

L2

VACCINE EFFECTIVENESS IN SCHOOLCHILDREN DURING A LARGE MEASLES OUTBREAK IN ROMANIA, 1996-1998. KA Hennessey*, N Ion-Nedelcu, D Craciun, F Toma, and P Strebel (Vaccine Preventable Disease Eradication Division, Centers for Disease Control and Prevention, Atlanta, GA 30333, USA; and Ministry of Health, Bucharest, Romania).

Romania is currently experiencing a measles outbreak that began in December 1996 with >27,000 cases and 13 deaths reported to date. Sixty percent of cases have occurred among schoolchildren, 73% of whom were vaccinated with at least one dose. Decreased effectiveness of locally produced measles vaccine, the only vaccine used in Romania since 1981, was investigated as a possible contributing factor in this outbreak. A retrospective cohort study among children in grades 1-7 was conducted in 5 schools in Dolj district. Children in classes with ≥ 1 measles case were included. Medical records were reviewed for history of vaccination and previous measles. Vaccine effectiveness was estimated by comparing attack rates among vaccinated and unvaccinated children. A total of 2,541 children from 83 classes, including 197 measles cases, were enrolled. Median age of enrollees was 11 years (range: 6-15 years). Compared with zero-doses, vaccine effectiveness of two-doses was significantly higher than one-dose, 96% (95% confidence interval [CI]: 92%-98%) and 89% (CI: 85%-91%), respectively. One-dose vaccine effectiveness was similar for 1st-grade children and 5-7th-grade children, 92% (CI: 87%-95%) and 89% (CI: 85%-92%), respectively. One-dose vaccine effectiveness was similar for children vaccinated between 9-11 months and 12-15 months, 88% (CI: 82%-92%) and 91% (CI: 87%-93%), respectively. Our findings suggest that this outbreak is not due to decreased vaccine effectiveness of Romanian produced vaccine, waning immunity, or young age at first dose of vaccination. To prevent future outbreaks among schoolchildren it may be necessary to administer a dose to all children who lack evidence of receipt of 2 doses.

L4

A RECENT INCREASE IN HOMICIDES, TAXI DRIVERS, ANCHORAGE, ALASKA. TK Thomas* and G Conway (Alaska Field Station, Division of Safety Research, NIOSH, Anchorage, AK 99508, USA).

Homicide is now the second leading U.S. cause of occupational death, with 20 workers murdered weekly. Most are robbery-related. High risk work places include taxicabs, grocery and liquor stores, detective/protective services and gas stations. Risk factors include: exchange of money with the public, working alone, working late night or early morning hours. Taxi drivers had the highest national occupational homicide rate for 1990-92, 22.7/100,000/yr, 34 times the overall occupational homicide rate of 0.66/100,000/yr for that period. Prompted by three taxi driver homicides in Anchorage within 60 days (the latest April 7th, 1998), we analyzed available data on these homicides in Anchorage. Case data were obtained through the NIOSH Alaska Field Station occupational fatality database, direct investigation (e.g. autopsy, interviews) and newspaper articles. Workforce denominators are municipal transport office enumeration of taxicab permits and licenses. Three taxi driver homicides occurred in Anchorage between May 1993 and January 1998, three more between February and April 1998. All victims were middle-aged white males killed by gunshot to the head. Motive was robbery in four cases, unknown in others. Three occurred between 10 pm and 8 am, only one during daylight. The estimated work force is 610, giving an occupational homicide rate of 200/100,000/yr, 300 times the national rate. During the same period, only two other occupational homicides occurred in Anchorage, equivalent to 0.29 homicides/100,000 workers/yr. Anchorage taxi drivers have a very high homicide rate compared to other workers in Anchorage or taxi drivers nationwide. The reasons are unclear. Urgent action is needed to make this industry safer. Possible strategies include; bulletproof partitions, video cameras, and drop boxes or cashless systems.

L3

A FOODBORNE OUTBREAK OF SCARLET FEVER. R Burr*, T Nekomoto, B Kanenaka, B Schwartz, O Levine, and P Effler (CDC, Atlanta, GA 30333, USA; Hawaii Health Department, Honolulu, HI, USA).

On November 4, 1997, two Honolulu schools reported absences from scarlet fever. The outbreak and costs of treatment were investigated. School absentee records identified cases. The authors performed 1) a grade 3-12 cohort survey; 2) physician and catering staff interviews; 3) pharyngeal cultures of cases and foodhandlers and 4) pulsed-field gel electrophoresis (PFGE) of isolates. The case definition was a student absent October 31-November 7 with scarlet fever or Group A Streptococcal (GAS) pharyngitis. The index school had 121 cases (attack rate (AR) 11%, 73% scarlet fever). Food questionnaires were completed by 94% of 871 grade 3-12 students; students eating hot lunch on October 31 were 14 times more likely to develop GAS illness (AR= 20% vs. 1.4%, 95% Confidence Interval (CI) 6.5 -31.2). Seventy-two percent of cases recalled eating spaghetti. In logistic regression, eating spaghetti remained an independent predictor of illness (Odds Ratio =7.4, 95% CI 2.2-27.2). A foodhandler who prepared pasta was GAS-positive. Another catered school reported GAS illness in 84 students. PFGE of isolates from the foodhandler and six of eight students revealed indistinguishable patterns. Seventy percent of 117 cases received recommended first-line antibiotics while the rest received other antimicrobials. This increased costs from \$904 to \$2186. This represents the first application of PFGE in a foodborne GAS outbreak. Epidemiologic and laboratory evidence implicate pasta contaminated by a foodhandler. Prescribing recommended antimicrobials would have reduced costs substantially.

L5

DEMOGRAPHIC AND PET-RELATED RISK FACTORS FOR EVACUATION FAILURE FROM A NATURAL DISASTER. SE Heath* and LT Glickman (Purdue University, School of Veterinary Medicine, Lafayette, IN, USA).

Evacuation failure jeopardizes the safety of residents and rescuers during a disaster. The association of household composition and pet ownership with evacuation failure was studied in residents of Marysville, CA, who were under an evacuation notice due to the threat of flooding in January 1997. A random digit dial telephone survey was conducted of 397 residents in June 1997. Case households failed to evacuate and control households evacuated. The risk (odds ratio (OR) and 95% confidence interval (CI) of evacuation failure (REF) was calculated by logistic regression. An estimated 19.4% households in Marysville failed to evacuate. The REF was reduced in households with children (< 18 years) without cats or dogs (OR 0.4; CI 0.2 - 0.8), with dogs (OR 0.4; CI 0.2 - 0.8), or with cats (OR 0.2; CI 0.1 - 0.6). The REF in dog-owning households without children increased with an increasing number of dogs (OR 1.7; CI 1.1 - 2.7) or cats (OR 1.4; CI 0.9 - 1.8). The REF in cat-owning households without children increased with an increasing number of dogs (OR 2.3; CI 1.6 - 3.5) and a higher educational level of the household head (OR 3.1; CI 1.2 - 7.6). The population attributable risk of evacuation failure associated with dog or cat ownership was 11.0% and 9.2%, respectively. Approximately 53% of US households own pets. Facilitating pet evacuation will promote human safety, especially in pet-owning households without children.

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