

Guide for food retailers

Control and prevention for public health emergencies



Continue to guard the security of consumption

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Translator's Preface

As microbiologists, we are drawn to life-forms that we cannot see with our naked eyes. Viruses are the simplest but probably the most complex life-forms at the same time. Richard Preston, the author of the book, *The Hot Zone*, used to say that viruses never go away; they only hide. Indeed, they are out there waiting for a chance to break into the human race.

In 2019, a new coronavirus, later named COVID-19 virus or SARS-CoV-2, started to spread in Wuhan, China. Quiet at the beginning, but within couple of months it horrified the entire country. Chinese government, industry and citizens were forced to fight the battle with this virus. During this drastic and devastating public health emergency, the retailers worked together to provide the country with foods and water. They did everything they could to keep up with the supply, protect the employees and enhance consumer confidence. This document is a summary of emergency response protocols that have proven to work in China.

Now, the COVID-19 pandemic is affecting life of people in the United States. As Louis Pasteur noted, chance favors the prepared mind. We hope by translating and distributing this document, we can provide some guidance for the retailers in the United States during this difficult time. Please noted that the original version of this guide was revised slightly during translation considering US audience.

We are grateful to China Chain Store & Franchise Association for their kindness to share this document. We appreciated Chinese Association for Food Protection in North America and International Association for Food Protection for supporting and promoting this translation.

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Foreword

At the beginning of 2020, a sudden outbreak of novel coronavirus disease (COVID-19) disrupted the normal lives of the people in China. During the disease control and prevention, the Food Safety Committee of the China Chain Store & Franchise Association (CCFA) actively played a leading role in the industry. On January 22nd, it issued the virus prevention guide for supermarkets, restaurants, and shopping malls, which became the earliest guidelines for commercial enterprises to respond to public health emergency of national concern.

At the beginning of February, with the idea of keeping consumer confident and employee safe, the committee was once again charged with developing an operation guide that is more suitable for the management of headquarters and has sustainable application at the individual store level. The committee referred to international literature and practical experience in outbreak prevention. The latest guidelines issued by the State Council and the State Administration for Market Regulation on the Public Health Protection in Shopping Malls, Supermarkets, Restaurants, and Other Business Establishments, as well as the Food Safety Supervision Requirements, have also been referred to.

We hope that this guide can serve as a reference document for the response and plans for companies in the future to cope with public health emergencies similar to the COVID-19 outbreak. This manual can also be used as a reference for improving day-to-day risk management in all businesses.

The development of this guide was initiated and organized by the Food Safety Committee of the China Chain Store & Franchise Association (CCFA). In this respect, we sincerely thank you for your social responsibility and dedication!

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GUIDE FOR FOOD RETAILERS: CONTROL AND PREVENTION FOR PUBLIC HEALTH EMERGENCIES

1 Basic information on the emerging Coronaviruses

1.1 Naming

On January 12th, 2020, the World Health Organization (WHO) temporarily named the new coronavirus 2019-nCoV. On February 11th, 2020, the International Virus Classification Commission announced that the novel coronavirus was named SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2). On the same day, WHO officially named the respiratory disease caused by the virus as COVID-19 (coronavirus disease 2019).



1.2 Symptoms

Reported COVID-19 disease symptoms have ranged from very mild (including some with no reported symptoms) to severe, including illness resulting in death. Symptoms include fever ($> 100.4^{\circ} \text{F}$) and dry cough. Some cases may have diarrhea and vomiting. Severe cases may have difficulty breathing or shortness of breath, persistent pain or pressure in the chest, new confusion or inability to arouse, and bluish lips or face (CDC, 2020). Note that the symptoms of COVID-19 are different from those of common colds or flu. For details, please consult your medical provider.

1.3 Transmission

From information currently available, the novel coronavirus may be initially spread from Chinese chrysanthemum head bat-a wild animal, to humans at the South China Seafood Market in Wuhan, Hubei Province. Specific intermediate hosts are still under research. Preliminary studies have shown that pangolin may carry the virus. Livestock and poultry, however, have not been found to carry the virus. The virus can be transmitted from person to person through droplets (cough, sneeze, loud conversation), direct contact (handshake, hug), or indirect contact through frequently contacted surfaces (handle, armrest, table, etc.). There is also a possibility of fecal-oral, aerosol, and mother-to-child transmission, but these transmission routes have not been confirmed. The possibility of transmission through food is extremely small. The COVID-19 outbreak is not a food safety issue. It falls

under the scope of public health. However, if the food in retail establishments is contacted by the virus carriers, it may serve as a vehicle for potential virus transmission.

1.4 Incubation period

The incubation period of COVID-19 in humans ranges from 2 to 14 days, with an average of 7 days. Rarely, cases have also been reported several weeks after exposure.

1.5 Survival of the virus

The virus can survive on smooth surfaces for several hours, and can survive for one or even five days under the suitable temperature and humidity conditions.

Coronaviruses are less resistant to the environmental conditions. According to studies on SARS-CoV-1 and MERS-CoV, coronaviruses are sensitive to heat and can be inactivated when exposed at 56 ° C for 30 minutes. They can also be inactivated when treated with 75% ethanol, chlorine-based disinfectants, or peroxyacetic acid.

2 Control and Prevention Strategy

2.1 Prevent person-to-person transmission

- Wear a face mask
- Cover coughing and sneezing with a tissue or into your elbow
- Wash your hands frequently
- Keep social distance

2.2 Prevent environmental transmission

- Increase the frequency of ambient air renewal
- Clean and disinfect of frequently contact surfaces

3 Employee management

3.1 Each enterprise must establish a control and prevention working group, develop an emergency plan, gather information thoroughly, and establish a reporting system.

a) Each enterprise's control and prevention working group must include personnel at all levels of the enterprise; develop the control and prevention strategy; hold meetings regularly, report new information from internal and external sources, and provide the latest updates on control and prevention situation.

b) The emergency plan includes establishing a daily reporting mechanism, a list of emergency contacts, a list of the local health care providers (publicly displayed), and a summary of cases among employees.

c) Establish an effective communication plan including informing employees at all levels through internal communication channels, following the reporting system established by the working group to obtain health status of staff at all levels. In case of infection of internal employees, actions need to be taken including reporting to the Department of Health, quarantine infected employee, and direct others.

3.2 The enterprise must collect and document the information of employees when they are on leave including where they have been and whether they have the corresponding symptoms as COVID-19. Employees who have lived, traveled to the epidemic areas or have close contact with confirmed cases should not return to work.

3.3 Enterprises that arrange work from home should maintain timely communication with employees. Employees are required to self-quarantine at home and observe for 14 days. The enterprise should collect and document the health status and travel history of employees even when they are not physically report to work. All employees should take the outbreak seriously and report honestly. They should not travel and/or go to work if they are experiencing suspect symptoms such as fever, cough, and shortness of breath. They should quarantine at home voluntarily. Once there is an elevation in body temperature, report to the Department of Health and seek medical attention immediately.

3.4 Management of employees who work on-site

Employees enter from a designated entrance upon arrival, and a designated person is responsible for measuring body temperature of each employee, disinfecting their hands and record keeping. Once symptoms of fever (> 100.4 °F), cough, and shortness of breath are noticed, immediately report to the supervisor and advise the employee to seek medical attention immediately.

3.5 Actively acquire and share knowledge on disease control and prevention. Take precaution of personal care including wearing a mask, washing hands frequently, disinfecting surfaces, etc.

3.6 All employees must wear masks correctly. Once employees enter the store, they should discard or put away the masks they were wearing prior of entering and then replace with a new mask immediately. Disposable medical masks should be worn in key areas and areas with frequent person-to-person contact. Employees who do not handle foods can wear ordinary protective masks. If sneeze without a mask on, be sure to sneeze into the elbow. Ideally, masks should be replaced every 4 hours. The replaced masks should be discarded in a closed garbage container. If used appropriately, the mask can be used for one day.

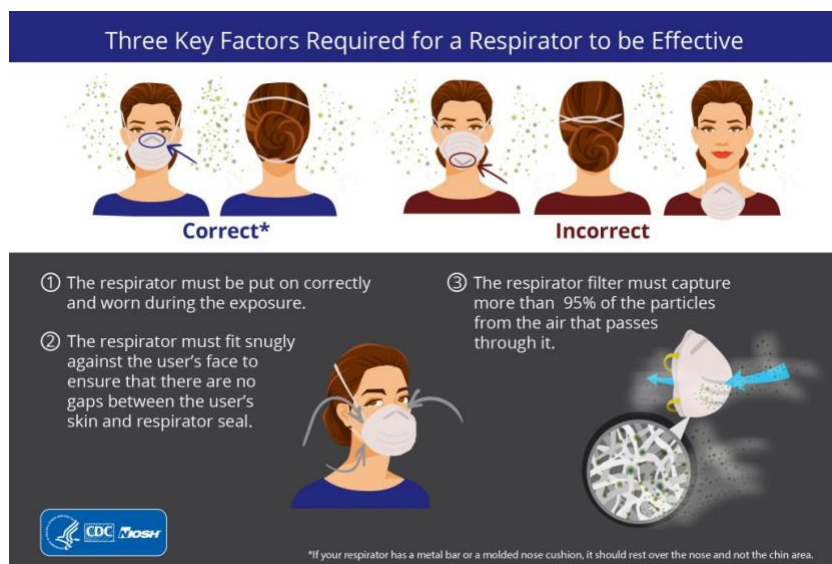


Figure 1: Adapted from US CDC.

3.7 The personnel who is responsible for employee entrances and store entrances should take control measures for personal protection. They should be familiar with symptoms of the disease, able to recognize abnormal situations, and capable of dealing with emergency incidents.

3.8 For the temperature check of employees, a medical-grade no-touch thermometer must be used. The thermometer shall be calibrated and disinfected frequently.



Figure 2: No-touch thermometer. Source: NPR.org.

3.9 For employee dormitories, if available, it is also necessary to strengthen management during the outbreak. Personal protective supplies must be provided. Keep record of personnel who go in and out of the dorms. Dormitories need to be cleaned and disinfected regularly. If a central ventilation system exist, filters must also be cleaned and disinfected or replaced regularly.

3.10 New or temporary employees engaged in food-related tasks must have a health certificate before start. If an employee's health certificate expires during the outbreak, if the local government agency allows extension, the employee can continue to work at his/her position. If there are no specific instructions from the local government agency about the certificate extension, the employee should not work on tasks that require to contact with food. See reference 8

4 Facility management

4.1 Public areas

4.1.1 Public areas such as corridors, floors, elevators (including buttons), escalators, as well as tables and chairs in the rest area should be cleaned and disinfected regularly. The facility should be kept clean and tidy. Cleaning and disinfecting should be carried out at least 3 times a day-in the morning before store opens, at noon, and at night after store closes (see section 5 of this guide). Cleaning and disinfection record must be kept.

4.1.2 Post signage at prominent locations such as supermarket entrances, elevator interiors, and restrooms, prompting customers to wear masks.

4.1.3 Natural ventilation is preferred for supermarkets and malls. Windows should be open at least twice a day for more than 30 minutes each time. If windows cannot be open or the ventilation is poor, facilities can use mechanical ventilation methods such as electric fans and exhaust fans.

4.1.4 When using a central air conditioning and ventilation system, maximize the fresh air intake to ensure that there is sufficient fresh air in the room. The fresh air intake vent and its surroundings must

be cleaned to prevent the contamination. After the store closing, keep the air circulation system continue to run for another hour to reach a full ventilation. For the specific requirements of air conditioning and ventilation, please refer to the notice of the Health and Medical Commission of Ref. 10.

4.1.5 U-shaped pipes in sewer, water seals of air treatment system, floor drains in restrooms, processing rooms, and condensate drain pipes of air conditioning units should be inspected regularly to replenish water when there is a shortage, to avoid mixing air from different floors.

4.1.7 Waste management of masks and gloves used by customers or employees should be centralized.

4.1.8 If customer flow is concentrated and the population inside the store is too dense, measures such as flow restriction and channeling may be adopted.

4.2 Restroom

4.2.1 Posters on appropriate handwashing should be displayed at hand washing stations.

4.2.2 Facilities should be equipped with no-touch hand-washing faucets if condition permits.

4.2.3 Dry your hands with a one-time use paper towel, or use a hand dryer in good working condition.

4.2.4 Restrooms should be equipped with alcohol disinfectant or hand sanitizer gel. Customers should be reminded to disinfect their hands after washing them. No-touch hand disinfection station can be installed if condition allows.

4.2.5 The restrooms must be managed by a specific cleaning staff. Overall cleaning and disinfection of countertops, floor and toilets must be performed regularly and recorded.



Figure 3: Adapted from US CDC

4.3 Store

4.3.1 Precautions for customers during store business hours

4.3.1.1 Store managers should control the number of people in the store at a given time. During peak hours, control the customer flow by limit or complete restrict entry.

4.3.1.2 In the fresh foods area, post signage to remind customers not to directly contact foods with their bare hands. Encourage customers to put plastic bags over their hands when taking foods from shelves to

avoid cross-contamination. Stores are encouraged to pre-pack the fresh produce, if condition permits. Signage is also needed in the prepared food area to remind customers avoid touching foods with bare hands and get help from employees.

4.3.1.3 Encourage customers to check out through self-checkout to reduce the waiting time. Customers should maintain a distance of more than 6 ft. in line to reduce the risk of person-to-person transmission.

4.3.2 Requirement for employee during store business hours

4.3.2.1 All employees in the store must take personal protective measures and must maintain a certain distance for service when encountering customer inquiries.

4.3.2.2 Employees are not allowed to chat in groups while on duty.

4.3.2.3 Employees must wash and disinfect their hands promptly after loading or touching goods and equipment.

4.3.2.4 The tools and equipment used by employees on a daily basis must be cleaned and disinfected regularly.

4.3.2.5 Employees may wear disposable gloves (rubber latex, nitrile or vinyl). Cashiers must wear gloves. Gloves must be replaced regularly and cashiers are required to disinfect hands before putting on new gloves.

4.3.3 Food Safety in Stores

4.3.3.1 Obtain letter of guarantee or certificate from suppliers

Stores must require letters of guarantee issued by the supplier. The letter should state that they are following either local, state, or federal regulations for food safety. If the supplier complaint with market required certificates such as SQF or ISO, the information should be included in the letters too. Game meat without USDA inspection is not allowed to sell at stores.

4.3.3.2 Personal hygiene

All personnel must wear masks and wash their hands properly.

4.3.3.3 Cleaning and disinfection

The workplace and tools must be cleaned and disinfected according to the Sanitation Standard Operating Procedure (SSOP). Cleaning and disinfection must be documented.

4.3.3.4 Prepared food

Ready-to-eat prepared food (hot line, hot bar, etc.) must be covered to ensure that the food is not directly touched by customers. A signage must be posted to prohibit customers from touching the food. All employees who are in contact with these types of food must wear hats, masks and disposable gloves. The store can pre-pack and weigh the food to provide grab-and-go service for customers.

4.3.3.5 Stop food sampling

During the outbreak period, all customer food sampling must be stopped.

4.3.3.6 Prohibition of selling wildlife

No wildlife or game meat is allowed to sell in the stores.

4.3.3.7 Food processing at retail stores

Use the designated area for food processing. Do not cut prepared foods or slice fruits in the store. Separate raw and cooked foods. When cooking, make sure the food to reach the minimal temperature for safety. Employees should replace masks when entering the processing room from the outside, and the dirty masks should be discarded in designated areas or closed containers.

4.3.3.8 Product quality

Check the quality of the products regularly. Remove the expired products off the shelves. Do not use or sell products that are spoiled, moldy, or infested. You must not sell food that is marked with a false production date (return to contract), without the expiration date, or pass the expiration date. Products that can be returned or exchanged need to be stored in the designated area (labeled and followed up in a timely manner).

4.3.4 Stabilizing prices

Stores should strictly prohibit arbitrary price increases. They should contribute to stabilizing prices and ensuring supply.

4.4 Office area

4.4.1 Management of office personnel

Refer to the above employee management and establish a health reporting system.

4.4.2 A temperature check-up station should be set up at the entrance of the office area. Employees' temperature should be checked and documented before entering.

4.4.3 The office should increase ventilation and maintain indoor air circulation. Natural ventilation is preferred. Doors and windows should be opened for ventilation as much as possible. Mechanical exhaust can also be used. If an air conditioning is used, sufficient fresh air input should be ensured. All exhaust air is discharged directly to the outdoors. When the air-conditioning system is under the recirculation mode, the new air mode should be used.

4.4.4 Ensure the hand washing facilities in the office area are function properly. Hand disinfectants should be in place at the exit of hand washing facilities. No-touch hand disinfection equipment can be installed if the condition permits.

4.4.5 Public areas (floor, corridors, restrooms, elevators, door handrails, printers, etc.) must be regularly cleaned and disinfected (disinfection methods and requirements refer to Part 5). Garbage needs to be removed in a timely manner.

4.4.6 When there are multiple employees sharing the office space, they should wear masks and maintain a moderate distance (it is recommended to keep a distance of more than 6 ft.).

4.4.7 Promote a healthy working style, exercise regularly and avoid sitting for a long time.

4.4.8 Cancel, postpone, or reduce meetings. Use remote virtual or phone conference options.

4.5 Employee dining area

4.5.1 Employees are encouraged to bring their own meals or eat pre-packaged foods.

4.5.2 Dining scheduling

Employees should be grouped by the different dining periods to allow 6 ft. distance between each person. Meals should be prepared and served according to the number of employees per group.

4.5.3 Employees must wash and disinfect their hands before and after meals. Handwashing station must be stocked with one-time use paper towels or hand dryers. Signage on proper handwashing steps must be posted in the handwashing area.

4.5.4 Masks taken off during meals should be placed with care. Old masks should be discarded in the designated area. If condition permits, spray alcohol on the masks for disinfection before discard. The mask discarding area should be away from the dining area. Put the mask back on immediately after meals.

4.5.5 When dining, all employee should sit in opposite seats at the table allowing 6 ft. distance in between. It is recommended to have one person per table to avoid personal contact. Dividers can be set up at the dining tables. Employees are encouraged to shorten the dining time or eat by their desk.



Figure 4: Schematic diagram of staff dining

4.5.6 Avoid gathering and talking loudly without mask during dining time.

4.5.7 After eating, the tabletop should be cleaned and disinfected immediately.

4.6 Takeout meals

4.6.1 The health certificate of a food delivery personnel (such as Uber eats, Waiter or others) must be checked. Their temperature must be taken every time when entering the store. They must follow the required walking route, wear a mask, and carry disinfection gels to carry out hand disinfection regularly. The delivery containers should be disinfected with 75% alcohol, and the frequency should be higher than the usual cleaning and disinfection requirements for in-store equipment.

4.6.2 Implement "non-contact delivery" strategy. Delivery personnel are required to place well packaged food items at designated locations, such as doorways, corridors, front desk of a company or the gatekeeper of a gated community. After items are properly placed and confirmed, the customer can

then go pick up the delivery items, in doing so to avoid person-to-person contact. Customer can specify delivery locations over phone or online orders.



Figure 5: Schematic diagram of non-contact delivery

5 Cleaning and disinfection

5.1 Types of disinfectants

5.1.1 70% -80% alcohol-based disinfectant.

5.1.2 chlorine-based disinfection products:

A. Sodium hypochlorite is the main active compound of the liquid form of the disinfectant. Available chlorine content should be between 4% -7%.

B. Powder or solid disinfectant with sodium dichloroisocyanurate as active compound.

5.1.3 Peroxide disinfectant: hydrogen peroxide.

5.1.4 Quaternary ammonium (QUATs) disinfectants: The fifth generation and above quaternary ammonium disinfectants are recommended.

5.2 Disinfection tools and personal protection equipment (PPE)

Test strips to measure disinfectant strength, spray bottles or tanks, wipes, disinfection bucket, mop, mop cart, mask, goggles, rubber protective gloves, rubber protective apron.

5.3 Disinfection solution preparation

5.3.1 Method 1. Directly use the dispenser

5.3.2 Method Two: prepare manually

a) The responsible personnel must read the manufacturer instructions carefully.

b) Wear proper PPE (masks, goggles, rubber protective gloves and rubber protective apron).

- c) Prepare preparation tools: measuring cup, disinfection bucket, test strips.
- d) Prepare the disinfectant at the concentration as required. Use a measuring cup to weigh the appropriate disinfectant stock solution and place it in the disinfection bucket.
- e) Mix tap water that has been pre-weighed with the disinfectant in the disinfection bucket.
- f) Stir well and use a test strip to verify the concentration of the disinfectant solution.

5.4 Disinfection procedure

Places	Frequency	Disinfectant types	Disinfection method
Employee hands	Every hour or every time after handwashing when switching tasks	70%-80%的 alcohol based disinfectant (example: hand sanitizer gel)	Spray, scrub, air dry after 20 seconds
Store customer service area: cashier, self-checkout, customer service desk, lockers	Every 4 hours or as frequently as need, after closing each day	Chlorine based disinfectant (250-500mg/L) or QUATs (concentration based on the manufactory instruction)	Spray, wipe, make sure the disinfectant stay on for 30 minutes before air dry
Store customer hand touching surfaces: shopping carts, baskets, escalator handrail, elevator buttons, door handles of walk-in coolers	Every 4 hours or as frequently as need, after closing each day	Chlorine based disinfectant (250-500mg/L) or QUATs (concentration based on the manufactory instruction)	Spray, wipe, make sure the disinfectant stay on for 30 minutes before air dry
Store customer area: shelves	Every 4 hours or as frequently as need, after closing each day	Chlorine based disinfectant (250-500mg/L) or QUATs (concentration based on the manufactory instruction)	Spray, wipe, make sure the disinfectant stay on for 30 minutes before air dry
Store customer dining area: tables and chairs	Before and after dining hours, and after each customer use	Chlorine based disinfectant (250-500mg/L)	Spray, wipe, make sure the disinfectant stay on for 30 minutes before air dry
Store customer dining area: dishes	After each customer use	Chlorine based disinfectant (250 mg/L)	Soak clean dishes in chlorine with 250mg/L for 5 min, then rinse with clean water; place dishes in UV cabinet (120 C) for 20 min; If automated dish washer used, please follow instruction from manufacturers.
Store customer area: floor	Every 4 hours or as frequently as need, after closing each day	Chlorine based disinfectant (250 mg/L)	Spray or mopping
Store customer area: restroom	Every 4 hours or as frequently as need, after closing each day	Chlorine based disinfectant (500 mg/L)	Spray toilet, mopping floor, spray door knobs and sink area then wipe it.
Store food preparing area: tools,	After each shift	Chlorine based disinfectant (250 mg/L) or QUATs	Soak for 5 min, then air dry

equipment, and containers		(concentration based on the manufactory instruction)	
Store food preparing area: food contact surfaces	After each shift	Chlorine based disinfectant (250-500mg/L) or QUATs (concentration based on the manufactory instruction)	Spray, wipe and keep for 30 min before air dry
Store food preparing area: floor, drain, cold room floor, receiving area floor	After each shift	Chlorine based disinfectant (250-500mg/L) or QUATs (concentration based on the manufactory instruction)	Spray and allow air dry
Store food preparing area: wall	Each day after closing	Chlorine based disinfectant (250-500mg/L) or QUATs (concentration based on the manufactory instruction)	Spray and allow air dry
Receiving and loading carts	Each day after closing	Chlorine based disinfectant (250-500mg/L) or QUATs (concentration based on the manufactory instruction)	Spray and allow air dry
Store employee changing area, floor	At least once a day	Chlorine based disinfectant (250-500mg/L)	Spray closet, wipe and air dry; mopping floor
Office area: office, employee dining, floor	At least once a day	Chlorine based disinfectant (250-500mg/L)	Spray table surface, chair, dining table and wipe it; mopping floor and air dry; mopping floor and air dry.
Store takeout preparation area	Every 4 hours	Chlorine based disinfectant (250-500mg/L) or QUATs (concentration based on the manufactory instruction)	Spray, mopping and air dry.
Store trash can	Every time after empty the trash can	Chlorine based disinfectant (500mg/L) or QUATs (concentration based on the manufactory instruction)	Spray and air dry

5.5 Disinfection announcement

Announce daily disinfection to consumers: The store has completed X disinfection, please do not hesitant to shop with us

* If possible, show the specific disinfection location and pictures to enhance customer trust and confidence.

5.6 Matters need attention

5.6.1 Seal or completely cover foods and edible portion of agricultural products before disinfection.

5.6.2 PPE should be worn when preparing and applying disinfection.

5.6.3 The disinfection tools (spray bottle or tank, disinfection bucket, rag and mop) must be dedicated of their use. The spray can and disinfection bucket must be clearly labeled.

5.6.4 The chlorine-based disinfectant should not be mixed with other chemicals (especially with acid chemicals).

5.6.5 When the chemical accidentally contacts with the human body during use, actions must be taken immediately referred to the product safety data sheet.

5.6.6 Chemicals are toxic and hazardous substances and should be stored in locked designated areas in designated areas. Specific personnel are responsible to keep records.

5.6.7 Keep daily disinfection records of stores.

6 Emergency response

Set up emergency zones. An emergency zone can be set up in the business premises. When a person appears with suspected symptoms, he/she should be sent the emergency zone for temporary isolation, and then handled in accordance with relevant regulations.

6.1 Employee temperature over 100.4 °F.

6.1.1 The employee must immediately stop working. Provided he/she with a medical mask and seek medical assistant.

6.1.2 Cooperate with staff of the Centers for Disease Control and Prevention (CDC) to carry out epidemiological investigations.

6.1.3 Disinfect the facility under the guidance of the staff of the CDC.

6.1.4 Personnel who came in close contact with the sick employee should undergo a 14-day centralized quarantine medical investigation.

6.1.5 If an employee is confirmed with COVID-19, the store should notice all customers to self-observe at home through public posters or public social media account.

6.1.6 Immediately close the central air conditioning and ventilation system corresponding to the area where the sick employee is located. Clean and disinfect the AC and ventilation system.

6.2 Customer who feel ill

6.2.1 Customers should be advised to go seek the nearest medical assistant when they find an abnormality during door temperature checkup.

6.2.2 If the stores were notified by government agencies or health care providers that a confirmed person had visited the store in a certain period of time, they should take the initiative to isolate the contacted employees at home, at the same time, give notice in the store, and promptly disinfect the

store. If condition permits, stores should also use their public communication channels to find customers who have visited the stores during the same time period.

6.3 Vomit, feces, secretions appear

If contaminants such as vomitus, feces, secretions is found in the store, you can use disposable absorbent materials (such as gauze, wipes, etc.) to absorb 5000mg / L ~ 10000mg / L chlorine-based disinfectant (example of preparation method: Chlorine disinfectant, with an effective chlorine content of 5%. When formulated into a 10,000mg / L chlorine disinfectant, take 1 part of the disinfectant and add 4 parts of water.) Remove carefully. The surface that may be contaminated should also be wiped and disinfected with 1000mg / L chlorine disinfectant for 30 minutes. Wear gloves and disposable medical masks when handling contaminants (wear protective garment and goggles if possible). Wash hands and disinfect immediately after handling.

6.4 Malicious behavior

6.4.1 If a customer wants to enter the store without wearing a mask, he/she should be advised to leave. If the customer ignores the advice and still breaks in, take the enforcement action while maintain good personal protection of store employees.

6.4.2 Any customer intentionally sneezes at food or touches a large area of foods with his / her bare hands should be reported to the supervisor immediately and asked to stop by the security. Potentially contaminated food needs to be handled. Serious behavior can be reported to the police.

7 Risk analysis of virus transmission in different areas of stores

Store managers, supervisors, and cleaning personnel should have basic judgments and analysis of the risk of novel coronavirus transmission in various areas of the store, in order to achieve scientific and accurate prevention. Here we make a preliminary list of risk points in key areas for reference. The layout of each store is different and the risk analysis can be adjusted according to the situation.

Objective	High Risk Area	Low Risk Area	Transmission Route
Prevent virus from entering store	Entrance, parking lot, leasing area, receiving area, customer service area takeout preparation area	Restroom,	Hands or shoes of people, handles, tools, carts, or wheels
Prevent virus from transferring within the store	Area of prepared foods, fresh cut fruits and vegetable, meat and poultry, seafood, freezer/refrigerator foods, alcohol beverage, cashier, self-checkout, employee dining area, office area	Areas for school supply, clothes, furniture	Hands or shoes, forklift wheels, shopping carts (handles and wheels), wheeled baskets, handles of refrigerators and freezers, scoop handles.

The level of risk in each area of the store also changes with the season and the trend of customer preference. The store manager knows these trends the best. The flat area map of the store can be used to help identify different risk areas. The analysis of sales big data will be more accurate, and the control and prevention of virus occurrence and expansion in business sites must also be based on scientific risk assessment. Stay positive and confident during the busy daily tasks.

8 Frequently asked questions

8.1 Why do we need to strengthen personnel management and disinfection measures at commercial supermarkets?

A: The business operation site is densely staffed, the person-to-person links are very complicated, and various virus transmission routes may exist. According to the characteristics of the novel coronavirus transmission mode (direct or indirect person-to-person transmission), all personnel must be strictly managed. Areas and surfaces of the facilities must be intensively cleaned and disinfected to block the virus transmission.

8.2 How do supermarket employees choose masks to stop the transmission of new coronaviruses?

A: In the supermarket, you can choose different types of masks according to the work area. For employees who are in close contact with other employees and/or customers, use masks with higher filter ability. Surgical masks are recommended. N95 masks are not required in store settings. Only when in close contact with a patient or suspected patient, a N95 mask is required.

8.3 Is the higher the disinfectant concentration the better?

Answer: Disinfectant with higher concentration does not mean it is more effective. For example, alcohol is preferably at a concentration of 75%. Appropriate water content can help alcohol to better penetrate the surface of the virus. Higher concentration of alcohol is not easy to penetrate. If you buy 90% alcohol, it should be diluted to 75% before use. Purchased disinfection products must also be properly diluted in accordance following the manufacture instructions before use. At the same time, some high concentration disinfectants are highly irritating, and can be harmful to the employees and customers.

8.4 How to safely disinfect the store with alcohol?

A: The flash point of 75% alcohol disinfectant is about 71 ° F. The danger of fire belongs to Class A. Therefore, when using 75% alcohol, it is forbidden to spray and disinfect the air in the room. It should be used at close range aiming surfaces. The room should stay ventilated. Avoid contact with open flames. Stores can also disinfect use alcohol wipes. When disinfecting human hands and surfaces, spray as closely as possible. Special attention is needed for the safe storage of alcohol.

8.5 When shopping in a supermarket, what should customers pay attention to?

A: When customers enter the supermarket, be careful not to touch the elevator buttons and escalator handrails directly with your hands. They should wear masks, cooperate with temperature checking, keep a certain distance when shopping, avoid touching various surfaces with hands. When choose prepared

ready-to-eat foods, especially fruits and vegetables, shopping bags or plastic gloves should be used to prevent bare hand contact. Animal and poultry meat and seafood should be picked up with tongs. If come into contact with meat or poultry products, customers should wash hands as soon as possible to prevent cross-contamination. When using the restrooms, please follow the proper hand washing procedures.

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