



由食物環境衛生署食物安全中心於每月第三個星期三出版
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二零二零年有關食肆及食物業的食物中毒個案回顧

Review of Food Poisoning Outbreaks Related to Food Premises and Food Business in 2020

食物安全中心風險管理組
蔡育嬌醫生報告
Reported by Dr. Lousia CHOI, Medical & Health Officer,
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本文旨在回顧食物環境衛生署食物安全中心(食安中心)在二零二零年所接報與本地食肆及食物業有關的食物中毒個案。

This article reviews the FPOs related to local food premises and food business reported to the Centre for Food Safety (CFS) of the Food and Environmental Hygiene Department in 2020.

與本地食肆及食物業有關的食物中毒個案

食安中心在二零二零年接獲229宗轉介的食物中毒個案,合共632人受影響。自2019冠狀病毒病在全球大流行以來,市民對外賣食物的需求越來越大。外賣食物所引起的食物中毒個案數目及受影響人數,也隨之由二零一九年影響236人的36宗(佔食物中毒個案總數19.5%),增加至二零二零年影響331人的128宗(55.9%)。食物中毒個案數目自二零一二年起整體呈下跌趨勢(見圖1),但在二零一九年及二零二零年略為回升。去年數目上升的主要原因是發生一宗大規模的集體食物中毒事故,涉及99宗與三文治有關的流行病學關連個案。雖然二零二零年錄得的食物中毒個案數目較二零一九年多,但受影響人數則創新低。

Food Poisoning Outbreaks Related to Local Food Premises and Food Business

In 2020, the CFS received 229 referrals of FPOs, affecting 632 persons in total. Since the global COVID-19 pandemic, takeaway foods have become more popular among the general public. The number of food poisoning outbreaks (FPOs) related to takeaway foods increased from 36 cases (19.5% of total FPOs) affecting 236 persons in 2019 to 128 cases (55.9%) affecting 331 persons in 2020. While a generally decreasing trend in the number of FPOs since 2012 was noted (see Figure 1), there was a small rebound in 2019 and 2020. Last year's increase was mainly attributable to one large-scale cluster involving 99 epi-linked outbreaks related to sandwiches. Despite more FPOs were recorded compared with 2019, the number of affected persons hit record low in 2020.

Causative Agents and Contributing Factors

Bacterial foodborne agents remained the leading causes (90%) of all FPOs in 2020, and *Salmonella* (76.3% of all bacterial cases) topped the list, followed by *Vibrio parahaemolyticus* (16.9%) and *Bacillus cereus* (2.9%). Viral causes accounted for 7% of all the FPOs, with Norovirus virtually involved in all viral cases. Natural toxin cases (such as mushroom toxins, ciguatera toxins, etc., 2.6%) and chemical case (calcium oxalate, 0.4%) contributed to the remaining FPOs. Contamination by raw food, contamination by

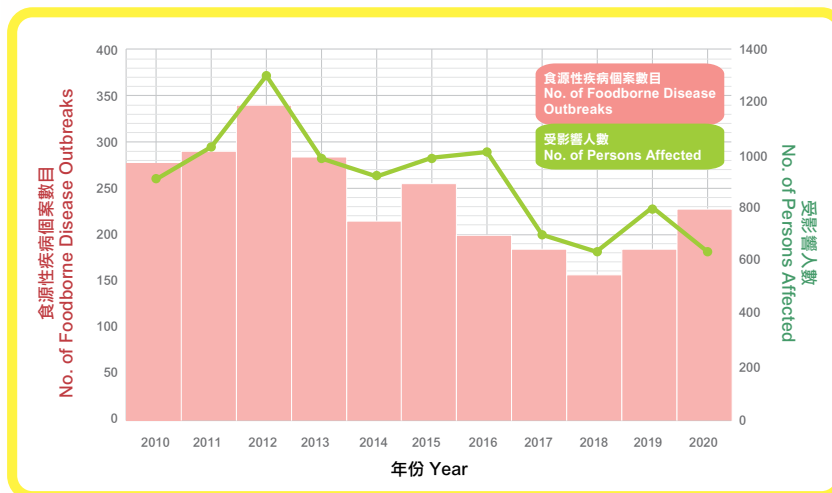


圖1:二零一零年至二零二零年有關食肆及食物業的食物中毒個案數目及受影響人數

Figure 1: Number of food poisoning outbreaks related to food premises and food business and the corresponding number of persons affected from 2010 to 2020.

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焦點個案
Incident in Focus

病原體及成因

在二零二零年的所有食物中毒個案中，由細菌引起的仍然佔大多數(90%)，排在首位的是沙門氏菌(佔細菌所引起的個案總數76.3%)，其後是副溶血性弧菌(16.9%)及蠟樣芽孢桿菌(2.9%)。至於病毒所引起的食物中毒個案佔總數7%，全部都涉及諾如病毒。其餘的食物中毒個案則由天然毒素(例如菇類毒素、雪卡毒素等，2.6%)及化學物(草酸鈣，0.4%)引起。二零二零年食物中毒個案最常見的三大成因分別是生的食物導致污染、食物處理人員造成污染，以及貯存溫度不當。

二零二零年發生的大規模流行病學關連食物中毒個案摘要

涉及三文治的沙門氏菌食物中毒個案

二零二零年五月，食安中心接獲99宗流行病學關連食物中毒個案，合共236人受影響，涉及進食同一品牌的預先包裝三文治。當中有42人的糞便樣本含有沙門氏菌。有一人需要接受深切治療，其血液樣本驗出腸炎沙門氏菌。在一名患者所購買仍未食用的三文治中，亦檢驗出D組沙門氏菌。

涉事三文治由一所本地食物製造工場生產。實地調查發現，個案的成因有多項，包括即食配料被未經煮熟的配料及食物處理人員所污染、三文治在運送往零售點的過程中貯存溫度不當，以及製成品貯存溫度不當，即置於危險溫度範圍內，使病原體得以生長。此外，生產商沒有在三文治包裝上標示生產日期及食用期限供員工及顧客參考。食安中心在其中一個零售點所抽取的一個三文治樣本中，檢驗出對D組沙門氏菌呈陽性反應。

在食安中心指示下，涉事食物製造工場及各零售點即時停售所有三文治，並進行徹底清潔及消毒。食安中心向有關食物處理人員提供了衛生建議。食安中心亦發出新聞稿，呼籲市民不要食用涉事三文治。其後，涉事食物製造工場的經營商已停止營運有關食品業務。

三文治在製作過程中通常都是以人手處理，而食物製造工場生產的預先包裝三文治會分銷予大量顧客。因此，食物製造工場應採取嚴格的食物安全及衛生措施，以避免污染。從這宗事故可見，任何製作程序中的不當做法都可造成影響多人的大規模食物中毒個案。

涉及外賣龍蝦伊麵的副溶血性弧菌食物中毒個案

食安中心在二零二零年九月接報7宗共影響19人的流行病學關連食物中毒個案，涉及購自一間食肆的外賣龍蝦伊麵。其中一名患者的糞便樣本檢驗出副溶血性弧菌。調查發現，為了應付繁忙時段的大量需求，龍蝦過早烹製，而且有可能被食物處理人員及其他生海鮮所污染。食安中心向涉事食肆提供了關於個人衛生、食物及環境安全的衛生建議，並指示食肆即時暫停出售有關食品及進行徹底清潔及消毒。食安中心其後再無接獲相關食物中毒個案。

為了預防感染副溶血性弧菌，必須徹底煮熟食物，遵守良好衛生規範，並防止食物煮熟後被生的海鮮交叉污染。

結語

二零二零年所發生涉及三文治的大規模食物中毒個案，正好提示食物業界，如不採取嚴格的食物安全措施，而且疏忽個人及環境衛生的話，可嚴重危害市民的健康。自2019冠狀病毒病大流行以來，外賣食物的需求日益增長。業界及市民應對所涉及的風險保持警惕，並遵循「[食物安全五要點](#)」，以預防發生食物中毒個案。

food handlers and improper holding temperature were the three most frequently identified contributing factors.

Highlights on Major Epi-linked Food Poisoning Outbreaks in 2020

Food Poisoning Outbreaks involving Sandwiches related to *Salmonella* species

In May 2020, the CFS received 99 epi-linked FPOs related to the consumption of prepackaged sandwiches of the same brand, involving 236 persons. Stool samples of 42 affected persons yielded *Salmonella*. One victim required intensive care and the blood specimen grew *Salmonella* Enteritidis. Group D *Salmonella* was also detected in one of the unconsumed sandwiches bought by a victim.

The sandwiches were produced by a local food factory. Field investigation revealed a number of contributing factors to the outbreaks, including ready-to-eat ingredients being contaminated by raw ingredients and food handlers, improper holding temperature during transportation of the sandwiches to the retail outlets, and improper storage temperature of finished products at the temperature danger zone allowing pathogens to grow. In addition, the manufacturer did not provide the production date and expiry date on the packing of the sandwiches for staff and customers' information. A sandwich sample collected from an outlet was tested positive for Group D *Salmonella*.

The CFS instructed the food factory and retail outlets to stop the sale of all sandwiches immediately and carry out thorough cleansing and disinfection. Health advice was conveyed to the food handlers. The CFS issued press releases to urge the public not to consume the concerned sandwiches. The food factory operator has ceased operating the concerned food business since then.

Sandwich preparation often involves manual handling and prepacked sandwiches produced by food factories can be distributed widely. Thus, stringent food safety and hygiene practices should be adopted in food factories to avoid contamination. As illustrated in this case malpractice in any step could lead to large-scale FPOs affecting a large number of people.

Food Poisoning Outbreaks involving Takeaway Lobster Noodles related to *Vibrio parahaemolyticus* species

In September 2020, seven epi-linked FPOs involving 19 persons were reported, involving takeaway lobster noodles purchased from a restaurant. A victim's stool sample grew *Vibrio parahaemolyticus* (VP). Investigation revealed that the cooked lobsters were prepared too far in advance to cater for the high demand during busy hours, and might have been contaminated by food handlers and other raw seafood. Health advice regarding personal hygiene, food and environmental safety was provided to the concerned food premises and the sale of the food item was suspended immediately. The premises was thoroughly cleaned and disinfected, and no further related FPOs were received afterwards.

To prevent VP infection, it is important to cook food thoroughly, observe good hygiene practices, and prevent cross-contamination after cooking by raw seafood.

Conclusion

The large-scale sandwich related FPO in 2020 served as a reminder to food trade that failure to adopt stringent food safety practices and lapses in personal and environmental hygiene can cause serious health hazards to the public. Takeaway foods have become more popular since the COVID-19 pandemic. The trade and the public should stay alert to the risks involved and adhere to the '[Five Keys to Food Safety](#)' to prevent occurrence of FPOs.

如何確保外送飯盒安全？

How to Keep Meal Box Delivery Safe?

食物安全中心風險傳達組
衛生總督察蘇志強先生報告

Reported by Mr. William SO, Chief Health Inspector,
Risk Communication Section, Centre for Food Safety

隨着商業公司及學校對飯盒的需求與日俱增，加上最近有一個飯盒樣本檢測出致病的蠟樣芽孢桿菌，因此，飯盒供應商應適時審視飯盒生產及送遞的作業方式。由於飯盒通常是大量生產，若在食物安全方面有任何失誤，都會對很多人造成影響。

In view of an increasing demand for meal boxes from commercial firms and schools, along with detection of disease-causing *Bacillus cereus* in a meal box sample recently reported, it is appropriately fitting to review the practices in the production and delivery of meal boxes. As meal boxes are often mass-produced, any lapses in food safety can affect a large number of people.

飯盒生產的食物安全問題

許多飯盒供應商經常面對的挑戰是，既要達致食物安全及品質要求，又要應付繁忙時段數以千計飯盒的殷切需求。其中一個常見的問題是熱存不當，原因涉及兩方面：過早烹製食物，加上熱存溫度不當。另一個問題是食物煮熟後受到污染，原因可能是使用同一區域或設備來處理生的食物及即食食物，以及環境衛生或食物處理人員個人衛生欠佳。

Food Safety Problems with Meal Box Production

The challenge of achieving food safety and quality while still meeting the acute demand for thousands of meal boxes at peak hours are all too familiar with many caterers. A common issue is improper hot holding, which implicates two faults – preparing food too far in advance, coupled with improper hot holding temperature. On the other hand, post-cooking contamination may be the result of using the same area or equipment for handling of both raw and ready-to-eat foods, poor environmental hygiene or personal hygiene of food handlers.

食物安全計劃

在即日烹煮及進食的生產模式中，大部分食材都是在供應當天才烹製的。然而，由於飯盒供應商必須在用膳時間前製作多達數千個飯盒，他們一般都會提前數小時烹煮好食材，然後把飯盒熱存，直至供顧客食用為止。因此，在送遞給顧客前把熱食一直保持在細菌無法滋生的溫度，是十分重要的步驟。

A Food Safety Plan

In 'Cook-Serve' operations, most food items are prepared on the day they are to be served. However, since meal box caterers have to prepare up to thousands of meal boxes before mealtime, they usually prepare food items hours in advance. The meal boxes are then held hot until they are distributed to customers for consumption, and it is a critical step to keep hot foods at a temperature too hot for bacteria to grow throughout until they are delivered to customers.

「食物安全重點控制」(HACCP)系統能有效提升食物安全，預防食物危害。飯盒供應商應推行適當的措施，以盡可能降低危害風險。為了方便供應商制訂有效的食物安全計劃，下文將闡述建議的控制重點及公認的監控標準，特別是生產及送遞期間的溫度。

Since the [Hazard Analysis and Critical Control Point \(HACCP\)](#) system can effectively enhance food safety and prevent food hazards, Meal box caterers should implement appropriate measures to minimise the risks as far as possible. To facilitate the caterers in developing an effective food safety plan, suggested critical control points (CCPs) and well-recognised critical limits with particular reference to temperature aspect during production and delivery are stated below.

整體來說，生產供熱食的飯盒有三個主要的控制重點：烹煮(CCP1)、熱存(CCP2)及送遞(CCP3)。病原體可能存在于生的食材中。未經徹底煮熟的食物可能含有這些病原體，引致食物中毒。因此，所有食物都應徹底煮熟，食物的中心溫度須達攝氏75度或以上，並維持最少30秒。使用清潔的食物溫度計來量度食物的中心溫度，是判斷食物是否徹底煮熟以供安全食用的最佳方法。盡可能在食用當天烹煮所有食材，包括醬料及湯。另一方面，供應商應避免在顧客進食前過早烹製食物。

Overall, there are three major CCPs for meal box production for hot serving: cooking (CCP1), hot holding (CCP2) and delivery (CCP3). Pathogens may be present in raw food ingredients. Foods that are not thoroughly cooked may contain these pathogens and cause food poisoning. Therefore, all foods should be thoroughly cooked with the core temperature reaching at least 75°C for at least 30 seconds. Using a clean food thermometer to measure the core temperature of food is the best way to judge whether the food is cooked adequately for safe consumption. Where possible, cook all food items, including sauce and soup, on the day of consumption. On the other hand, the caterers should avoid preparing food too far in advance before consumption.

食材經烹煮後應盡快入盒並置於乾淨的保溫容器中，以防止交叉污染，並確保送遞時保持在攝氏60度以上。如未能即時放入保溫容器中，應把飯盒存放在攝氏60度以上的熱櫃內。要注意的是，保溫容器通常沒有任何發熱元件，只能保溫和阻止食物的熱力散失。因此，把飯盒放入保溫設備前，應以適當可行的方法將設備預熱。雖然保溫效果會隨着時間下降，但供應商有責任確保飯盒在送遞過程中及送抵目的地供食用時一直保持在攝氏60度以上。盡量縮短飯盒完成生產與送遞往目的地之間的時間，有助於食物保溫。另外，電熱餐車也可用來保持食物在食用前的所需溫度。供應商應提醒顧客，在食物送抵後盡快食用。

After cooking, food items in meal boxes should be packed into clean insulated containers to prevent cross-contamination and maintained at above 60°C for delivery as quickly as possible. If not packed immediately, keep meal boxes in warming devices at above 60°C. Of note, insulated containers generally do not have any active heating element, and they simply trap the heat of the food and stop it from escaping. Preheat hot holding equipment by suitable and feasible means before putting meal boxes in it. While the hot holding effect will dissipate over time, the caterers have the responsibility to ensure meal boxes on delivery and at the destination for consumption are kept consistently at above 60°C. Minimise the time between finishing the meal box production and the delivery to the destination to help heat preservation in the food. Alternatively, electric warming trolleys can be used to keep food consistently hot before use. The caterers should remind their customers to consume the food upon arrival as soon as possible.

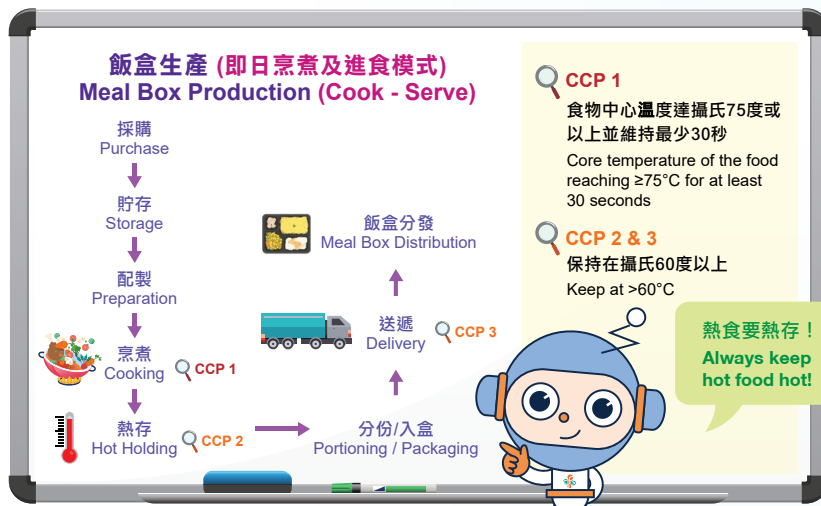


圖2: 飯盒生產流程圖及控制重點(CCP)

Figure 2: Schematic diagram and CCPs for meal box production

飯盒中的蠟樣芽孢桿菌

蠟樣芽孢桿菌是一種可產生孢子的細菌，其孢子可抵受一般的烹煮溫度。食物烹煮後如置於室溫下過久，蠟樣芽孢桿菌的繁殖細胞便有機會大量生長及／或最終產生可引致食物中毒的毒素。然而，把已煮熟的食物熱存在攝氏60度以上，可抑制蠟樣芽孢桿菌的生長。

如欲了解更多資訊，午餐飯盒供應商可參閱食物安全中心的文件《根據「食物安全重點控制」系統制定的食物安全計劃(適用於學校午餐飯盒供應商)》。

Bacillus cereus in meal boxes

Bacillus cereus is a spore-forming bacterium and the spores can survive normal cooking temperatures. If the cooked food is left at ambient temperatures for a prolonged period, the vegetative cells of *Bacillus cereus* have the opportunity to multiply into large numbers and/or eventually produce toxins which can cause food poisoning. However, keeping cooked food hot at above 60°C can restrict the growth of *Bacillus cereus*.

For more information, lunch box caterers can refer to the CFS' document "[Developing a school food safety plan based on HACCP system \(for school lunch box caterers\)](#)".



使用梘液洗手還是消毒潔手液清潔雙手？

Washing Hands with Liquid Soap or Cleaning Hands with Hand Sanitisers?

在2019冠狀病毒病大流行下，保持良好的手部衛生十分重要。很多人會選擇使用隨身攜帶的消毒潔手液，但在烹製食物時，最好還是以梘液洗手。如非處理食物，而雙手又沒有明顯污垢，使用70-80%濃度的酒精搓手液也是可行的方法。

在廚房裏處理食物時，雙手可能會直接接觸食物而沾染油脂及細菌。以梘液及清水洗手最少20秒，是去除污垢及食源性病原體的有效措施。相比之下，手上如有明顯污垢或油脂，消毒潔手液的效果較差。消毒潔手液亦無法有效消滅某些病原體，例如諾如病毒及甲型肝炎病毒。

在處理食物前，建議用梘液及清水正確洗手。此外，用清潔的抹手紙抹乾雙手同樣重要，除了抹去水滴，也可減少再受不潔的毛巾污染的風險。

Maintaining good hand hygiene is important during the COVID-19 pandemic. While many opt to use hand sanitisers that are readily carried around, it is preferable to wash hands with liquid soap when coming to food preparation. For non-food handlers, using 70-80% alcohol-based handrubs could be an alternative when hands are not visibly soiled.

A food handler's hands may be soiled with grease and bacteria when they come in direct contact with foods in the kitchen. Washing hands with liquid soap and water for at least 20 seconds is an effective measure for removing dirt and foodborne pathogens. In contrast, hand sanitisers work less effectively on visibly dirty or greasy hands. They cannot effectively remove certain pathogens such as norovirus and hepatitis A virus.

It is advised to [wash hands](#) properly with liquid soap and water before handling foods. Furthermore, drying hands with clean paper towels is important to remove drips and reduce the risk of re-contamination by dirty towels.

適當處理新鮮菇類

Proper Handling of Fresh Mushrooms

冬菇、金菇、秀珍菇及蘑菇等新鮮菇類是廣受歡迎的食材。由於新鮮菇類容易變壞，特別是在炎熱的天氣下，因此需要小心處理和貯存，以保持狀況良好。

選購新鮮菇類時，以觸感結實、顏色均勻、外觀光滑的為佳。菇類表面要乾燥，但不應皺縮。購買後要盡快存放在雪櫃內。烹煮前才把菇類徹底清洗和切開，以盡量減少貯存期間出現霉菌生長及其他變壞的情況。

不要購買不衛生、有變壞跡象(例如出現有色斑點、發出異味和釋出黏液)的菇類。菇類如摻雜了不明品種，應整包棄掉。由於需要專業知識才能分辨菇類屬食用還是有毒品種，因此切勿自行採食野生菇類。

Fresh mushrooms, such as winter mushrooms (shiitake), gold needle mushrooms (enokitake), oyster mushrooms and button mushrooms, are popular food ingredients. As fresh mushrooms are prone to deterioration especially in hot weather, careful handling and storage are required to keep them in good condition.

When purchasing fresh mushrooms, look for the ones that are firm to touch, uniform in colour and smooth in appearance. The surface should be dry but not shrunken or wrinkled. Store them in the refrigerator soon after purchase. Wash the mushrooms thoroughly and cut them only right before cooking to minimise mould growth and other deterioration during storage.

Do not buy mushrooms that are unhygienic, show signs of spoilage (e.g. coloured spots, abnormal smell and slime). If the mushrooms are mixed with unknown species, discard the whole pack. Do not pick and consume wild mushrooms, as expert knowledge is required to distinguish edible species from toxic ones.



風險傳達工作一覽 (二零二一年五月)

Summary of Risk Communication Work (May 2021)

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