## Raspberries Implicated in Norovirus Outbreaks

BY HEIDI SPLETE Senior Writer

ATLANTA — As summer approaches, it may be wise to be wary of berries. Five norovirus outbreaks affecting several hundred people in Denmark in 2005 were traced to a single batch of contaminated frozen raspberries, Dr. Gerhard Falkenhorst reported at the International Conference on Emerging Infectious Diseases.

The first cases of illness in each outbreak appeared within 24 hours after the patients ate a raspberry dessert, and norovirus was detected in stool samples from all but one outbreak, said Dr. Falkenhorst, of the Statens Serum Institut, Copenhagen.

The outbreaks occurred between May and September 2005, and all of them involved mass catering settings—one hospital, one meals-on-wheels service, one restaurant, and two nursing homes. All of the outbreaks involved desserts made with frozen raspberries.

The first outbreak occurred in a hospital, and patients and staff members reported acute gastroenteritis. Nearly 450 cases occurred in this outbreak. Several cases occurred simultaneously, suggesting a foodborne cause, and norovirus was discovered in food tracings that implicated a dessert

## Most *Salmonella* Cases in U.S. Are Isolated Events

ATLANTA — About 80% of *Salmonella* cases in the United States in 2004 and 2005 were domestically acquired isolated incidents, Dina Hoefer reported in a poster presented at the International Conference on Emerging Infectious Diseases.

By contrast, about 12% of infected patients with known travel status had traveled internationally, and almost 8% of cases were associated with a recognized outbreak, based on data from the Foodborne Diseases Active Surveillance Network (FoodNet).

FoodNet is an ongoing program, supported by the Centers for Disease Control and Prevention, the U.S. Department of Agriculture, and the Food and Drug Administration, that seeks to link foodborne illnesses to specific foods and settings based on information collected from 10 sites throughout the United States.

Ms. Hoefer, of the New York State Department of Health in Albany, and her colleagues reviewed FoodNet surveillance data for 12,159 cases of *Salmonella* infection from 2004 and 2005. Of the 7,500 patients whose travel status and outbreak associations were known, 878 had traveled internationally within 7 days prior to the onset of illness, and 583 were known to be part of a documented *Salmonella* outbreak.

Overall, the domestically acquired cases were significantly more likely to require hospitalization, compared with travel-related cases (relative risk 1.5) or cases associated with outbreaks (relative risk 1.4).

—Heidi Splete

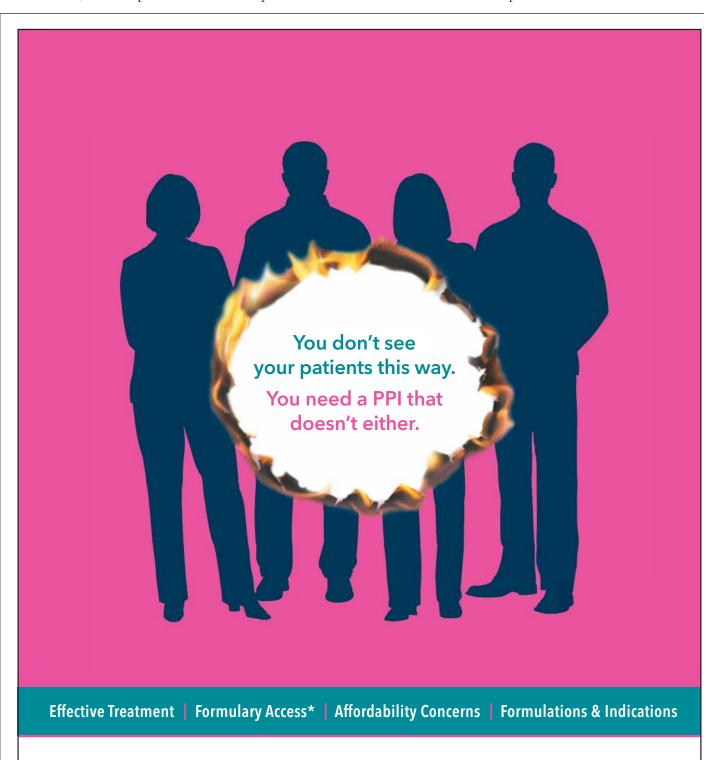
made with raspberries that were part of a single, large shipment from Poland. Although the supplier began a voluntary recall of the shipment, the affected raspberries had already been sent to other clients and were linked to several other outbreaks.

The second outbreak affected about 70 residents and staff members at a nursing home the day after a raspberry dessert had been served, and the third outbreak struck several hundred clients of a meals-on-wheels service, which reported diarrhea

and vomiting in its clients within 2 days of receiving raspberry desserts. The attack rate was especially high in patients aged 85 years and older, Dr. Falkenhorst noted.

A case-control study confirmed that all the desserts associated with the outbreaks were prepared with crushed frozen raspberries from the same batch imported from Poland. The same norovirus genogroup (II.7) was identified in 24 of 54 stool samples from one outbreak and 9 of 11 stool samples from the second outbreak. In addition, norovirus genogroup II.4 was found in 15 of 15 samples from a third outbreak and genogroup II.b was found in 4 of 8 samples from another outbreak.

This series of outbreaks was the first time several different norovirus strains were detected in stool samples involving the same raspberry vehicle, he noted. He suggested contamination at several points during the processing of the raspberries could have contributed to the presence of multiple norovirus strains.



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