

FOOD SAFETY



BE FOOD SAFE!
A publication for retail food establishment licensees and food handlers

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OPENING MESSAGE

In recent years, there have been significant improvements in the hygiene standards at our eating establishments. The food poisoning incidence rate at NEA-licensed food establishments has been on a downward trend*, but this would not have been possible without the joint efforts of retail food operators and consumers.

Serving great food is not the only recipe for success. A good food safety culture is also instrumental in building a strong foundation for F&B businesses, which consequently, promotes professionalism in the retail food industry. So, in this and the next issue, we will be featuring a two-part series on "Food Safety Culture" to recognise why nurturing a food safety culture is good for business.

In this issue, together with the Ministry of Manpower (MOM) and Singapore Civil Defence Force (SCDF), we will also highlight safety issues from gas-fired stoves in the kitchen. We would like to acknowledge MOM and SCDF for their contributions in the 'Safety Advisory' column. Happy reading, and we hope you will be inspired to inculcate a food safety culture!

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* KEY ENVIRONMENTAL STATISTICS 2016, Ministry of the Environment and Water Resources



Archive of NEA's Food Safety Bulletin.

Reducing the risk of *VIBRIO* INFECTIONS!

Find out more about the different species of *Vibrio*, why they are of particular concern in seafood, and what we can do to reduce the risk of *Vibrio* infections.

V. parahaemolyticus and *V. vulnificus*

These two species of *Vibrio* live in saltwater and coastal water. Seafood harvested from water containing these bacteria can cause illness if they are consumed raw or undercooked.

They generally cause mild to moderate symptoms such as diarrhoea, vomiting and/or fever. Although most people can recover within a week, the bacteria may sometimes enter the bloodstream of people, causing severe complications.

In 2009, *V. parahaemolyticus* was responsible for causing the outbreak with 2 fatalities in Singapore linked to contaminated Indian Rojak.



V. cholerae

This species of *Vibrio* can be found naturally in freshwater and seawater environments, although it can be introduced to water sources polluted by sewage.

V. cholerae is responsible for causing the cholera disease, which usually occurs through the consumption of contaminated seafood or water. Symptoms of cholera include profuse rice-watery diarrhoea, nausea and/or vomiting that usually last for a few days.

PREVENTION

- Cook seafood thoroughly.
- Wash hands thoroughly with soap and water before and after handling raw seafood.
- Clean chopping boards, countertops and utensils thoroughly before and after preparation of seafood.
- Avoid cross-contamination. Store and handle raw ready-to-eat (RTE) seafood separately from cooked food and other raw foods intended for cooking.
- Wear clean gloves, hairnet and mask when handling RTE seafood.
- Do not prepare any food if you are sick, especially if you have diarrhoea, vomiting and/or fever. Inform your supervisor and see a doctor promptly.
- Pay special attention to the hazards and factors (critical control points) that may contaminate or encourage the growth of pathogens in seafood during receiving, storage, preparation and serving.

Additional tips for outlets serving buffets

- Do not display cooked seafood dishes in the temperature danger zone (5-60°C), as bacteria can multiply quickly. Food that has been kept in this temperature danger zone for more than 4 hours should be discarded.
- Provide separate tongs for customers to handle raw and cooked RTE food dishes.
- Keep the environment clean. Have a staff to monitor hygiene conditions of the displayed seafood.

FOOD POISONING CASE STUDY

In an outbreak of *Salmonella* Enteritidis during a festive season, nearly 20 people in five separate incidents came down with gastroenteritis (i.e. infection of the stomach) symptoms after consuming eggs benedict and crab cake purchased from a local café.



Festive seasons are always the busiest period for the F&B industry. Families and friends hold gatherings to celebrate the festivities, and more often than not, it would involve eating out. While it can be good business for retail food establishments, the large volume of customers could also be a bane for operators, especially if they are not prepared to handle the increase in volume.

This was what had happened in this case, where a local café saw an increase in its business during a festive season, but

also saw about 20 of its customers suffer from serious food poisoning. They had consumed food such as eggs benedict, crab cake, pizza and pasta at the café.

Over the next three days, all of them developed gastroenteritis symptoms, such as diarrhoea, vomiting and fever. 3 people, including a 4-year-old child, were hospitalised. Investigations found that *Salmonella* Enteritidis was the likely cause of the outbreak, and that eggs benedict and crab cakes were the common food consumed by the affected customers.

LEARNING POINTS from this incident:



FINDING 1:

During food preparation, poached eggs (which are cooked and ready-to-eat) were kept near the wash basin.

ISSUE:

The kitchen area was small and ill-equipped to handle large volumes of orders, leading to the improper storage and placing of food where they may be contaminated.

LEARNING POINTS:

Understand your kitchen's capacity, and do not take orders beyond the capacity, as this may result in hygiene lapses and compromise food safety. Plan your kitchen workflow and procedures such that food is kept and stored properly even during busy periods.



FINDING 2:

The food handlers were not wearing gloves when handling and preparing cooked/RTE food.

ISSUE:

There is a risk of cross-contamination of the food from handling during preparation. It is also an offence under the Environmental Public Health (Food Hygiene) Regulations to handle cooked/RTE food with bare hands.

LEARNING POINTS:

Always wear clean gloves and/or use proper utensils when handling cooked/RTE food. Do not use the same gloves and utensils to handle other items (including raw food) that can contaminate the cooked/RTE food.



FINDING 3:

Chiller gaskets found to be worn.

ISSUE:

Worn refrigerator door gaskets allow outside air to enter the refrigerator which would raise the refrigerator's temperature.

LEARNING POINTS:

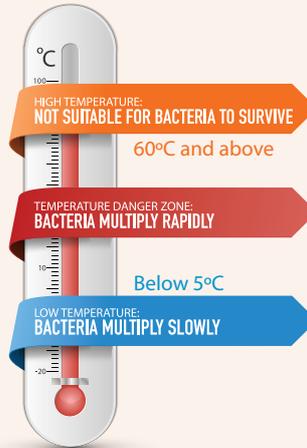
Refrigeration slows bacterial growth and prolongs the freshness of food. It is important to ensure that the refrigerator is in good working condition, so that food is chilled and frozen at the correct temperatures. Chilled food products should be stored at a temperature between 0–4°C and frozen product should be stored at a temperature not above -12°C.

RISK INSIGHT

Do you know that some food pose a higher risk of causing illness when they are not prepared or stored properly. In this article, we will be sharing some practical tips on reducing food safety risks in a popular local delicacy, *Rojak*.

Food can generally be categorised into low-risk and high-risk groups. Low-risk food are those that are unlikely to encourage bacterial growth. Such food include those that do not have high water and/or protein content, such as bread, biscuits and preserved food.

On the other hand, high-risk food usually provide a platform for bacterial growth, such as meats, seafood, dairy products, and food that are ready-to-eat or do not need any further cooking.



This would include food with raw vegetables and meat (e.g. sashimi, oysters, undercooked meats). If these food are not stored properly, they may turn bad, and become unsafe to eat.

Food with raw ingredients would be of higher risk compared to food that has been cooked. Keep food safe by ensuring good food handling practices, and by storing at the right temperature to ensure that bacteria cannot reproduce.

Rojak, which means "mixture" in Malay, is as its name describes: a mixture of fresh ingredients, and is often served together with a sauce. In Singapore, there are two popular types of rojak preparations, namely the Chinese and Indian versions.



As both versions typically comprise raw vegetables and fruits, and sometimes seafood, rojak are categorised as high-risk food and we should take care to observe good food handling practices when preparing these dishes to reduce the risk of contamination and bacterial growth.

TIPS ON PREPARING ROJAK HYGIENICALLY

WASH CUCUMBERS AND GARNISHES THOROUGHLY

- Wash and peel cucumbers, and wash them again after peeling.
- Wash garnishes thoroughly by soaking them in fresh tap water for 15 minutes and rinsing them with water to remove any dirt, bacteria or chemical residues.
- Prepare cucumbers and garnishes in batches and store them in the refrigerator.

PREVENT CROSS-CONTAMINATION

- Use clean gloves or tongs for handling ready-to-eat food.
- Before wearing gloves, wash your hands thoroughly with soap and tap water.
- Use clean and separate utensils, crockery and gloves for handling raw and cooked food/RTE food.
- Do not use gloves when handling money and other tasks other than food preparation.
- Change gloves frequently and as soon as they become dirty or torn.

CLEAN CHOPPING BOARDS FREQUENTLY

- Plastic board: Scrub with a scouring pad and detergent, and then rinse with clean water after that.
- Wooden board: Wash with detergent and water as described as above. If washing is not feasible, scrape the top surface with a clean knife and wipe with a dry and clean cloth.

TEMPERATURE CONTROL

- Keep gravy hot above 60°C.
- Reheat rojak ingredients before serving.
- Do not display food in the temperature danger zone (5-60°C) for more than 4 hours.

WHY CULTIVATE FOOD SAFETY CULTURE

The following article is about cultivating food safety culture among operators in the food retail industry. In this issue, we will highlight why good hygiene is good for business and emphasise the importance of management's commitment towards a food safety culture.

01

WHY GOOD HYGIENE IS GOOD FOR YOUR BUSINESS?

Based on a survey by Health Promotion Board in 2010, it was reported that 60% of Singaporeans eat out at least 4 times a week. Food retailers have a greater responsibility to ensure that good food hygiene practices are followed to safeguard the health of their customers. Practising good hygiene results in safe food for consumers, reduces the risk of food poisoning and protects business reputation. With greater public accessibility to food hygiene information of food retail outlets and the increasing use and influence of social media, food businesses should establish a food safety culture in their premises. A strong food safety culture is instrumental in ensuring that any food hygiene practices or initiative will be effectively implemented and sustained over a long time. It is thus worthwhile for businesses to make food safety part of their reputation and marketing strategy.

02

MANAGEMENT COMMITMENT

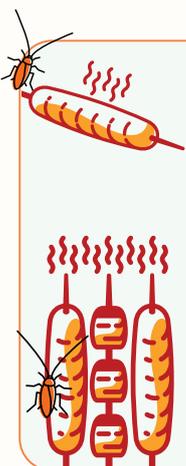
A food safety culture starts with a commitment by the management. Research has shown that employees are more likely to practise food safety and be committed to it if they see managers or supervisors making the effort too. Even though all foodservice employees are responsible for ensuring that the food served is safe for consumption, managers and supervisors need to monitor and motivate employees to handle food safely consistently.

Case Study

A COCKROACH-INFESTED RESTAURANT

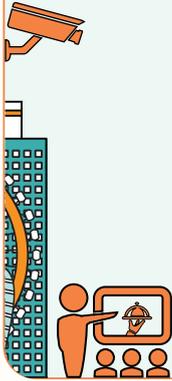
A kebab restaurant was shut down by the authorities after cockroaches were found next to the chicken kebabs that were to be served to its customers. The employer knew that there was a pest infestation, but did not follow up to rectify the situation, and the employees continued to prepare food next to where the infestation was. The business of the restaurant became more important

than food safety for the customers. Thus, it is important for management/supervisors to follow up on any lapses to ensure that the premises is kept clean and pest-free, and food safety is not compromised. Even though it is important to keep up with the fast work pace, safeguarding food safety for consumers should always come first.



Case Study

A PIONEERING HOTEL



An international hotel chain takes their food safety culture very seriously. The kitchen staff members need to attend at least 8 hours of food safety seminars each year to keep their certification valid. The staff members are also observed via CCTV for any food safety lapses, which the General Manager then reviews and suggest areas for improvement with the staff members during their weekly meetings.

This has allowed the hotel restaurant to advertise itself as one that has an exemplary track record of food safety. This example demonstrates the importance of strong management commitment and emphasis on food safety, as well as providing continuous training for employees to ensure that they have the relevant skills and knowledge to practise good food safety behaviour.



03

POSSIBLE BARRIERS AND MOTIVATIONAL FACTORS TO ACHIEVE HIGHER FOOD HYGIENE STANDARDS

POSSIBLE MOTIVATIONAL FACTORS

- Preparing safe food for customers to keep them safe from food-borne diseases.
- Having adequate implements such as tongs, knives and cutting boards.
- Having sufficient amenities and materials for personal hygiene, such as hand soap, paper towels and gloves.
- Having the knowledge and skills on safe food handling.
- A workplace that has policies and procedures on food safety in place.
- Culture that emphasises and recognises food safety.

POSSIBLE BARRIERS FACED BY EMPLOYEES

- Fast work pace and the lack of time.
- Lack of awareness and knowledge.
- Lack of support from supervisors/management who are commercially-driven at the expense of food safety.
- Do not have sufficient supplies at workplace.

POSSIBLE BARRIERS FACED BY EMPLOYERS

- Lack of awareness and knowledge to implement effective food hygiene systems.
- Pressure to prioritise profits and reduce operating costs.
- Commercially-driven mindset, where food safety is not important as it does not increase revenue.

The findings were adapted from a peer-reviewed article published by the International Association for Food Protection (IAFP). IAFP is a non-profit association of food safety professionals based in the U.S. source: <http://www.foodprotection.org/files/food-protection-trends/May-Jun-14-Strohbehn.pdf>



Good food safety culture begins with good individual hygiene practices, but it also depends on management commitment to cultivate it into a culture. In the next issue, we'll share strategies to cultivate a food safety culture that will help to achieve higher food hygiene standards in your business.



SAFETY ADVISORY

Cooking Fumes Can Be Dangerous!

Do you know that fire from gas-fired stoves can produce airborne contaminants such as nitrogen dioxide and carbon monoxide? If allowed to accumulate (i.e. without being exhausted out), airborne contaminants can cause headache, nausea, breathing difficulties, impaired judgement and even loss of consciousness in high concentrations.

In a recent accident in November 2016, several employees felt unwell while working in a kitchen. Two were hospitalised after exposure to elevated levels of carbon monoxide, while another 17 were placed under overnight observation in the A&E ward. It was found that the exhaust system from the kitchen was not in working order at the time of incident.

What Can You Do?

1. Conduct a risk assessment

- Identify safety and health hazards like removing airborne contaminants from gas-fired stoves and heat stress.
- Assess any foreseeable risk.
- Implement measures to eliminate or minimise the risk.

2. Safe work procedures

- Establish procedures to carry out work safely and to deal with emergencies that may arise during work, such as gas leaks and exhaust system failure.



[Read more](#)



3. Ventilation

- Ensure that the kitchen is provided with adequate ventilation either by natural or mechanical means. For mechanical ventilation, ensure that there are at least 20 air-changes per hour in the kitchen.
- Install a suitable local exhaust ventilation (LEV) system to prevent accumulation of fumes and contaminants generated from gas-fired stoves. The exhaust system must be maintained regularly to ensure that it is in good working condition at all times.
- Consider installing detectors with alarms to monitor the level of airborne contaminants when gas fired stoves are used. The detectors should alert those working in the kitchen when the level of contaminants in the air exceed the permissible limits.

Fire Incidence Can Disrupt Businesses!

In April 2016, a coffee shop in Jurong West was engulfed in flames. The small fire started in a stall and quickly spread to several other stalls through the oil accumulated in the kitchen exhaust duct. The fire caused the coffee shop to close for weeks, resulting in business disruption to all its stall owners. It was not an isolated incident as there has been an increase in the number of such fires at coffee shops, hawker centres and food courts.



[Read more](#)



What Can You Do?

- Do not leave cooking unattended.**
- Ensure that the stove, its surrounding area and especially the opening of the kitchen exhaust duct at each stall, are free from grease and oil stains.**
- Engage a specialist to clean and maintain the kitchen exhaust systems properly and regularly. This includes degreasing and cleaning the ducts and hoods. The kitchen exhaust ducts must be thoroughly cleaned at least once a year. Records of the cleaning and maintenance should be kept.**

Additional Safety Tips

Plan and follow a cleaning schedule to keep the kitchen clean and tidy. Dispose any waste or unused carton boxes because these could be possible combustible materials.