

Communicable Diseases

WATCH

HP 衛生防護中心
Centre for Health Protection
保護市民健康
Protecting Hong Kong's health

30
衛生署
Department of Health

EDITORIAL BOARD **Editor-in-Chief** Dr SK Chuang **Members** Dr Emily Leung / Dr Albert Au / Dr Chen Hong / Dr Taron Loh / Dr Benjamin Fung / KK So / Doris Choi / Chloe Poon **Production Assistant** Amy Fung. This biweekly publication is produced by the Centre for Health Protection (CHP) of the Department of Health, 147C, Argyle Street, Kowloon, Hong Kong **ISSN** 1818-4111 **All rights reserved** Please send enquiries to cdsurinfo@dh.gov.hk.

FEATURE IN FOCUS

Non-typhoidal Salmonella Group D food poisoning outbreak linked to consumption of sandwiches

Reported by Dr Alan LAM, Senior Medical and Health Officer, Outbreak Section, Epidemiology Division, Communicable Disease Branch, CHP; and Dr LEUNG Lai-kwan, Queenie, Medical Officer, Food Incidents Response and Management Unit, Risk Management Section, Risk Management Division, Centre for Food Safety, Food and Environmental Hygiene Department.

In end-May 2020, the Centre for Health Protection (CHP) of the Department of Health recorded 99 clusters of food poisoning outbreaks related to consumption of sandwiches produced in a food factory.

CHP received notification of the first two clusters on May 21. The first cluster involved four persons who developed gastroenteritis symptoms about eight to 12 hours after consuming sandwiches on the previous day. The second cluster comprised three persons who developed similar symptoms about seven to 14 hours after consuming sandwiches of the same brand. The sandwiches involved in both clusters were purchased from the same retail outlet in Tsuen Wan on the same day. Subsequently CHP identified additional clusters of suspected food poisoning related to those sandwiches. A total of 99 clusters involving 236 cases were identified. The size of the clusters ranged from two to five cases, with a median of two cases.

The 236 cases comprised 87 males and 149 females and their ages ranged from 10 months to 68 years (median = 30 years). They presented with diarrhoea (234 cases, 99%), abdominal pain (212 cases, 89.8%), fever (191 cases, 80.9%), nausea (105 cases, 44.5%) and vomiting (89 cases, 37.7%). The sandwiches were purchased from nine different retail outlets and one food factory and were consumed immediately to 48 hours later (median = 2.5 hours). The incubation period ranged from 0.5 to 87.5 hours (median = 15 hours) (Figure 1).

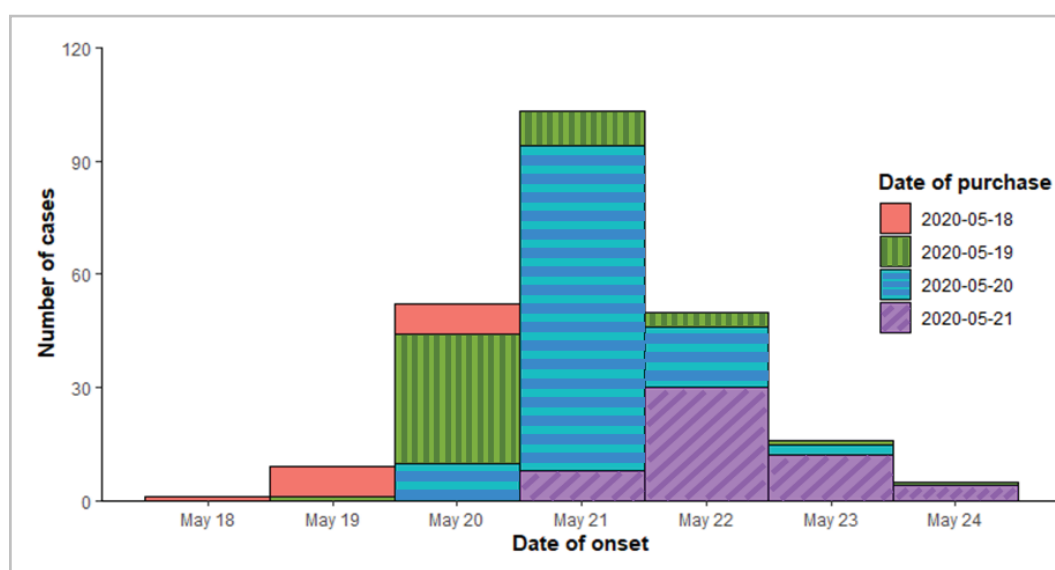


Figure 1 - Epidemic curve of the food poisoning outbreak.

Among the 236 cases, 51 cases required hospitalisation (including one case who required intensive care); 36 cases had attended Accident and Emergency Departments and did not require admission; 149 cases had sought treatment from private practitioners or outpatient clinics; and 38 cases did not seek medical attention. All hospitalised patients had subsequently been discharged. A total of 53 stool specimens were collected for culture, out of which 37 yielded Group D Salmonella and five specimens grew Salmonella Species. *Salmonella enteritis* was cultured from the blood specimen of the case who required intensive care. A food remnant was provided by one of the patients for testing, from which Group D Salmonella was isolated.

The most commonly consumed items included ham-cheese-egg sandwich (166 cases, 70.3%), ham-egg sandwich (50 cases, 21.1%) and cheese-egg sandwich (29 cases, 12.3%).

The Centre for Food Safety of the Food and Environmental Hygiene Department (CFS/FEHD) was informed for investigation and follow up actions. Investigation revealed that the sandwiches concerned were supplied from the same food factory in Kwun Tong, which provided sandwiches to 12 retail outlets.

Field investigation by CFS/FEHD at the retail outlet in Tsuen Wan revealed that the refrigerator for storing the sandwiches recorded 19°C to 20.7°C, which was much higher than the recommended storage temperature (at or below 4°C). No expiry date or production date was found on the package of the sandwiches. Two sandwich samples were collected for testing which yielded Group D Salmonella. Whole genome sequencing performed on the Group D Salmonella isolates from the sandwich samples, sandwich remnant and stool samples of 38 affected persons revealed that all the isolates belonged to ST (sequence type)-11. Phylogenetic analysis showed that all except two isolates were closely related to each other.

Review of the food preparatory process at the field visit to the food factory in Kwun Tong revealed that fried egg sheets were prepared from egg mixture of unpasteurized eggs, and were then cut and stacked up before being stored in the fridge for later use. The same working table was used for preparation of raw eggs and cooked egg sheets. It was noted that a food handler was not wearing gloves during preparation of the egg sheets. All food handlers would share the same towel for hand drying after hand washing, and the towel would only be washed after close of business. The 10 food handlers all reported that they did not have gastroenteritis symptoms and their stool samples were all negative for *Salmonella* species.

The packed sandwiches were delivered from the food factory to the retail outlets throughout the day using a single vehicle without any temperature control equipment. Unsold sandwiches were sometimes moved between retail outlets for replenishment of the stock.

Health advice on food, environmental and personal hygiene was given to the person-in-charge and staff of the food factory and the retail outlets. All the retail outlets stopped the sale of the affected products and the food factory was instructed to stop production of the food items on May 21. In response to the incident, CHP issued press releases to update the public about the investigation findings of the incident. The public was advised not to consume the products concerned. The 99 clusters reported had all consumed the sandwiches before the implementation of control measures by CFS/FEHD. There were no additional clusters reported thereafter.

The clinical, epidemiological and microbiological findings were compatible with food poisoning caused by non-typhoidal Group D Salmonella. Cross contamination by raw eggs and food handlers at the food factory, as well as prolonged storage of sandwiches at improper temperature during delivery and at the retail outlets were suspected to be contributing factors to the outbreak.

Salmonella is a common causative agent for food poisoning. It is widely distributed in domestic and wild animals and is prevalent in food animals such as poultry, pigs and cattle. Inadequately cooked meat, meat products, poultry, raw milk, raw egg and egg products are frequent sources for Salmonella food poisoning.

The World Health Organization promulgates the five keys to food safety: keep clean; separate raw food from other ready-to-eat food to prevent cross-contamination; cook food thoroughly before consumption; store ready-to-eat food under proper temperature (at or below 4°C or above 60°C); and use safe water and raw materials from reliable sources.

For more information on food poisoning, please visit the CHP's website: www.chp.gov.hk.

NEWS IN BRIEF

Four sporadic cases of necrotizing fasciitis due to *Vibrio vulnificus* infection

The Centre for Health Protection (CHP) of the Department of Health recorded four cases of *Vibrio vulnificus* infection in the months of May and June 2020.

The first case was an 83-year-old female with underlying illnesses. She presented with fever and right thumb swelling on May 14 and was admitted to a public hospital on the same day. Exploration of tendon sheath, incision and drainage was performed. The patient was transferred to the intensive care unit (ICU) post-operatively due to septic shock. She developed necrotizing fasciitis and required amputation and disarticulation of thumb, and elbow disarticulation on May 15, followed by elbow amputation on May 16. She was treated with antibiotics, and underwent surgical debridement. The patient later developed perforation of bowel and suppurative peritonitis, and underwent right hemicolectomy and ileostomy on May 29. Her condition deteriorated and she succumbed on June 7. The blood and pus aspirate collected for culture on May 14 yielded *Vibrio vulnificus*. The patient had history of right thumb injury while handling a fish during cooking at home on May 13. She had no recent travel and her home contacts were asymptomatic.

The second case was a 73-year-old male with underlying illnesses. He presented with left leg pain and swelling on June 10 and was admitted to a public hospital on June 13. The clinical diagnoses were necrotizing fasciitis and sepsis. He was treated with antibiotics and underwent left above knee amputation on the same day. He was transferred to ICU postoperatively. He developed right shin swelling and required surgical debridement and subsequently right above knee amputation. His condition was critical. Fascia tissue and blood tissue collected on June 13 for culture yielded *Vibrio vulnificus*. According to information from the patient's family, he had no recent travel. During the incubation period he had history of purchasing seafood from a wet market. There was no known history of injury. His home contacts were asymptomatic.

The third case was a 62-year-old woman with underlying illnesses. She presented with left leg swelling on June 12 and attended the Accident and Emergency Department on the same day. She was found to be in shock, with a blister over the left leg, and was transferred directly to the operating theatre for surgical debridement of the left limb. She was transferred to ICU postoperatively and was intubated. The diagnosis was necrotizing fasciitis. Tissues collected from her left leg on June 12 yielded *Vibrio vulnificus*. Her current condition was serious. According to information provided by her husband, the patient had handled a leopard coral grouper on June 11 for preparing meal at home. There was no history of injury or wounds to the left leg. She had no travel history during the incubation period. Her home contact was asymptomatic.

The fourth case was a 73-year-old male with underlying illnesses. He presented with right foot swelling on June 21 and was admitted to a public hospital on June 22. The clinical diagnosis was necrotizing fasciitis. He was treated with antibiotics and underwent right lower limb amputation. He was transferred to ICU and his condition was critical. Blood collected on June 23 grew *Vibrio vulnificus*. The patient had no travel history during incubation period. He used to visit the wet market every day and had visited the beach near Discovery Bay with his wife on June 20, when he sustained an injury to his foot. His wife developed lower limbs redness on June 22. She was admitted to a public hospital and diagnosed as cellulitis.

Two sporadic cases of psittacosis

CHP recorded two sporadic cases of psittacosis in June. The first case affected a 77-year-old man with underlying illnesses. He presented with cough on June 1, developed shortness of breath and fever on June 9 and was admitted to a public hospital. Chest X-ray showed right lung consolidation. The clinical diagnosis was pneumonia. He was transferred to ICU due to respiratory distress and was intubated. His condition improved with antibiotic treatment. Tracheal aspirate collected on June 10 was positive for *Chlamydia psittaci* DNA. He lived alone.

The second case affected a 57-year-old man with underlying illness. He presented with fever and cough on June 17 and was admitted to a public hospital on June 21. Chest X-ray showed right lower zone consolidation. The clinical diagnosis was pneumonia and he was treated with antibiotics. He remained stable and was discharged on June 24. The sputum collected on June 23 tested positive for *Chlamydia psittaci* DNA. His home contacts remained asymptomatic.

Investigation did not identify epidemiological linkage between the two cases. Both cases had no recent travel history. They both reported no history of contact with birds or their excreta and did not keep any pets at home.

A local case of *Streptococcus suis* infection

On June 26, 2020, CHP recorded a sporadic case of *Streptococcus suis* infection affecting a 57-year-old woman with underlying illness. She worked as a butcher and sustained cut injury on the left middle finger while handling raw pork at work on June 19. She had persistent wound swelling and pain and was admitted to a public hospital on June 20. The clinical diagnosis was wound infection. The wound swab for culture yielded *Streptococcus suis*. She was treated with antibiotics and surgical debridement. Her condition remained stable and she was discharged on June 24. She lived alone and had no travel history during the incubation period.