

## Key Message 13



Consume safe and clean foods and beverages



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### 1. Terminology

#### Appropriately labelled

Appropriately labelled refers to a food label which complies with the Malaysian Food Regulations 1985 (MOH, 1985) and contains the main requirements as stated in Appendix 1.

#### Clean foods and beverages

Clean foods and beverages are food and water that are free from dirt, stain or impurities; unsoiled, free from foreign matter or pollution, unadulterated and not infected.

#### Cross contamination

Cross contamination is the transfer of harmful microorganisms from one item of food to another via a non-food surface such as human hands, equipments or utensils. It may also be a direct transfer from a raw food to a cooked food.

#### Food and water borne illness

Food and water borne illness is any illness resulting from the consumption of contaminated food and drinking water. Most cases are actually food infection caused by a variety of food borne pathogenic bacteria, viruses and parasites

#### Food poisonings

Food poisonings are syndromes acquired as a result of ingesting contaminated foods, which are foods that contain infectious, toxigenic micro-organisms or noxious elements.

#### Fresh foods

Fresh foods are raw foods that have not changed colour, do not have unpleasant odour, not withered and texture remain unchanged.

#### Safe foods and beverages

Safe foods and beverages is an assurance of the food and water against chemical, biological or physical conditions, which may expose the user to food borne illnesses.

### 2. Introduction

Food borne illnesses are defined as diseases, usually either infectious or toxic in nature, caused by agents that enter the body through the ingestion of food (WHO 2007). Food borne disease remains a real and formidable problem in both developed and developing countries, causing great human sufferings and significant economic losses. Up to one third of the population of developed countries may be affected by food borne diseases each year, and the problem is likely to be even more widespread in developing countries with poor socio-economic status that gave low priority on food safety and where

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food and water borne diarrhoeal diseases kill an estimated 2.2 million people each year, most of them children (FAO/WHO, 2006). Most of these cases can be attributed to contaminated food and water. Proper food preparation can prevent most food borne diseases. In developed countries, the incidence of infections caused by classical enteropathogens like *Salmonella typhi* and *Vibrio cholera* has decreased, but new enteropathogens have emerged which needs due attention. These include *E. coli*, *Vibrio vulnificus*, *Listeria monocytogenes*, multiresistant *Salmonella* serotype *Typhimuriums* definitive type 104 and the parasite *Cyclospora cayetanensis* (MOH, 2006).

Food borne disease is caused by presence of a food borne hazard in a food or beverage and is defined by Codex as “a biological, chemical or physical agent in, or condition of, food, with the potential to cause an adverse health effect”. Many of these hazards have long been recognised and addressed by food safety control measures. These include biological hazards such as infectious bacteria, toxin-producing organisms, moulds, parasites and viruses, chemical hazards such natural toxins, food additives, pesticide residues, veterinary drug residues, environmental contaminants and allergens and physical hazards such as metal, machine filings, glass, jewellery, stone and bone chips (FAO/WHO, 2006).

The serious morbidity and mortality consequences of food borne disease have long been recognised. It is also a strain on health care systems and hurts the national economy and development (WHO, 2007).

Food Act 1983 and the Food Regulations 1985 have been published in Malaysia to protect the public against health hazards and fraud in the preparation and sale.

This Act and Regulation help to ensure safe food and beverage consumption in food outlets and premises.

A technical summary report MOH (2006), stated that there are still pockets of areas with poor basic sanitation and environment facilities. It is recommended that in order to prevent and control food borne disease, inter-agency involvement, in particular agencies responsible for the provision of basic environmental facilities, and local authorities need to play an important role in enforcing laws related to establishment and operations of food outlets. The report also stated that data from the National Disease and Pathogen Surveillance Systems, with linkages to system from various related agencies will provide useful information that are important for a better understanding of food borne disease problems in Malaysia.

In addition to regulations, it is important to educate consumers to consume safe and clean foods and beverages. Health education in food safety is both possible and cost-effective, but it should be culture specific and should respond to technological, economic and social situations that prevail in a particular society or cultural group (Motarjemi *et al.* 1993). The World Health Organization has long emphasised some simple food hygiene steps that can prevent most of food borne diseases as explained in the scientific basis.

## 3. Scientific basis

World Health Organization (WHO 2001) has introduced the Five Keys to Safer Food which incorporates all the message of the Ten Golden Rules for Safe Food Preparation. The Five Keys are stated as in Appendix 2.

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The core concept remains the same and the information provided in the Five Keys to Safer Food Manual are adapted in our country. The Five Keys to Safer Food by WHO (2001) and articles published have been used as the basis or rationale for the proposed key recommendations namely; choose safe and clean foods and beverages, store foods appropriately, prepare foods hygienically, cook foods thoroughly, hold foods appropriately and when eating out, choose safe and clean premises.

According to WHO (2008), consumers are encouraged to monitor the expiry date, be alert on the adulteration of food when choosing and buying food. When deciding where to buy food and eating out, make a visual check of the staff, cutlery and other equipment used for cleanliness and tidiness. It is being emphasised that personal hygiene for people who work in the food premises should be given priority to make sure that consumers can have safe food. Practising good personal hygiene will help to promote clean premises. This is also a good indicator of hygiene standards.

Raw and cooked foods should be stored separately while cans, packets and bottles are to be kept in a cool and dry place. All the food products need to be well protected and be free from insects, rodents and pests (WHO, 2008).

Consumers are encouraged to always wash their hands using soap during food preparation and eating foods. A meta analysis carried out by Curtis & Cairncross (2003) using seven intervention studies indicated that washing hands with soap can reduce the risk of diarrhoeal diseases by 42% to 47%. In other words, it can help reduce the risk of food borne illness.

Consumers also need to properly wash

the raw material and equipment using clean and safe water because dangerous micro-organisms are widely found in soil, water, animals and people. These micro-organisms can also be carried on hands, wiping cloths and utensils. Furthermore, food cannot be exposed to room temperature more than two hours. This is due to the fact that the number of microbes multiplied within this duration is high enough to cause food borne disease (WHO, 2008).

All cooked foods should be cooked thoroughly in order to prevent food contamination. Food that has been cooked should be held at safe temperature range (less than 5°C or more than 60°C). Holding food at this safe temperature range will slow or stop the growth of micro-organisms (WHO, 2008). On the other hand, maintaining food in the danger zone from 5°C to 60°C can cause micro-organisms to multiply very quickly (FAO, 2008). Improper holding temperature of foods is the main contributing factor that leads to food borne illness because spore forming bacteria like *Clostridium botulinum*, *Clostridium perfringens* and *Bacillus cereus* can still survive cooking temperatures.

Foods, especially Potentially Hazardous Food (PHF) such as minced meat, rolled roasts, large joints of meat and whole poultry need to be properly cooked to a temperature of 70°C to kill almost all dangerous micro-organisms (WHO, 2008).

Any food that needs reheating must be reheated to 74°C within two hours to prevent the number of organisms reaching levels that can cause food borne illnesses (McSwane, Rue & Linton, 2000).

## 4. Current status

Reports from the Ministry of Health

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Malaysia (MOH, 2006) showed that water borne illness and food borne illness are public health problems in Malaysia and other developed countries. There are five main diseases being monitored by the Ministry of Health Malaysia namely cholera, typhoid fever, Hepatitis A, food borne illness and dysentery.

Over the last 9 year period (1998 to 2006), the incidence of cholera, typhoid, hepatitis A and dysentery had steadily decreases. This is due to consumption of clean water, improvement of personal hygiene and enforcement of environmental sanitation. However the incidence of food poisoning showed a fluctuating trend with improvement in the first half of 2005 but appeared to be on the increase in 2006 (Table 13.1).

## 4.1 Cholera

Despite a significant decline in number of cholera cases in most parts of Malaysia, outbreaks still persist in several areas where water supply, sanitation, food handling and personal hygiene practices are inadequate (MOH, 2006). The annual incidence of cholera in Sabah has always been higher compared to the other states. Over the past five years, 69% of overall cholera cases reported in the country were from Sabah. Unsafe water and poor sanitation practices are major contributing factors. Analysis on the cases reported from 2001 through 2005 revealed that 66% of the cases did not have safe water supply at their residences and 79% did not have sanitary toilet facilities. In other states, the incidence of cholera was rather sporadic and occurred in areas where food hygiene practices were given little emphasis by the community. In 2002, an outbreak of cholera was reported in one primary school in Kelantan, with 46 cases and 1 death. The primary source of the outbreak was contaminated food (MOH, 2006).

## 4.2 Typhoid

The incidence of typhoid has steadily declined in most states except Kelantan which had a major outbreak in 2005 (MOH, 2006). Kelantan has always been higher compared to other states. Inadequate safe water supply was a major contributing factor. In 2005 (between April and June 2005), 735 cases were reported with 2 deaths. Contaminated ice and ready-to-eat (RTE) foods distributed by street hawkers and night markets were very much suspected as the source. Most of the typhoid cases reported was among the younger school-going age group of 5 to 19 years old (MOH, 2006).

## 4.3 Food poisoning

The incidence of food poisoning has been on the decline from 1999 but there was a sudden increase in 2006 (MOH, 2006). In 2005, majority of food poisoning cases occurred in schools (53.4%) followed by institutions (15.9%) and private residence (11.5%). Similar pattern was observed in 2006 where 62.7% occurred in school, followed by 12.8% in institutions and 8.5% cases at the private residences. It showed that school going age group posed greater risk compared to other age group (MOH, 2006)

From the analysis of 149 episodes of food poisoning in 2006, unsanitary food premises and poor hygiene practices among food handlers during food preparation contributed about 40% of episodes reported in that year. Another important factor was prolonged holding time of food at room temperature or food being served more than 4 hours after it had been cooked (MOH, 2006).

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## 4.4 Hepatitis A

The incidence rate for hepatitis A decreased dramatically over the past 9 years with no marked difference between states or ethnic groups. Most of the Hepatitis A cases were among the adult population with a mean age of 35 to 39 years old (MOH, 2006).

## 4.5 Dysentery

The incidence of dysentery has been low with no marked changes in the incidence over the past 9 years. The highest incidence rate was 2 per 100, 000 population which was

recorded in 2000. In 2005 and 2006, children less than 5 year of age and the elderly (more than 65 years old) had greater risk of dysentery (MOH, 2006).

Overall, the incidence of food borne illness in Malaysia has shown great improvement over the years. This is contributed by improvement in living standards with socio-economic development in basic infrastructure, in particular safe water supply. Improvement in educational status of the population also played an important role.

**Table 13.1. Incidence of food borne and water borne illness cases in Malaysia for 1998 – 2006**

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>Disease</b>									
<b>Cholera</b>	1,304	536	124	557	365	135	89	386	237
<b>Dysentery</b>	246	429	447	348	292	310	356	141	105
<b>Food Poisoning</b>	6,976	8,640	8,129	7,137	7,023	6,624	5,957	4,641	6,938
<b>Typhoid</b>	782	811	765	695	853	785	484	1,072	204
<b>Hepatitis A</b>	240	319	497	453	295	222	107	44	64

Source : Ministry of Health Malaysia (2006)

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## 5. Key recommendations

### Key recommendation 1

**Choose safe and clean foods and beverages.**

#### How to achieve

1. Choose raw foods that are fresh and clean.
2. Choose processed foods that are appropriately labelled and have not reached expiry date.
3. Choose cans that are not rusted, dented or bulging. For packaged foods, ensure that they are properly sealed, not torn or leaking.
4. Choose foods that are processed for safety such as pasteurised, UHT and sterilised.
5. Purchase cold and frozen foods last when shopping and return home as soon as possible to avoid spoilage. Try to use cooler boxes or bags during transportation.

### Key recommendation 2

**Store foods appropriately.**

#### How to achieve

1. Store foods at the appropriate area and temperatures. Keep the area clean and orderly.
2. Keep perishable foods like milk, yoghurt and eggs in the refrigerator below 5°C, meat, poultry and seafood in the freezer compartment (-18°C) as soon as possible upon returning home.
3. Separate raw foods, especially meat, fish and seafood from cooked foods in the refrigerator. Do not overload the refrigerator.
4. Do not keep very hot food in the refrigerator, as this will cause the refrigerator temperature to rise.
5. Store cooked foods and/or meal leftovers in the refrigerator below 5°C within two hours after cooking and do not keep them for longer than two days. If you like to keep these foods longer, deep freeze them at -18°C.
6. Foods stored should be properly covered and placed in containers or wrapped to avoid contact between raw and prepared foods.
7. Store foods away from chemical products, pesticides and cleaning agents.

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## Key recommendation 3

**Prepare foods hygienically.**

### How to achieve

1. Practise good personal hygiene and habits to avoid food poisoning and cross-contamination, for example, wash hands, cooking utensils and cooking area with soap and clean water before food preparation.
2. Avoid handling foods with bare hands if you have cuts, burns or wounds unless properly bandaged.
3. Wash thoroughly food that is to be eaten raw with safe and clean water.
4. Use separate equipment and utensils such as knives and cutting boards for handling raw foods and cooked foods.
5. Do not thaw frozen food at room temperature but do it in the refrigerator or under clean running water.

## Key recommendation 4

**Cook foods thoroughly.**

### How to achieve

1. Foods must be cooked thoroughly especially meat, poultry, eggs and seafood. Bring foods like soups and stews to boiling. For meat and poultry, make sure that juices are clear and not pink.
2. Reheat cooked food thoroughly.
3. Boil clean water for drinking.





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## **Key recommendation 5**

**Hold foods appropriately.**

### **How to achieve**

1. Serve cooked foods as soon as possible in crockery that are clean and in good condition. If you need to hold foods, keep them appropriately covered and never leave the cooked foods at room temperature for more than four hours.
2. Serve hot foods hot and cold foods cold.
3. If you need to hold cooked foods hot, keep it hot (above 60°C) and hold chilled cooked foods in the refrigerator (below 5°C).

## **Key recommendation 6**

**When eating out, choose safe and clean premises.**

### **How to achieve**

1. Choose premises that are situated in clean areas far away from street, rubbish dumps, clogged drains, septic tanks or waste disposals.
2. Choose premises that are in clean and tidy conditions, with running pipe water, proper drainage system, and covered rubbish bins. The premises should be free from signs or presence of pets, rodents, pests and insects.
3. Choose premises that use crockery, cutleries and utensils that are in clean and good condition.
4. Choose premises that serve appropriately covered foods and beverages.
5. Choose premises where the staffs practise good personal hygiene and habits at work.

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## Appendices

### Appendix 1. General requirements for labelling of food

#### 1. Language to be used

- (a) In the case of food produced, prepared or packaged in Malaysia, be in Bahasa Malaysia ; or
- (b) In the case of imported food, be in Bahasa Malaysia or English. And in either case may include translation thereof in any other language.

#### 2. Particulars in Labelling

- (a) The appropriate designation of the food or a description of the food containing the common name of its principal ingredients: e.g: orange juice and corn oil.
- (b) In the case of mixed or blended food, words which indicate that the contents are mixed or blended, as the case may be, and such word shall be conjoined with the appropriate designation of the food, in the following form: e.g: mixed orange and mango juice.
- (c) Where the food contains beef or pork, or its derivatives, or lard, a statement as to the presence, in the form “contains (state whether beef or pork, or its derivatives, or lard)” e.g: contains lard.
- (d) Where the food contains added alcohol, a statement as to the presence in that food of such alcohol, in the form “contains alcohol”.
- (e) Where the food contains food additive, a statement as to the presence in that food of such food additive, in the form e.g: contains permitted food conditioner.
- (f) Where the food consists of two or more ingredients, the appropriate designation of each of those ingredients should be in descending order of proportion by weight.

#### 3. Net weight

A statement of the minimum net weight or volume or number of the content of the package.

#### 4. Manufacturer/ Country of Origin

In the case of food locally manufactured or packed, the name and business address of the manufacturer or packer, or the owner of the rights of manufacture or packing or the agent of any of them; and in the case of imported food, the name and business address of manufacturer or packer or the owner of the rights of manufacture, or the agent of any of

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them, and the name and business address of the importer in Malaysia and the name of the country of origin of the food.

## 5. Date marking

- (1) In these Regulations, “date marking” in relation to a package of food, means a date permanently marked or embossed on the package or in the label on the package, of any food signifying the expiry date or the date of minimum durability of the food, as the case may be.
  - (a) the expiry date in respect of any food shall be shown in one of the following forms:
    - (i) “EXPIRY DATE or EXP DATE ( here insert the date, expressed in day, month and year or in month and year)”;
    - (ii) “USE BY ( here insert the date, expressed in day, month and year or in month and year)”;
    - (iii) “CONSUME BY or CONS BY ( here insert the date, expressed in day, month and year or in month and year)”.
  - (b) the date of minimum durability in respect of any food, shall be shown in the following form: “BEST BEFORE or BEST BEF” (date/month/year) or (month/year)]
- (2) Where the validity of the date marking of a food to which this regulation applies is dependent on its storage, the storage direction of that food shall also be required to be borne on its label.

## 6. Claims on the label

As the phrase suggests, a nutrition claim is any claim made on a label of a food product pertaining to its nutritional quality.

- |   |  |
|---|--|
| Nutrient content claim  | - A claim describing the level of a nutrient in a food product   |
| Nutrient comparative claim  | - A claim that compares the nutrient levels and/or energy value  |
| Nutrient function claim   | - A claim that describes the physiological role of nutrient in growth, development and normal functions of the body. |
| Claim for enrichment, fortification or other words of similar meaning | - As specified in Regulation 26(7)   |

## 7. Nutrition labelling

Nutrition labelling means a description intended to inform the consumer of the nutrient content of a food.

The nutrients that must be declared on a nutrition label are energy, protein, carbohydrate and fat. In addition, total sugars must also be declared for ready-to-drink beverages. They do not include alcoholic beverages.

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## Appendix 2. WHO 5 keys to safer foods

### Five keys to safer food



#### Keep clean

- ✓ Wash your hands before handling food and often during food preparation
- ✓ Wash your hands after going to the toilet
- ✓ Wash and sanitize all surfaces and equipment used for food preparation
- ✓ Protect kitchen areas and food from insects, pests and other animals

#### Why?

While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause foodborne diseases.



#### Separate raw and cooked

- ✓ Separate raw meat, poultry and seafood from other foods
- ✓ Use separate equipment and utensils such as knives and cutting boards for handling raw foods
- ✓ Store food in containers to avoid contact between raw and prepared foods

#### Why?

Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.

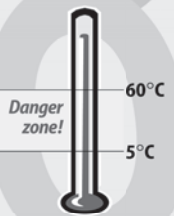


#### Cook thoroughly

- ✓ Cook food thoroughly, especially meat, poultry, eggs and seafood
- ✓ Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer
- ✓ Reheat cooked food thoroughly

#### Why?

Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.



#### Keep food at safe temperatures

- ✓ Do not leave cooked food at room temperature for more than 2 hours
- ✓ Refrigerate promptly all cooked and perishable food (preferably below 5°C)
- ✓ Keep cooked food piping hot (more than 60°C) prior to serving
- ✓ Do not store food too long even in the refrigerator
- ✓ Do not thaw frozen food at room temperature

#### Why?

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5°C.



#### Use safe water and raw materials

- ✓ Use safe water or treat it to make it safe
- ✓ Select fresh and wholesome foods
- ✓ Choose foods processed for safety, such as pasteurized milk
- ✓ Wash fruits and vegetables, especially if eaten raw
- ✓ Do not use food beyond its expiry date

#### Why?

Raw materials, including water and ice, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.