

Occupational Aviation Fatalities — Alaska, 2000–2010

Aircraft crashes are the second leading cause of occupational deaths in Alaska; during the 1990s, a total of 108 fatal aviation crashes resulted in 155 occupational fatalities (1). To update data and identify risk factors for occupational death from aircraft crashes, CDC reviewed data from the National Transportation Safety Board (NTSB) and the Alaska Occupational Injury Surveillance System. During 2000–2010, a total of 90 occupational fatalities occurred as a result of 54 crashes, an average of five fatal aircraft crashes and eight fatalities per year. Among those crashes, 21 (39%) were associated with intended takeoffs or landings at landing sites not registered with the Federal Aviation Administration (FAA). Fifteen crashes (28%) were associated with weather, including poor visibility, wind, and turbulence. In addition, 11 crashes (20%) resulted from pilots' loss of aircraft control; nine (17%) from pilots' failure to maintain clearance from terrain, water, or objects; and seven (13%) from engine, structure, or component failure. To reduce occupational fatalities resulting from aircraft crashes in the state, safety interventions should focus on providing weather and other flight information to increase pilots' situational awareness, maintaining pilot proficiency and decision-making abilities, and expanding the infrastructure used by pilots to fly by instruments.

CDC reviewed reports from its Alaska Occupational Injury Surveillance System (AOISS) and information from the NTSB accident database* to identify risk factors for occupational deaths. A case was defined as a fatal occupational traumatic injury in an aircraft crash during 2000–2010 that was reported in Alaska and investigated by NTSB. AOISS contains information on all fatal occupational traumatic injuries that occur in Alaska. Only cases that meet the criteria for an occupational fatality using established guidelines for injury at work are included (2). NTSB is mandated by Congress to investigate civilian transportation incidents and crashes, determine probable causes, and issue safety recommendations. NTSB reports include information on aircraft, crash circumstances, pilots and

crew, and a narrative outlining contributing factors. Crashes are "accidents," defined by the NTSB as "an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage."[†] Military crashes and crashes of aircraft that are not registered in a civil aviation registry (such as ultralights) routinely are not investigated.

Rates for the number of departures were calculated using data from the FAA Terminal Area Forecast summary report for the Alaska region for 2000–2010.[§] FAA air traffic control towers and radar approach control facilities record aircraft operations (takeoffs and landings). Aircraft operations at contracted air traffic control towers and nontowered airports are estimated. For this report, the number of departures was calculated as operations (takeoffs + landings) divided by two. FAA reports aviation operations by fiscal year (i.e., October through September). Fatalities are reported by calendar year. Data on fatalities from each calendar year were paired with operations data from corresponding fiscal years.

During 2000–2010, 54 aircraft crashes involving fatalities occurred in Alaska, resulting in 90 occupational deaths (Figure). The mean age of victims was 44 years (range: 20–73

[†] Definitions, 49 C.F.R. Sect. 830.2 (1995).

[§] Available at <http://aspm.faa.gov/main/taf.asp>.

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* Available at <http://www.nts.gov/aviationquery/index.aspx>.



years), and 79 (88%) of the victims were male. Of those persons who died, 53 (59%) were occupational pilots. Mean total flight hours (when available) for pilots in command ($n = 43$) was 7,798 hours. The most common occupations of the nonpilot victims were management (11); installation, service, and repair (seven); personal care/service occupations, including tour guides (six); and protective service occupations (four). Fixed wing aircraft were involved in 48 (89%) of the crashes and six (11%) involved helicopters. Most (65%) crashes occurred during May–September; 48% of crashes occurred during the hours of 12:01 p.m. and 6:00 p.m.

The numbers and rates of occupational fatal crashes and deaths that occurred during 2005–2009 were lower than those during 2000–2004 (Table 1). The crash rate declined 32%, from 6.5 to 4.4 crashes per 1 million departures. The fatality rate decreased 36%, from 10.8 to 6.9 per 1 million departures. However, in 2010, numbers were higher than the previous yearly average, with six occupational fatal crashes resulting in 12 deaths. A review of the departure locations and destinations revealed that 21 (39%) fatal crashes were associated with intended takeoffs or landings at non-FAA–registered landing sites, such as gravel bars, snow fields, lakes, and temporary airstrips. The other 33 (61%) crashes were associated with intended takeoffs and landings at FAA-registered airports. The leading causes of fatal crashes, by numbers of crashes, were 15 (28%) encounters with adverse weather; 11 (20%) pilots' loss of control; nine (17%) pilots' failure to maintain clearance from terrain, water or objects; and seven (13%) from

engine, structure, or component failure (Table 2). Causes are undetermined for three crashes with missing aircraft, and not yet determined for all 2010 crashes.

Reported by

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Editorial Note

To reduce the state's high number and rate of aircraft crashes in the 1990s CDC's National Institute for Occupational Safety and Health (NIOSH), NTSB, FAA, the National Weather Service (NWS), and the Alaska aviation industry started the Alaska Interagency Aviation Safety Initiative (AIASI). Several interventions were implemented, including the FAA Capstone program (3), which funded the purchase and installation of avionics equipment in commercial aircraft based in southwestern and southeastern Alaska and provided training in its use. This equipment provides terrain, air traffic, and weather information to pilots. FAA also has funded the installation of 150 weather cameras in mountain passes and remote locations throughout Alaska. These images are transmitted sequentially via the Internet.[‡] The NWS and FAA mike-in-hand program provides current weather information to pilots in the air (4),

[‡] Information available at <http://akweathercams.faa.gov>.

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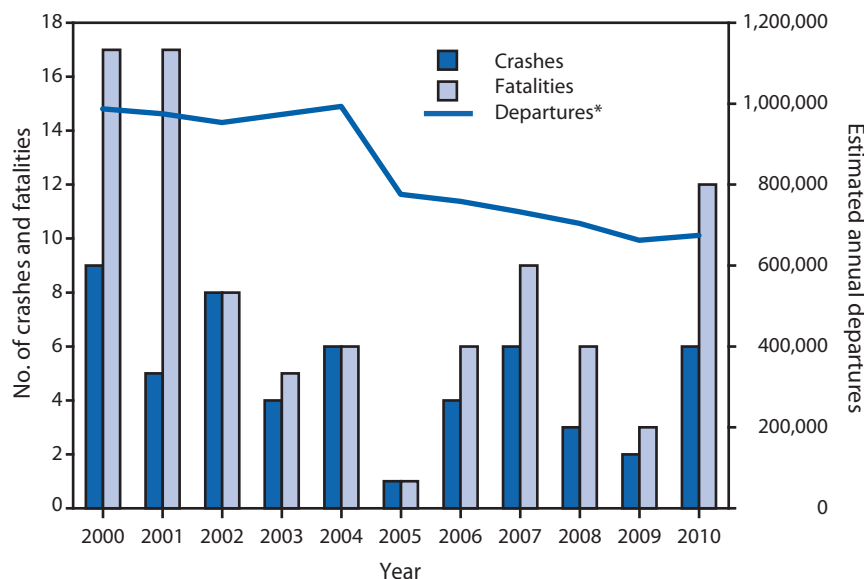
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FIGURE. Number of fatal crashes, associated fatalities, and departures — Alaska, 2000–2010

* Based on Federal Aviation Administration Terminal Area Forecast data.

TABLE 1. Number and rate of fatal aviation occupational crashes and associated fatalities — Alaska, 2000–2004, 2005–2009, and 2010

Event	2000–2004	2005–2009	2010
Fatal occupational crashes	32	16	6
Rate	6.5*	4.4*	
Per year	6 [†]	3 [†]	
Occupational fatalities	53	25	12
Rate	10.8*	6.9*	
Per year	11 [†]	5 [†]	

* Rate per 1 million departures for air carrier, air taxi and commuter, and general aviation operations based on Federal Aviation Administration Terminal Area Forecast data, available at <http://aspm.faa.gov/main/taf.asp>.

[†] Average for 5-year interval.

TABLE 2. Causes of fatal occupational aviation crashes — Alaska, 2000–2010

Cause	Crashes (N = 54)	Deaths (N = 90)
Weather-related, including wind	15	22
Loss of control, including failure to maintain airspeed	11	21
Failure to maintain clearance from terrain, water, or obstacles	9	12
Engine, structural, or component failure, including known deficiencies	7	11
Failure to use appropriate landing gear	2	6
Failure to follow published instrument procedures	2	2
Failure to supervise student pilot	1	1
Undetermined or aircraft missing	3	5
National Transportation Safety Board report not complete	4	10

and the FAA Circle of Safety program helps educate passengers on their responsibilities for safe flight (5). The Medallion Foundation is a nonprofit organization created to raise safety standards and foster a culture of safety among operators and pilots.**

In the 1990s, NIOSH determined that crashes into terrain and flying from good weather into conditions of poor visibility were strongly associated (6). Interventions developed as part of AIASI focused on improving the industry's safety culture and provided tools to avoid flight into poor visibility conditions. These various interventions have been effective in reducing fatalities (3); however, adverse weather continues to be a risk factor for fatal crashes. Loss of control, failure to maintain clearance, and aircraft structure or component failure also are risk factors. Crashes resulting from loss of aircraft control, failure to maintain clearance from terrain and objects, failure of aircraft structure and components, failure to

follow published procedures, and improper use of landing gear might be associated with pilot proficiency and decision making. Crashes since 2000 commonly were associated with flights to or from non-FAA-registered landing sites. These locations often are in remote areas of Alaska having limited weather information and minimal or no emergency equipment. Alaska's vast area, lack of roads, mountainous terrain, adverse weather conditions, and limited coverage by air traffic control, plus the use of airstrips and nonestablished landing fields, increase flight safety risks. Continued safety interventions that increase access to weather information, pilot proficiency, and instrument flight capabilities are needed to contend with the unique flying hazards found in Alaska.

The findings in this report are subject to at least two limitations. First, departure data were used as a denominator to measure flight activity, but these data are not a precise representation of worker exposure. The number of flight hours logged by workers traveling as part of their job or to their jobsites would give more precise measure of worker exposure. Second, departure data are obtained through reports to air traffic control towers and radar approach control facilities and estimated for nontowered airports included in FAA's National Plan of Integrated Airport Systems (NPIAS). Operations at non-FAA-registered landing sites and airports not listed in NPIAS are not included in the estimates.

** Information available at <http://www.medallionfoundation.org>.

What is already known on this topic?

Aircraft crashes are the second leading cause of occupational fatalities in Alaska.

What is added by this report?

Occupational aviation safety in Alaska has improved, with the fatal crash rate decreasing 32% from the first to the second half of 2000–2009. The higher than average number of crashes in 2010 call for continued efforts to identify risk factors, develop interventions, and promote safety. The most frequent causes of fatal occupational aircraft crashes include encounters with weather, pilots' loss of aircraft control, failure to maintain clearance from terrain, and aircraft structure or component failure.

What are the implications for public health practice?

Safety interventions should continue to focus on providing weather information and improving pilots' situational awareness, and on enhancing airport infrastructure to allow pilots with appropriate equipment and experience to fly by instruments; proficiency in piloting skills and aeronautical decision making should be emphasized for pilots regardless of experience, ratings, and flight hours.

In October 2010, approximately 200 members of the Alaska aviation community met to acknowledge the seriousness of the increased number of crashes in 2010, to explore solutions, and to identify resources to advance aviation safety in Alaska. Six vital items were identified by workgroups and persons at the meeting: pilot proficiency, access to weather information, Capstone avionics equipment, runway maintenance, fuel availability, and increased infrastructure support for instrument flight navigation (7). Further safety interventions should continue to focus on providing weather and other information to increase pilots' situational awareness, maintaining pilot proficiency and decision-making ability regardless of experience, ratings and flight hours, and providing infrastructure to allow pilots to fly by instruments.

Acknowledgments

National Transportation Safety Board. Federal Aviation Admin. National Weather Svc. Medallion Foundation. Alaska Air Carriers Assoc, Alaska Airmen's Assoc, Univ of Alaska Anchorage Aviation Technology Div, State of Alaska.

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Adult Blood Lead Epidemiology and Surveillance — United States, 2008–2009

Lead exposure can result in acute or chronic adverse effects in multiple organ systems, ranging from subclinical changes in function to symptomatic, life-threatening toxicity. Despite improvements in public health policies and substantial reductions in blood lead levels (BLLs) in adults, lead exposure remains an important health problem worldwide. Approximately 95% of all elevated BLLs reported among adults in the United States are work-related (1), and recent research has raised concerns regarding the toxicity of BLLs as low as 5 $\mu\text{g}/\text{dL}$ (2,3). CDC's state-based Adult Blood Lead Epidemiology and Surveillance (ABLES) program tracks laboratory-reported elevated BLLs. To update rate trends and identify industry subsectors and nonoccupational activities with high lead exposures, CDC collected and analyzed 2008–2009 data from 40 state ABLES programs. The results of that analysis indicated that a decline in the prevalence of elevated BLLs ($\geq 25 \mu\text{g}/\text{dL}$) was extended, from 14.0 per 100,000 employed adults in 1994 to 6.3 in 2009. Industry subsectors with the highest numbers of lead-exposed workers were battery manufacturing, secondary smelting and refining of nonferrous metals, and painting and paper hanging. The most common nonoccupational exposures to lead were shooting firearms; remodeling, renovating, or painting; retained bullets (gunshot wounds); and lead casting. The findings underscore the need for government agencies, employers, public health professionals, health-care providers, and worker-affiliated organizations to increase interventions to prevent workplace lead exposure, and the importance of conducting lead exposure surveillance to assess the effectiveness of these interventions.

State ABLES programs 1) collect data on adult BLLs from laboratories and physicians through mandatory reporting requirements; 2) assign unique identifiers to each adult to account for multiple BLL records; 3) follow-up on adults with BLLs $\geq 25 \mu\text{g}/\text{dL}$ with laboratories, health-care providers, employers, or workers to ensure completeness of information (e.g., the industry where the adult is employed and whether the exposure source is occupational, nonoccupational, or both); and 4) code the industry where the adult worked using the 1987 Standard Industrial Classification (SIC) or the 2002 North American Industry Classification System (NAICS). The requirement for laboratories and health-care providers to notify state authorities about BLLs varies among ABLES states, ranging from the reporting of all BLLs to only BLLs $\geq 40 \mu\text{g}/\text{dL}$.^{*} Most ABLES states submit data on all BLLs to CDC's National Institute for Occupational Safety and Health

(NIOSH), including records from adults whose BLLs fall below the state reporting requirement.

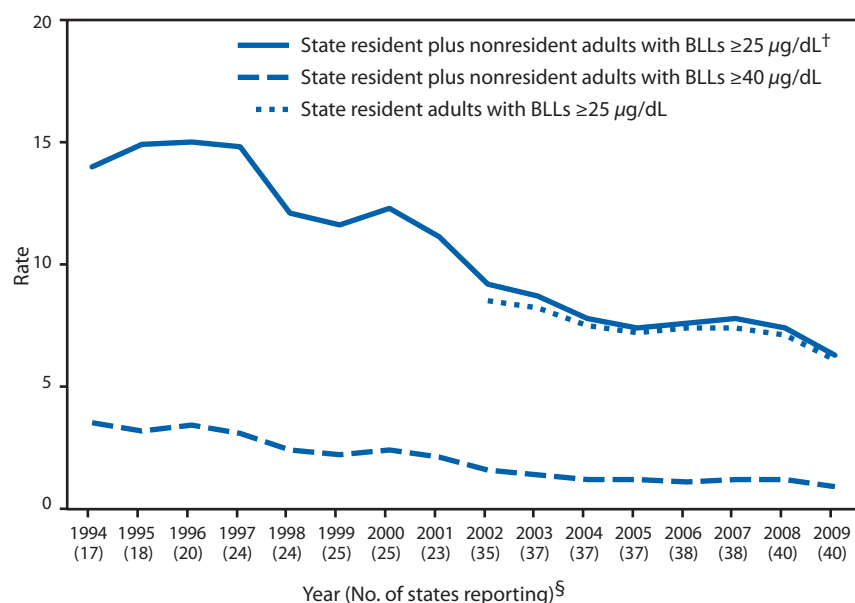
Adults were defined as persons aged ≥ 16 years. For adults with more than one BLL record in a given year, only the highest BLL was included. Elevated BLLs were defined as blood lead concentrations $\geq 25 \mu\text{g}/\text{dL}$. Prevalence numerators were either "state residents" (adults residing in the reporting state) or "state residents and nonresidents" (all adults reported by a state) with elevated BLLs (a distinction in the data since 2002); both employed and unemployed persons were included in the numerators. Denominators were the annual employed population aged ≥ 16 years for the period 2008–2009, as obtained from the U.S. Bureau of Labor Statistics (4). To calculate annual state prevalences, the numbers of adults with elevated BLLs from each of the 40 states reporting[†] were divided by the state's annual employed population and expressed as a rate per 100,000 employed adults. The combined state numerators and denominators for each year were then used to calculate national (40-state) prevalence rates for 2008–2009. The percentage of adults with BLL $\geq 40 \mu\text{g}/\text{dL}$ among adults with BLL $\geq 25 \mu\text{g}/\text{dL}$ in each industry subsector was used to identify industry subsectors with the highest lead exposures. Additional information regarding interpretation of specific state ABLES data, definitions, and rate calculations is available at the ABLES program website (5).

A total of 40 states submitted data in both 2008 and 2009. Overall, the prevalence of elevated BLLs ($\geq 25 \mu\text{g}/\text{dL}$) among state residents and nonresidents declined from 14.0 adults per 100,000 employed adults in 1994 (4) to 7.4 in 2008 and 6.3 in 2009. Rates were slightly lower (7.1 and 6.1 respectively) when only state resident adults were included (Figure 1). The number of states with high prevalence of elevated BLLs (i.e., ≥ 20 adults per 100,000 employed adults) decreased from six of 17 states in 1994 to three of 40 states in 2009 (Figure 2). ABLES states reported 9,325 and 7,674 state resident adults with elevated BLLs in 2008 and 2009, respectively. State resident prevalence of elevated BLLs for 2008 ranged from 0.5 per 100,000 employed adults (Hawaii) to 37.6 (Pennsylvania); and for 2009, from 0.3 (Hawaii) to 32.0 (Pennsylvania). Prevalence of state resident and nonresident adults with BLLs $\geq 40 \mu\text{g}/\text{dL}$ declined from 3.5 in 1994 to 1.2 in 2008 and 0.9

[†] A total of 40 states submitted data in 2008 and 2009: Alabama, Alaska, Arizona, California, Connecticut, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Washington, Wisconsin, and Wyoming.

^{*} Information on blood lead laboratory results reporting requirements by state is available at the ABLES program website <http://www.cdc.gov/niosh/topics/ABLES/State-Contacts.html>.

FIGURE 1. Prevalence rates* of adults with elevated blood lead levels (BLLs) — Adult Blood Lead Epidemiology and Surveillance program, United States, 1994–2009



* Per 100,000 employed adults aged ≥16 years. Denominators for 2008–2009 extracted from 2011 U.S. Department of Labor, Bureau of Labor Statistics Local Area Unemployment Statistics program, available at <http://www.bls.gov/data>.

[†] State residents are adults residing in the reporting state. State residents and nonresidents are all adults reported by a state.

[§] A total of 40 states submitted data in 2008 and 2009: Alabama, Alaska, Arizona, California, Connecticut, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Washington, Wisconsin, and Wyoming.

in 2009. In 2008, these rates ranged from 0.2 (Arizona) to 6.5 (Pennsylvania) and in 2009, from zero (Alaska and Wyoming) to 4.2 (Pennsylvania).

Thirty-seven states in 2008 and 38 states in 2009 submitted data on industry and exposure source (8,450 and 7,112 state resident adults with elevated BLLs, respectively).[§] Among all reported cases of elevated BLLs, exposures at work accounted for 6,081 (71.9%) in 2008 and 4,998 (70.1%) in 2009 (Table). Among only those cases with known exposure type (i.e., occupational or nonoccupational), occupational exposures accounted for 94.8% of cases in 2008 and 93.8% in 2009. The greatest proportions of adults with elevated BLLs were employed in three main industry sectors: manufacturing (72.1% in 2008 and 72.3% in 2009), construction (13.2% in 2008 and 14.4% in 2009), and mining (6.6% in 2008 and 5.1% in 2009). Industry subsectors with the highest numbers of workers with elevated BLLs were manufacturing of storage batteries, secondary smelting and refining of nonferrous

[§] A total of 38 of the 40 states (all except Indiana and Kentucky) provided data on industry in 2009 and 37 in 2008 (all except Alabama, Indiana, and Kentucky).

metals, and painting and paper hanging (Table). Industry subsectors with the greatest proportions of adults with BLLs ≥40 µg/dL among adults with BLLs ≥25 µg/dL were painting and paper hanging; bridge, tunnel, and elevated highway construction; copper foundries; special trade contractors; and heavy construction industries (Table). Nonoccupational exposures accounted for 337 (4.0%) and 328 (4.6%) of all adult cases in 2008 and 2009, respectively. The most common nonoccupational exposures were from shooting firearms; remodeling, renovating, or painting; retained bullets; and lead casting (Table).

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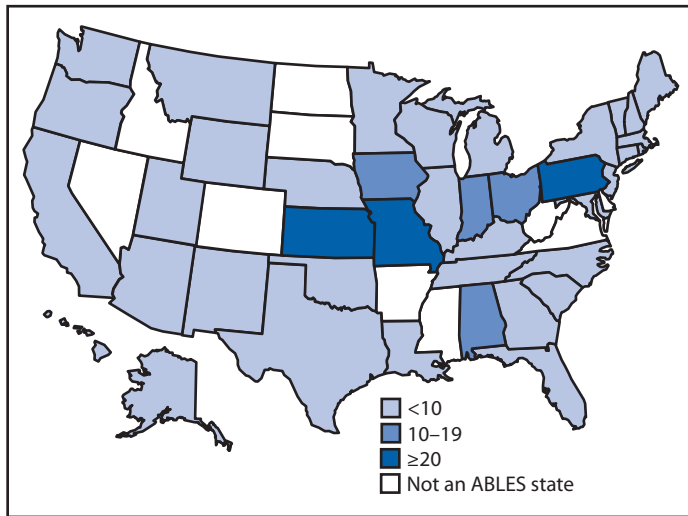
Editorial Note

Job activities known to involve the use or disturbance of lead include the following: handling of lead-containing powders, liquids, or pastes; production of dust or fumes by melting, burning, cutting, drilling, machining, sanding, scraping, grinding, polishing, etching, blasting, torching, or welding lead-containing solids; and dry sweeping of lead-containing dust and debris (3). Since 1994, ABLES surveillance results indicate an overall decreasing trend in the prevalence of elevated BLLs in U.S. adults and a decrease in the number of states with the highest rates (i.e., ≥20 adults per 100,000). This decrease, in part, might be attributable to a decline in the number of manufacturing jobs with potential for lead exposure over time and prevention measures that have been enacted since the early 1990s, including 1) improved interventions by state ABLES programs,[¶] worker-affiliated organizations, and federal programs such as the Occupational Safety and Health Administration (OSHA) National Emphasis Program to reduce lead exposure** and 2) measures implemented by industry

[¶] Interventions include 1) conducting follow-up interviews with physicians, employers, and workers; 2) investigating worksites; 3) providing technical assistance; 4) providing Occupational Safety and Health Administration (OSHA) referrals for consultation and enforcement; and 5) developing and disseminating educational materials and conducting outreach programs.

** Additional information available at http://www.osha.gov/OshDoc/Directive_pdf/CPL_03-00-0009.pdf.

FIGURE 2. Prevalence rates* of adults with elevated blood lead levels ($\geq 25 \mu\text{g}/\text{dL}$), among adults residing in the reporting state — Adult Blood Lead Epidemiology and Surveillance (ABLES) program, United States, 2009[†]



* Per 100,000 employed adults aged ≥ 16 years. Denominators for 2008–2009 extracted from 2011 U.S. Department of Labor, Bureau of Labor Statistics Local Area Unemployment Statistics program, available at <http://www.bls.gov/data>.

[†] A total of 40 states submitted data in 2008 and 2009: Alabama, Alaska, Arizona, California, Connecticut, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Washington, Wisconsin, and Wyoming.

(e.g., engineering and work practice controls,^{††} and respiratory protection). However, the decrease in rates also might reflect low employer compliance with testing and reporting requirements (6).

ABLES data also underscore that elevated BLLs among adults are almost exclusively an occupational health problem in the United States. Those states with higher rates of elevated BLLs might represent 1) states where higher proportions of workers are employed in high-risk industries (e.g., lead-related manufacturing, construction activities involving lead paint exposure, and lead mining), 2) states where workers in high-risk areas are less likely to be protected by engineering and workplace controls, or 3) states where greater compliance with testing requirements by employers and reporting requirements by laboratories result in larger numbers of reported cases of elevated BLLs. Similar to findings in previous years, the 2008–2009 data indicate that five industry subsectors accounted for approximately 65% and 14 subsectors accounted for approximately 80% of

^{††} Engineering controls and good work practices are the preferred methods of minimizing exposures to airborne lead at the worksite. Engineering control methods that can be used to reduce or eliminate lead exposures can be grouped into three main categories: 1) substitution, 2) isolation, and 3) ventilation. Additional information available at http://www.osha.gov/dts/osta/otm/otm_v/otm_v_3.html#2.

What is already known on this topic?

Lead exposure among adults remains almost exclusively an occupational health problem in the United States, although the health effects from lead exposure are well characterized and controls to reduce lead exposure for workers exist.

What this report adds?

During 2008–2009, the prevalence of U.S. adults with blood lead levels (BLLs) $\geq 25 \mu\text{g}/\text{dL}$ continued to decrease, to 6.3 per 100,000 employed adults in 2009 from 14.0 in 1994. The highest prevalences of elevated BLLs continue to be found among workers in the manufacturing, construction, and mining industries.

What are the implications for public health practice?

Measures to improve lead exposure surveillance and preventive interventions focused in the manufacturing, construction, and mining industries should be implemented by government agencies, employers, and worker-affiliated organizations.

adults with elevated BLLs who were exposed at work. Higher lead exposures likely are present in those industries with the greatest proportions of elevated BLLs $\geq 40 \mu\text{g}/\text{dL}$.

ABLES data are used to track *Healthy People 2020* objective OSH-7, to reduce the prevalence of persons who have elevated BLLs from work exposures (7). The *Healthy People 2020* target incorporates the new $\geq 10 \mu\text{g}/\text{dL}$ operational definition for elevated BLLs established by ABLES consistent with guidance from the Association of Occupational and Environmental Clinics and the Council of State and Territorial Epidemiologists (8).

The findings in this report are subject to at least four limitations. First, the number of adults with elevated BLLs reported to ABLES likely is underreported because some employers might not provide BLL testing to all lead-exposed workers as required by OSHA regulations and because some laboratories might not report all tests as required by state regulations (9). Second, because denominators are the numbers of employed persons, aged ≥ 16 years, unemployed adults who might be at risk for lead exposure, although included in the numerator, are not included in the denominator. Third, although state ABLES programs ascertain the work-relatedness of a lead exposure by following up with laboratories, physicians, employers, or workers, the possibility of misclassification of occupational versus nonoccupational cases cannot be excluded. Finally, analyzing lead exposures using a threshold of $25 \mu\text{g}/\text{dL}$ likely underestimates harmful occupational lead exposure because lead-related toxicity can occur at levels as low as $5 \mu\text{g}/\text{dL}$ and the *Healthy People 2020* target is set at $10 \mu\text{g}/\text{dL}$.

Progress toward meeting the *Healthy People 2020* target for reducing the prevalence of adults with BLLs $\geq 10 \mu\text{g}/\text{dL}$ from workplace lead exposures can be aided by improving 1)

TABLE. Number and annual percentage of state resident adults with elevated blood lead levels (BLLs) (≥ 25 $\mu\text{g}/\text{dL}$), by industry subsector and nonoccupational source of exposure — Adult Blood Lead Epidemiology and Surveillance (ABLES) program, United States, 2008–2009

Exposure type	2008 (37 states)				2009 (38 states)			
	BLLs ≥ 25 $\mu\text{g}/\text{dL}$		BLLs ≥ 40 $\mu\text{g}/\text{dL}$		BLLs ≥ 25 $\mu\text{g}/\text{dL}$		BLLs ≥ 40 $\mu\text{g}/\text{dL}$	
	No.	(% [†])	No.	(% [§])	No.	(% [†])	No.	(% [§])
Occupational (industry subsector [SIC and NAICS codes]*)								
Manufacturing								
Storage batteries (SIC 3691, NAICS 335911)	2,214	(36.4)	239	(10.8)	1,800	(36.0)	138	(7.7)
Secondary smelting and refining of nonferrous metals (SIC 3341, NAICS 331314 part, 331423 part, 331492 part)	575	(9.5)	95	(16.5)	641	(12.8)	99	(15.4)
Primary batteries (dry and wet) (SIC 3692, NAICS 335912)	510	(8.4)	77	(15.1)	225	(4.5)	8	(3.6)
Primary smelting and refining of nonferrous metals (SIC 3339, NAICS 331419)	161	(2.6)	13	(8.1)	160	(3.2)	7	(4.4)
Copper foundries (SIC 3366, NAICS 331525)	126	(2.1)	28	(22.2)	56	(1.1)	11	(19.6)
Rolling, drawing, and extruding of nonferrous metals (SIC 3356, NAICS 331491)	68	(1.1)	10	(14.7)	102	(2.0)	14	(13.7)
Nonferrous die-castings, except aluminum (SIC 3364, NAICS 331522)	52	(0.9)	6	(11.5)	33	(0.7)	3	(9.1)
Nonferrous foundries, except aluminum and copper (SIC 3369, NAICS 331528)	41	(0.7)	6	(14.6)	38	(0.8)	3	(7.9)
Construction								
Painting and paper hanging (SIC 1721, NAICS 237310 part, 238320 part)	453	(7.4)	142	(31.3)	314	(6.3)	85	(27.1)
Bridge, tunnel, and elevated highway construction (SIC 1622, NAICS 237310 part, 237990 part)	78	(1.3)	11	(14.1)	131	(2.6)	33	(25.2)
Special trade contractors NEC (SIC 1799, various NAICS codes in construction and services)	52	(0.9)	5	(9.6)	76	(1.5)	20	(26.3)
Heavy construction, NEC (SIC 1629, various NAICS codes in construction)	36	(0.6)	5	(13.9)	49	(1.0)	10	(20.4)
Metal mining								
Lead and zinc ores (SIC 1031, NAICS 212231)	393	(6.5)	58	(14.8)	242	(4.8)	19	(7.9)
Trade								
Scrap and waste materials (SIC 5093, NAICS 423930, 425110 part, 425120 part)	81	(1.3)	19	(23.5)	44	(0.9)	4	(9.1)
Other industries and unavailable information on industry[¶]	1,241	(20.4)	204	(16.4)	1,087	(21.7)	214	(19.7)
Total exposed at work	6,081	(100.0)	918	(15.1)	4,998	(100.0)	668	(13.4)
Nonoccupational								
Shooting firearms (target shooting)	120	(35.6)	19	(15.8)	105	(32.0)	23	(21.9)
Remodeling/Renovation/Painting	37	(11.0)	12	(32.4)	34	(10.4)	8	(23.5)
Retained bullets (gunshot wounds)	20	(5.9)	9	(45.0)	29	(8.8)	6	(20.7)
Casting (e.g., bullets and fishing weights)	26	(7.7)	7	(26.9)	20	(6.1)	9	(45.0)
Eating food containing lead	16	(4.7)	10	(62.5)	27	(8.2)	11	(40.7)
Pica (eating nonfood items)	14	(4.2)	4	(28.6)	13	(4.0)	8	(61.5)
Complementary and alternative medicines (e.g., Ayurvedic medicines)	9	(2.7)	6	(66.7)	7	(2.1)	3	(42.9)
Retired**	7	(2.1)	2	(28.6)	7	(2.1)	0	(0.0)
Other nonoccupational exposure	37	(11.0)	3	(8.1)	21	(6.4)	7	(33.3)
Nonoccupational source of exposure unavailable	51	(15.1)	17	(33.3)	65	(19.8)	21	(32.3)
Total exposed at places other than work	337	(100.0)	89	(26.4)	328	(100.0)	96	(29.3)
Total unknown exposure source	2,032		357	(17.6)	1,786		282	(15.8)

Abbreviations: SIC = Standard Industry Classification; NAICS = North American Industry Classification System; NEC = not elsewhere classified.

* Correspondence tables between 2002 NAICS and 1987 SIC are available from the U.S. Census Bureau at <http://www.census.gov/epcd/naics02/index.html>.

[†] Percentage of the total number of employed adults reported per year.

[§] Percentage of employed adults with BLLs ≥ 40 $\mu\text{g}/\text{dL}$ among employed adults with BLLs ≥ 25 $\mu\text{g}/\text{dL}$ in each industry subsector or nonoccupational exposure category.

[¶] Information on industry was unavailable for 125 adults with BLLs ≥ 25 $\mu\text{g}/\text{dL}$ and for 18 adults with BLLs ≥ 40 $\mu\text{g}/\text{dL}$ in 2008; and in 84 adults with BLLs ≥ 25 $\mu\text{g}/\text{dL}$ and for 18 adults with BLLs ≥ 40 $\mu\text{g}/\text{dL}$ in 2009.

** These adults might have been former lead workers. Available data show that one adult (BLL 64 $\mu\text{g}/\text{dL}$) retired from a motor vehicle parts and accessories manufacturing industry; one adult (BLL 27 $\mu\text{g}/\text{dL}$) was a retired minister; and one adult (BLL 34 $\mu\text{g}/\text{dL}$) retired as a prospector, with exposure to melted lead.

worker protection programs developed and maintained by employers^{§§}; 2) government activities such as ABLES programs, which can effectively intervene to prevent lead exposures and the OSHA National Emphasis Program to reduce lead exposure; 3) research and interventions by stakeholder organizations; and 4) education of the public regarding preventing nonoccupational exposures. Emphasis should be placed on those industries identified in this report with the highest numbers of workers with elevated BLLs: manufacturing of storage batteries, secondary smelting and refining of nonferrous metals, painting and paper hanging, and bridge, tunnel, and elevated highway construction.

^{§§} Additional information available at http://www.osha.gov/pls/oshaweb/owa_disp.show_document?p_table=fact_sheets&p_id=161.

Acknowledgments

ABLES program coordinators in 40 states who contributed data in 2008 and 2009.

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Update on Vaccine-Derived Polioviruses — Worldwide, July 2009–March 2011

In 1988, the World Health Assembly resolved to eradicate poliomyelitis worldwide (1). The live, attenuated oral poliovirus vaccine (OPV) has many advantages favoring its use in polio eradication: it is administered easily by mouth; confers intestinal immunity, making recent OPV recipients resistant to infection by wild polioviruses (WPVs); provides long-term protection against paralytic disease through durable humoral immunity; and is inexpensive. Despite its many advantages, OPV use carries the risk for occurrence of rare cases of vaccine-associated paralytic poliomyelitis among immunologically normal OPV recipients and their contacts and the additional risk for emergence of vaccine-derived polioviruses (VDPVs). Because of these risks, OPV use will be discontinued worldwide once the goal of eradicating all WPV transmission is achieved. VDPVs can cause polio outbreaks in areas with low OPV coverage and can replicate for years in immunodeficient persons; therefore, strategies to strengthen global polio immunization and surveillance are needed to limit emergence of VDPVs (2). This report updates previous surveillance summaries (3,4) and describes VDPVs detected worldwide during July 2009–March 2011 and reported as of June 20, 2011. Three new outbreaks of circulating VDPVs (cVDPVs), ranging in size from six to 16 cases, were identified in Afghanistan, Ethiopia, and India; three previously identified outbreaks in Nigeria, Democratic Republic of Congo (DRC), and Somalia continued through late 2010 or into 2011 and resulted in 355, 37, and 13 total cases, respectively; two countries experienced importations of cVDPVs from Nigeria; nine newly identified paralyzed immunodeficient persons in seven middle-income and developing countries were found to excrete VDPVs; and VDPVs were found among persons and environmental samples in 15 countries. With the use of alternate OPV formulations since 2005 (1) and with enhanced poliovirus surveillance sensitivity and laboratory screening, the number of identified cVDPV outbreaks per year has increased over time (2,3). To prevent VDPV emergence and spread, all countries should maintain high poliovirus vaccination coverage against all three poliovirus serotypes. Sensitive poliovirus surveillance to detect VDPVs will continue to increase in importance.

Properties of VDPVs

VDPVs can cause paralytic polio in humans and have the potential for sustained circulation. VDPVs resemble WPVs biologically (3) and differ from the majority of vaccine-related poliovirus (VRPV) isolates by having genetic properties consistent with prolonged replication or transmission. Because poliovirus genomes evolve at a rate of approximately 1% per

year, VRPVs that differ from the corresponding OPV strain by >1% of nucleotide positions (usually determined by sequencing the genomic region that encodes the major viral surface protein [VP1]) are presumed to have replicated for at least 1 year in one or more persons after administration of an OPV dose. This is substantially longer than the normal period of vaccine virus replication of 4–6 weeks in an OPV recipient.

Three poliovirus serotypes exist: types 1, 2, and 3. Poliovirus isolates are grouped into three categories, based on the extent of divergence of the VP1 nucleotide region compared with the corresponding OPV strain: 1) VRPVs (<1% divergent [types 1 and 3] or <0.6% divergent [type 2]); 2) VDPVs (VRPVs that are >1% divergent [types 1 and 3] or >0.6% divergent [type 2] from the corresponding OPV strain); and 3) WPVs (no genetic evidence of derivation from any vaccine strain) (3). VDPVs are further categorized as 1) cVDPVs, when evidence of person-to-person transmission in the community exists; 2) immunodeficiency-associated VDPVs (iVDPVs), which are isolated from persons with primary immunodeficiencies who have prolonged VDPV infections; and 3) ambiguous VDPVs (aVDPVs), which are either clinical isolates from persons with no known immunodeficiency or sewage isolates whose source is unknown (3).

Virologic Testing for VDPVs

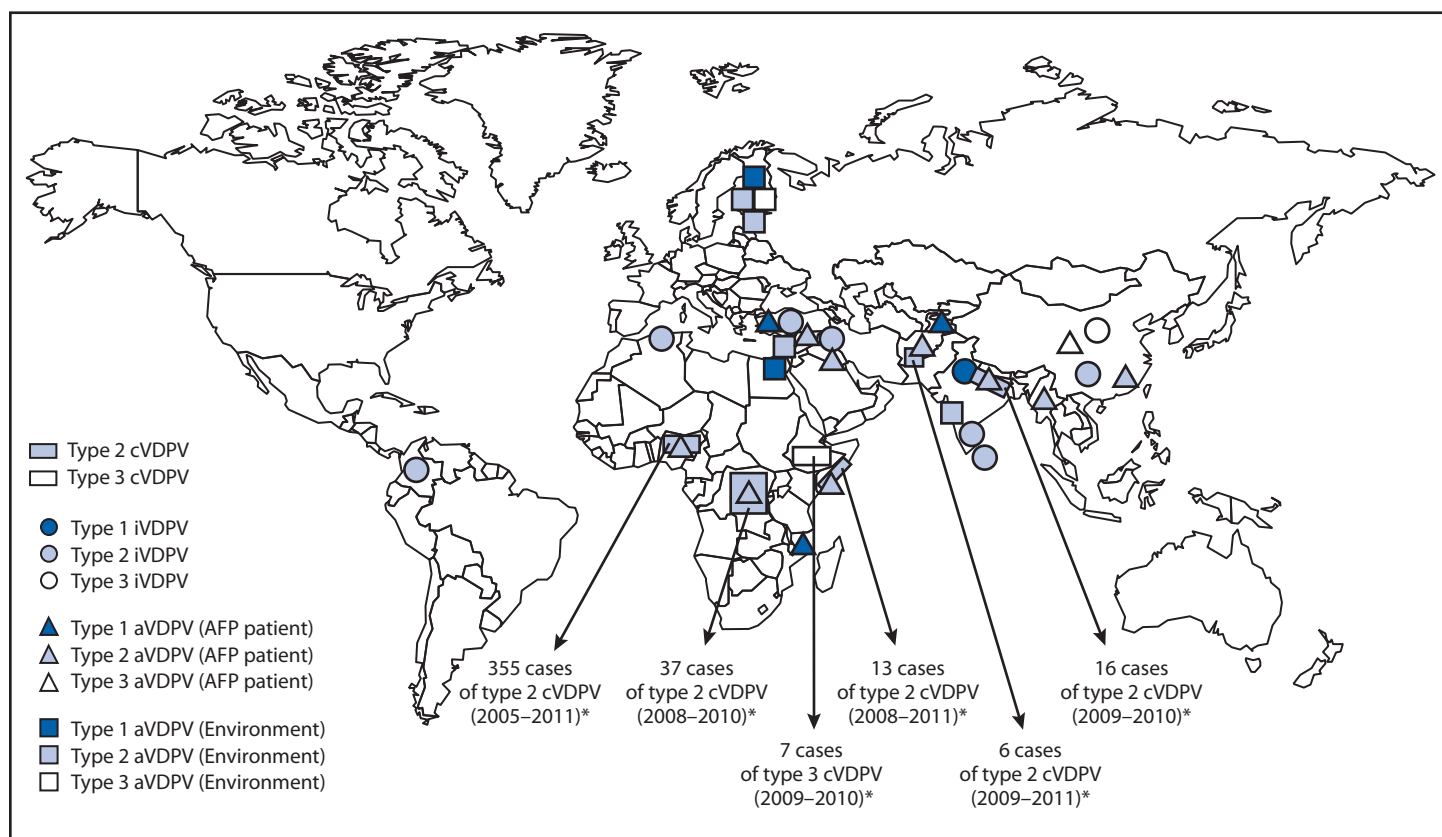
All poliovirus isolates are characterized by laboratories of the Global Polio Laboratory Network (4). The original protocol to screen for VDPVs, using a combination of molecular and antigenic methods, largely has been replaced by a real-time reverse transcription–polymerase chain reaction (rRT-PCR) nucleic acid amplification targeted to nucleotide substitutions that occur early in VDPV emergence (3). Candidate VDPVs are sequenced in the VP1 region for routine analysis; the complete genome is sequenced if higher epidemiologic resolution is required.

cVDPVs

The number of countries with indigenous cVDPV emergence increased from three to six since the last reporting period (3), and VDPVs were imported from Nigeria into two countries. In all but one country the emerging cVDPVs were type 2 (Figure).

Afghanistan. Six type 2 cVDPV (cVDPV2) isolates (1.0%–1.2% divergent) were isolated during June 2010–January 2011 in the southern province of Helmand, where routine trivalent OPV (tOPV) coverage is low, and where WPV1 has circulated throughout the reporting period and WPV3 was

FIGURE. Vaccine-derived polioviruses (VDPVs) detected — worldwide, July 2009–March 2011



Abbreviations: cVDPV = circulating VDPV; iVDPV = immunodeficiency-associated VDPV; aVDPV = ambiguous VDPV; AFP = acute flaccid paralysis.

* Spread of cVDPVs followed the elimination of the corresponding serotype of indigenous wild poliovirus, but with continued introduction of oral poliovirus vaccine into communities with growing immunity gaps. All of the cVDPV outbreaks were detected first by the laboratory, using sequence data and evolutionary analyses.

isolated until April 2010. After introduction of bivalent OPV (bOPV) type 1 and 3 in December 2009, two of 12 subsequent supplementary immunization activities (SIAs)* through March 2011 used tOPV.

Chad. One cVDPV2 (5.3% divergent) was isolated from a patient in Ndjamena with onset of acute flaccid paralysis (AFP) in November 2010. The isolate was closely related to virus circulating in northeastern Nigerian states in 2010.

DRC. The cVDPV2 outbreak in DRC continued through 2010, with a total of 37 cases detected. Since July 2009, a total of 17 cVDPV2 isolates (0.7%–3.5% divergent) from AFP cases have been detected in five provinces. Five additional aVDPV2 isolates (0.7%–1.4% divergent) from AFP patients were detected in three of these provinces. Multiple independent cVDPV2 and aVDPV2 emergences occurred in DRC.

Ethiopia. Seven cVDPV3 isolates (1.3%–3.1% divergent) were isolated from AFP patients in three overlapping VDPV3 outbreaks that emerged independently in three central regions.

* Mass campaigns conducted during a short period (days to weeks) during which a dose of OPV is administered to all children aged <5 years, regardless of previous vaccination history. Campaigns can be conducted nationally or in portions of the country.

India. Sixteen cVDPV2 isolates (1.0%–1.6% divergent), representing four independent emergences, were isolated from AFP patients in Uttar Pradesh. The cVDPV2 cases clustered in districts of western Uttar Pradesh that previously had been at high risk for WPV1 and WPV3 circulation (5). Although all patients had received >7 mOPV1 doses in SIAs, <50% had received a tOPV dose.

Niger. One cVDPV2 (2.5% divergent) was isolated from a patient in southwestern Niger with onset of AFP in June 2010. The isolate was closely related to a cVDPV circulating in neighboring Sokoto State, Nigeria. As with the four previous cVDPV2 importations from Nigeria detected since May 2006 (3), no secondary cases were found in Niger.

Nigeria. Since 2005, a total of 355 AFP cases associated with an outbreak of cVDPV2 (0.7%–6.2% divergent) have been reported in 11 northern and three central states of Nigeria (3,6,7). The outbreak peaked at 153 cases in 2009, but 27 cases were detected in 2010, and five cases (representing three transmission chains) were detected through March 2011. Genetic analysis indicated that detected cases represent at least seven concurrent outbreaks arising from multiple

cVDPV2 emergences during 2004–2006 (3,7). The outbreak occurred in northern states, where coverage attained through routine vaccination with tOPV was low and tOPV SIAs were infrequent (3,6,7).

Somalia. VDPV2 has been detected in Somalia since 2005. During July 2009–March 2011, cVDPV2 (1.0%–2.4% divergent) were isolated from five AFP cases and six contacts in the regions surrounding Mogadishu; all were derived from a single emergence. An independent aVDPV2 (0.7% divergent) was isolated in 2010 from an AFP patient.

iVDPVs

Since the introduction of OPV in 1961, approximately 50 persons with B-cell immunodeficiencies have been found worldwide to be excreting iVDPVs (indicating prolonged infections), most of which were detected only after the onset of AFP. Intensified surveillance for VDPVs and special studies of iVDPV excretion among persons with primary immunodeficiencies in developing and middle-income countries have resulted in an increase in recognized iVDPV infections, from two in the previous reporting period (3) to nine currently, seven of which were associated with iVDPV2. New iVDPV infections will occur as long as OPV is used and no effective therapies to clear iVDPV infections are available.

Algeria. A girl aged 1.5 years with HLA-DR–associated immunodeficiency, who had received 2 OPV doses, developed AFP in April 2010, and died in November 2010 from complications of immunodeficiency; iVDPV2 (1.0%–1.8% divergent) was isolated from four consecutive stool specimens.

China. An iVDPV2 (1.9% divergent) was isolated from a girl aged 9 years with primary immunodeficiency, and an iVDPV3 (2.0% divergent) was isolated from a boy aged 2 years with primary immunodeficiency. Both patients had received 3 OPV doses, and both developed AFP in February 2011.

Colombia. A boy aged 15 months with agammaglobulinemia who had received 4 OPV doses in his first months of life, developed AFP in July 2009, 15 months after receipt of the first OPV dose; iVDPV2 (1.5% divergent) was isolated from two consecutive stool specimens.

India. A boy aged 11 years with common variable immunodeficiency who had received 4 OPV doses, developed AFP in September 2009, 5 years after receipt of the most recent OPV dose; iVDPV1 (4.1% divergent) was isolated from two consecutive stool specimens. A child aged 10 years with primary immunodeficiency who had received 19 OPV doses developed AFP in January 2010; iVDPV2 (1.2% divergent) was isolated from two consecutive stool specimens.

Iraq. A boy aged 8 months who showed signs of primary immunodeficiency (multiple infections) and had received 6 OPV doses developed AFP in December 2010; iVDPV2

(1.2% divergent) was isolated from stool specimens taken within a week of AFP onset. The child had no residual paralysis when examined 60 days after AFP onset but died 2 weeks later from acute severe bronchiolitis.

Sri Lanka. An iVDPV2 (1.3% divergent) was isolated in 2010 from a boy aged 8 months diagnosed with severe combined immunodeficiency who had received 3 OPV doses but had not developed AFP.

Turkey. An iVDPV2 (1.8% divergent) was isolated in 2011 from a boy aged 1 year with primary immunodeficiency who had received 1 OPV dose but had not developed AFP.

aVDPVs

During July 2009–March 2011, aVDPVs were isolated in 15 countries (Table). Descriptions of the most divergent aVDPVs, all from sewage samples in countries with high rates of polio vaccination coverage, follow. Despite follow-up investigations in all three countries, the persons infected with the corresponding aVDPVs have not been identified. In settings of low poliovirus vaccine coverage, aVDPVs might signal cVDPV emergence and potential gaps in surveillance.

Estonia. Highly divergent (13.5%–15.8%) aVDPV2s were isolated through late 2010 and are related to sewage isolates detected previously in Estonia (3).

Finland. Highly divergent (12.4%–14.6%) aVDPV1s, aVDPV2s, and aVDPV3s were isolated from sewage samples collected during July 2009–October 2010 (8). The isolates were related to aVDPVs detected previously and unrelated to the Estonian aVDPVs (3). Of 13 samples collected, 11 contained heterotypic VDPV mixtures sharing similar degrees of divergence from the parental OPV strains, consistent with the source being a person chronically infected with iVDPVs of all three serotypes.

Israel. Sewage samples from the Tel Aviv area (sampling populations of approximately 350,000 and 10,000) yielded two genetically distinct groups of type 2 aVDPVs (9). Group 1 aVDPV2s (15.0%–16.7% divergent), first detected in 1998, were found in samples collected during July 2009–March 2011. Group 2 aVDPV2s (10.7%–11.2% divergent), first detected in 2006, were found in samples collected during the same period.

Reported by

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TABLE. Vaccine-derived polioviruses (VDPVs) detected — worldwide, July 2009–March 2011

Category	Country	Year(s) detected*	Source (total cases or specimens)†	Serotype	No. of isolates [§] July 2009–March 2011			VP1 divergence from Sabin OPV strain (%)	Routine coverage with 3 doses of polio vaccine (%) [¶]	Estimated duration of VDPV replication**	Current status (date of last outbreak case, last patient isolate, or last environmental sample)
					Cases	Contacts	Non-AFP source				
cVDPV ^{††}	Afghanistan	2010–2011	Outbreak (6 cases) ^{§§}	2	6	—	—	1.0–2.7	83 ^{¶¶}	2.5 yrs	January 20, 2011
	Chad	2010	Importation (1 case) ^{***}	2	1	—	—	5.3	36	—	November 10, 2010
	DRC ^{†††}	2008–2010	Outbreak (37 cases)	2	17	—	—	0.7–3.5	68	3.2 yrs	October 26, 2010
	Ethiopia	2009–2010	Outbreak (7 cases)	3	7	—	—	1.3–3.1	60	2.8 yrs	November 4, 2010
	India	2009–2010	Outbreak (16 cases)	2	16	—	—	1.0–1.6	50 ^{§§§}	1.5 yrs	January 31, 2010
	Niger	2006–2010	Importations (5 cases) ^{***}	2	1	—	—	2.5	71	—	June 1, 2010
	Nigeria ^{¶¶¶}	2005–2011	Outbreak (355 cases) ^{****}	2	48	—	—	0.7–6.2	61	6 yrs	March 7, 2011
	Somalia	2008–2011	Outbreak (13 cases)	2	5	6	—	0.7–2.8	26	2.6 yrs	March 22, 2011
iVDPV ^{††††}	Algeria	2010	AFP patient HLA-DR	2	1	—	—	1.0–1.8	—	1.5 yrs	November 2010 (patient died)
	China - Guizhou	2011	AFP patient PID	2	1	—	—	1.9	99	1.7 yrs	February 18, 2011
	China - Ningxia	2011	AFP patient PID	3	1	—	—	2.0	99	1.8 yrs	February 26, 2011
	Colombia	2009	AFP patient AGG	2	1	—	—	1.5	92	1.3 yrs	July 10, 2009
	India - Delhi	2009	AFP patient CVID	1	1	—	—	4.1	67	5 yrs	July 15, 2010
	India - Tamil Nadu	2010	AFP patient PID	2	1	—	—	1.2	67	1 yr	January 29, 2010
	Iraq	2010	AFP patient ^{§§§§}	2	1	—	—	1.2	69	8 mos	March 2011 (patient died)
	Sri Lanka	2010	Non-AFP SCID	2	—	—	1	1.3	97	8 mos	July 8, 2010 (patient died)
	Turkey	2011	Non-AFP PID	2	—	—	1	1.8	96	1 yr	April 13, 2011
	aVDPV	Afghanistan	2009	AFP patient	2	1	1	—	1.7	83	1.5 yrs
China ^{¶¶¶¶}		2010	AFP patients	2	3	2	1	0.7–1.2	99	8–13 mos	March 1, 2011
China		2010	AFP patients	3	1	—	1	1.1–1.2	99	12–13 mos	March 28, 2011
DRC		2009–2010	AFP patients	2	5	—	—	0.7–1.4	68	8–15 mos	June 29, 2010
Egypt		2010	Environment	1	—	—	1	1.1	97	1 yr	February 7, 2010
Estonia		2008–2010	Environment	2	—	—	4	13.5–15.8	95	>15 yrs	November 25, 2010
Finland		2008–2010	Environment (13 specimens, 11 of them with mixtures of VDPVs)	1	—	—	9	12.4–13.2	97 (IPV)	~15 yrs	September 9, 2010
				2	—	—	9	13.0–13.7	—	—	October 25, 2010
				3	—	—	9	13.7–14.6	—	—	October 11, 2010
Israel ^{*****}		1998–2011	Environment	2	—	—	17	6.6–16.7	95 (IPV)	>15 yrs	March 15, 2011
India ^{†††††}		2010–2011	AFP patients	2	5	—	—	0.7–1.1	50	6–12 mos	February 12, 2011
			Healthy child	2	—	—	1	1.1	—	1 yr	October 2, 2009
			Environment	2	—	—	1	0.7	—	6 mos	January 25, 2011
Mozambique		2011	AFP patient	1	1	—	—	3.0	75	2.7 yrs	February 10, 2011
Myanmar		2010	AFP patient	2	1	—	—	0.8	90	8 mos	December 6, 2010
Nigeria		2011	AFP patient	2	1	—	—	0.6	61	6 mos	February 15, 2011
Somalia		2010	AFP patient	2	1	—	—	0.7	26	6 mos	August 18, 2010
Syria	2010	AFP patient	2	1	—	—	1.4	83	1.3 yrs	February 10, 2010	
Tajikistan	2010	AFP patient	1	1	—	—	1.3	93	1.2 yrs	April 2, 2010	
Turkey	2010	Healthy child	1	—	—	1	1.5	96	1.4 yrs	December 16, 2010	

Abbreviations: cVDPV = circulating VDPV; DRC = Democratic Republic of Congo; iVDPV = immunodeficiency-associated VDPV; aVDPV = ambiguous VDPV; OPV = oral poliovirus vaccine; IPV = inactivated poliovirus vaccine; AFP = acute flaccid paralysis; HLA-DR = HLA-DR-associated immunodeficiency; AGG = agammaglobulinemia; CVID = common variable immunodeficiency; PID = primary immunodeficiency; SCID = severe combined immunodeficiency.

* Total years detected and cumulative totals for previously reported cVDPV outbreaks (DRC, Ethiopia, and Nigeria).

† Outbreaks list total cVDPV cases. Some VDPV case isolates from outbreak periods might be listed as aVDPVs.

§ Total cases for VDPV-positive specimens from AFP cases and total VDPV-positive samples for environmental (sewage) samples.

¶ Based on 2009 data from the World Health Organization (WHO) Vaccine Preventable Diseases Monitoring System (2010 global summary) and WHO-UNICEF coverage estimates, available at http://www.who.int/immunization_monitoring/en/globalsummary/countryprofileselect.cfm. National data might not reflect weaknesses at subnational levels.

** Duration of cVDPV circulation was estimated from extent of VP1 nucleotide divergence from the corresponding Sabin OPV strain; duration of iVDPV replication was estimated from clinical record by assuming that exposure was from initial receipt of OPV; duration of aVDPV replication was estimated from sequence data.

†† Most cVDPV isolates from Afghanistan, Chad, DRC, Ethiopia, Niger, Nigeria, and Somalia were vaccine/nonvaccine recombinants.

§§ Three cases from 2009 are not included in the count because they had <10 nucleotide substitutions in VP1 and new the definition was not yet implemented.

¶¶ Routine trivalent OPV coverage was 14% among case-patients.

*** Importations from Nigerian cVDPV outbreak. One imported VDPV from Niger had been previously incorrectly assigned to be from Guinea.

††† Previously reported outbreak. Additional information available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5836a3.htm>.

§§§ cVDPVs clustered in Uttar Pradesh and Bihar, where routine coverage with trivalent OPV was ~50%.

¶¶¶ Previously reported outbreak. Additional information available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5836a3.htm>.

***** Count does not include 29 cases with <10 nucleotide substitutions in VP1 detected before 2010.

†††† None of the iVDPV isolates appeared to be vaccine/nonvaccine recombinants.

§§§§ The patient was never tested for immunodeficiency; the diagnosis was based on clinical signs.

¶¶¶¶ An early 2009 type 2 aVDPV from Shandong, China (1.2% VP1 divergence from Sabin 2) not previously reported is not included. The non-AFP sources of aVDPV2 and aVDPV3 in China were healthy children.

***** Two separate lineages of type 2 aVDPVs were isolated from environmental samples in Israel. Additional information available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5836a3.htm>.

††††† Isolates were from six different states. Count does not include a type 1 aVDPV from an Assam AFP patient with onset on April 7, 2009, nor a type 3 aVDPV from Mumbai sewage collected on March 20, 2009, that were not reported previously.

Editorial Note

The three categories of VDPVs differ in their public health importance. First, cVDPVs have recovered the biologic properties of WPVs and have the potential to circulate for years in settings where polio vaccination coverage to prevent that particular type is low. In addition, for each case detected, another 100–1,000 asymptomatic infections occur among susceptible children, as is the case for WPVs (10). Second, iVDPVs can be excreted for many years by persons with certain primary immunodeficiencies, and some chronic infections are latent. Many persons with prolonged iVDPV infections either spontaneously clear the infections or die from the complications of immunodeficiency. Nonetheless, in the absence of effective antiviral therapy, persons infected with iVDPVs without paralysis are at risk for developing paralytic poliomyelitis and might infect others with poliovirus, posing a risk for outbreaks in areas with low polio vaccination coverage. Third, aVDPVs are heterogeneous; some represent the initial isolates from cVDPV outbreaks, especially in areas with type-specific immunity gaps, and aVDPVs isolated during cVDPV outbreaks of the same serotype might be cVDPVs whose progenitors or progeny were not detected. Other aVDPVs, such as those detected in sewage in Estonia, Finland, and Israel, probably are iVDPVs from latent chronic infections. Still other aVDPVs, especially those with limited divergence, might represent limited spread of OPV virus or the upper limit of OPV divergence in a single normal vaccine recipient or contact.

The detection in Nigeria of numerous isolates with <1% divergence that were ancestral to cVDPV2 lineages (7) prompted a redefinition of VDPV2 for purposes of reporting by the Global Polio Laboratory Network to include isolates with >0.6% divergence and was applied beginning in 2010.

The increased frequency of VDPV detection compared with the previous reporting period (3) is attributable partly to increased surveillance sensitivity and improved laboratory methods. However, for cVDPVs, the most important factor is the growth of type-specific immunity gaps in areas with low routine vaccination, arising from the intensive use of mOPV1 and bOPV in SIAs. These alternative OPV formulations, by eliminating interference from the type 2 OPV strain, are more

effective than tOPV in inducing higher levels of population immunity to WPV1 and WPV3. Their use in endemic and outbreak countries has facilitated WPV control. In settings of inadequate routine vaccination coverage with tOPV, conditions develop that favor multiple independent VDPV2 emergences, as occurred in DRC, India, Nigeria, and Somalia. Emergence of cVDPV3 appears to be rare but occurred in areas of low tOPV coverage in Ethiopia after a cVDPV2 emergence in 2008 (3).

Current and past experiences underscore the importance of robust routine vaccination with tOPV (or, alternatively, inactivated poliovirus vaccine) to prevent VDPV emergence and spread as well as to prevent WPV transmission. In countries with low routine vaccination coverage, closing the immunity gaps to all three poliovirus serotypes by periodic but regular use of tOPV in SIAs is essential to prevent cVDPV emergence (3). Maintenance of sensitive AFP surveillance also is crucial; any temporal and geographic clustering of vaccine-related isolates of the same serotype should prompt further investigation.

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Notes from the Field

Multiple Cases of Measles After Exposure During Air Travel — Australia and New Zealand, January 2011

In January 2011, measles was diagnosed in three New Zealand residents recently returned from a 17-day trip to Singapore and the Philippines. On January 11, they had flown on a 7.5-hour flight from Singapore to Brisbane, Australia, remained in a transit lounge for 9.5 hours, and then continued on a 4-hour flight to Auckland, New Zealand. Searches in Australia and New Zealand for secondary cases among passengers on either flight resulted in the identification of three cases among passengers on the Singapore-to-Brisbane flight and five cases among passengers on the Brisbane-to-Auckland flight.

The three index cases had rash onsets occurring January 11–15 and tested positive for measles immunoglobulin M (IgM). One Australian case and one New Zealand case were diagnosed clinically, but the remaining six secondary cases, with rash onsets occurring January 21–26, were positive for measles RNA by nucleic acid amplification testing. Each specimen was genotype D9 with the same genetic sequence. Only three of the eight secondary cases were in persons seated within two rows of a person with an index case: two in unvaccinated persons and one in a person whose measles vaccination status was unknown. One secondary case was in a person of unknown vaccination status seated four rows away from the nearest person with an index case, one was in a person with a history of having been vaccinated against measles twice who was seated six rows away, and three were in unvaccinated children 11 rows away, in a separate cabin. The three index cases were in unvaccinated children aged 12–17 years.

Australian contact investigation guidelines for exposure to a single passenger with infectious measles aboard an aircraft focus on the seats within two rows of persons with index cases (1); five of the eight secondary cases in this outbreak were

in persons who were farther away. Three persons likely were infectious aboard the aircraft, not one, and recent literature suggests that exposure might extend farther than two rows (2,3). In addition, because measles is readily transmissible through airborne transmission, the opportunity for exposure existed in the jetways, the arrival and departure terminals, and the transit lounge. This outbreak highlights the transmissibility of measles and the risk for exposure during international travel, which might start at the airport before departure, and the need for travelers to be protected against measles by vaccination.

Reported by

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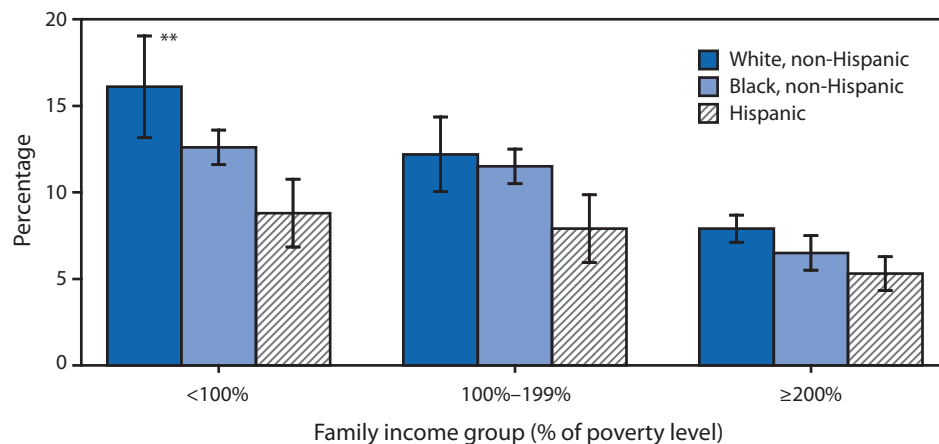
Errata: Vol. 60, No. 21

In the report “HIV Surveillance — United States, 1981–2008,” populations identified in the text as white, black or African American, Asian or Pacific Islander, or American Indian or Alaska Native, should have been further identified as **non-Hispanic**. In the table on page 692, Hispanic/Latino should have been included under **Race/Ethnicity** and a footnote added saying: **Persons in the four racial populations all were non-Hispanic. Persons of Hispanic/Latino ethnicity might be of any race.**

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Percentage of Children Aged 5–17 Years Ever Receiving a Diagnosis of Learning Disability,* by Race/Ethnicity[†] and Family Income Group[§] — National Health Interview Survey,[¶] United States, 2007–2009



* Based on parental response to the following question: “Has a representative from a school or a health professional ever told you that [child] had a learning disability?”

[†] White and black children are non-Hispanic children with a single race reported. Hispanic children might be of any race.

[§] Family income group is based on family income and family size using the U.S. Census Bureau poverty thresholds. Family income was imputed when information was missing, using multiple imputation methodology.

[¶] Estimates were based on household interviews of a sample of the U.S. civilian noninstitutionalized population. Denominators for each category exclude persons for whom data were missing.

** 95% confidence interval.

During 2007–2009, among children with family incomes <100% of the poverty level, non-Hispanic white children (16%) and non-Hispanic black children (13%) were more likely to have ever received a diagnosis of learning disability than Hispanic children (9%). Among those with family income 100%–199% of the poverty level, the percentage with a learning disability was higher for non-Hispanic white and non-Hispanic black children (both 12%) than for Hispanic children (8%). Among children with family income ≥200% of the poverty level, non-Hispanic white children (8%) were more likely to have been diagnosed with learning disability than Hispanic children (5%). For children in all three racial/ethnic groups, the percentage of children ever receiving a diagnosis of learning disability decreased as family income increased.

Sources: CDC. Health Data Interactive. Available at <http://www.cdc.gov/nchs/hdi.htm>.

National Health Interview Survey 2007–2009 data. Available at <http://www.cdc.gov/nchs/nhis.htm>.

Notifiable Diseases and Mortality Tables

TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending June 25, 2011 (25th week)*

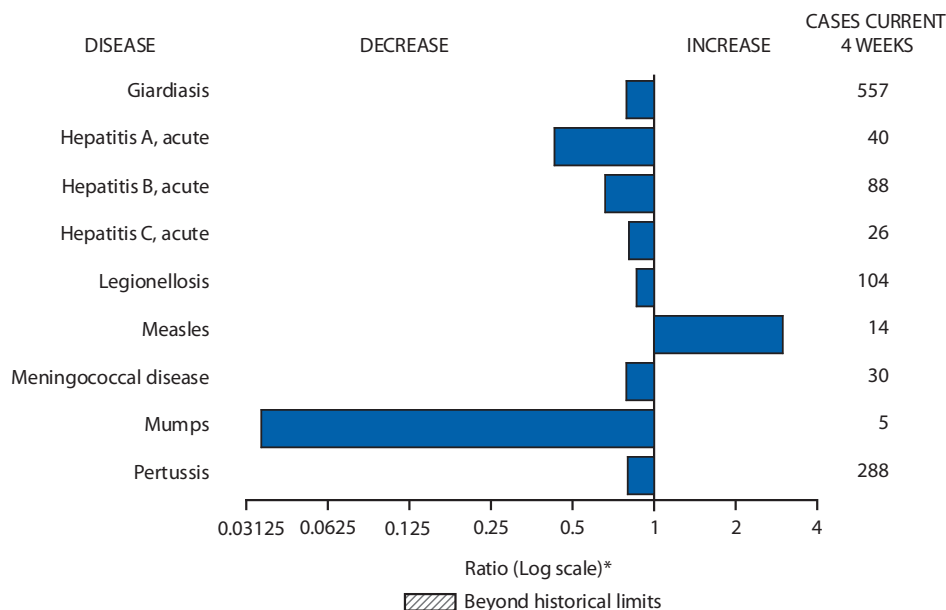
Disease	Current week	Cum 2011	5-year weekly average [†]	Total cases reported for previous years					States reporting cases during current week (No.)
				2010	2009	2008	2007	2006	
Anthrax	—	—	—	—	1	—	1	1	
Arboviral diseases ^{§, ¶} :									
California serogroup virus disease	—	—	2	75	55	62	55	67	
Eastern equine encephalitis virus disease	—	—	0	10	4	4	4	8	
Powassan virus disease	—	—	0	8	6	2	7	1	
St. Louis encephalitis virus disease	—	—	0	10	12	13	9	10	
Western equine encephalitis virus disease	—	—	—	—	—	—	—	—	
Babesiosis	7	52	3	NN	NN	NN	NN	NN	NY (6), PA (1)
Botulism, total	1	38	3	112	118	145	144	165	
foodborne	—	4	0	7	10	17	32	20	
infant	1	28	2	80	83	109	85	97	NY (1)
other (wound and unspecified)	—	6	1	25	25	19	27	48	
Brucellosis	—	31	2	115	115	80	131	121	
Chancroid	—	10	0	24	28	25	23	33	
Cholera	—	18	0	13	10	5	7	9	
Cyclosporiasis [§]	1	59	6	179	141	139	93	137	NY (1)
Diphtheria	—	—	—	—	—	—	—	—	
<i>Haemophilus influenzae</i> ,** invasive disease (age <5 yrs):									
serotype b	—	3	0	23	35	30	22	29	
nonsensory type b	—	54	4	200	236	244	199	175	
unknown serotype	—	124	3	223	178	163	180	179	
Hansen disease [§]	—	21	2	98	103	80	101	66	
Hantavirus pulmonary syndrome [§]	—	6	1	20	20	18	32	40	
Hemolytic uremic syndrome, postdiarrheal [§]	3	45	7	266	242	330	292	288	TN (1), CO (1), CA (1)
Influenza-associated pediatric mortality ^{§, ††}	2	108	1	61	358	90	77	43	MN (1), PA (1)
Listeriosis	6	199	17	821	851	759	808	884	NY (1), PA (1), KS (1), MD (1), FL (1), CA (1)
Measles ^{§§}	1	122	3	63	71	140	43	55	CA (1)
Meningococcal disease, invasive ^{¶¶} :									
A, C, Y, and W-135	1	97	5	280	301	330	325	318	NY (1)
serogroup B	—	54	4	135	174	188	167	193	
other serogroup	—	5	1	12	23	38	35	32	
unknown serogroup	4	237	10	406	482	616	550	651	MD (1), FL (2), CO (1)
Novel influenza A virus infections ^{***}	—	1	0	4	43,774	2	4	NN	
Plague	—	1	0	2	8	3	7	17	
Poliomyelitis, paralytic	—	—	—	—	1	—	—	—	
Polio virus Infection, nonparalytic [§]	—	—	—	—	—	—	—	NN	
Psittacosis [§]	—	1	0	4	9	8	12	21	
Q fever, total [§]	—	29	4	131	113	120	171	169	
acute	—	18	2	106	93	106	—	—	
chronic	—	11	0	25	20	14	—	—	
Rabies, human	—	1	0	2	4	2	1	3	
Rubella ^{†††}	—	3	0	5	3	16	12	11	
Rubella, congenital syndrome	—	—	0	—	2	—	—	1	
SARS-CoV [§]	—	—	—	—	—	—	—	—	
Smallpox [§]	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome [§]	3	61	2	148	161	157	132	125	NY (1), VA (2)
Syphilis, congenital (age <1 yr) ^{§§§}	—	73	8	374	423	431	430	349	
Tetanus	—	3	0	10	18	19	28	41	
Toxic-shock syndrome (staphylococcal) [§]	1	39	2	82	74	71	92	101	GA (1)
Trichinellosis	—	7	0	7	13	39	5	15	
Tularemia	—	28	5	124	93	123	137	95	
Typhoid fever	4	162	6	468	397	449	434	353	CA (4)
Vancomycin-intermediate <i>Staphylococcus aureus</i> [§]	1	26	1	91	78	63	37	6	NY (1)
Vancomycin-resistant <i>Staphylococcus aureus</i> [§]	—	—	—	2	1	—	2	1	
Vibriosis (noncholera <i>Vibrio</i> species infections) [§]	12	164	11	848	789	588	549	NN	MD (1), VA (1), GA (3), FL (4), WA (1), CA (2)
Viral hemorrhagic fever ^{¶¶¶}	—	—	—	1	NN	NN	NN	NN	
Yellow fever	—	—	—	—	—	—	—	—	

See Table 1 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 June 25, 2011 (25th week)*

—: No reported cases. N: Not reportable. NN: Not Nationally Notifiable. Cum: Cumulative year-to-date counts.
 * Case counts for reporting years 2010 and 2011 are provisional and subject to change. For further information on interpretation of these data, see http://www.cdc.gov/osels/ph_surveillance/nndss/phs/files/ProvisionalNationa%20NotifiableDiseasesSurveillanceData20100927.pdf.
 † Calculated by summing the incidence counts for the current week, the 2 weeks preceding the current week, the 2 weeks following the current week, for a total of 5 preceding years. Additional information is available at http://www.cdc.gov/osels/ph_surveillance/nndss/phs/files/5yearweeklyaverage.pdf.
 ‡ Not reportable in all states. Data from states where the condition is not reportable are excluded from this table except starting in 2007 for the arboviral diseases, STD data, TB data, and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at http://www.cdc.gov/osels/ph_surveillance/nndss/phs/infdis.htm.
 ¶ Includes both neuroinvasive and nonneuroinvasive. Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (ArboNET Surveillance). Data for West Nile virus are available in Table II.
 ** Data for H. influenzae (all ages, all serotypes) are available in Table II.
 †† Updated weekly from reports to the Influenza Division, National Center for Immunization and Respiratory Diseases. Since October 3, 2010, 112 influenza-associated pediatric deaths occurring during the 2010-11 influenza season have been reported.
 ‡‡ The one measles case reported for the current week was imported.
 ¶¶ Data for meningococcal disease (all serogroups) are available in Table II.
 *** CDC discontinued reporting of individual confirmed and probable cases of 2009 pandemic influenza A (H1N1) virus infections on July 24, 2009. During 2009, four cases of human infection with novel influenza A viruses, different from the 2009 pandemic influenza A (H1N1) strain, were reported to CDC. The four cases of novel influenza A virus infection reported to CDC during 2010 and the one case reported in 2011 were identified as swine influenza A (H3N2) virus and are unrelated to the 2009 pandemic influenza A (H1N1) virus. Total case counts for 2009 were provided by the Influenza Division, National Center for Immunization and Respiratory Diseases (NCIRD).
 ††† No rubella cases were reported for the current week.
 §§§ Updated weekly from reports to the Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention.
 ¶¶¶ There was one case of viral hemorrhagic fever reported during week 12 of 2010. The one case report was confirmed as lassa fever. See Table II for dengue hemorrhagic fever.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals June 25, 2011, with historical data



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

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Morbidity and Mortality Weekly Report

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending June 25, 2011, and June 26, 2010 (25th week)*

Reporting area	Dengue Virus Infection†									
	Dengue Fever§					Dengue Hemorrhagic Fever¶				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
	Med	Max				Med	Max			
United States	—	4	52	43	147	—	0	2	—	3
New England	—	0	3	1	1	—	0	0	—	—
Connecticut	—	0	0	—	—	—	0	0	—	—
Maine**	—	0	2	—	1	—	0	0	—	—
Massachusetts	—	0	0	—	—	—	0	0	—	—
New Hampshire	—	0	0	—	—	—	0	0	—	—
Rhode Island**	—	0	1	—	—	—	0	0	—	—
Vermont**	—	0	1	1	—	—	0	0	—	—
Mid. Atlantic	—	2	25	18	46	—	0	1	—	2
New Jersey	—	0	5	—	4	—	0	0	—	—
New York (Upstate)	—	0	5	—	5	—	0	1	—	1
New York City	—	1	17	10	32	—	0	1	—	1
Pennsylvania	—	0	3	8	5	—	0	0	—	—
E.N. Central	—	0	5	5	12	—	0	1	—	—
Illinois	—	0	1	2	—	—	0	0	—	—
Indiana	—	0	2	1	4	—	0	0	—	—
Michigan	—	0	2	—	2	—	0	0	—	—
Ohio	—	0	2	—	5	—	0	0	—	—
Wisconsin	—	0	2	2	1	—	0	1	—	—
W.N. Central	—	0	6	—	10	—	0	1	—	—
Iowa	—	0	1	—	1	—	0	0	—	—
Kansas	—	0	1	—	—	—	0	0	—	—
Minnesota	—	0	1	—	8	—	0	0	—	—
Missouri	—	0	0	—	—	—	0	0	—	—
Nebraska**	—	0	6	—	—	—	0	0	—	—
North Dakota	—	0	0	—	1	—	0	0	—	—
South Dakota	—	0	0	—	—	—	0	1	—	—
S. Atlantic	—	1	19	11	59	—	0	1	—	1
Delaware	—	0	0	—	—	—	0	0	—	—
District of Columbia	—	0	0	—	—	—	0	0	—	—
Florida	—	1	14	10	48	—	0	1	—	1
Georgia	—	0	2	—	5	—	0	0	—	—
Maryland**	—	0	0	—	—	—	0	0	—	—
North Carolina	—	0	2	1	—	—	0	0	—	—
South Carolina**	—	0	3	—	2	—	0	0	—	—
Virginia**	—	0	3	—	3	—	0	0	—	—
West Virginia	—	0	1	—	1	—	0	0	—	—
E.S. Central	—	0	2	—	1	—	0	0	—	—
Alabama**	—	0	2	—	—	—	0	0	—	—
Kentucky	—	0	1	—	—	—	0	0	—	—
Mississippi	—	0	0	—	—	—	0	0	—	—
Tennessee**	—	0	1	—	1	—	0	0	—	—
W.S. Central	—	0	1	—	—	—	0	1	—	—
Arkansas**	—	0	0	—	—	—	0	1	—	—
Louisiana	—	0	0	—	—	—	0	0	—	—
Oklahoma	—	0	1	—	—	—	0	0	—	—
Texas**	—	0	1	—	—	—	0	0	—	—
Mountain	—	0	2	2	4	—	0	0	—	—
Arizona	—	0	2	1	1	—	0	0	—	—
Colorado	—	0	0	—	—	—	0	0	—	—
Idaho**	—	0	1	—	—	—	0	0	—	—
Montana**	—	0	1	—	1	—	0	0	—	—
Nevada**	—	0	1	—	1	—	0	0	—	—
New Mexico**	—	0	0	—	1	—	0	0	—	—
Utah	—	0	1	1	—	—	0	0	—	—
Wyoming**	—	0	0	—	—	—	0	0	—	—
Pacific	—	0	7	6	14	—	0	0	—	—
Alaska	—	0	0	—	1	—	0	0	—	—
California	—	0	5	2	9	—	0	0	—	—
Hawaii	—	0	0	—	—	—	0	0	—	—
Oregon	—	0	0	—	—	—	0	0	—	—
Washington	—	0	2	4	4	—	0	0	—	—
Territories										
American Samoa	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	35	454	247	2,495	—	0	20	1	78
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—

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

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

* Case counts for reporting year 2010 and 2011 are provisional and subject to change. For further information on interpretation of these data, see http://www.cdc.gov/osels/ph_surveillance/nndss/phs/files/ProvisionalNationalNotifiableDiseasesSurveillanceData20100927.pdf. Data for TB are displayed in Table IV, which appears quarterly.

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

§ Dengue Fever includes cases that meet criteria for Dengue Fever with hemorrhage, other clinical and unknown case classifications.

¶ DHF includes cases that meet criteria for dengue shock syndrome (DSS), a more severe form of DHF.

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

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TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending June 25, 2011, and June 26, 2010 (25th week)*

Reporting area	Legionellosis					Lyme disease					Malaria				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	23	48	128	866	1,229	361	321	1,828	5,481	11,924	14	26	114	479	634
New England	—	3	16	39	78	8	68	457	1,011	4,046	—	1	20	17	47
Connecticut	—	1	6	11	12	5	34	151	603	1,499	—	0	20	1	2
Maine†	—	0	3	3	3	—	9	62	93	172	—	0	1	2	3
Massachusetts	—	1	10	17	46	—	12	209	94	1,627	—	1	5	9	35
New Hampshire	—	0	5	3	4	2	12	69	155	639	—	0	2	2	1
Rhode Island†	—	0	4	1	11	—	1	40	4	27	—	0	4	—	5
Vermont†	—	0	2	4	2	1	5	28	62	82	—	0	1	3	1
Mid. Atlantic	11	13	53	196	285	304	141	662	3,047	3,942	2	9	22	109	208
New Jersey	—	1	18	1	48	5	38	234	742	1,776	—	1	6	8	49
New York (Upstate)	4	5	19	83	77	122	35	159	632	705	2	1	6	19	33
New York City	—	2	17	34	57	—	7	30	2	286	—	4	13	58	97
Pennsylvania	7	5	19	78	103	177	60	279	1,671	1,175	—	1	4	24	29
E.N. Central	2	9	44	153	246	1	22	373	376	1,581	—	3	9	51	60
Illinois	—	1	14	17	57	—	1	17	12	55	—	1	6	20	23
Indiana	1	1	6	27	23	—	0	7	12	44	—	0	2	5	7
Michigan	1	2	20	38	42	1	1	14	17	21	—	0	4	8	7
Ohio	—	4	15	71	97	—	0	9	7	10	—	1	5	17	18
Wisconsin	—	0	5	—	27	—	20	345	328	1,451	—	0	2	1	5
W.N. Central	—	2	9	28	51	1	3	188	13	848	—	1	45	6	26
Iowa	—	0	2	4	4	—	0	10	8	44	—	0	2	2	6
Kansas	—	0	2	4	6	—	0	1	3	7	—	0	2	2	3
Minnesota	—	0	8	—	15	—	3	181	—	792	—	0	45	—	3
Missouri	—	0	5	18	15	—	0	1	—	1	—	0	3	—	4
Nebraska†	—	0	1	—	5	1	0	2	2	3	—	0	1	2	8
North Dakota	—	0	1	1	2	—	0	10	—	—	—	0	1	—	—
South Dakota	—	0	2	1	4	—	0	1	—	1	—	0	1	—	2
S. Atlantic	1	9	22	170	244	45	57	178	930	1,354	9	7	41	168	165
Delaware	—	0	2	3	8	—	10	32	247	340	—	0	1	2	2
District of Columbia	—	0	3	4	12	—	1	5	9	14	—	0	1	5	7
Florida	—	3	9	69	73	2	1	8	31	24	3	2	7	44	52
Georgia	—	1	4	9	33	—	0	2	4	5	2	1	7	33	27
Maryland†	—	1	6	25	54	18	17	103	316	612	2	1	21	38	28
North Carolina	—	1	6	28	22	—	0	9	18	33	—	0	13	14	18
South Carolina†	—	0	2	5	7	—	0	3	5	18	—	0	1	1	3
Virginia†	1	1	9	22	30	25	19	82	283	294	2	1	5	31	28
West Virginia	—	0	2	5	5	—	0	29	17	14	—	0	1	—	—
E.S. Central	—	2	9	65	65	—	0	3	15	24	—	0	3	11	11
Alabama†	—	0	2	10	7	—	0	2	5	—	—	0	1	3	2
Kentucky	—	0	4	12	11	—	0	1	—	2	—	0	1	4	3
Mississippi	—	0	3	8	9	—	0	0	—	—	—	0	2	1	—
Tennessee†	—	1	7	35	38	—	0	3	10	22	—	0	2	3	6
W.S. Central	2	3	13	41	56	—	1	29	16	42	—	1	18	21	37
Arkansas†	—	0	2	3	9	—	0	0	—	—	—	0	1	2	1
Louisiana	—	0	3	6	2	—	0	1	—	—	—	0	1	—	1
Oklahoma	—	0	2	2	6	—	0	0	—	—	—	0	1	2	3
Texas†	2	2	11	30	39	—	1	29	16	42	—	1	17	17	32
Mountain	2	2	10	43	77	—	0	3	5	9	1	1	4	31	26
Arizona	1	1	7	16	20	—	0	1	3	2	—	0	4	14	11
Colorado	—	0	2	4	16	—	0	1	1	—	1	0	3	11	9
Idaho†	1	0	1	4	1	—	0	2	—	2	—	0	1	1	—
Montana†	—	0	1	—	4	—	0	1	—	—	—	0	1	—	1
Nevada†	—	0	2	8	15	—	0	1	—	—	—	0	2	3	2
New Mexico†	—	0	2	3	2	—	0	2	1	3	—	0	1	2	—
Utah	—	0	2	7	15	—	0	1	—	2	—	0	0	—	3
Wyoming†	—	0	2	1	4	—	0	0	—	—	—	0	0	—	—
Pacific	5	5	21	131	127	2	3	11	68	78	2	4	10	65	54
Alaska	—	0	2	—	—	—	0	1	—	2	—	0	2	3	2
California	5	4	15	117	110	2	2	9	50	51	—	2	10	46	31
Hawaii	—	0	1	1	1	N	0	0	N	N	—	0	1	2	2
Oregon	—	0	3	4	7	—	0	3	18	21	—	0	3	5	5
Washington	—	0	6	9	9	—	0	4	—	4	2	0	5	9	14
Territories															
American Samoa	N	0	0	N	N	N	0	0	N	N	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	1	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	1	—	1	N	0	0	N	N	—	0	1	—	4
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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

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

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

Morbidity and Mortality Weekly Report

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending June 25, 2011, and June 26, 2010 (25th week)*

Reporting area	Rabies, animal					Salmonellosis					Shiga toxin-producing <i>E. coli</i> (STEC) [†]				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	26	62	172	1,084	2,011	507	841	1,812	14,180	17,468	74	92	264	1,663	1,696
New England	2	4	18	49	131	4	25	209	538	1,251	2	2	27	60	113
Connecticut	—	0	8	—	63	—	0	187	187	491	—	0	27	27	60
Maine [§]	2	1	3	25	30	2	2	8	51	48	1	0	3	12	4
Massachusetts	—	0	0	—	—	—	17	52	204	518	—	0	9	5	31
New Hampshire	—	0	6	7	4	—	3	12	64	78	1	0	3	13	12
Rhode Island [§]	—	0	3	2	11	—	1	9	10	94	—	0	1	—	1
Vermont [§]	—	1	3	15	23	2	1	5	22	22	—	0	2	3	5
Mid. Atlantic	10	16	33	312	526	50	89	217	1,626	2,126	11	9	30	178	171
New Jersey	—	0	0	—	—	—	13	57	133	423	—	2	9	31	40
New York (Upstate)	10	7	19	136	231	24	25	63	449	486	4	4	12	61	60
New York City	—	0	4	7	124	3	21	53	411	499	—	1	6	22	16
Pennsylvania	—	8	17	169	171	23	31	80	633	718	7	3	13	64	55
E.N. Central	1	2	27	31	71	10	82	265	1,427	2,484	1	11	48	173	290
Illinois	1	1	11	15	29	—	27	123	524	891	—	2	9	18	61
Indiana	—	0	3	4	—	—	10	61	143	255	—	2	10	36	47
Michigan	—	1	5	12	25	10	13	49	257	376	1	2	7	52	65
Ohio	—	0	12	—	17	—	19	42	324	596	—	2	11	44	50
Wisconsin	N	0	0	N	N	—	11	57	179	366	—	2	16	23	67
W.N. Central	2	2	40	36	117	22	46	121	813	1,053	4	13	49	200	315
Iowa	—	0	3	—	8	—	9	34	184	165	—	2	16	40	52
Kansas	—	1	4	15	33	8	7	18	130	159	2	1	6	36	29
Minnesota	—	0	34	—	15	—	4	30	—	295	—	2	20	—	87
Missouri	—	0	6	—	29	—	15	43	316	276	—	4	12	74	103
Nebraska [§]	2	0	3	14	26	9	4	13	92	81	2	1	6	35	32
North Dakota	—	0	6	7	6	5	0	15	20	13	—	0	10	4	3
South Dakota	—	0	0	—	—	—	3	17	71	64	—	1	4	11	9
S. Atlantic	10	20	52	527	574	216	271	624	4,175	4,075	22	18	31	403	243
Delaware	—	0	0	—	—	—	3	11	49	52	—	0	2	5	1
District of Columbia	—	0	0	—	—	—	1	7	13	44	—	0	1	1	6
Florida	—	0	29	50	121	122	108	226	1,727	1,820	9	6	15	183	76
Georgia	—	0	0	—	—	39	37	142	703	668	1	2	7	37	34
Maryland [§]	—	6	14	127	176	15	19	54	322	345	2	2	8	39	33
North Carolina	—	0	0	—	—	30	30	241	636	410	1	2	10	48	20
South Carolina [§]	N	0	0	N	N	—	27	99	317	329	—	0	4	12	12
Virginia [§]	9	12	27	298	240	7	21	68	372	328	4	3	9	71	55
West Virginia	1	0	30	52	37	3	0	14	36	79	5	0	4	7	6
E.S. Central	—	3	7	62	97	21	56	175	942	1,006	3	5	22	108	90
Alabama [§]	—	1	7	43	43	6	20	52	262	270	1	1	4	18	24
Kentucky	—	0	4	6	6	—	9	32	119	198	—	1	6	14	13
Mississippi	—	0	0	—	—	1	21	65	276	259	1	0	12	6	9
Tennessee [§]	—	1	4	13	48	14	17	53	285	279	1	3	12	70	44
W.S. Central	1	8	54	49	399	82	123	515	1,681	1,900	5	8	151	122	91
Arkansas [§]	1	0	10	37	12	7	14	43	206	164	3	0	4	15	22
Louisiana	—	0	0	—	—	—	15	52	141	447	—	0	2	3	9
Oklahoma	—	0	30	12	6	—	11	95	164	188	—	1	55	12	5
Texas [§]	—	7	30	—	381	75	93	381	1,170	1,101	2	6	95	92	55
Mountain	—	0	5	5	25	23	46	113	948	1,120	7	11	33	209	194
Arizona	N	0	0	N	N	2	15	43	296	356	1	1	14	38	27
Colorado	—	0	0	—	—	14	10	24	228	249	1	3	21	55	67
Idaho [§]	—	0	2	—	1	2	3	9	71	68	4	2	7	41	21
Montana [§]	N	0	0	N	N	5	2	6	47	47	1	1	4	15	22
Nevada [§]	—	0	2	—	2	—	4	21	71	98	—	0	6	15	10
New Mexico [§]	—	0	2	3	6	—	6	19	89	109	—	1	6	19	15
Utah	—	0	3	2	1	—	6	17	122	170	—	1	8	19	23
Wyoming [§]	—	0	4	—	15	—	1	8	24	23	—	0	3	7	9
Pacific	—	3	15	13	71	79	103	288	2,030	2,453	19	13	46	210	189
Alaska	—	0	2	9	11	—	1	4	29	41	—	0	1	—	1
California	—	1	10	—	52	53	77	232	1,537	1,699	10	8	36	143	82
Hawaii	—	0	0	—	—	6	6	13	138	143	—	0	3	4	15
Oregon	—	0	2	4	8	—	7	20	115	283	—	2	11	27	30
Washington	—	0	14	—	—	20	15	42	211	287	9	2	20	36	61
Territories															
American Samoa	N	0	0	N	N	—	0	1	—	1	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	3	6	5	—	0	0	—	—
Puerto Rico	—	0	6	18	23	—	7	25	40	254	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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 U: Unavailable. —: No reported cases. N: Not reportable. NN: Not Nationally Notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
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[†] Includes *E. coli* O157:H7; Shiga toxin-positive, serogroup non-O157; and Shiga toxin-positive, not serogrouped.
[§] Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending June 25, 2011, and June 26, 2010 (25th week)*

Reporting area	Shigellosis					Spotted Fever Rickettsiosis (including RMSF) [†]									
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Confirmed					Probable				
		Med	Max			Current week	Previous 52 weeks	Cum 2011	Cum 2010	Current week	Previous 52 weeks	Cum 2011	Cum 2010		
United States	193	258	742	4,385	6,492	2	2	11	40	59	12	20	245	286	455
New England	—	3	20	77	179	—	0	0	—	—	—	0	1	1	1
Connecticut	—	0	18	18	69	—	0	0	—	—	—	0	0	—	—
Maine [§]	—	0	4	14	3	—	0	0	—	—	—	0	1	—	1
Massachusetts	—	2	16	42	92	—	0	0	—	—	—	0	0	—	—
New Hampshire	—	0	2	1	5	—	0	0	—	—	—	0	1	—	—
Rhode Island [§]	—	0	4	—	9	—	0	0	—	—	—	0	1	1	—
Vermont [§]	—	0	1	2	1	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	22	15	74	269	872	—	0	1	3	2	3	1	6	11	37
New Jersey	—	3	16	40	202	—	0	0	—	1	—	0	4	—	26
New York (Upstate)	18	3	15	84	79	—	0	0	—	1	1	0	3	2	2
New York City	—	4	14	96	160	—	0	0	—	—	—	0	2	4	4
Pennsylvania	4	4	56	49	431	—	0	1	3	—	2	0	1	5	5
E.N. Central	1	17	37	255	933	—	0	1	—	—	—	1	7	19	31
Illinois	—	6	20	64	594	—	0	1	—	—	—	0	4	11	16
Indiana [§]	—	1	4	27	26	—	0	1	—	—	—	0	3	6	9
Michigan	1	4	9	70	117	—	0	0	—	—	—	0	1	—	1
Ohio	—	5	15	94	152	—	0	0	—	—	—	0	2	2	3
Wisconsin	—	0	4	—	44	—	0	0	—	—	—	0	1	—	2
W.N. Central	4	15	52	166	1,406	—	0	2	4	4	—	3	17	60	98
Iowa	1	0	4	9	28	—	0	0	—	—	—	0	1	1	2
Kansas [§]	2	3	12	31	144	—	0	0	—	—	—	0	0	—	—
Minnesota	—	0	4	—	23	—	0	0	—	—	—	0	2	—	—
Missouri	—	9	41	119	1,192	—	0	2	4	2	—	3	17	59	95
Nebraska [§]	1	0	10	4	15	—	0	2	—	2	—	0	1	—	1
North Dakota	—	0	0	—	—	—	0	0	—	—	—	0	1	—	—
South Dakota	—	0	2	3	4	—	0	0	—	—	—	0	0	—	—
S. Atlantic	79	63	127	1,673	949	2	1	7	24	39	3	6	59	82	117
Delaware [§]	—	0	2	1	33	—	0	1	1	1	—	0	2	6	9
District of Columbia	—	0	3	6	18	—	0	1	1	—	—	0	0	—	—
Florida [§]	68	33	99	1,218	355	—	0	1	2	2	1	0	2	2	6
Georgia	6	13	26	224	340	2	0	5	15	32	—	0	0	—	—
Maryland [§]	1	2	8	40	48	—	0	1	1	—	—	0	5	6	16
North Carolina	2	3	36	115	70	—	0	3	1	3	—	1	47	32	49
South Carolina [§]	1	1	5	25	33	—	0	1	3	—	—	0	2	8	4
Virginia [§]	1	2	8	40	51	—	0	2	—	1	1	2	12	26	33
West Virginia	—	0	66	4	1	—	0	0	—	—	1	0	1	2	—
E.S. Central	3	13	29	234	356	—	0	3	3	7	6	5	31	84	140
Alabama [§]	2	5	15	82	56	—	0	1	—	—	—	1	9	18	27
Kentucky	—	1	6	30	160	—	0	1	—	5	—	0	0	—	—
Mississippi	1	2	7	58	17	—	0	1	—	—	—	0	4	1	8
Tennessee [§]	—	4	14	64	123	—	0	3	3	2	6	4	20	65	105
W.S. Central	68	55	503	978	1,077	—	0	8	—	1	—	1	235	7	26
Arkansas [§]	2	2	7	27	22	—	0	2	—	—	—	0	28	1	8
Louisiana	—	5	13	49	123	—	0	0	—	—	—	0	1	—	1
Oklahoma	—	2	161	40	150	—	0	5	—	—	—	0	202	4	8
Texas [§]	66	46	338	862	782	—	0	1	—	1	—	0	5	2	9
Mountain	11	16	32	321	297	—	0	5	6	2	—	0	7	22	4
Arizona	4	7	19	93	160	—	0	4	6	—	—	0	7	19	—
Colorado [§]	3	2	7	38	39	—	0	1	—	—	—	0	1	1	—
Idaho [§]	—	0	3	8	11	—	0	0	—	—	—	0	1	—	1
Montana [§]	4	0	15	99	4	—	0	0	—	2	—	0	0	—	1
Nevada [§]	—	0	6	10	15	—	0	0	—	—	—	0	0	—	—
New Mexico [§]	—	3	10	52	52	—	0	0	—	—	—	0	0	—	1
Utah	—	1	4	20	16	—	0	0	—	—	—	0	1	—	1
Wyoming [§]	—	0	1	1	—	—	0	0	—	—	—	0	1	2	—
Pacific	5	23	63	412	423	—	0	2	—	4	—	0	1	—	1
Alaska	—	0	2	3	—	N	0	0	N	N	N	0	0	N	N
California	4	18	59	317	335	—	0	2	—	4	—	0	0	—	—
Hawaii	—	1	4	27	30	N	0	0	N	N	N	0	0	N	N
Oregon	—	1	4	26	29	—	0	0	—	—	—	0	1	—	1
Washington	1	2	22	39	29	—	0	1	—	—	—	0	0	—	—
Territories															
American Samoa	—	1	1	1	1	N	0	0	N	N	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	2	1	3	N	0	0	N	N	N	0	0	N	N
Puerto Rico	—	0	1	—	2	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending June 25, 2011, and June 26, 2010 (25th week)*

Reporting area	Streptococcus pneumoniae, [†] invasive disease														
	All ages					Age <5					Syphilis, primary and secondary				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	73	282	937	7,563	9,247	6	24	101	582	1,136	55	256	363	5,399	6,186
New England	—	11	79	216	484	—	1	5	24	67	2	8	19	177	218
Connecticut	—	0	49	8	216	—	0	3	6	20	—	1	8	24	42
Maine [§]	—	2	13	76	76	—	0	1	3	5	—	0	3	9	14
Massachusetts	—	0	3	14	50	—	0	3	6	35	—	5	14	106	136
New Hampshire	—	2	8	65	70	—	0	1	4	3	—	0	3	12	10
Rhode Island [§]	—	0	36	8	19	—	0	3	—	1	2	0	7	22	14
Vermont [§]	—	1	6	45	53	—	0	2	5	3	—	0	2	4	2
Mid. Atlantic	5	22	81	527	971	2	3	27	75	148	9	31	46	661	802
New Jersey	—	6	29	96	432	—	1	4	24	38	—	4	10	96	121
New York (Upstate)	3	2	10	54	99	2	1	9	30	75	4	3	20	85	50
New York City	2	13	42	377	440	—	0	14	21	35	3	15	31	322	445
Pennsylvania	N	0	0	N	N	N	0	0	N	N	2	7	13	158	186
E.N. Central	2	65	110	1,748	1,899	—	4	10	101	167	—	30	56	565	909
Illinois	N	0	0	N	N	N	0	0	N	N	—	14	23	217	449
Indiana	—	14	32	361	429	—	1	4	16	33	—	3	14	66	69
Michigan	1	14	29	404	436	—	1	4	24	53	—	4	10	90	131
Ohio	—	25	45	710	734	—	2	7	49	57	—	9	21	171	237
Wisconsin	1	9	24	273	300	—	0	3	12	24	—	1	4	21	23
W.N. Central	3	5	35	90	497	—	1	5	4	68	—	7	18	133	133
Iowa	N	0	0	N	N	N	0	0	N	N	—	0	3	10	9
Kansas	N	0	0	N	N	N	0	0	N	N	—	0	3	7	10
Minnesota	—	3	24	—	378	—	0	5	—	55	—	3	10	56	37
Missouri	N	0	0	N	N	N	0	0	N	N	—	2	9	58	72
Nebraska [§]	3	2	9	72	81	—	0	1	4	11	—	0	2	2	5
North Dakota	—	0	18	18	38	—	0	1	—	2	—	0	1	—	—
South Dakota	N	0	0	N	N	N	0	0	N	N	—	0	1	—	—
S. Atlantic	30	68	170	2,137	2,489	3	7	22	160	312	27	62	178	1,432	1,411
Delaware	—	1	6	33	21	—	0	1	—	—	1	0	4	9	3
District of Columbia	—	1	3	28	50	—	0	1	4	7	—	3	8	96	66
Florida	15	23	68	864	946	1	3	13	77	124	4	23	44	509	493
Georgia	7	18	54	478	805	1	2	7	39	96	3	10	130	222	306
Maryland [§]	6	10	32	319	290	1	0	4	17	34	5	8	17	200	123
North Carolina	N	0	0	N	N	N	0	0	N	N	—	7	19	180	232
South Carolina [§]	2	8	25	290	310	—	1	3	18	37	7	4	10	105	61
Virginia [§]	N	0	0	N	N	N	0	0	N	N	7	5	16	110	124
West Virginia	—	1	48	125	67	—	0	6	5	14	—	0	2	1	3
E.S. Central	6	19	36	564	637	—	1	4	32	61	5	14	34	307	417
Alabama [§]	N	0	0	N	N	N	0	0	N	N	—	3	11	76	123
Kentucky	N	0	0	N	N	N	0	0	N	N	5	2	16	53	61
Mississippi	N	0	0	N	N	N	0	0	N	N	—	3	16	64	95
Tennessee [§]	6	19	36	564	637	—	1	4	32	61	—	5	11	114	138
W.S. Central	17	32	368	1,106	1,118	1	4	30	98	147	6	37	71	770	945
Arkansas [§]	2	3	26	142	103	—	0	3	11	11	6	3	10	90	121
Louisiana	—	3	11	97	60	—	0	2	8	16	—	8	36	167	199
Oklahoma	N	0	0	N	N	N	0	0	N	N	—	1	6	25	48
Texas [§]	15	27	333	867	955	1	3	27	79	120	—	23	33	488	577
Mountain	10	32	72	1,084	1,092	—	3	8	82	153	2	12	24	233	255
Arizona	7	12	44	518	537	—	1	5	38	70	2	4	9	74	100
Colorado	2	11	23	336	318	—	1	4	25	44	—	2	8	51	60
Idaho [§]	N	0	0	N	N	N	0	0	N	N	—	0	2	4	2
Montana [§]	N	0	0	N	N	N	0	0	N	N	—	0	2	2	—
Nevada [§]	N	0	0	N	N	N	0	0	N	N	—	3	9	67	40
New Mexico [§]	1	3	13	150	100	—	0	2	9	13	—	1	4	29	18
Utah	—	3	8	63	127	—	0	3	10	24	—	0	5	6	35
Wyoming [§]	—	0	15	17	10	—	0	1	—	2	—	0	0	—	—
Pacific	—	2	11	91	60	—	0	2	6	13	4	51	66	1,121	1,096
Alaska	—	2	11	90	60	—	0	2	6	13	—	0	0	—	3
California	N	0	0	N	N	N	0	0	N	N	2	41	57	936	934
Hawaii	—	0	3	1	—	—	0	0	—	—	—	0	5	7	20
Oregon	N	0	0	N	N	N	0	0	N	N	—	1	7	38	27
Washington	N	0	0	N	N	N	0	0	N	N	2	6	13	140	112
Territories															
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	—	—	12	4	11	121	119
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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

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

* Case counts for reporting year 2010 and 2011 are provisional and subject to change. For further information on interpretation of these data, see http://www.cdc.gov/osels/ph_surveillance/nndss/phs/files/ProvisionalNationalNotifiableDiseasesSurveillanceData20100927.pdf. Data for TB are displayed in Table IV, which appears quarterly.[†] Includes drug resistant and susceptible cases of invasive Streptococcus pneumoniae disease among children <5 years and among all ages. Case definition: Isolation of S. pneumoniae from a normally sterile body site (e.g., blood or cerebrospinal fluid).[§] Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

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