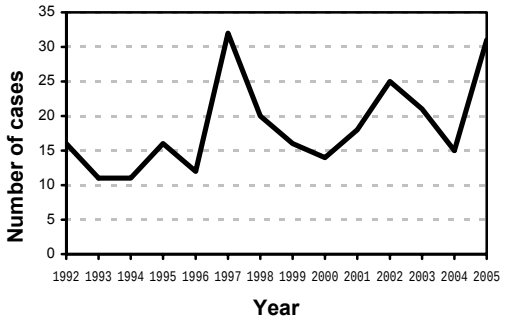
LEGIONELLOSIS

CRUDE DATA	
Number of Cases	31
Annual Incidence	
LA County	0.32
United States	N/A
Age at Diagnosis	
Mean	62.8
Median	62
Range	35–86 years
Case Fatality	
LA County	16%
United States	N/A

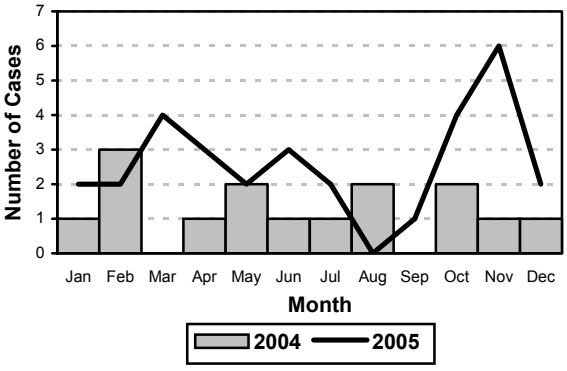
Figure 1
Legionellosis
Cases by Year of Onset
LAC, 1996–2005



DESCRIPTION

Legionellosis is a bacterial infection with two distinct clinical forms: 1) Legionnaires' disease (LD), the more severe form characterized by pneumonia, and 2) Pontiac fever, an acute-onset, self-limited flu-like illness without pneumonia. *Legionella* bacteria are common inhabitants of aquatic systems and thrive in warm environments. Ninety percent of cases of LD are caused by *Legionella pneumophila,* although at least 46 Legionella species and 70 serogroups have been identified. Transmission occurs through inhalation of aerosols containing the bacteria or by aspiration of contaminated water. Person-to-person transmission does not occur. The case fatality rate for LD ranges from 10%–15%, but can be higher in outbreaks occurring in a hospital setting. People of any age may get LD, but the disease most often affects middle-aged and older persons, particularly those who are heavy smokers, have chronic lung disease, or whose immune system is suppressed by illness or medication.

Figure 2
Legionellosis
Cases by Month of Onset
LAC, 2004–2005



DISEASE ABSTRACT

- The incidence of Legionellosis in LAC is increasing.
- Two nosocomial cases were reported in 2005.
- No cases of Pontiac fever were reported in 2005.
- The case fatality decreased from 20% to 16% in 2004 and 2005, respectively.

STRATIFIED DATA

Trends: A total of 31 reported cases met the CDC surveillance case definition for LD in 2005.This is slightly lower than the peak incidence of 32 cases reported in 1997 (Figure 1).

Seasonality: Cases occurred throughout the year, with a peak in November—this peak was unrelated to nosocomial incidents.

Age: Consistent with the expected higher frequency among older persons, the mean age of reported cases was 63 years, the median age 62 years, and the range was 35-86 years.

Fatality: In 2005, the case fatality rate of 16% (5/31) was lower than in 2004, 20% (3/15). The mean age of expired cases was 62 years and the median age was 59 years (range 35-82 years).

Gender: There were 21 (68%) male cases and 10 (32%) female cases.

Race: The majority of cases (n=12, 39%) occurred in Whites. The next most frequently reported racial group was Hispanics (n=10, 32%), Asian (n= 7, 23%), followed by Black (n=2, 6%).

Ethnicity: The majority of cases reported were non-Hispanic (n=21, 68%) and (n= 10, 32%) cases reported Hispanic ethnicity.

COMMENTS

In 2005, 23 (74%) LD cases were diagnosed by Legionella urinary antigen, 3 (10%) were diagnosed by direct fluorescent antibody (DFA) staining, 3 (10%) by BAL/sputum culture, and 2 (6%) by serologic antibody titers. As in 2004, the Legionella urinary antigen was the most frequently used method to diagnose LD. However, this diagnostic test will only screen for Legionella pneumophila serogroup 1.

Legionnaire's disease is more prevalent during summer and early fall. The more favorable weather conditions could explain increased exposure risk during outdoor and recreational activities (i.e. hot tubs, cruise ships, hotels, swimming pools, etc). However, our data show LD is equally distributed throughout the year.

Two nosocomial LD cases were reported at LAC in 2005 by separate medical facilities. Each medical facility conducted eight weeks of prospective active surveillance to detect other possible cases of nosocomially related LD as well as six months of retrospective review to determine if additional LD cases could be found. No additional LD cases were found by either prospective or retrospective surveillance methods.

The number of LD cases in LAC has increased as reporting and monitoring procedure improved. In 2005, we had 43 reported cases, a 39% increase, compared to 31 cases reported in 2004.The utilization of automated laboratory reporting and heightened awareness about the disease can explain the increasing trend of cases reported. Other probable reasons could be due to the improvement of the physician's ability to diagnose LD, associated with the available diagnostic assays. However, some providers are not familiar of the timing of serology collection of single titers to meet the laboratory criteria of case definition. Some cases may have been missed due to convalescent samples taken prematurely or not at all.

ADDITIONAL RESOURCES

Guidelines:
Centers for Disease Control and Prevention.2003.Guidelines for environmental infection control in health-care facilities: recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC). MMWR; 52 (RR-10): 1-249. Available at: www.cdc.gov/ncidod/dhqp/gl environinfection.hmtl

Centers for Disease Control and Prevention. 2004. Guidelines for preventing health-care associated pneumonia, 2003: recommendations of CDC and the Healthcare Infection Practices Advisory Committee (HICPAC). MMWR; 53(RR-3): 1-179.

Dixon B, Krystofiak S, McMahon J, Stout J, Squier C, Wagener M, Yu VL. A proactive approach to prevention of health care-acquired Legionnaires' disease: The Allegheny County (Pittsburg) experience. American Journal of Infection Control 2005;33:360-7.

State of Maryland, Department of Health and Mental Hygiene. Report of the Maryland Scientific working Group to Study *Legionella* in Water Systems in Healthcare Institutions. June 14, 2000, Baltimore, Maryland. www.dhmh.state.md.us/html/legionella.htm

LAC Department of Health Services. Legionellosis: Taking the Mystery out of Laboratory Diagnosis. The Public's Health. 2001;1(3):4. Available at:
www.lapublichealth.org/wwwfiles/ph/ph/ph/TPH_October_2001.pdf

Reviews:

- Stout JE, Yu VL; Hospital-acquired Legionnaires' disease: new developments. Current Opinion in Infectious Disease 2003, 16:337-341.
- Sabria M, Yu VL, Hospital-acquired legionellosis: solutions for a preventable infection. The Lancet Infectious Diseases Vol 2 June 2002.

Selected Articles:

- Benin AL, Benson RF, Besser RE. Trends in Legionnaires Disease, 1980- 1998; Declining Mortality and New Patterns of Diagnosis. Clinical Infectious Diseases 2002; 35:1039-46.