31	3	20	—	1	11	1	11
Connecticut	—	0	26	—	—	—	0	11	—	—
Maine§	—	0	3	1	2	—	0	1	—	—
Massachusetts	—	1	8	—	16	—	0	4	—	8
New Hampshire	—	0	2	1	2	—	0	1	—	3
Rhode Island§	—	0	9	1	—	—	0	2	—	—
Vermont§	—	0	3	—	—	—	0	1	1	—
<b>Mid. Atlantic</b>	11	17	43	47	96	2	3	18	6	33
New Jersey	—	2	11	—	22	—	1	4	1	6
New York (Upstate)	7	6	18	18	24	2	2	18	5	11
New York City	—	3	10	4	22	—	0	5	—	16
Pennsylvania	4	7	16	25	28	N	0	2	N	N
<b>E.N. Central</b>	5	15	42	51	79	2	6	15	13	30
Illinois	—	5	16	9	22	—	1	5	—	10
Indiana	—	2	9	3	7	—	0	5	—	2
Michigan	—	3	10	8	20	—	1	5	2	8
Ohio	4	5	14	29	24	2	1	4	10	7
Wisconsin	1	1	10	2	6	—	0	4	1	3
<b>W.N. Central</b>	3	5	39	14	18	1	2	11	6	9
Iowa	—	0	0	—	—	—	0	0	—	—
Kansas	—	0	5	1	3	1	0	3	2	1
Minnesota	—	0	35	—	—	—	0	9	2	—
Missouri	2	2	10	6	10	—	1	2	2	6
Nebraska§	1	1	3	5	3	—	0	1	—	2
North Dakota	—	0	3	—	—	—	0	2	—	—
South Dakota	—	0	2	2	2	—	0	1	—	—
<b>S. Atlantic</b>	15	21	37	94	96	3	6	16	28	32
Delaware	1	0	2	3	—	—	0	0	—	—
District of Columbia	—	0	4	—	2	—	0	1	—	—
Florida	3	5	10	22	30	1	1	4	6	4
Georgia	4	5	14	28	18	2	1	5	10	5
Maryland§	2	3	8	13	24	—	1	4	5	12
North Carolina	4	2	10	9	2	N	0	0	N	N
South Carolina§	—	2	5	9	5	—	1	6	5	5
Virginia§	1	2	9	7	12	—	0	6	—	6
West Virginia	—	0	3	3	3	—	0	2	2	—
<b>E.S. Central</b>	2	3	9	12	10	—	2	6	1	3
Alabama§	N	0	0	N	N	N	0	0	N	N
Kentucky	—	1	3	—	2	N	0	0	N	N
Mississippi	N	0	0	N	N	—	0	3	—	2
Tennessee§	2	3	6	12	8	—	1	5	1	1
<b>W.S. Central</b>	3	9	33	23	19	3	5	17	9	11
Arkansas§	—	0	2	—	—	—	0	2	1	2
Louisiana	—	0	1	—	3	—	0	3	4	1
Oklahoma	1	2	8	15	5	1	1	3	1	2
Texas§	2	6	30	8	11	2	3	14	3	6
<b>Mountain</b>	1	9	20	16	70	2	4	11	11	33
Arizona	1	3	8	11	24	2	2	7	8	21
Colorado	—	2	8	3	18	—	1	4	2	6
Idaho§	—	0	2	—	1	—	0	1	—	1
Montana§	N	0	0	N	N	—	0	1	—	—
Nevada§	—	0	1	—	2	N	0	0	N	N
New Mexico§	—	1	8	2	17	—	0	3	—	2
Utah	—	1	4	—	8	—	0	4	1	3
Wyoming§	—	0	2	—	—	—	0	1	—	—
<b>Pacific</b>	1	3	8	10	13	—	0	2	1	3
Alaska	—	1	4	2	3	N	0	0	N	N
California	—	0	0	—	—	N	0	0	N	N
Hawaii	1	2	8	8	10	—	0	2	1	3
Oregon§	N	0	0	N	N	N	0	0	N	N
Washington	N	0	0	N	N	N	0	0	N	N
American Samoa	—	0	12	—	—	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—
Puerto Rico	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	N	0	0	N	N

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

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

\* Incidence data for reporting year 2008 and 2009 are provisional.

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

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



TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending January 31, 2009, and January 26, 2008 (4th week)\*

Reporting area	<i>Streptococcus pneumoniae</i> , invasive disease, drug resistant†										Syphilis, primary and secondary				
	All ages					Aged <5 years									
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
	Med	Max				Med	Max				Med	Max			
<b>United States</b>	53	51	105	213	349	8	8	23	18	37	112	242	303	616	828
<b>New England</b>	1	1	48	3	6	—	0	5	—	—	8	5	14	22	16
Connecticut	—	0	48	—	—	—	0	5	—	—	—	0	3	2	—
Maine§	—	0	2	—	2	—	0	1	—	—	—	0	2	—	—
Massachusetts	—	0	0	—	—	—	0	0	—	—	7	4	11	16	13
New Hampshire	—	0	0	—	—	—	0	0	—	—	1	0	2	4	1
Rhode Island§	—	0	2	—	3	—	0	1	—	—	—	0	5	—	2
Vermont§	1	0	2	3	1	—	0	1	—	—	—	0	2	—	—
<b>Mid. Atlantic</b>	1	4	13	6	26	—	0	2	—	1	29	34	52	122	123
New Jersey	—	0	0	—	—	—	0	0	—	—	3	4	10	10	15
New York (Upstate)	—	1	5	1	3	—	0	1	—	—	2	3	7	3	2
New York City	—	1	6	—	7	—	0	0	—	—	24	20	36	95	77
Pennsylvania	1	1	9	5	16	—	0	2	—	1	—	5	12	14	29
<b>E.N. Central</b>	11	11	41	44	96	2	2	7	4	16	8	24	38	58	90
Illinois	—	0	7	—	33	—	0	2	—	7	—	7	19	6	41
Indiana	—	2	31	—	15	—	0	5	—	1	1	3	10	7	5
Michigan	—	0	3	2	4	—	0	1	—	1	3	3	21	18	10
Ohio	11	7	18	42	44	2	1	4	4	7	4	6	15	24	31
Wisconsin	—	0	0	—	—	—	0	0	—	—	—	1	4	3	3
<b>W.N. Central</b>	2	2	9	7	28	2	0	2	2	1	—	8	14	13	35
Iowa	—	0	0	—	—	—	0	0	—	—	—	0	2	—	—
Kansas	1	1	5	1	10	1	0	1	1	1	—	0	5	—	—
Minnesota	—	0	0	—	—	—	0	0	—	—	—	2	6	1	7
Missouri	1	1	5	6	18	1	0	1	1	—	—	4	10	11	27
Nebraska§	—	0	0	—	—	—	0	0	—	—	—	0	2	1	1
North Dakota	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
South Dakota	—	0	1	—	—	—	0	1	—	—	—	0	1	—	—
<b>S. Atlantic</b>	35	22	53	129	142	4	3	13	10	12	12	55	106	138	124
Delaware	—	0	1	—	—	—	0	0	—	—	3	0	4	5	—
District of Columbia	—	0	3	—	4	—	0	1	—	—	—	2	9	14	7
Florida	21	13	30	82	89	2	2	12	7	10	—	19	37	55	63
Georgia	14	6	23	38	43	2	1	5	3	2	—	13	59	—	6
Maryland§	—	0	2	1	1	—	0	1	—	—	—	7	14	10	16
North Carolina	N	0	0	N	N	N	0	0	N	N	9	5	19	41	15
South Carolina§	—	0	0	—	—	—	0	0	—	—	—	2	6	3	9
Virginia§	N	0	0	N	N	N	0	0	N	N	—	5	16	10	8
West Virginia	—	1	9	8	5	—	0	2	—	—	—	0	1	—	—
<b>E.S. Central</b>	2	5	20	15	33	—	1	4	1	2	19	21	37	74	70
Alabama§	N	0	0	N	N	N	0	0	N	N	4	8	17	23	32
Kentucky	—	1	6	6	8	—	0	2	1	—	1	1	10	6	5
Mississippi	—	0	2	—	—	—	0	1	—	—	—	3	19	5	5
Tennessee§	2	3	18	9	25	—	0	3	—	2	14	8	19	40	28
<b>W.S. Central</b>	1	2	7	7	10	—	0	2	1	3	33	42	62	143	145
Arkansas§	—	0	4	5	—	—	0	1	1	—	10	3	19	29	6
Louisiana	1	1	6	2	10	—	0	1	—	3	—	10	31	7	28
Oklahoma	N	0	0	N	N	N	0	0	N	N	—	1	5	4	14
Texas§	—	0	0	—	—	—	0	0	—	—	23	27	46	103	97
<b>Mountain</b>	—	1	11	—	7	—	0	4	—	1	2	9	16	8	39
Arizona	—	0	0	—	—	—	0	0	—	—	2	4	13	2	21
Colorado	—	0	0	—	—	—	0	0	—	—	—	1	7	3	7
Idaho§	N	0	1	N	N	N	0	1	N	N	—	0	2	—	—
Montana§	—	0	1	—	—	—	0	0	—	—	—	0	7	—	—
Nevada§	N	0	1	N	N	N	0	0	N	N	—	1	6	1	7
New Mexico§	—	0	1	—	—	—	0	0	—	—	—	1	4	2	4
Utah	—	1	10	—	7	—	0	4	—	1	—	0	1	—	—
Wyoming§	—	0	1	—	—	—	0	0	—	—	—	0	1	—	—
<b>Pacific</b>	—	0	1	2	1	—	0	1	—	1	1	44	64	38	186
Alaska	N	0	0	N	N	N	0	0	N	N	—	0	1	—	—
California	N	0	0	N	N	N	0	0	N	N	—	40	58	27	162
Hawaii	—	0	1	2	1	—	0	1	—	1	—	0	3	4	3
Oregon§	N	0	0	N	N	N	0	0	N	N	1	0	3	3	2
Washington	N	0	0	N	N	N	0	0	N	N	—	3	9	4	19
American Samoa	N	0	0	N	N	N	0	0	N	N	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	0	—	—	—	0	0	—	—	8	3	11	12	1
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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

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

\* Incidence data for reporting year 2008 and 2009 are provisional.

† Includes cases of invasive pneumococcal disease caused by drug-resistant *S. pneumoniae* (DRSP) (NNDSS event code 11720).

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

**TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending January 31, 2009, and January 26, 2008 (4th week)\***

Reporting area	West Nile virus disease†														
	Varicella (chickenpox)					Neuroinvasive				Nonneuroinvasive§					
	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008	Current week	Previous 52 weeks		Cum 2009	Cum 2008
		Med	Max				Med	Max				Med	Max		
<b>United States</b>	306	500	1,001	1,210	1,871	—	1	75	—	—	—	1	73	—	1
<b>New England</b>	9	10	22	28	58	—	0	2	—	—	—	0	1	—	—
Connecticut	—	0	0	—	—	—	0	2	—	—	—	0	1	—	—
Maine¶	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Massachusetts	—	0	1	—	—	—	0	0	—	—	—	0	0	—	—
New Hampshire	3	5	13	17	32	—	0	0	—	—	—	0	0	—	—
Rhode Island¶	—	0	0	—	—	—	0	1	—	—	—	0	0	—	—
Vermont¶	6	4	17	11	26	—	0	0	—	—	—	0	0	—	—
<b>Mid. Atlantic</b>	33	43	81	138	237	—	0	8	—	—	—	0	4	—	—
New Jersey	N	0	0	N	N	—	0	1	—	—	—	0	1	—	—
New York (Upstate)	N	0	0	N	N	—	0	5	—	—	—	0	2	—	—
New York City	N	0	0	N	N	—	0	2	—	—	—	0	2	—	—
Pennsylvania	33	43	81	138	237	—	0	2	—	—	—	0	1	—	—
<b>E.N. Central</b>	129	137	312	495	571	—	0	8	—	—	—	0	3	—	—
Illinois	13	31	67	106	16	—	0	4	—	—	—	0	2	—	—
Indiana	—	0	0	—	—	—	0	1	—	—	—	0	1	—	—
Michigan	27	53	116	126	284	—	0	4	—	—	—	0	2	—	—
Ohio	88	46	106	249	269	—	0	3	—	—	—	0	1	—	—
Wisconsin	1	5	50	14	2	—	0	2	—	—	—	0	1	—	—
<b>W.N. Central</b>	20	21	71	88	99	—	0	6	—	—	—	0	21	—	—
Iowa	N	0	0	N	N	—	0	2	—	—	—	0	1	—	—
Kansas	—	6	40	2	41	—	0	2	—	—	—	0	3	—	—
Minnesota	—	0	0	—	—	—	0	2	—	—	—	0	4	—	—
Missouri	20	9	51	86	55	—	0	3	—	—	—	0	1	—	—
Nebraska¶	N	0	0	N	N	—	0	1	—	—	—	0	8	—	—
North Dakota	—	0	39	—	—	—	0	2	—	—	—	0	11	—	—
South Dakota	—	0	5	—	3	—	0	5	—	—	—	0	6	—	—
<b>S. Atlantic</b>	27	85	173	128	368	—	0	3	—	—	—	0	3	—	—
Delaware	—	1	5	—	—	—	0	0	—	—	—	0	1	—	—
District of Columbia	—	0	3	—	4	—	0	0	—	—	—	0	0	—	—
Florida	24	29	87	102	73	—	0	2	—	—	—	0	0	—	—
Georgia	N	0	0	N	N	—	0	1	—	—	—	0	1	—	—
Maryland¶	N	0	0	N	N	—	0	2	—	—	—	0	2	—	—
North Carolina	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
South Carolina¶	—	12	67	1	65	—	0	0	—	—	—	0	1	—	—
Virginia¶	—	20	72	—	153	—	0	0	—	—	—	0	1	—	—
West Virginia	3	12	33	25	73	—	0	1	—	—	—	0	0	—	—
<b>E.S. Central</b>	—	17	101	16	78	—	0	7	—	—	—	0	8	—	1
Alabama¶	—	16	101	16	78	—	0	3	—	—	—	0	3	—	—
Kentucky	N	0	0	N	N	—	0	1	—	—	—	0	0	—	—
Mississippi	—	0	2	—	—	—	0	4	—	—	—	0	7	—	—
Tennessee¶	N	0	0	N	N	—	0	2	—	—	—	0	3	—	1
<b>W.S. Central</b>	80	113	435	243	265	—	0	8	—	—	—	0	7	—	—
Arkansas¶	—	9	55	—	27	—	0	1	—	—	—	0	1	—	—
Louisiana	1	1	10	4	6	—	0	3	—	—	—	0	5	—	—
Oklahoma	N	0	0	N	N	—	0	1	—	—	—	0	1	—	—
Texas¶	79	107	422	239	232	—	0	6	—	—	—	0	4	—	—
<b>Mountain</b>	1	39	90	57	186	—	0	12	—	—	—	0	22	—	—
Arizona	—	0	0	—	—	—	0	10	—	—	—	0	8	—	—
Colorado	—	14	44	16	80	—	0	4	—	—	—	0	10	—	—
Idaho¶	N	0	0	N	N	—	0	1	—	—	—	0	6	—	—
Montana¶	1	5	27	28	27	—	0	0	—	—	—	0	2	—	—
Nevada¶	N	0	0	N	N	—	0	2	—	—	—	0	3	—	—
New Mexico¶	—	3	18	6	25	—	0	1	—	—	—	0	1	—	—
Utah	—	11	55	7	52	—	0	2	—	—	—	0	5	—	—
Wyoming¶	—	0	4	—	2	—	0	0	—	—	—	0	2	—	—
<b>Pacific</b>	7	2	8	17	9	—	0	38	—	—	—	0	23	—	—
Alaska	6	1	6	15	1	—	0	0	—	—	—	0	0	—	—
California	—	0	0	—	—	—	0	37	—	—	—	0	19	—	—
Hawaii	1	1	5	2	8	—	0	0	—	—	—	0	0	—	—
Oregon¶	N	0	0	N	N	—	0	2	—	—	—	0	4	—	—
Washington	N	0	0	N	N	—	0	1	—	—	—	0	1	—	—
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	1	17	—	4	—	0	0	—	—	—	0	0	—	—
Puerto Rico	2	7	20	7	36	—	0	0	—	—	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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

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

\* Incidence data for reporting year 2008 and 2009 are provisional.

† Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (ArboNET Surveillance). Data for California serogroup, eastern equine, Powassan, St. Louis, and western equine diseases are available in Table I.

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

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

TABLE III. Deaths in 122 U.S. cities,\* week ending January 31, 2009 (4th week)

Reporting area	All causes, by age (years)							P&I†	Reporting area	All causes, by age (years)							P&I†
	All Ages	≥65	45-64	25-44	1-24	<1	Total			All Ages	≥65	45-64	25-44	1-24	<1	Total	
<b>New England</b>	497	352	104	21	10	10	60	<b>S. Atlantic</b>	1,168	728	299	87	18	35	88		
Boston, MA	135	87	32	9	3	4	16	Atlanta, GA	62	33	19	4	—	6	6		
Bridgeport, CT	36	24	9	3	—	—	7	Baltimore, MD	169	90	57	16	4	2	15		
Cambridge, MA	21	15	5	—	—	1	1	Charlotte, NC	135	92	32	8	1	2	12		
Fall River, MA	27	21	4	1	1	—	5	Jacksonville, FL	168	107	38	17	2	4	9		
Hartford, CT	45	30	12	2	1	—	8	Miami, FL	102	69	21	10	1	1	10		
Lowell, MA	26	22	4	—	—	—	2	Norfolk, VA	62	37	12	5	3	5	3		
Lynn, MA	9	6	2	—	1	—	1	Richmond, VA	85	51	28	5	1	—	7		
New Bedford, MA	27	25	—	—	2	—	1	Savannah, GA	44	32	10	1	1	—	4		
New Haven, CT	U	U	U	U	U	U	U	St. Petersburg, FL	65	44	14	3	2	2	5		
Providence, RI	58	41	13	2	—	2	6	Tampa, FL	255	157	64	17	3	13	12		
Somerville, MA	7	4	2	1	—	—	—	Washington, D.C.	U	U	U	U	U	U	U		
Springfield, MA	41	28	11	—	2	—	3	Wilmington, DE	21	16	4	1	—	—	5		
Waterbury, CT	25	17	3	2	—	3	—	<b>E.S. Central</b>	957	611	243	63	16	23	66		
Worcester, MA	40	32	7	1	—	—	10	Birmingham, AL	235	153	56	19	4	2	19		
<b>Mid. Atlantic</b>	2,357	1,631	538	125	37	26	130	Chattanooga, TN	95	73	17	2	1	2	6		
Albany, NY	51	32	14	2	2	1	4	Knoxville, TN	127	84	27	10	3	3	8		
Allentown, PA	26	18	3	4	—	1	—	Lexington, KY	20	15	4	1	—	—	1		
Buffalo, NY	76	51	17	6	1	1	6	Memphis, TN	179	106	52	15	3	3	14		
Camden, NJ	11	7	3	—	—	1	—	Mobile, AL	71	40	23	4	—	4	3		
Elizabeth, NJ	10	6	4	—	—	—	—	Montgomery, AL	93	63	22	5	1	2	10		
Erie, PA	49	37	10	2	—	—	3	Nashville, TN	137	77	42	7	4	7	5		
Jersey City, NJ	U	U	U	U	U	U	U	<b>W.S. Central</b>	1,721	1,092	435	104	44	46	97		
New York City, NY	1,170	827	265	56	13	9	52	Austin, TX	110	70	27	8	3	2	7		
Newark, NJ	60	33	11	10	2	4	4	Baton Rouge, LA	53	38	15	—	—	—	—		
Paterson, NJ	12	6	6	—	—	—	1	Corpus Christi, TX	75	49	23	2	—	1	6		
Philadelphia, PA	422	252	118	32	15	5	19	Dallas, TX	215	131	53	14	9	8	11		
Pittsburgh, PA§	42	33	9	—	—	—	3	El Paso, TX	129	79	31	11	5	3	7		
Reading, PA	39	32	6	1	—	—	3	Fort Worth, TX	104	47	38	8	3	8	3		
Rochester, NY	124	99	20	3	1	1	16	Houston, TX	476	287	124	32	15	18	18		
Schenectady, NY	22	15	6	—	1	—	3	Little Rock, AR	82	52	16	8	4	2	—		
Scranton, PA	24	17	6	1	—	—	1	New Orleans, LA	U	U	U	U	U	U	U		
Syracuse, NY	154	117	25	7	2	3	12	San Antonio, TX	278	199	60	14	1	4	26		
Trenton, NJ	28	20	8	—	—	—	1	Shreveport, LA	83	54	24	4	1	—	11		
Utica, NY	15	11	4	—	—	—	2	Tulsa, OK	116	86	24	3	3	—	8		
Yonkers, NY	22	18	3	1	—	—	—	<b>Mountain</b>	1,114	750	240	73	29	22	76		
<b>E.N. Central</b>	2,213	1,455	515	133	52	55	142	Albuquerque, NM	U	U	U	U	U	U	U		
Akron, OH	65	39	19	3	1	3	6	Boise, ID	48	33	8	3	2	2	1		
Canton, OH	44	33	6	3	1	1	4	Colorado Springs, CO	82	66	10	5	1	—	6		
Chicago, IL	378	233	97	31	8	6	23	Denver, CO	101	68	19	8	3	3	12		
Cincinnati, OH	77	47	24	1	3	2	4	Las Vegas, NV	333	212	85	24	8	4	20		
Cleveland, OH	249	173	51	10	3	12	10	Ogden, UT	35	25	8	1	1	—	3		
Columbus, OH	229	159	47	12	7	4	20	Phoenix, AZ	194	122	40	19	6	7	15		
Dayton, OH	124	90	27	5	—	2	10	Pueblo, CO	33	23	8	2	—	—	5		
Detroit, MI	192	99	58	22	7	6	8	Salt Lake City, UT	123	74	27	10	7	5	8		
Evansville, IN	50	38	9	2	1	—	1	Tucson, AZ	165	127	35	1	1	1	6		
Fort Wayne, IN	75	58	9	1	7	—	9	<b>Pacific</b>	1,849	1,282	404	96	39	28	174		
Gary, IN	14	5	2	3	1	3	—	Berkeley, CA	14	10	4	—	—	—	1		
Grand Rapids, MI	45	30	12	1	1	1	2	Fresno, CA	124	92	23	4	3	2	9		
Indianapolis, IN	169	89	49	16	5	10	10	Glendale, CA	32	26	5	—	—	1	7		
Lansing, MI	43	30	10	2	1	—	2	Honolulu, HI	96	74	14	5	—	3	7		
Milwaukee, WI	113	78	26	9	—	—	13	Long Beach, CA	72	44	19	3	5	1	11		
Peoria, IL	59	45	8	4	1	1	5	Los Angeles, CA	282	168	81	21	6	6	38		
Rockford, IL	54	43	9	1	1	—	1	Pasadena, CA	22	19	2	—	1	—	2		
South Bend, IN	64	44	12	5	2	1	3	Portland, OR	149	99	32	10	4	4	8		
Toledo, OH	112	79	26	2	2	3	3	Sacramento, CA	214	162	38	8	4	2	28		
Youngstown, OH	57	43	14	—	—	—	8	San Diego, CA	166	116	33	9	5	3	9		
<b>W.N. Central</b>	830	564	187	42	16	20	61	San Francisco, CA	119	71	36	12	—	—	14		
Des Moines, IA	100	78	16	4	—	2	9	San Jose, CA	180	133	39	5	1	2	17		
Duluth, MN	41	32	9	—	—	—	3	Santa Cruz, CA	35	25	9	1	—	—	4		
Kansas City, KS	34	21	9	3	1	—	4	Seattle, WA	146	87	42	8	5	4	7		
Kansas City, MO	117	86	22	8	1	—	8	Spokane, WA	73	59	12	1	1	—	8		
Lincoln, NE	54	39	12	1	1	1	4	Tacoma, WA	125	97	15	9	4	—	4		
Minneapolis, MN	87	54	20	3	5	5	6	<b>Total¶</b>	<b>12,706</b>	<b>8,465</b>	<b>2,965</b>	<b>744</b>	<b>261</b>	<b>265</b>	<b>894</b>		
Omaha, NE	111	84	18	3	1	5	9										
St. Louis, MO	99	46	34	9	5	4	4										
St. Paul, MN	63	40	17	4	—	2	5										
Wichita, KS	124	84	30	7	2	1	9										

U: Unavailable. —:No reported cases.  
 \* Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of >100,000. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.  
 † Pneumonia and influenza.  
 § Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.  
 ¶ Total includes unknown ages.

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