

## Medical News

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### Outbreak of Shigellosis Aboard Commercial Airline

An international foodborne outbreak of shigellosis was identified after the occurrence of an index outbreak involving a professional football team. Twenty-one (32%) of 65 football players and staff developed shigellosis associated with consuming cold sandwiches prepared at the airline flight kitchen of a Minnesota-based airline. An intensive investigation identified 240 passengers with confirmed or probable shigellosis on 219 flights to 24 states, the District of Columbia, and four countries between September 14 and October 13, 1988. An outbreak-associated strain of *Shigella sonnei* was isolated from football players and staff, airline passengers, and flight attendants. It was believed that cold food items were contaminated during processing by one or more foodhandlers who acquired *S. sonnei* infection in the community. Several foodhandlers admitted to working while they had diarrhea. Employees did not always wash their hands before beginning work, after eating or using the toilet facilities, or as often as necessary.

The authors noted that inadequate cleaning and sanitizing of equipment produced conditions that were conducive to the transmission of *S. sonnei* and an apparent failure of adequate training and supervision of food handlers contributed to this outbreak. The authors recommend that all establishments that mass-produce cold food items should perform aggressive surveillance for diarrheal illness, exclude ill employees from handling food, and provide strict supervision of handwashing practices. Further, prevention of such outbreaks may require reduction of hand contact in the preparation of cold food items.

The potential for outbreaks of shigellosis associated with cold food served on commercial airlines is increased because of the lack of onboard refrigeration facilities, inadequate handwashing sinks, and faucet designs that require one hand to hold the faucet open while rinsing the other hand.

Only 23 outbreaks of foodborne illness associated with commercial airline flights have been reported worldwide from 1947 through 1984. Recognition of

these outbreaks was facilitated by one of three factors: 1) attack rates exceeding 20% of the passengers or crew; 2) incubation periods short enough that passengers became ill during or shortly after the flight; or 3) the occurrence of an illness, such as cholera or typhoid fever, that is likely to be investigated by public health officials.

FROM: Hedberg CW, Levine WC, White KE, et al. An international foodborne outbreak of shigellosis associated with a commercial airline. *JAMA* 1992;268:3208-3212.

### Nosocomial Measles Persists Despite Sharp Decline in Total Cases

The total number of measles cases declined dramatically in 1992 to 2,200 cases compared to almost 10,000 cases in 1991 and 27,000 cases in 1990. The tremendous immunization effort over the past two years is believed to have contributed to this reduction in cases, with 400,000 more doses of measles vaccine given to one-year-old children in 1991 compared to 1988. However, because almost 50% of the cases are in children under five years of age, the cohorts will be refilled quickly if vaccination efforts do not continue.

Despite the overall decline, transmission in medical settings (emergency rooms and physicians) continues. This accounted for 617 cases in 1991, representing more than 6% of all reported cases. This was the highest proportion of reported measles infection in this setting since detailed information on sites of transmission became available in 1985. The proportion of cases continued to be high in 1992 with 14% of cases in medical settings, representing more than 300 cases. In medical settings, more than half of the nosocomial cases are usually in patients and many of these are preschool-aged children waiting in emergency rooms or clinics.

Nonimmunized healthcare workers exposed to infected patients also are at risk—indeed, most healthcare workers who acquire measles in medical settings are unvaccinated. The CDC recommends

targeting immunization of workers born in 1957 or later because they probably do not have natural immunity from prior infection. Nonetheless, screening of healthcare workers born before 1957 for measles immunity still may be warranted because 30% of healthcare workers with reported measles in 1991 were born before 1957.

FROM: Centers for Disease Control and Prevention. Measles Surveillance-United States, 1991. In: CDC Surveillance Summaries. *MMWR* 1992;41 (no. SS-6):1-12.

## Patients with Community-Acquired Hepatitis C Have High Rates of Chronic Hepatitis

Chronic hepatitis was found to develop in a high proportion (62%) of patients with community-acquired hepatitis C. This research finding was reported by Miriam J. Alter, PhD, et al of the CDC's Sentinel Counties Chronic Non-A, Non-B Study Team<sup>1</sup> and provides evidence that the rate of chronic hepatitis following community-acquired hepatitis C is not, as previously believed, significantly lower than the rate following posttransfusion hepatitis C.

Further, severe disease in the form of chronic active hepatitis was more likely to be found in patients who acquired their infection through blood transfusion, suggesting that the size of the infectious inoculum may be associated with the severity of chronic liver disease.

Non-A, non-B hepatitis accounts for approximately 25% of acute viral hepatitis in the United States, and HCV appears to be the etiologic agent of at least 82% of these cases. Parenteral sources of transmission (ie, injection-drug use, transfusion, and occupational exposure) are risk factors for both non-A, non-B hepatitis and HCV infection. Since 1985, however, transfusions account for only 4% of the cases of hepatitis C. Other risk factors identified with HCV infection include household or sexual contact with an infected person and multiple sexual partners. In addition, low socioeconomic level is associated with a large proportion (an average of 30%) of cases of both non-A, non-B hepatitis and hepatitis C. This risk factor is probably a surrogate marker for other routes of transmission and makes prevention of disease difficult because of its nonspecific nature.

The uniformly high rate of chronic hepatitis found in patients after HCV infection suggests that HCV may be a major cause of chronic liver disease in the United States. In most patients, HCV infection seems to persist for at least several years, even in the absence of active liver disease, emphasizing the urgent need for development of preventive strategies for those in risk groups unassociated with blood transfusions.

## REFERENCE

1. Alter MJ, Margolis HS, Krawczynski K, et. al. The natural history of community-acquired hepatitis C in the United States. *N Engl J*

## New Procedure Allows Detection of HIV in Blood of Nearly All Infected Persons

A new procedure developed by researchers at the University of California, San Francisco (UCSF), appears optimal for detecting HIV in the blood on infected individuals. In the past, free human immunodeficiency virus (HIV) could be found in the plasma of only about 35% of infected people, reported Dr. Li-Zhen Pan et al at UCSE Effective detection of the virus depends on using an enzyme-linked immunosorbent assay (ELISA) for p24 core antigen of HIV and adding the HIV-infected plasma to target cells.

This testing procedure has confirmed that free virus can be detected in the plasma of almost all individuals infected with HIV if the blood is analyzed within three hours after it is drawn. The researchers confirmed the previous work of other researchers that levels of virus reflect patients' clinical status, with healthier people having less virus and those with very high CD4 + cell counts having less but still detectable virus.

The three-hour window is important for accurate results because beyond this time period substances in the blood such as neutralizing antibodies begin to inactivate the virus so that it is undetectable. However, if plasma and serum samples are frozen and stored at  $-70^{\circ}\text{C}$ , the virus will remain detectable for up to several months. The researchers noted that this procedure is not suitable for initial HIV screening because it is a lengthy procedure. FROM: Pan L, Werner A, Levy JA. Detection of plasma viremia in human immunodeficiency virus-infected individuals at all clinical stages. *J Clin Microbiol.* 1993;31:283-288.