

HOMEMADE ICE CREAM - THE AGONY AND ECSTASY



HOMEMADE ICE CREAM is a treat as American as apple pie. When made with raw eggs, however, some batches may be remembered for more than their great taste. Two outbreaks of salmonellosis, one in Oregon in 1992, the other in Florida in 1993, illustrate the potential for trouble whenever uncooked eggs are on the menu.

OREGON, 1992

A new baby provided the impetus for a family get-together in southern Oregon in July of 1992. Eight of the nine persons who assembled for the barbecue subsequently became ill. All partook of the ice cream, as did a hapless neighbor boy who wandered in at just the right moment, becoming the ninth victim. The median incubation period was 15 hours (range: 12-26 hours). Illness lasted a median of six days; one person was hospitalized. *Salmonella heidelberg* was isolated from three patients' stool specimens. No other menu items were epidemiologically implicated. The ice cream was a confection of sugar, vanilla, pasteurized whipping cream, and raw eggs. Although no ice cream was leftover, unused eggs from the same carton were examined by the Oregon Department of Agriculture laboratory but were negative for salmonellae. While other ingredients could not be logically ruled out, eggs were the obvious suspect.

The Oregon cluster illustrates that, while uncommon, *Salmonella enteritidis* (SE) is not the only serotype that has been linked to egg consumption. It is not known if eggs can be infected transovarially with these other serotypes, as has been shown for SE.

FLORIDA 1993

The second outbreak occurred following a cookout at a psychiatric treatment hospital in Jacksonville. Fourteen persons attended the cookout; 12 of them (five children and seven adults) became ill

within 72 hours with diarrhea, nausea or vomiting, abdominal pain, or fever. The median incubation period was 14 hours (range: 7-21 hours). SE was isolated from three patients. Eleven of the 12 ill persons had eaten homemade ice cream served at the cookout. No other food item was associated with illness, and SE was recovered from leftover ice cream.

The ice cream was prepared at the hospital using a recipe that included six grade A raw eggs. An electric ice cream churn was used to make the ice cream approximately 3 hours before the noon meal. The ice cream had been properly cooled, and no food-handling errors were identified. The person who prepared the ice cream was not ill before preparation; however, she became ill 13 hours after eating the ice cream. Her stool specimen was one of the three stools positive for SE (phage type 13a).

The U.S. Department of Agriculture Animal and Plant Health Inspection Service attempted to trace the implicated eggs back to the farm of origin. Traceback to the flock was unsuccessful because the implicated eggs came from two suppliers—one of whom bought and mixed eggs from many different sources. Current USDA *Salmonella* regulations limit testing of flocks to one clearly implicated flock.

SE IN THE U.S.

The number of sporadic and outbreak-associated cases of SE infection has increased substantially since 1985; much of the increase can be attributed to consumption of raw or undercooked eggs.¹⁻³ During 1983-1992, the proportion of reported *Salmonella* isolates that were SE increased from 8% to 19%. During 1985-1993, a total of 504 SE outbreaks were reported to CDC and resulted in 18,195 cases, 1,978 hospitalizations, and 62 deaths. Of the 233 outbreaks for which epidemiologic evidence was sufficient to implicate a food vehicle, 193 (83%) were

associated with eggs. Of these 193 outbreaks, 14 (7%) were associated with consumption of homemade ice cream. No outbreaks have been associated with pasteurized egg products.

An estimated 0.01% of all eggs contain SE.⁴ After eggs are identified by public health officials as the cause of an SE outbreak, USDA attempts to trace the implicated eggs back to the farm of origin to conduct serologic and microbiologic assessments of the farm. If SE is detected on the source farm, the eggs are diverted to pasteurization, or the flocks are destroyed. During 1990-1993, the success rate of USDA tracebacks to the source farm declined from 86% (19/22 outbreaks) in 1990 to 17% (3/21 outbreaks) in 1993. The rate declined primarily because eggs increasingly have been marketed in shipments containing eggs from multiple sources.

CONCLUSION

Based on the Food and Drug Administration Food Safety Survey conducted in 1993, 53% of a nationally representative sample of 1,620 respondents reported ever eating foods containing raw eggs; of these, 50% had eaten cookie batter, and 36% had eaten ice cream containing raw eggs. Many persons may eat raw or undercooked eggs because they are unaware that eggs may be a source of *Salmonella*³ and that certain foods (e.g., homemade ice cream, cookie batter, Caesar salad, and hollandaise sauce) may contain raw eggs. Eggs should be refrigerated to prevent proliferation of *Salmonella* (if present) and should be cooked thoroughly to kill *Salmonella*. Pasteurized egg products should be substituted in recipes requiring raw eggs. Because most serious illnesses and deaths associated with salmonellosis occur among the elderly and immunocompromised (including HIV infected) persons, these persons in particular should not eat foods containing raw or undercooked eggs.

REFERENCES

The account of the Florida outbreak was adapted from MMWR 1994;43:669-671 (September 16, 1994).

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3. Hedberg CW, David MJ, White KE, MacDonald KL, Osterholm MT. Role of egg consumption in sporadic *Salmonella enteritidis* and *Salmonella typhimurium* infections in Minnesota. J Infect Dis 1993;167:107-11.
4. Mason J, Ebel E. APHS *Salmonella enteritidis* Control Program [Abstract]. In: Snoeyenbos GH, ed. Proceedings of the Symposium on the Diagnosis and Control of *Salmonella*. Richmond, Virginia: US Animal Health Association, 1992:78.

Flu Surveillance Begins

AT LEAST ONE FALL classic is right on schedule; our annual influenza surveillance program is now underway. Effective immediately, the Center for Public Health Laboratories will accept throat wash specimens for "rule out" influenza cultures at no charge. Kits are available from local health departments or from the CPHL (229-5504). To be eligible, specimens must be clearly marked "rule out influenza."

Vaccine Information Statements Now Available

CDC HAS DEVELOPED new Vaccine Information Statements (VISs) which explain the benefits and risks associated with MMR, polio, DTP and Td vaccines. Beginning October 1, 1994 all public and private providers who administer the above vaccines will be required to distribute a copy of the appropriate VIS every time a patient is vaccinated.

The Oregon Health Division is printing and distributing VISs to all public agencies and mailing camera ready copies to all private providers. The American Academy of Pediatrics (AAP) and the American Academy of Family Physicians (AAFP) are also making the VISs available for purchase. To order from AAP call 800-433-7016, or AAFP call 800-274-2237.

WHY NEW FORMS?

The new statements are the result of an amendment to the National Childhood Vaccine Injury Act (NCVIA) designed to simplify the vaccine information materials and the process by which they are developed and revised.

The amendment to NCVIA requires that a specific VIS be given to the legal representatives of any child or to any other individual *every time* a particular vaccine is administered. Each VIS contains: 1) a description of the benefits of the vaccine; 2) a description of the risks associated with the vaccine; 3) a statement of the availability of the National Vaccine Injury Compensation Program and 4) such other relevant information as may be determined by the Secretary, Health and Human Services.

The NCVIA amendment *deleted language that allowed providers who buy their own vaccine to develop their own materials.*

RECORD KEEPING

Beginning October 1, 1994, health care providers are no longer required to obtain the signature of the patient, parent, or child's legal representative, acknowledging receipt of the VISs. However, providers must note in each patient's permanent medical record that

VISs were provided at the time of vaccination. In addition, health care providers must record the date of administration; the manufacturer and lot number of the vaccine; and the provider's name and business address (where the patient's records are kept).

HIB, HEPATITIS B

Within the year, the existing Important Information Statements (IISs) for Hib and hepatitis B vaccines will be modified, so that they have the same format as the VISs. Because neither vaccine is currently covered by the National Vaccine Injury Compensation Program, providers who buy their own vaccines are not required to use IISs when administering privately purchased vaccines.

However, because of Duty to Warn clauses included in the federal contracts, all providers who administer doses of Hib or hepatitis B vaccines purchased through the federal contracts are required to provide the IISs to patients.

Vaccines For Children Program Delayed for Private Sector

DUE TO RECENT Congressional intervention, plans for the VFC program's national vaccine distribution warehouse have been cancelled. Plans for an alternative vaccine distribution mechanism for the private medical sector are being formulated. The VFC program will be implemented in Oregon, but on a revised timeline. Public sector programs will begin October 1 as planned, but the private sector component is now scheduled to begin in early 1995.

For more information on VISs or the VFC call the Immunization Program at 731-4020.