

Epidemiology Bulletin

– Contents –

Outbreak of Staphylococcal Food
Poisoning at the International Con-
ference in Taipei

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The International Conference on health, Environment and Social Changes was held in Taipei on July 2-5, 1990. On July 4, all participants were served with snacks during the morning break and box lunches at noon. At around 2 p.m., some participants began to have symptoms of vomiting and diarrhea. Some were taken to the National Taiwan University Hospital for treatment. In order to understand the epidemiology of this food poisoning and to prevent future outbreak, the Department of Health and other concerned agencies conducted an epidemiological investigation immediately.

On July 5, all participants were given a questionnaire requesting personal information, time of onset, symptoms and all food consumed. Out of the 114 questionnaires collected (14 did not participate on July 4), 34 persons experienced either vomiting or diarrhea or any two or more of the following symptoms: abdominal pain, nausea, fever, chill and bloody stool at the meeting on July 4. The attack rate was 34% with a median age of 36 years. Male and female were 50% respectively and 21% of the participants were from foreign countries. The symptoms include vomiting (79.4%), diarrhea (73.5%), nausea (67.6%), abdominal pain (61.8%), chill (41%), fever (38.2%), and bloody stool (2.9%). The median of incubation period was 4.5 hours as shown in Figure 1. The average time to recovery was 12 hours, 35% of the patients had medical treatment and 12% took medicines by themselves.

The univariate statistical analysis of the 10 food items consumed by patients and non-patients has shown (Table 1) that the "small dried fish cooked with peanuts" and "chicken" were significantly associated with illness.

Out of the 15 vomiting specimen, five were positive for *Staphylococcus aureus* (enterotoxin type A.D.). Out of the 19 anal swabs, one was positive for *Vibrio parahaemolyticus*. The left-over box lunches also tested positive except for the rice. Out of the 8 specimens collected from the hands of food-handlers, four were positive for *Staphylococcus aureus* (enterotoxin type A). From the incubation periods, symptoms and laboratory results, the pathogenic agent of this food poisoning was considered to have *Staphylococcus aureus*.

The attack rate is underestimated due to some severely ill patients who did not attend the meeting on July 5. Out of the 24 patients treated in the National Taiwan University Hospital, 14 did not attend the meeting on the following day. Therefore, the attack rate should be higher than 34%.

Fig. 1. Incubation period for 34 persons with gastroenteritis at the International Conference, Taipei, July 4, 1990

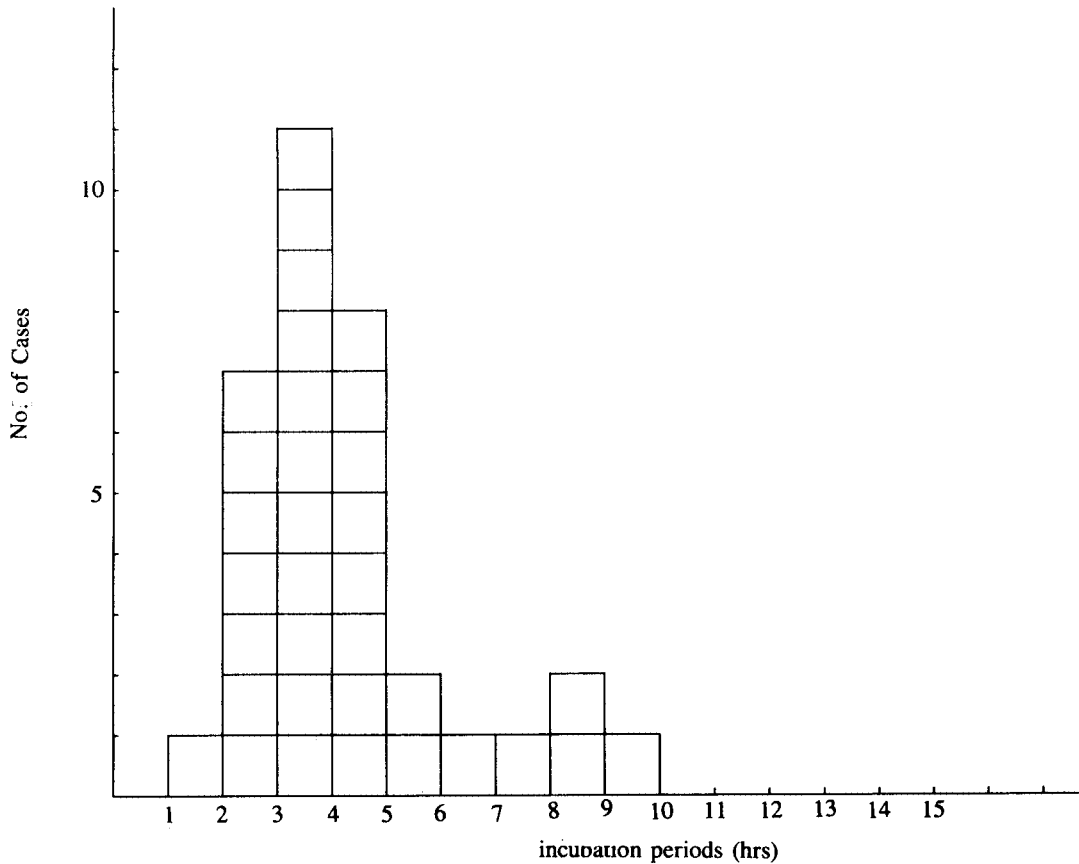


Table 1. Food history attack rates for items contained in the box lunches

Food item	Ate		% ill	did not eat			χ^2	p-value
	ill	well		ill	well	% ill		
Small fish	26	37	41%	3	17	15%	4.6	0.03*
Chicken	31	44	41%	2	12	14%	3.7	0.05*
Fish	16	21	43%	7	23	23%	2.9	0.08
Shrimp	29	40	42%	4	15	21%	2.8	0.09
Cake	19	33	37%	14	22	39%	0.05	0.8
Sushi	12	23	48%	19	30	39%	1.17	0.67
Stewed egg	30	50	38%	3	6	33%	0.06	0.8
Meat in vegetable	31	53	37%	1	3	25%	0.23	0.62
Pickles	19	38	33%	7	15	31%	0.016	0.89
Rice	33	52	39%	0	4	0%	2.47	0.01

* $\alpha=0.05$

Out of the 19 human specimens, one was found to have vibrio parahaemolyticus but it was not considered to have the pathogenic agent for this food poisoning outbreak because the incubation period did not correspond with that of the patients.

It was speculated from this epidemiological investigation that improper food handling resulted from the cooks' hands contamination was the major cause of this outbreak. In addition, the food served during the morning break and lunch was not stored under low temperature of less than 4°C. It is recommended that food handlers need more training in food sanitation and personal hygiene, and more intensified inspection of foods are ways to prevent food poisoning.

Reported by: the National Institute of Preventive Medicine (FETP, Bacteriology Section), Taipei City Health Department, Chung-shan and Chung-chen District Health Centers, the Department of Health (Bureaus of Food Sanitation and Disease Control).

Erratum: Epidemiology Bulletin Vol 6 No 3

- 1) p 18 "infection rate of 38.24% for persons above the age of 60 years is the highest", should read: "among those infected, more are persons above the age of 60 years (38.24%)."
- 2) p.18 "the infection rate of the worm is in proportion to the age, and more male (65.68%) than female (34.31%) are infected", should read: "the worm appears more with the increase of age, and more is found in males than in females."