



**Los Angeles County Department of Public Health
Acute Communicable Disease Control Program
Annual Morbidity Report
2011**

• EXECUTIVE SUMMARY •

In Los Angeles County (LAC), more than 85 diseases and conditions, as well as unusual disease occurrences and outbreaks, are reportable by law. Acute Communicable Disease Control Program (ACDC) is the lead program for the surveillance and investigation of most communicable diseases—responsibilities exclude tuberculosis, sexually transmitted diseases, and HIV/AIDS; selected vaccine-preventable diseases are monitored by the Immunization Program. Surveillance is primarily passive, with reports submitted via facsimile, mail, or telephone by providers and hospitals. Electronic reporting from hospitals via a secure web-based application has steadily increased since its inception in 2005; nearly every hospital infection preventionist in addition to correctional health providers and several large clinics are now capable of electronic reporting. Electronic laboratory reporting has been in place since 2002 and has expanded to more than twenty-five clinical and reference laboratories that report an estimated 60 percent of all mandated laboratory reports.

ACDC Mission

To prevent and control communicable disease in Los Angeles County utilizing the tools of surveillance, outbreak response, education and preparedness activities.

ACDC also sets policy and develops procedures for LAC Department of Public Health (DPH) activities related to infectious and communicable disease prevention and control. Our program interprets and enforces state and federal laws and regulations, and interfaces with other jurisdictions, programs and agencies responsible for public health. ACDC frequently provides consultation to the medical community on issues of communicable and infectious diseases and education to medical professionals.

ACDC has several sections, units and special projects, each with unique goals and objectives for the surveillance and control of communicable disease. ACDC team members work to decrease morbidity from acute communicable diseases through surveillance to detect outbreaks and monitor trends. ACDC activities include working with:

- foodborne illnesses, with special interest in *Listeria*, norovirus, *Salmonella* and shiga-toxin producing *E. coli* (STEC)
- vectorborne and zoonotic diseases such as West Nile virus, typhus, and plague as well as meningococcal disease and other causes of encephalitis and meningitis
- acute care hospitals, sub-acute healthcare facilities (e.g., skilled nursing facilities), and ambulatory care settings for disease prevention, infection control, and outbreak investigations

Los Angeles County: A Description of Our Community

LAC is one of the nation's largest counties, covering over 4,000 square miles. While LAC enjoys fairly temperate, year-round weather, it encompasses a wide variety of geographic areas including mountain ranges, arid deserts, and over 80 miles of ocean coastline. Accordingly, one challenge of disease surveillance, response and control is responding to its enormous size. LAC presently has the largest population (nearly 10 million) of any county in the US and is exceeded by only eight states. LAC is densely populated, with over one-fourth of the state's population. LAC is home to approximately 100 hospitals with 74 emergency departments, more than 30,000 licensed physicians, over 450 sub-acute healthcare facilities, and about 25 thousand retail food purveyors.

Another challenge is the extensive diversity of our population coupled with a high level of immigration and foreign travel. Nearly half of our residents are Hispanic (48%), around one-third white (30%), and around one in ten are Asian (13%) or black (9%). Residents report over 90 languages as their primary spoken language. There is also substantial economic diversity within our county; the 2010 US census recorded over 1.5 million residents (nearly 16% of LAC's population) living in poverty.

LAC is a major port of entry for immigrants to the US. According to the 2007 Los Angeles County Health Survey, 32% of respondents stated they were born outside of the US. According the US Department of Homeland Security Yearbook of Immigration Statistics 2007, California is the residence of the largest number of legal immigrants to the US. The population is also highly mobile. In terms of air travel alone, each year roughly 55 million travelers come through the Los Angeles International airport (over 40 million domestic and 14 million international travelers yearly)—making it the nation's 3rd busiest airport.



- antimicrobial-resistant bacterial agents such as *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Clostridium difficile*, *Enterococcus*, *Acinetobacter*, and *Klebsiella*
- influenza (including pandemic influenza) and other respiratory pathogens through a variety of case-based, aggregate, and virologic surveillance parameters
- LAC DPH Community Health Services (CHS) for outbreak investigations in community settings, providing guidance, support and consultation on infection prevention and control
- Other LAC programs such as Environmental Health and Health Facilities for communicable disease outbreaks, investigations, and consultation
- selected vaccine-preventable diseases for surveillance, outbreak investigation and control
- healthcare providers to enhance preparedness and response through strengthened communications, collaboration, and consolidation of resources, engaging infection preventionists, emergency departments, and laboratories in these efforts
- automated disease surveillance systems to enhance surveillance and epidemiology capacity, to identify and respond to unusual occurrences and possible terrorist incidents; activities include syndromic surveillance and electronic laboratory reporting
- many programs of the California Department of Public Health, including the Center for Infectious Diseases and the Center for Environmental Health, as well as the Centers for Disease Control and Prevention (CDC) on communicable disease matters of regional and national scope.
- the Varicella Surveillance Project, a research project examining the incidence of varicella and herpes zoster, as well as immunization coverage levels and the impact of immunization on this herpes zoster. The Project ceased data collection at the end of 2011 and came to an end in 2012.
- LAC Department of Coroner to identify infectious disease related deaths.

Other ACDC team members support and work with the disease surveillance units to:

- provide epidemiologic consultation and support, as well as assist with special projects, data maintenance, epidemiologic analysis, data presentation, and geographic information system (GIS)
- plan and evaluate cross-cutting ACDC activities with strategic planning and consequential epidemiology (application of public health research); establish and maintain performance measures for evidence based public health practice
- train and educate internal and external partners to respond to potential or actual disease which may be the result of bioterrorism.

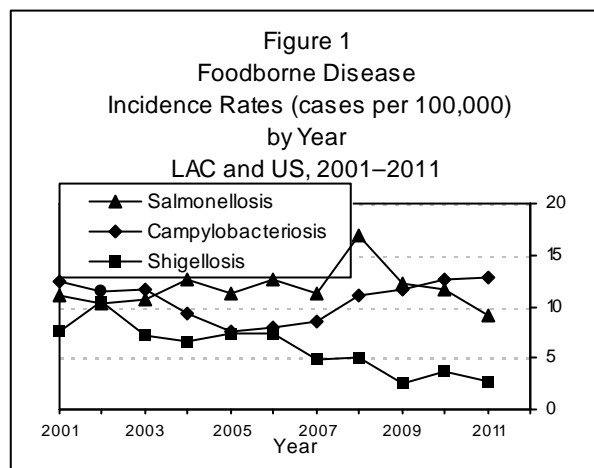
Additional information about ACDC and DPH is available at:

<http://publichealth.lacounty.gov/acd/index.htm>

<http://publichealth.lacounty.gov>

Foodborne Diseases

Diseases spread by food and food sources make up many of the investigations and activities conducted by ACDC and CHS. Overall, foodborne diseases have declined since the mid-1990's and have stabilized at lower rates as in Figure 1 (see individual chapters on campylobacteriosis, *E. coli* O157:H7, listeriosis, salmonellosis, shigellosis,



typhoid fever, and vibriosis for more details). The declining trend in reported cases is most evident with the bacterial disease shigellosis. The rate of salmonellosis is the lowest in the past ten years, though the campylobacteriosis rate continued to increase over the past five years. Incidence of Shiga-toxin producing *E. coli* (STEC) serotypes has changed in the past two years. Serotype O157:H7 decreased while other serotypes are being reported more often. This is due to the introduction of new stool tests for Shiga toxins which many laboratories are now using; both positive toxin tests and cultures are reportable to Public Health. LAC enteric disease findings are similar to national trends depicting sustained decreases with occasional upsurges



among many foodborne illnesses, particularly those of the bacterial origin.¹ While the underlying causes for these local and national trends are not known, the implementation of control measures at several levels are believed to be important factors in the reduction of food and water-related illnesses. On a national level, these measures include the expansion of federal food safety and inspection services as well as increased attention to fresh produce safety. Locally, the restaurant grading system in operation in LAC since 1998 advances food safety through training of food handlers and education of the public regarding best practices to reduce foodborne disease.

In 2011, the LAC salmonellosis crude rate dropped to a ten year low. Nationally, the incidence of salmonellosis cases has also been decreasing, but at a slower rate than it has for LAC in the previous ten years.¹ Although many food items and both potable and recreational water sources have been implicated in the transmission of *Salmonella*, salmonellosis is most commonly associated with eggs, poultry, and fresh produce. Occasionally, an infected food service worker is the source of a salmonellosis outbreak. Another prominent source is

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reptiles, either by direct contact or through surfaces or other people exposed to reptiles. In 2011, 8.8% of reported LAC salmonellosis cases had contact with turtles, lizards or snakes—an increase of two percentage points that demonstrates the need for continued efforts of the ACDC-led coalition of internal DPH partners and external community stakeholders for community-based prevention interventions.

ACDC investigated 21 disease outbreaks in 2011 that were determined to be foodborne, in which at least 353 persons were ill and 12 were hospitalized. Three outbreaks were caused by *Salmonella*, 13 by norovirus, three by bacterial toxin, one by chemical contaminant, and one by fish toxin. While the overall incidence of most foodborne diseases has been decreasing, they continue to account for considerable morbidity and mortality—most likely thousands of preventable infections occur yearly that go unreported. The majority of people affected by these illnesses improves without treatment and suffers no complications; however, some infections may become invasive, especially among children, the elderly and those with certain chronic medical conditions (e.g., immunocompromise), leading to hospitalization and death. In LAC, foodborne diseases were a contributing factor for at least 16 deaths in 2011. Accordingly, further efforts are needed to improve food quality and to educate the food industry and the public about proper food storage, handling, and preparation.

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Waterborne Diseases

Diseases such as amebiasis, cryptosporidiosis, and giardiasis have the potential to be waterborne and could infect large numbers of persons; more commonly they are spread person to person by fecal contamination of hands, food, and drink. No recreational waterborne disease outbreaks occurred in 2011; the last known such outbreak occurred in 1988 which was a swimming pool-associated cryptosporidiosis outbreak. In 2005, a

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drinking water dispenser, probably contaminated by the maintenance worker, transmitted *Giardia* to 41 members of a gym. In 2007, hepatitis A was transmitted to eight patrons of a neighborhood bar by an ice machine contaminated by an ill customer.

Waterborne parasitic disease reports continue to decline for the past ten years, staying below or consistent with statewide incidence rates. From 2006 to 2011, surveillance data reflect a growing proportion of reported amebiasis and giardiasis cases among immigrants and/or refugees in LAC.

¹ CDC, Preliminary FoodNet Data on the Incidence of Infection with Pathogens Transmitted Commonly Through Food---10 States, 2009. MMWR 2010; 59(14); 418-422. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5914a2.htm>.



Vectorborne Diseases

Vectorborne disease surveillance has documented the re-emergence of endemic (murine) typhus and other rickettsial diseases in LAC. An increase in murine typhus cases from nine reports in 2005 to over 30 cases was noted in 2011. Murine typhus cases have been documented from known endemic LAC areas of Los Feliz, South Pasadena, and Pasadena as well as newer foci including Santa Monica, downtown Los Angeles, and cities bordering Long Beach. In 2011, West Nile virus (WNV) cases increased from a low of four cases in 2010 to 63 WNV cases in 2011, including 41 cases of neuroinvasive disease (NID), 17 WNV fever cases, and five asymptomatic infections in blood donors. ACDC staff work closely with LAC DPH Veterinary Public Health, Environmental Health Vector Management, and the five local vector control agencies to routinely communicate data, control, and health education issues concerning these vector-borne diseases.

In 2011, LAC experienced the highest WNV activity among all local jurisdictions in the United States.

Invasive Bacterial Diseases

In February 2008, severe community acquired *Staphylococcus aureus* infection was made a reportable disease by California regulation. Forty-four cases that resulted in intensive care unit hospital admission or death were reported in 2011, considerably higher than the 28 cases reported in 2010. However, since almost one third of all cases were reported by only one hospital, substantial under-reporting in both years was likely. Contrary to the publicity around the virulence of methicillin-resistant *S. aureus* (MRSA), only 36% of the cases had MRSA. From interviews with patients or surrogates, it was found that diabetes and current smoking were reported more than any other risk factors. Counter to the popular reports in the press focusing on school aged children with “superbug” infections due to MRSA, those at highest risk for illness were ≥ 65 years old.

Risk factors for invasive group A streptococcal disease (IGAS) were similar to those for community acquired *S. aureus*, including diabetes and advanced age. The total number of IGAS cases (N=175) was within recent range of cases (129-191). One cluster of IGAS infections (N=7 [5 confirmed and 2 probable]) was identified in a skilled nursing facility. An extensive investigation was undertaken but no source was identified. However, several breakdowns in infection control were identified and the facility was offered infection control training.

Viral Hepatitis

The rate of hepatitis A continued to drop to its lowest recorded level while the rate of acute hepatitis B was stable. For the past two years (2010 and 2011), there have been more reported cases of acute hepatitis B than A, a first for LA County. Though many individual patients appeared to have nosocomial risk factors for acute hepatitis B and C, only one outbreak was detected except a cluster of two patients in an assisted living facility with diabetes. ACDC continues to diligently follow up all potential cases of nosocomial hepatitis B and C.

Influenza

The 2011-2012 influenza season was characterized by mild flu activity both locally and around the nation. Most of the cases of influenza detected in LAC were due to influenza A, unlike the previous season where influenza B was equal to influenza A. Only 21 deaths due to laboratory confirmed influenza were reported, though the median age at death (69 years) was higher than the previous 2 years (~45 years). Based on research, laboratory confirmed deaths represent a small proportion of all influenza related deaths. Influenza A pH1N1 decreased (perhaps due to immunizations and herd immunity). See [Influenza Watch](#) for a summary of the 2011-2012 influenza season in LAC.

Vaccine Preventable Diseases

National and international vaccine preventable disease (VPD) outbreaks continue to increase in frequency, and 2011 marked the second highest pertussis incidence in over 50 years although the year's count was a



decline in incidence from the 2010 epidemic. Notably, over 40% of the 2011 cases were not up-to-date with their vaccinations.

Although infants accounted for the highest incidence rate, adolescents and adults continue to account for a higher proportion of reported cases as they did in 2010. To counter this statewide trend, a California school immunization law was enacted in July 2011 requiring all 7th-12th grade students younger than 18 years of age to receive a Tdap vaccination.

Due to the international resurgence and high risk of exposure to VPDs during global travel, immunizations against measles, mumps, rubella, pertussis, diphtheria, and hepatitis A are strongly recommended at least two weeks prior to travel. In addition, unvaccinated infants six months of age and older should be vaccinated with MMR if they are traveling out of the country. A 2011 measles outbreak in Los Angeles County highlighted the importance and practicality of this recommendation when a newly arrived symptomatic refugee with measles from Malaysia exposed two infants and a customs officer, all of whom were not up-to-date on their vaccinations and developed measles.

Although vaccine coverage levels in LAC remain high (over 80% in children) for disease-specific vaccine antigens, an alarming trend among parents to reject, for personal belief reasons, vaccines for their children is on the rise and has contributed to the increased VPD morbidity. Personal belief exemption rates in LAC kindergarten schools have increased steadily over the last ten years and now comprise over 2% of the population. The percentage of pertussis cases less than 18 years of age with personal belief vaccine exemptions continues to be high. In 2011, 8% (n=29) of the cases had a personal beliefs pertussis vaccine exemption, double the percentage reported in 2010. A multi-pronged effort incorporating innovative and tailored community-based strategies, especially targeting hard-to-reach populations including international travelers, is being implemented in order to educate parents/guardians about the importance of vaccines and to dispel vaccine myths.

In conjunction with high vaccine coverage levels in children, it's important to achieve and maintain high vaccine coverage levels in adults and adolescents, to curb VPD morbidity in the general community. Attributable in large part to the 2011 California school immunization law, over 98% of LAC students in grades 7th-12th grades were able to document receipt of Tdap vaccine and Tdap coverage for all Californian adolescents 13-17 years of age increased from 71% in 2010 to 83% in 2011. However, California coverage levels remain low for the human papilloma virus vaccine, although improvement has been noted with 43% of California females 13-17 years of age in 2011 able to document receipt of three doses of the vaccine, up from 32% in 2010.

Meningococcal conjugate vaccine (MCV) coverage in California teens remains high at 75%. Although recent MCV coverage level data is not available for LAC, it is estimated to be in the same range as that for California as a whole. Significantly, the incidence of invasive meningococcal disease (IMD) in LAC has continued to show declines across all age- and race-ethnic groups since 1995. In 2011, one outbreak of IMD involving four serogroup C cases was investigated and all cases had some connection with the homeless community. This was the first documented LAC outbreak of IMD in over ten years.

The maintenance of high childhood immunization coverage levels, coupled with steadily increasing adolescent coverage levels should, continue to contribute to the relatively low LAC VPD morbidity levels, when compared to other regions of the country.

Vaccine Preventable Diseases

- *Although pertussis incidence in LAC has been declining in incidence since the 2010 epidemic, 2011 still recorded the second highest pertussis incidence in over 50 years.*
- *Starting July 2011, all 7th-12th grade students are required to receive a Tdap vaccination according a California school immunization law.*



Healthcare Associated Infections and Outbreaks

Healthcare associated infections (HAIs) have generated a great deal of attention in the US in recent years, especially the issue of transparency and public reporting of individual hospital infection rates. California legislation mandates healthcare facility reporting of selected conditions and healthcare practices, and established a statewide HAI advisory committee to monitor implementation of these laws to reduce and prevent HAIs. ACDC Hospital Outreach Unit (HOU) participates in the state advisory committee and works with the California Department of Public Health (CDPH) and other public health organizations to make recommendations related to the prevention and control of HAIs, including compliance with HAI regulations and public reporting of HAI associated process and outcome measures. The 2011 CDPH public reports of healthcare associated bloodstream infections and surgical site infections in California hospitals can be found at <http://www.cdph.ca.gov/programs/hai/Pages/default.aspx>. The data in the report were collected using the Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) as a method of standardizing the data.

In 2011, the HOU collaborated with CDPH to conduct a validation project in which 25 on-site hospital visits were made to validate reportable HAI data. The validation project highlighted low sensitivity of reporting central line associated blood stream infections (CLABSIs) and provided consultation to hospitals to improve case identification. The HOU continued to collaborate with CDPH, holding joint information sessions with hospital infection preventionists (IP), hosting monthly conference calls and participating in statewide HAI collaboratives such as the Comprehensive Unit Based Safety Program/Catheter Association Urinary Tract Infection in long term acute care hospitals.

Multidrug-resistant organisms are emerging diseases that have become of increasing public health concern and are frequently HAIs.

Multidrug-resistant organisms are an emerging and increasing public health concern that frequently cause HAIs. In 2011, LAC continued its laboratory surveillance of carbapenem-resistant *Klebsiella pneumoniae* (CRKP). We conducted analysis on the first year of data and

found higher rates of CRKP in long term acute care hospitals compared to standard hospitals.

Ambulatory Care Settings

HAIs in ambulatory care settings (ACSs) are a growing concern especially because more healthcare delivery is occurring currently in ACSs rather than acute care hospitals. ACSs are distinct entities, hospital-based or non-hospital-based, that operate exclusively on an outpatient basis for patients who do not require hospitalization with an expected stay of less than 24 hours. In 2011, there were four reported outbreaks in ACSs due to HAIs that include two viral and two bacterial agents. The reported etiologies of these outbreaks included hepatitis B, *Staphylococcus aureus*, and mixed bacteria. For the four outbreak investigations, the total case patient count was 31 (median: 12; mean: 10; range: 5-14). The total number of confirmed cases was nine; three cases were hospitalized. All outbreaks occurred in non-hospital based ACSs, including two contracted home health agencies, one orthopedist office, and one dialysis center. Breaches in infection control identified during these outbreaks related to hand hygiene, reusing single-use medications, and equipment reprocessing and sterilization practices such as improper cleaning of reusable dialyzer headers with O rings (see ACDC 2011 Special Studies Report). ACSs with reported outbreaks were advised of recommended infection control standards and practices. Timely event reporting from ACSs should be promoted in order to prevent and control outbreaks for patient safety.

Sub-acute Healthcare Facilities

The number of reported outbreaks in sub-acute healthcare facilities increased by 5% from 2010 (N=104) to 2011 (N=110). Scabies was the most frequently reported etiology of these outbreaks (35, 31%) followed by gastroenteritis (34, 31%), with 26 of these due to laboratory-confirmed norovirus. Only six respiratory outbreaks were reported in 2011, the same as in 2010, compared to nineteen in 2009 when pandemic influenza was first observed. In four of six respiratory outbreaks, influenza A subtype H3 was identified as the most likely etiology. These influenza outbreaks involved at least 38 skilled nursing facilities (SNFs) residents and 22 staff members. Several studies have documented diminished influenza vaccine efficacy in SNF



residents and the elderly. Routine vaccination of all SNF residents and timely administration of post-exposure influenza antiviral prophylaxis in these and other residential settings involving the elderly is critical to prevent large influenza outbreaks, as is healthcare worker receipt of annual influenza vaccination.

Automated Disease Surveillance

The achievements of ACDC's automated disease surveillance in 2011 were consolidating gains and building toward future objectives, as well as the continued integration of early detection system activities into routine public health operations. Emergency department syndromic

Emergency department syndromic surveillance may provide early detection of bioterrorist-related activity or natural disease outbreaks. Syndromic surveillance can also track trends of known outbreaks or diseases of public health importance such as seasonal influenza.

surveillance may provide early detection of bioterrorist-related activity or natural disease outbreaks. Syndromic surveillance can also track trends of known outbreaks as well as diseases and exposures of public health importance such as seasonal influenza, high temperatures, and air pollution.

Syndromic surveillance proved capable of detecting patterns of illness and community outbreaks, complementing traditional disease surveillance activities; it is one of the tools used for influenza surveillance. In 2011, the near real-time syndromic surveillance system monitored pertussis illness, heat related illness during the summer months, and acute respiratory illnesses. Current hospital participation represents approximately 70% of all emergency department visits in the county and recruitment of additional hospitals is ongoing. Nurse call line, coroner data, veterinary reports of zoonotic diseases, 911 calls, over-the-counter medication sales data, and emergency department ReddiNet, an emergency medical communications network, complement the early event detection system.

vCMR (Visual Confidential Morbidity Report) is a web-based electronic reporting system that manages the "life-cycle" of a disease incident investigation from the date of report to the final resolution. The system has been fully operational since May 2000. It features modules for diseases, outbreaks, foodborne illness reports, manual reporting by hospital infection preventionists, and automated electronic laboratory reporting.

vCMR is aligned with CDC-sponsored initiatives such as the Public Health Information Network (PHIN) and National Electronic Disease Surveillance System (NEDSS). It was converted to a fully web-based application used by the following DPH programs: Acute Communicable Disease Control; Environmental Health Food and Milk; Immunization Program; Community Health Services' eight Service Planning Areas; Health Assessment and Epidemiology; Injury and Violence Prevention; and STD Control (laboratory reports only).

ELR (Electronic Laboratory Reporting): Automated electronic reporting of communicable diseases from laboratories to DPH has been shown to yield more complete and rapid reporting of disease. Results are sent as soon as they are available rather than days later. LAC implemented ELR in 2002, and has pursued efforts to recruit and implement additional laboratories, with feeds from 21 laboratories in 2011.

Bioterrorism, Emergency Preparedness and Response Activities

The ACDC Bioterrorism Preparedness and Response team continues active participation and association with the Consortium of Technical Responders (CTR), a multi-agency collaborative of agencies comprised of members from the LAPD, LAC Sheriff, DPH, Fire, Hazmat, US Customs and Border Patrol, California Highway Patrol, FBI, and US Postal Inspectors. The goal of CTR is to unify the technical response community in incidents involving the use of Chemical, Biological and Radiological Agents.

Collaboration and partnership continues at the Joint Regional Intelligence Center (JRIC) with a public health nurse detailed to this fusion center, composed of public health, fire services, police, sheriff, and Federal



Bureau of Investigation (FBI) departments working in partnership with other local, state, and federal programs to share and analyze information, disseminate intelligence, and assist with the coordination of resources for a unified response to a terrorism event. The PHN manages and directs the fusion center medical program. This added value and presence of public health expertise at the JRIC allows for the analysis, sharing, and early identification of sensitive health, medical and classified threat information that may pose a public health risk in LAC.

Through ongoing partnership and relationship with the California National Guard 9th Civil Support Team, DPH participated in a full-scale multi-agency bioterrorism response exercise on board on a military cargo vessel docked at a LAC Port. For this exercise, the ACDC training and response unit coordinated and guided a core team for response to a suspected bioterrorism threat in LAC. Participation in these types of exercises provide opportunities to continue testing skills capabilities, improve workforce competence, and increase confidence in response to potential public health emergency events and incidents (see [2011 Special Studies Report](#)). The Response Unit provides ongoing subject matter expertise consultation related to biological incidents to other public health programs, first responder agencies, hospitals and the community as needed. The team will respond in the field to quickly assess and evaluate situations reported as unusual or suspected or cases of Category A agents. This unit works closely with the Public Health Laboratory Bioterrorism Response Unit to prioritize risk level and evaluate situations related to clinical specimens submitted for Category A agent testing. The unit is included in the development of training and planning efforts for upcoming biological response exercises in coordination with other DPH units such as EPRP, OD&T and CHS.

Planning and Evaluation

In 2011, the ACDC Planning and Evaluation Unit convened a Southern California regional workshop to provide training to local public health departments in utilizing Council to Improve Foodborne Outbreak Response (CIFOR)'s *Guidelines for Foodborne Disease Outbreak Response* and its Toolkit. The target audiences for this project were multidisciplinary state, county and city-based teams involved in outbreak response, including epidemiologists, public health laboratorians, environmental health specialists, and public health nurses. The workshop was attended by 57 public health professionals from 11 Southern California jurisdictions. The workshop consisted of case study presentations with tabletop exercises, break-out session with professional peer groups, and action planning session. Workshop attendees gained resources and skills to facilitate foodborne outbreak response. The CIFOR *Guidelines* can influence standardization of foodborne disease investigation as well as other communicable disease investigations. Moreover, continuous utilization of the *Guidelines* and diligent follow-through of the action planning will be essential in contributing to foodborne disease prevention and management.

The Unit's activities and efforts are fundamentally based on the concept of syndemics—*two or more afflictions, interacting synergistically, contributing to excess burden of disease in a population*²—which is crucial to enhancing capacity to respond to communicable disease outbreaks and emerging infectious diseases, and to preparing for natural and man-made disasters. Building capacity and community resiliency with the networks of schools, healthcare professionals, and various public and private stakeholders will increase effectiveness and efficiency of public health prevention, preparedness, response, intervention, and mitigation efforts. The Unit continues to work with early childhood education providers for outreach and education on various communicable diseases and emerging infectious diseases.

² CDC. Syndemics Prevention Network. Available at: <http://www.cdc.gov/syndemics/definition.htm>.