

trophoresis. Patterns were compared visually with reference patterns (6).

From January 1, 2003, to March 31, 2004, a total of 44 of 124 male rectal swabs were positive for *C. trachomatis*. Of those, 38 were identified as belonging to the L2 serotype, which confirms the diagnosis of rectal LGV. Epidemiologic information was retrospectively obtained by clinicians through review of medical records, telephone interview, or both. A complete history was available for 14 of the 38 cases. All 14 men reported unprotected anal sex with anonymous male sex partners in France, and none reported a stay in an LGV-endemic area. Their mean age was 40 years (31–50); 8 were HIV-infected, and 9 had another concomitant STD. The mean duration of symptoms before LGV diagnosis was 50 days (range 11–120 days). All 14 patients had symptoms of acute proctitis, including rectal pain, discharge, and tenesmus, and 3 (all HIV-infected) had fever. Deep, extended rectal ulcerations were reported in 8 patients, 3 of whom were HIV-infected and had lesions suggestive of rectal carcinoma. In 1 patient in whom a late diagnosis was made 4 months after the onset of symptoms, a rectal tumorlike stricture was observed. All 14 patients were treated with tetracycline for a mean duration of 16 days (range 10–60 days).

An information campaign among microbiologists and clinicians and a

sentinel LGV surveillance system were launched in April 2004. Subsequently, LGV was diagnosed in 65 additional male patients, some retrospectively. In total, rectal LGV was diagnosed in 103 patients from July 2002 to August 2004 (Figure).

Prompt diagnosis and treatment is indeed paramount to prevention and control. Diagnosis may be further hampered because rectal LGV may mimic other conditions such as rectal carcinoma or Crohn disease. Treatment duration should be no shorter than 21 days, and follow-up examinations should be conducted until all signs and symptoms have resolved (7,8). If left untreated, rectal LGV could lead to serious complications such as rectal stricture (1). If recently exposed to infection, sexual contacts should receive prophylactic treatment to prevent reinfection and to eliminate a potential reservoir. The emergence of rectal LGV, characterized by deep mucosal ulcerations and frequently occurring in HIV-infected men who have sex with men, is a serious concern for the gay community in Europe.

**Magid Herida,\* Patrice Sednaoui,†  
Elisabeth Couturier,\* Didier Neu,‡  
Maïthe Clerc,§ Catherine Scieux,¶  
Gerard Kreplak,#  
Véronique Goulet,\*  
Françoise F Hamers,\*  
and Bertille de Barbeyrac§**

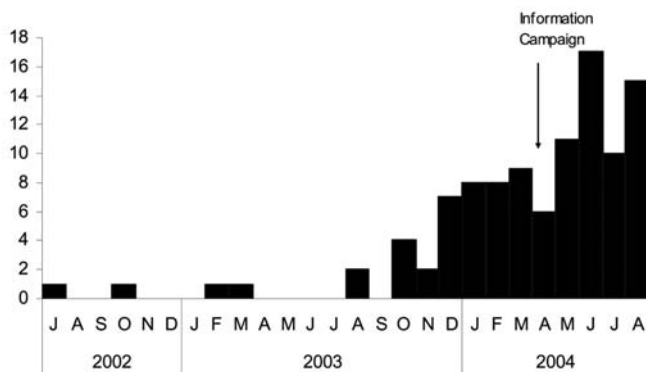


Figure. Number of rectal lymphogranuloma venereum cases diagnosed in men in France, July 2002–August 2004.

\*Institut de Veille Sanitaire, Saint-Maurice, France; †Institut Alfred Fournier, Paris, France; ‡Hospital Pellegrin, Bordeaux, France; §Université Bordeaux 2, Bordeaux, France; ¶Hospital Saint-Louis, Paris, France; and #Laboratoire du Chemin Vert, Paris, France

## References

- Perrine PL, Stamm WE. Lymphogranuloma venereum. In: Holmes KK, Sparling PF, Mardh PA, Lemon SM, Stamm WE, Piot P, et al., editors. Sexually transmitted diseases. New York: McGraw-Hill; 1999. p. 423–32.
- Klausner JD, Kohn R, Kent C. Etiology of clinical proctitis among men who have sex with men. *Clin Infect Dis*. 2004;38:300–2.
- Quinn TC, Goodell SE, Mkrichian E, Schuffler MD, Wang SP, Stamm WE, et al. *Chlamydia trachomatis* proctitis. *N Engl J Med*. 1981;305:195–200.
- Scieux C, Barnes A, Bianchi I, Casin I, Morel P, Perol Y. Lymphogranuloma venereum: 27 cases in Paris. *J Infect Dis*. 1989;160:662–8.
- Centers for Disease Control and Prevention. Lymphogranuloma venereum among men having sex with men—Netherlands, 2003–2004. *MMWR Morb Mortal Wkly Rep*. 2004;53:985–7.
- Rodriguez P, Vekris A, de Barbeyrac B, Dutilh B, Bonnet J, Bebear C. Typing of *Chlamydia trachomatis* by restriction endonuclease analysis of the amplified major outer membrane protein gene. *J Clin Microbiol*. 1991;29:1132–6.
- Centers for Diseases Control and Prevention. Sexually transmitted diseases treatment guidelines 2002. *MMWR Morb Mortal Wkly Rep*. 2002;51(RR-6):18.
- Clinic Effectiveness Group. National guidelines for the management of lymphogranuloma venereum. *Sex Transm Infect*. 1999;75:40–2.

Address for correspondence: Magid Herida, Institut de Veille Sanitaire, 12 Rue du Val d'Osne 94415, Saint-Maurice, France; fax: 33141796766; email: m.herida@invs.sante.fr

## Pertussis in Soldiers, Israel

**To the Editor:** The role of adults as reservoirs of pertussis was previously well established (1–7). Young army recruits undergoing basic train-

ing in the Israeli Defense Force constitute a unique adult population because of their special living and service conditions. This and the fact that they are not vaccinated with the diphtheria, tetanus, and pertussis (DTP) vaccine after the age of 1 year (unlike children in most of the Western countries) led us to hypothesize that this semiclosed population may have an exceptionally high risk for pertussis. These young soldiers are on leave on weekends, during which time they come in close contact with susceptible family members, including young infants, and may thus facilitate the "import" and "export" of pertussis between the military setting and the general population. An outbreak of pertussis that recently occurred among infantry soldiers (8) indicated the need to conduct the present study, in which we sought to evaluate the prevalence and incidence of pertussis among young soldiers in the Israeli Defense Force.

We conducted 2 concurrent studies. The first was a 15-month (November 2001–March 2003), laboratory-based surveillance study of pertussis, which included 110 trainees who complained of persistent coughing (case definition: cough lasting 10–90 days) upon admission to compound clinics. Samples obtained from these patients were tested by a commercial enzyme-linked immunosorbent assay (ELISA) (PanBio, East Brisbane, Queensland, Australia) for the presence of immunoglobulin (Ig) A against a *Bordetella pertussis* sonicate and by an in-house IgA-detection ELISA directed against pertussis toxin as previously described (9). Results for IgA to *B. pertussis* sonicate were calculated as arbitrary ELISA units obtained according to the manufacturer's instructions. A result of 9 U (a cutoff point that was previously shown to provide a 98.5% specificity for the diagnosis of recent pertussis infection [8]) or higher was considered positive. Results for IgA to

pertussis toxin were calculated as arbitrary ELISA units according to a calibration curve of a serially, double-diluted, positive standard. The cutoff point was calculated by adding 3 standard deviations to the mean value of a group of 40 healthy study participants. A positive result in either test was considered a confirmed case of pertussis.

We conducted another substudy to estimate incidence. This substudy included 278 trainees who were interviewed regarding the occurrence of persistent cough and seeking of medical care during the preceding 6 months. We multiplied the prevalence of laboratory-confirmed pertussis found in the first study by the incidence of study participants with persistent cough who sought medical care in this study. The result was multiplied by 200,000 to receive incidence estimation for 100,000 person-years.

The median duration of cough among the 110 case-patients was 14 days, their median age was 19 years, 94 (85.5%, 95% confidence interval [CI] 77.5%–91.5%) were males, 71 (64.5%, 95% CI 54.9%–73.4%) were born in Israel, and 85 (77.3%, 95% CI 68.3%–84.7%) were in basic training when they visited the clinic. Twenty (18.2%, 95% CI 11.5%–26.7%) and 14 (12.7%, 95% CI 7.1%–20.4%) of the patients were positive for IgA antibodies to *B. pertussis* and pertussis toxin, respectively. Twenty-five patients (22.7%, 95% CI 15.3%–39.7%) were positive by either test. Significant variations were recorded during the follow-up period. The first period (November 2001–May 2002) was characterized by a high prevalence of pertussis among the 72 patients enrolled, with 19 (26.4%, 95% CI 16.7%–38.1%) and 14 (19.4%, 95% CI 11.1%–30.5%) positive for IgA to *B. pertussis* and pertussis toxin, respectively. In the second period (August 2002–March 2003), although charac-

terized by the same median duration of cough (14 days), a substantially lower prevalence of pertussis was observed among the 38 patients enrolled, with only 1 (2.6%) and 0 patients, respectively, showing positive results in either of the 2 tests ( $p < 0.01$  for differences between the 2 periods for both diagnostic methods).

The frequency of clinical symptoms observed in patients positive for pertussis by at least 1 ELISA ( $n = 25$ ) was similar to those observed in patients negative for pertussis by both ELISAs ( $n = 85$ ), with the exception of post-tussive emesis (40% versus 25%, respectively) and fever (4% versus 21%). These differences were not significant.

Of the 278 basic training respondents, 17 (6.1%, 95% CI 3.6–9.6%) reported a persistent cough (>2 weeks) during the preceding 6-month period; 13 (4.7%, 95% CI 2.5%–7.9%) had sought medical care. When we extrapolated from this sample and from the laboratory-confirmed prevalence of 22.7% among patients with persistent coughing who sought medical care (and thus came to the clinics), the incidence rate was 2,132 cases per 100,000 person-years (95% CI 440–6,240).

The prevalence of pertussis found in this study is comparable with that previously reported among U.S. Marine corps trainees, university students, and other civilian adult populations (1–7). Complete case-capturing could not be performed. However, the high clinical similarity between pertussis-positive and other cases of prolonged cough renders selection bias unlikely. The prevalence of disease in this study showed significant changes in relation to time in contrast to previous studies (3). This difference may be because our present study was conducted in a semiclosed population characterized by epidemic occurrence of the disease.

The incidence of pertussis reported in this study (2,132 cases per 100,000

person-years) is substantially higher than the findings of Nennig and others (10) among an urban population in San Francisco (176 cases per 100,000 person-years). This finding may be due to the difference in immunization practices between Israel and the United States (5 doses of DTP vaccine in the United States with the last 1 administered between the ages of 4 and 6 years, compared with only 4 doses of the vaccine during the first year of life in Israel) or to crowded living conditions of the recruits. Our findings emphasize the need for revaccination against pertussis of young adults in Israel, primarily of those at high risk for pertussis, such as army recruits.

**Eyal Klement,\* Itamar Grotto,\*†  
Itzhak Srugo,‡§ Naday Orr,\*†  
Jacob Gilad,¶ and Dani Cohen†**

\*Israel Defense Force, Medical Corps, Ramat-Gan, Israel; †Tel-Aviv University, Tel-Aviv, Israel; ‡Bnai Zion Hospital, Haifa, Israel; §Technion-Israel Institute of Technology, Haifa, Israel; and ¶Soroka University Medical Center, Beer-Sheva, Israel

## References

1. Birkebaek NH, Kristiansen M, Seefeldt T, Degn J, Moller A, Heron I, et al. *Bordetella pertussis* and chronic cough in adults. *Clin Infect Dis*. 1999;29:1239–42.
2. Jansen DL, Gray GC, Putnam SD, Lynn F, Meade BD. Evaluation of pertussis in U.S. Marine Corps trainees (see comments). *Clin Infect Dis*. 1997;25:1099–107.
3. Mink CM, Cherry JD, Christenson P, Lewis K, Pineda E, Shlian D, et al. A search for *Bordetella pertussis* infection in university students. *Clin Infect Dis*. 1992;14:464–71.
4. Rosenthal S, Strebel P, Cassidy P, Sanden G, Brusuelas K, Wharton M. Pertussis infection among adults during the 1993 outbreak in Chicago. *J Infect Dis*. 1995;171:1650–2.
5. Schmitt-Grohe S, Cherry JD, Heining U, Uberall MA, Pineda E, Stehr K. Pertussis in German adults. *Clin Infect Dis*. 1995;21:860–6.
6. Senzilet LD, Halperin SA, Spika JS, Alagaratnam M, Morris A, Smith B. Pertussis is a frequent cause of prolonged cough illness in adults and adolescents. *Clin Infect Dis*. 2001;32:1691–7.
7. Wright SW, Edwards KM, Decker MD, Zeldin MH. Pertussis infection in adults with persistent cough. *JAMA*. 1995;273:1044–6.
8. Klement E, Uliel L, Engel I, Hasin T, Yavzori M, Orr N, et al. An outbreak of pertussis among young Israeli soldiers. *Epidemiol Infect*. 2003;131:1049–54.
9. Klement E, Kagan N, Hagain L, Kayouf R, Cohen D, Orr N. Correlation of IgA, IgM and IgG antibody-detecting assays based on filamentous hemagglutinin, pertussis toxin and *Bordetella pertussis* sonicate in a strictly adult population. *Epidemiol Infect*. 2005;133:149–58.
10. Nennig ME, Shinefield HR, Edwards KM, Black SB, Fireman BH. Prevalence and incidence of adult pertussis in an urban population. *JAMA*. 1996;275:1672–4.

Address for correspondence: E. Klement, Center for Vaccine Development and Evaluation, Medical Corps, M.P. 02149, Israeli Defense Force, Ramat-Gan, Israel; fax: 972-3-737-6867; email: klement@agri.huji.ac.il

## Food Safety for First Responders

**To the Editor:** Relatively few published reports of intentional food contamination are available (1–5). However, after the anthrax attacks of 2001, biologic terrorism vulnerability assessments have determined that intentional food poisoning is a plausible means to widely disseminate pathogens, with potentially devastating effect (6). As a consequence, food security has emerged as one of the major priorities for bioterrorism preparedness (7–10). We describe a naturally occurring incident that demonstrates the potential for premeditated food contamination to target specific populations who are critical for protecting public safety, in this instance, a city police force. Measures to mitigate the risk of this scenario type are provided.

On the evening of December 19, 1998, local hospital emergency departments notified the Hawaii

Department of Health that an unusually high number of police officers were coming to the hospitals with acute gastroenteritis. Earlier that day, several police-affiliated support associations had cosponsored a holiday event. The food was catered by a food service establishment that routinely provided meals at the police department headquarters in Honolulu. Active and retired police officers and their family members participated in the event. The food service at the event consisted of “bento lunch boxes” containing luncheon meat, a hot dog, teriyaki beef, fried chicken, and rice. Approximately 1,100 lunches were distributed at the event, some of which were taken offsite to be consumed by others, including on-duty officers at satellite police stations.

Interviews were conducted with a convenience sample of 394 persons who ate the bento lunch, of which 145 (37%) reported becoming ill with diarrhea (81%) or vomiting (80%). Illness onset occurred a mean of 4 hours after eating the lunch (1.5–8 hours); the mean duration of illness was 14 hours (2–96 hours). Incapacitation of police officers and their family members as a result of the illness was substantial with 25% absent from work for a half day, 42% for 1 full day, 18% for 2 days, and 15% for more than 2 days. *Staphylococcus aureus* was recovered from 7 of 8 stool specimens, of which 6 were positive on *S. aureus* toxin testing. Analyses of the lunch items found between 18 million to 3 billion *S. aureus* colonies per gram in the implicated foods. Luncheon meat, teriyaki beef, and hot dogs were positive on *S. aureus* toxin assays. *S. aureus* isolates obtained from food and clinical specimens were indistinguishable by pulsed field-gel electrophoresis. The quantity of lunch boxes produced for this holiday event exceeded that which the catering facility routinely produced while adhering to recommended food-hand-