Infectious disease outbreak management
A programme manual for the oil and gas industry

THE GLOBAL OIL AND GAS INDUSTRY ASSOCIATION FOR ENVIRONMENTAL AND SOCIAL ISSUES

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Infectious disease outbreak management

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Infectious disease outbreak management

SECTION 2: BEFORE, DURING AND AFTER AN OUTBREAK

This section contains detailed practical guidance on the prevention and management of infectious diseases. It is divided into three subsections covering the periods before, during and after an infectious disease outbreak.

The first subsection, which describes what to do before an outbreak occurs, emphasizes the need for prevention and for being prepared. It provides basic guidance on controls for preventing disease outbreaks (e.g. immunization, awareness training, health screening, identification of potential problems, and personal and food hygiene) and recommends surveillance practices for the quick identification of potential outbreaks. It concludes with a discussion on preparedness, including awareness and response training, and the need to ensure that appropriate supplies are in stock and that relevant contractors have been identified and contracted in advance.

The second subsection covers the period during an outbreak, and includes guidance on infection management in cases where an infectious disease outbreak is either suspected or occurring. It provides guidance on notification (who to tell), response and disease investigation. Advice is also offered on methods to prevent and control infectious disease transmission in the workforce when an outbreak is suspected and

OVERVIEW OF THIS DOCUMENT

The oil and gas industry operates in many locations where people live and work together in close quarters, such as offshore installations, ships and remote camps. In these locations, infectious diseases can spread quickly, affect many people and disrupt facility operations.

This document is aimed at local management and operations personnel working in these locations. It offers guidance for the prevention, identification and control of infectious disease outbreaks. It also provides advice on reviewing lessons learned to enable continuous improvement in the management of infectious diseases.

The appendices contain management tools, training resources and awareness raising tools that can support those dealing with infectious disease outbreaks.

SECTION 1: INTRODUCTION

This section describes the scope and purpose of the guidance, as summarized above. It also outlines the need to comply with local laws and regulations, and describes how the characteristics of different facilities should be taken into account when determining the scale of infectious disease outbreak management (IDOM) implementation to ensure that the extent and scope of the management approach is appropriate for a particular facility or group of facilities.
Executive summary

occurring (e.g. isolation, both in situ and during transportation (medevac) of infected personnel).

A review of enhanced food handling, cleanliness and disinfection procedures, and the disposal of bio-hazardous waste is also included.

The third subsection provides guidance on actions to take in the post-infection period, including capturing and sharing lessons learned with management and medical and occupational health personnel, and restocking supplies.

APPENDICES

Appendix 1 provides an implementation checklist for IDOM.

Appendix 2 contains a series of IDOM training resources aimed at different sectors of the business including catering providers, transport providers, decontamination providers, unit leadership, and the Person in Charge and medical personnel on site.

Appendix 3 highlights the importance of appropriate use of face masks and respirators to control infection.

Appendix 4 provides a list of recommended items to keep on hand to ensure an adequate level of preparedness for a potential outbreak.

Appendix 5 provides a fact sheet on food safety.

Appendices 6, 7, 8 and 9 provide a series of posters designed to raise workforce awareness of the importance of: reducing the spread of germs; recognizing potential sickness; washing hands; and the use of hand sanitizer, respectively.

Appendix 10 provides a glossary of key terms used in the document.
Section 1

Introduction

This manual provides guidance for local management and operations personnel on the prevention and control of infectious disease outbreaks in locations such as offshore installations, ships and remote camps. It addresses disease prevention, facility preparations for an outbreak, and control measures to take when an outbreak occurs. It also covers investigation of the outbreak, transportation of affected personnel and sharing of lessons learned.
Introduction

USING THIS DOCUMENT

Scope and users

This document provides guidance for local management and operations personnel on how to identify and interrupt infectious disease outbreaks in locations where personnel live and work together in close quarters, such as on offshore installations, onboard ships, and at remote camps. Under such conditions, infections can spread quickly, infect a large number of people and disrupt facility operations.

This document also identifies external organizations that can support management and operations personnel in the event of an infectious disease outbreak.

Purpose

The purpose of this guide is to:

- provide basic guidance on controls needed to prevent disease outbreaks;
- recommend surveillance practices to quickly identify potential outbreaks;
- recommend steps to take to limit or interrupt infectious disease transmission among the workforce when an outbreak occurs or is suspected to have occurred; and
- provide guidance on sharing lessons learned with management and Medical and Occupational Health (MOH) personnel.

LAWS AND REGULATIONS

All personnel should be aware of the need to comply with local laws and regulations regarding the reporting of an infectious disease outbreak, as well as the reporting of specific illnesses, such as tuberculosis.

SCALABILITY OF IMPLEMENTATION

Infectious disease outbreak management (IDOM) should be scaled to be fit for purpose at the facility level (Table 1).

For example, a major central processing platform that is manned for 24 hours a day for 7 days each week, and has full board and lodging, on-site medical support and significant production throughput, is expected to implement IDOM to the full extent. A low-throughput well head platform that is not normally manned and has only basic facilities for food preparation might apply IDOM by evacuating affected personnel and sending in a clean-up team to disinfect the food preparation facilities.

The primary considerations when determining the scale of IDOM implementation for a facility (or a group of facilities) are the number of personnel onboard (POB), accommodation and catering arrangements, personnel transfer logistics, on-site and off-site medical support, and the production throughput of the facility.

A risk assessment may be conducted to help determine the most appropriate scope and extent of IDOM implementation for a facility or group of facilities.

This document should be reviewed as soon as a remote camp is established for a new operation.

Table 1  Scalability matrix

<table>
<thead>
<tr>
<th>SCALE</th>
<th>LOCATION</th>
<th>OUTBREAK MANAGEMENT SUPPLIES</th>
<th>ISOLATION ROOM</th>
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</thead>
<tbody>
<tr>
<td>Full</td>
<td>Site with galley/kitchen with sleeping quarters</td>
<td>Face masks, hand sanitizers, disinfectants and laboratory services/rapid diagnostic test (RDT) facilities per number of people on-site.</td>
<td>Yes</td>
</tr>
<tr>
<td>Scaled</td>
<td>Site with less than 10 people or a larger location without galley or quarters</td>
<td>Determine as appropriate.</td>
<td>No</td>
</tr>
</tbody>
</table>
Before, during and after an outbreak

This section contains detailed practical guidance on the prevention and management of infectious diseases. It is divided into three subsections covering the periods before, during and after an infectious disease outbreak.
Before, during and after an outbreak

This programme manual provides a detailed description of prevention, preparation, control and follow-up for an infectious disease outbreak.

BEFORE AN OUTBREAK

**Preventive measures**

**Immunizations**

For many infectious diseases, the best means of preventing an outbreak is immunization. It is recommended that personnel be inoculated against immunizable diseases such as seasonal influenza and the H1N1 virus, hepatitis A and B, chickenpox, typhoid and meningitis, depending on location-specific guidance as identified in the company’s Health Risk Assessment.

**Awareness training**

IDOM awareness training should be provided to all POB, and should cover issues such as reporting illness, control of coughs and sneezes, and hand washing. This could take the form of a safety meeting presentation. See the relevant information on hand washing and cough and sneeze droplet prevention on page 9.

**Arrival health screenings**

In-country arrival health screenings should include the following questions to help screen for illness and confirm that new arrivals have not recently developed symptoms. The ‘Are You Sick?’ poster in Appendix 7 can facilitate posting these questions throughout the clinic or worksite location:

- Do you feel like you are getting sick?
- Have you had fever (38°C or 100°F) in the past 24 hours?
- Have you started having any of the following symptoms in the past 24 hours:
  - cough
  - sneezing
  - aches, pains
  - diarrhoea
  - sore throat
  - chest discomfort
  - extreme fatigue
  - vomiting

If a worker answers ‘yes’ to any of these questions, clearance should be obtained from MOH before he/she is allowed to proceed to a remote location.
Hand washing
Frequent hand washing is important in reducing disease transmission. If clean, running water is not accessible, as is common in many parts of the world, use soap and available water. If soap and water are unavailable, use an alcohol-based hand sanitizer that contains at least 60% alcohol to clean hands. Hand washing is recommended on an ongoing basis. During an outbreak situation, hand washing or the use of sanitizer (or both) should be required and verified after workers enter the cafeteria but before workers take their food. The following posters on hand washing and sanitizing should be accessible to all POB (see Appendix 8 and Appendix 9, respectively):

- Cover mouth and nose with a tissue when coughing or sneezing. Put the used tissue in a wastebasket.
- When no tissue is available, cough or sneeze into the upper sleeve, not into the hands.
- Clean hands after coughing or sneezing, preferably by hand-washing. If soap and water are not available, use a hand sanitizing gel.
- If feeling unwell, seek medical attention immediately. Do not wait to see if you get better—this has the potential for spreading an infectious disease to others.
- Review the cough etiquette poster in Appendix 6.
- Use the hand washing poster in Appendix 8 to spread awareness.

Food and potable water safety
The probability of an outbreak caused by unsafe food or unsafe potable water can be minimized by following the IDOM training resources provided in Appendix 2.

If a hand washing station is not already present in the kitchen, it is recommended that one be installed.

Food safety awareness resources should be provided for the general worker population (see Appendix 5).

Response preparedness
Effective site preparedness depends on all personnel and management being made aware of their respective roles and responsibilities. Personnel should be knowledgeable of, or have access to, guidance on the recommended practices to apply in an outbreak situation. Tools, supplies and services should be available on-site to ensure that an outbreak can be interrupted quickly and effectively.

Training and awareness
IDOM awareness materials (e.g. pamphlets on coughing, sneezing, hand washing and restroom use) should be made freely available in the facility. This material can also be used in safety meetings to maintain awareness.
Training should be provided to staff and management personnel according to the circumstances, as follows:

- **Initial infectious disease outbreak awareness**—all locations:
  - Unit leadership—management awareness training.
  - All personnel—general awareness training.
  - Person in Charge (PIC) and Medicine and Occupational Health (MOH)—detailed training, repeated on a needs basis (e.g. in the event of a change of personnel).

- **Training during an outbreak**:
  - All personnel—specific tasks to be carried out.
  - Caterers—enhanced food handling requirements.
  - Cleaners—enhanced cleaning requirements.
  - Transport—methods for transporting ill people.

- **Awareness packs aimed at catering, cleaning and logistics personnel, and general awareness guidelines for all personnel, should be developed in advance of an outbreak; these should be translated into the local languages, as appropriate.**

**Preparedness measures**

It is vital that site personnel are adequately prepared to respond to a potential outbreak. Key preparedness measures include the following:

- **PIC to ensure that site medical personnel are aware of the need to promptly notify the PIC if two or more cases with similar symptoms are identified within a short period of time. Such an occurrence may indicate a developing outbreak.**

- **PIC to inform management using established business processes. Refer to the appropriate section of the company’s health risk assessment.**

- **PIC to ensure that an isolation room has been identified and isolation practices have been documented.**

- **Logistics department to ensure that medevac practices cover suspected cases of infectious disease. Refer to the appropriate section of the company’s health risk assessment.**

- **PIC to ensure that the facility has defined enhanced food handling practices to use during an outbreak. Refer to the appropriate section of the company’s health risk assessment.**

- **PIC to ensure that the facility has defined enhanced cleaning and disinfection practices to use during an outbreak. Refer to the appropriate section of the company’s health risk assessment.**

**Pre-positioned supplies**

Site management or leadership personnel should ensure that adequate supplies for managing an infectious disease outbreak are readily available at the facility (see Appendix 4).

It may be beneficial to consider holding these supplies in a central storage facility so that they can be quickly distributed to several sites in the event of an outbreak.

The PIC should ensure that service providers for the following services are contracted prior to an outbreak:

- laboratory services; and
- disinfection and decontamination services.
Section 2
Before, during and after an outbreak

DURING AN OUTBREAK

Notification and response

Notification of a suspected outbreak should include:
- Site MOH or medics (or both) should immediately notify the PIC if two or more cases with similar symptoms are identified within 48 hours.
- The PIC should promptly notify the unit’s team management, in addition to the MOH, that an infectious disease outbreak could be occurring. Refer to the appropriate section of the company’s health risk assessment.
- Local management and MOH personnel should exchange updates at least three times during the first week of a potential infectious disease outbreak.

Enhanced measures

Enhanced preventive measures should be applied in a stringent manner during a suspected or confirmed outbreak.

Management of an outbreak

Management of a suspected outbreak should include the following:
- MOH personnel should advise the unit leadership on:
  - isolation of the ill person (IP);
  - evacuation of the IP; and
  - the need for deployment of enhanced cleaning, disinfection and food handling practices.
- The PIC should decide whether a refresher session is necessary for POB, to address issues such as the urgency of reporting an illness; control of coughs and sneezes; hand washing; enhanced cleaning, disinfection, and food handling; and discouraging hand shaking.
- The unit leadership and MOH personnel should consult at least three times during the first week of a potential outbreak.
- Sample collection of biological and food specimens as indicated, and the use of rapid tests (as appropriate), should be performed immediately.

It should become clear within a few days whether the suspected outbreak has been resolved or whether it has developed into a confirmed outbreak. If the outbreak is confirmed, the unit leadership should engage with MOH personnel to make decisions on:
- isolation of the IP in the facility;
- evacuation of the IP from the facility;
- alerting associated facilities of the outbreak and symptoms;
- communication with POB at the affected facility;
- deployment of enhanced cleaning, disinfection and food handling practices;
- travel restrictions to and from the facility;
- notification to MOH personnel and line management, as appropriate, of a serious illness event (SIE);
- communication with local health authorities; and
- incident investigation.

Appendix 1 provides an implementation checklist for infectious disease outbreak management.

Incident investigation

Investigation of an infectious disease outbreak event typically includes the following considerations:
- It is recognized that outbreak investigations are different to most safety, security, health and environment (SSH&E) investigations in that:
  - it may be difficult to determine a clear and specific cause of the outbreak; and
  - the investigation may involve confidential medical data, including pathology results.
- When chartering the incident investigation, management should direct the investigation team toward the potential root causes, causal factors and corrective actions that are within control of the facility.
- It is recommended that an experienced facilitator be appointed to keep the investigation process on track, as some of the personnel involved are unlikely to have prior experience with incident investigations.
Section 2
Before, during and after an outbreak

- MOH involvement in the investigation is considered essential, and the involvement of the local health authorities is a requirement in some countries.
- Investigation to determine the pathogen and route of disease transmission may be useful, depending on the type of outbreak.
- Investigation is most effective when initiated immediately at the time of the outbreak, and may require use of the specialized resources identified during the outbreak response preparation and planning stages.

Isolation
The purpose of isolation is to disrupt the outbreak of an infectious disease by reducing the probability of pathogens being transmitted between individuals at the site.

Anyone who is suspected of having a communicable infectious disease should be isolated.

MOH personnel should provide advice to the PIC on the appropriate level of isolation. Options include:
- separating the IP from others in an isolation room; or
- allowing the IP to access common areas while wearing a mask.

Isolation generally ends only when the IP is evacuated or when symptoms have disappeared.

Isolation room/isolation practices
Isolation and isolation room practices typically include the following:
- If practical, the selected isolation room should have an exhaust that is directed to the exterior of the facility.
- The configuration of a bedroom with en-suite bathroom is preferred.
- The isolation room should be clearly identified by appropriate signage.
- A supply of hand sanitizer should be made available at the isolation room entrance.
- Facility personnel should be instructed to remain outside the isolation room.
- Entry by persons other than the IP and care staff should be prohibited.
- The door to the isolation room should be kept closed.
- Visitors should be required to disinfect hands before entering and leaving the isolation room.
- Visitors and the IP should be instructed to wear face masks before the visitors enter the isolation room.
- Visitors should be advised to avoid touching surfaces in the isolation room.
- Visitors and the IP should be advised to remain at a distance of at least 6 feet (2 metres) from each other.
- If an en-suite bathroom is not available, the IP should be required to wear a mask and gloves when using a shared bathroom. Other individuals using the same facility should wash hands thoroughly after use.
- If the IP needs to leave the isolation room, his or her movements should be confined to the minimum area necessary and the IP should be instructed to practice frequent hand washing.
- Consumption of food and beverages by the IP should take place in the isolation room.
After isolation ends

- All utensils used by the IP for eating and drinking should be deemed contaminated and treated as biohazard waste.
- All items from the isolation room should be deemed contaminated, and either disinfected or disposed of as biohazard waste.
- The isolation room should be decontaminated following the guidance provided in this document.

Transportation

Detailed arrangements for the transport of a suspected case by medical evacuation (medevac) helicopter may vary between locations, but the general guidance below should be followed.

Planning for medevac

Pilots and health-care personnel that conduct medevac operations involving a patient with an airborne disease should be fitted with N95 respirators (see Appendix 3) and should wear these throughout the evacuation. Infectious diseases that are transmitted via other routes will trigger the use of standard infection control procedures.

Logistics personnel who are closely involved in the medevac operation should review the relevant IDOM training resources included in Appendix 2 of this document.

Implementing the medevac

- Logistics personnel will require as much notice as possible in advance of a medevac operation.
- MOH personnel should specify the appropriate personal protective equipment (PPE) (e.g. face masks/respirators) needed by the crew, passengers, IP and assistants before entering and exiting the aircraft.
- The IP should wash his/her hands before leaving the isolation room, and should wear the specified PPE at all times when transiting between the isolation room and the destination medical facility.
- The time period during which the IP leaves the isolation room and enters the aircraft should be kept to a minimum.
- If the IP has an airborne disease, both he/she and any accompanying travellers should wear face masks/respirators while in transit. The health-care professionals should be directed to use N95 respirators. The IP should be separated from the passengers by at least three rows of seats. Evacuation of the IP with accompanying passengers should be avoided wherever possible.
- If biohazard waste is transported on a helicopter it should be contained in a small bag or box (not plastic). Sharp objects should not be placed in plastic or soft-sided containers.
Decontamination of the carrier

Disinfection of the aircraft should be performed after transportation of an IP who is either suspected of carrying an infectious disease or who has been confirmed as carrying such a disease. A typical disinfectant regime will consist of the following:

- The helicopter should be disinfected using an appropriate disinfectant solution.
- Decontamination should be carried out after transportation and before remobilization.
- Appropriate PPE (N95 respirator, nitrile gloves, goggles, gowns, etc.) should be worn by those carrying out the decontamination procedure.
- The disinfectant solution used for the carrier should be effective against the disease agent. Note that different disinfectants may have different dwell or kill times; these can range from 5–10 minutes.
- Soft and hard surfaces should be disinfected, including doors, safety vests, earmuffs, the IP’s seat and other adjacent seats as required.
- Non-porous surfaces (carrier seats, doors, etc.) should be sprayed with disinfectant solution and allowed to dry for an appropriate dwell time (follow instructions on the product label). After the dwell time has passed, these areas should be wiped down with a wet disposable cloth.
- Porous surfaces should be wiped down with a solution of 1 part bleach in 20 parts water.
- Used PPE should be placed into biohazard plastic bags and disposed of immediately after use.
- After the decontamination has been completed, personnel should wash hands thoroughly with soap and water, along with any other parts of the body that have been exposed during the decontamination procedure.

Food handling

Catering personnel should review the relevant IDOM training resources included in Appendix 2 of this document. Enhanced food handling practices are critical in mitigating transmission risks during an outbreak; they combine personal measures for workers and stringent food handling measures for caterers. Recommended practices for enhanced food handling include the following:

- Cleaning and disinfecting personnel should not be involved in food preparation or kitchen duties during outbreak situations.
- Cleaning personnel should wait for an appropriate period of time before undertaking food preparation; the recommendation is to wait for 72 hours in the case of a suspected Norovirus episode and 24 hours in the case of pandemic flu, after the last case is released from isolation or evacuated, or ceases to present clinical signs.
- Food service personnel should be made aware of the urgent need to report to medical staff if they develop symptoms such as fever, cough, chills, sore throat, diarrhoea, vomiting, etc.
- Hand sanitizer should be made available at each galley entrance for use by catering workers as they enter the area.
- It is vital to ensure that workers use hand sanitizer or other hand washing techniques after entering the cafeteria and before taking food.
- All food handlers should be required to wear food preparation/latex gloves.
- Individually wrapped plastic knives and forks should be used instead of cutlery.
- All food should be served by catering staff; the use of shared serving utensils should be avoided.
- Shared condiments (e.g. salt and pepper shakers, ketchup, mustard and mayonnaise pots, etc.) should be replaced with individually-wrapped single serve products.
- Hand dipping for ice (or any other consumable item) should be avoided.
- The use of communal bins for serving cookies, candies and snacks should be avoided.
- Food that may have been contaminated or handled by non-galley workers, such as fruit that has been kept in a communal place, should be disposed of.
Infectious disease outbreak management

Hands should be dried using disposable paper towels; the use of shared towels should be eliminated.

Pots, pans and utensils should be washed and rinsed as usual, and then sanitized by soaking for at least one minute in warm water containing one teaspoon of regular chlorine bleach per gallon of water. Kitchenware should then be air-dried on a clean and sanitized dish rack.

All surfaces should be disinfected using a solution of household bleach containing 1 measure of bleach to 10 measures of water. Particular attention should be given to high-frequency contact areas such as counters, tables and chairs.

Disinfectant solutions should be changed regularly, and immediately if the colour fades.

Floors should be cleaned and disinfected using disposable cleaning cloths and a disinfectant solution.

Cleaning and disinfecting

Cleaning personnel should review the relevant IDOM training resources included in Appendix 2 of this document.

Enhanced cleaning and disinfecting

Enhanced cleaning and disinfecting should continue for 72 hours after the last IP is released from isolation or has been evacuated. Key practices for enhanced cleaning and disinfecting include the following:

- Personnel involved in cleaning and disinfecting should be kept away from catering areas for 72 hours after the last IP ceases to present clinical signs or is evacuated from the site.
- All workers involved in cleaning and disinfecting should wear protective clothing and gloves.
- Contaminated surfaces that have been exposed to the IP should be cleaned and disinfected immediately. It should be noted that some pathogens can remain viable for several days on surfaces such as floors, walls and furnishings.
- Vacuuming carpets or buffing floors should be avoided as this can recirculate the pathogen.
- Hard surfaces (railings, tables, chairs, counters, desktops, keyboards, telephones, pens, pencils, exercise equipment, etc.) should be washed with soap and water using a disposable cloth, and disinfected using a bleach solution containing one measure of chlorine bleach to nine measures of water.
- Frequently-handled surfaces such as door handles, taps, and toilets should be disinfected at least twice daily using a bleach solution containing one measure of chlorine bleach to nine measures of water.
- Bunks, beds and lockers should be sprayed with disinfectant.
- Non-disposable mop heads should be disinfected after use, and disposable mop heads should be discarded as biohazard waste.

Laundry

Recommended practices for enhanced laundry cleaning and disinfecting include the following:

- Carpets, curtains and other soft furnishings should be steam cleaned where possible.
- Walls should be scrubbed and floors mopped.
- Contaminated sheets, blankets and pillows should immediately be removed from the IP’s bed and also from adjacent beds. All bedding should be transported in plastic biohazard bags. The number of workers engaged in handling bedding should be kept to a minimum.
- Bed linen and pillows should not be shaken or fluffed up as this can release pathogens.
- All collected materials should be laundered at high temperature (160°F or 71°C for a minimum of 25 minutes).
- If the recommended temperature for wash water cannot be achieved, a multipurpose laundry sanitizer (e.g. Virkon® or similar) should be added to the wash.
Visibly soiled sheets and blankets should be laundered twice.

Contaminated pillows should be laundered, unless they have an impermeable plastic cover in which case they should be disinfected using a diluted household bleach solution containing 1 measure of bleach to 10 measures of water.

Heavily soiled sheets, blankets and pillows should be discarded in biohazard bags.

Biohazard waste disposal

Recommended practices for biohazard waste disposal include the following:

- Biohazard waste is a potential source of further infection and should be handled appropriately.
- All potentially contaminated waste generated during a suspected or confirmed infectious disease outbreak should be treated as biohazard waste unless it consists of items that can be cleaned, disinfected or laundered and reused.
- Items that should be regarded as potentially contaminated waste include:
  - heavily soiled bedding;
  - the contents of the isolation room; and
  - materials which have been in contact with the IP.
- Biohazard waste should be stored in appropriately labelled plastic bags.
- Sharp objects must not be placed in plastic or soft-sided baggage.
- Biohazard waste should be double-bagged or placed in boxes before being transported.
- Biohazard labels should always be visible.

AFTER THE OUTBREAK

Declare the outbreak over

 Declare the outbreak over

Restock supplies

Restock supplies

Review lessons learned

Review lessons learned

An outbreak is considered to be over when no cases have occurred in 72 hours since the last case was released from isolation or was evacuated. It is important to keep in contact with the IP after evacuation to monitor his/her recovery and develop an appropriate return-to-work plan.

Outbreak supplies used at the affected facility should be replaced at the earliest opportunity.

Local management should review the effectiveness of the IDOM process, from first recognition of the event, through implementation of enhanced controls, to the incident investigation. The review should identify:

- improvements in the IDOM response—these should be implemented as necessary; and
- corrective actions identified by the incident investigation—these should be implemented as soon as practicable.

The unit leadership should share the results of the incident investigation and its review of IDOM effectiveness with MOH personnel to enable wider sharing of lessons learned and improvements in the IDOM process.
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## Appendix 1: Implementation checklist for infectious disease outbreak management (IDOM)

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<thead>
<tr>
<th>TASK NO.</th>
<th>TASK DESCRIPTION</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
<th>COMMENTS/ACTION ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Before an outbreak</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>IDOM training/awareness has been provided to Person(s) in Charge (PIC), supervisor(s) and providers/contractors.</td>
<td></td>
<td></td>
<td></td>
<td>Medical and Occupational Health (MOH) leads rollout for IDOM with management. Safety, Security, Health and Environment (SSH&amp;E) assist as needed.</td>
</tr>
<tr>
<td>2</td>
<td>IDOM notification practice and response initiation plan is in place with PIC(s), supervisor(s) and MOH contact(s).</td>
<td></td>
<td></td>
<td></td>
<td>MOH takes the lead and notifies the PIC or designee when two or more persons are identified with the same symptoms.</td>
</tr>
<tr>
<td>3</td>
<td>Arrival health check is in place at the point of embarkation for workforces arriving on-site.</td>
<td></td>
<td></td>
<td></td>
<td>Site management and site dispatcher or clerk ensure health checklist is in place with orientation for workers.</td>
</tr>
<tr>
<td>4</td>
<td>Awareness materials are positioned in at least one common area of the targeted locations.</td>
<td></td>
<td></td>
<td></td>
<td>PIC or designee posts awareness materials. See examples of relevant material in Appendices 5, 6, 7, 8 and 9.</td>
</tr>
<tr>
<td>5</td>
<td>At least one IDOM awareness session has been organized on-site for the staff.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC or Safety Advisor organizes the awareness raising session.</td>
</tr>
<tr>
<td>6</td>
<td>Isolation practices are available on-site for the PIC and an isolation room for potential use is identified.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC to take lead, with MOH personnel/first responder as advisor.</td>
</tr>
<tr>
<td>7</td>
<td>Transportation practices for a suspected or confirmed case of infectious disease outbreak are available to the PIC.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC to take lead, with MOH personnel as advisor, along with Transportation Advisor.</td>
</tr>
<tr>
<td>8</td>
<td>Tightened food handling practices during outbreak are available on-site for food handlers and the PIC.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC advise galley staff to implement procedures.</td>
</tr>
<tr>
<td>9</td>
<td>Cleaning and disinfection practices during outbreak are available on-site for the PIC, along with an identified cleaning provider.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC advise cleaning providers and staff.</td>
</tr>
<tr>
<td>10</td>
<td>Outbreak management supplies (face mask, hand sanitizer, disinfectants, etc.) are procured and positioned on-site.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC verify that supplies are in place.</td>
</tr>
</tbody>
</table>
## Implementation checklist for infectious disease outbreak management

### During an outbreak

<table>
<thead>
<tr>
<th>TASK NO.</th>
<th>TASK DESCRIPTION</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
<th>COMMENTS/ACTION ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Notification of potential IDOM (two cases)—PIC notifies his or her management and MOH contact.</td>
<td></td>
<td></td>
<td></td>
<td>MOH takes the lead and notifies the PIC when two or more cases are identified with the same symptoms. PIC notifies management and MOH.</td>
</tr>
<tr>
<td>2</td>
<td>Staff on board have been informed of the situation, the risks and the IDOM mitigation measures that they are required to adopt; regular updates to be provided.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC with MOH personnel/first responders as advisors inform the staff.</td>
</tr>
<tr>
<td>3</td>
<td>Cases have been isolated or evacuated following the established guidelines for IDOM.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC take the lead, with MOH personnel/first responders as advisors.</td>
</tr>
<tr>
<td>4</td>
<td>All common surfaces have been properly cleaned using the recommended products and methods.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC advises galley staff of products to use.</td>
</tr>
<tr>
<td>5</td>
<td>Private quarters where ill person(s) was living have been cleaned using the recommended products and methods.</td>
<td></td>
<td></td>
<td></td>
<td>Local management ensures that the living quarters are cleaned before the room is occupied.</td>
</tr>
<tr>
<td>6</td>
<td>Food handling practices have been tightened in accordance with the IDOM procedures.</td>
<td></td>
<td></td>
<td></td>
<td>Leadership team notifies local management/PIC to advise galley staff. Galley staff implements.</td>
</tr>
<tr>
<td>7</td>
<td>IDOM supplies (hand sanitizer, face masks, etc.) have been made available to staff on board.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC designates personnel to ensure that equipment is ordered and stored in the appropriate location(s).</td>
</tr>
<tr>
<td>8</td>
<td>Updates between PIC and MOH are being carried out at least three times a week during the first week of a potential IDOM.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC monitors and advises.</td>
</tr>
<tr>
<td>9</td>
<td>Outbreak investigation is carried out if needed in coordination with the designated team. Refer to the appropriate section of the company’s health risk assessment.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC designates personnel to assist.</td>
</tr>
</tbody>
</table>

---

During an outbreak continued …
## Appendix 1
Implementation checklist for infectious disease outbreak management

<table>
<thead>
<tr>
<th>TASK NO.</th>
<th>TASK DESCRIPTION</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
<th>COMMENTS/ACTION ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>IDOM notification</strong> has been provided per normal site/business reporting systems.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC designates interface for reporting.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Lessons learned have been identified</strong> by Person in Charge, supervisor, and MOH for improved prevention and response.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC/MOH develops and reports lessons learned.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Lessons learned are shared</strong> among sites to facilitate adoption of improved practices.</td>
<td></td>
<td></td>
<td></td>
<td>Local management shares lessons learned through existing health and safety information tools and proposes health manual updates to the IDOM team.</td>
</tr>
<tr>
<td>4</td>
<td>Review the checklist to consider the need for improvements</td>
<td></td>
<td></td>
<td></td>
<td>The IDOM team reviews the implementation checklist based on provided recommendations and lessons learned.</td>
</tr>
</tbody>
</table>

**After an outbreak**
Appendix 2: IDOM training resources

Why outbreak management?

- In a recent year at a single oil company, more than 400 workers were affected with more than 1,600 lost work days.
- Infectious diseases will always be brought inside the fence line by workers.
- Flu and food-/water-borne illness spreads rapidly in close quarters.
- Outbreaks represent a significant risk of disruption to operations.
- Many operations have the potential to be exposed.

Preparing for an outbreak

- Training and awareness for PIC, supervisors, workers, food handlers, transportation providers and medical providers.
- IDOM processes for notification and response are put in place by PIC with supervisors and MOH contacts.
- IDOM awareness materials displayed in common areas (cafeteria, rest rooms, etc.).
- PIC trained in isolation procedures and isolation room identified.
- Self questionnaire poster displayed in indicated areas.
- Monitor outbreaks in communities where workers are coming from.
Preparing for an outbreak

- PIC has transportation procedures in place for suspected or confirmed cases.
- Site and catering persons in charge have a list of special food handling procedures to use during an outbreak.
- Site PIC, catering, and housekeeping have cleaning and disinfecting procedures to use before/during an outbreak.
- Stock supplies such as face masks, hand sanitizers and disinfectants.
- Site PIC has procedures to record and identify outbreaks. Workers are trained on record-keeping and reporting.
- Identify lab service provider and pre-position supplies such as rapid diagnostic tests.

Responsibilities of supervisor/PIC

- Key expectations: training of audiences, supplies/services in place, isolation room identified, notification process established.
- Consult HR/contract owner for guidance on contractor pay for time not worked.
- Communicate importance of preventive measures (hand-washing, cough policy) and stress importance of monitoring symptoms. If ill, send workers home.
- Minimize the impact of business disruption (see the company’s business continuity plan).
- Procure/pre-position supplies and services including educational materials.
- Awareness sessions for workers (safety meetings, repeat during outbreaks).
- Ensure training of appropriate service providers (catering, transport, etc.).
- Monitor travel advisories for possible outbreaks in the community.
- Update management, SSHE and MOH daily during outbreaks.
- Ensure that the site is meeting health inspection objectives.
MOH role/responsibilities

- Train SSHE key person in country.
- May assist in the initial training for all audiences, including medic on sites and MOH local team.
- Selection of local laboratory provider and prepositioning lab supplies.
- Monitor local health information to identify outbreaks in the community.
- Assist the PIC and medic to mitigate/investigate outbreaks.
- Communicate with MOH IDC team.
- Review and steward verification measures performed by Industrial Hygiene during health inspections and assessments.

Implementation checklist example

<table>
<thead>
<tr>
<th>Task description</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>Comments / action item</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-outbreak</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 <strong>IDOM orientation training</strong> has been provided to person(s) in charge, supervisor(s), and providers/contractors.</td>
<td></td>
<td></td>
<td></td>
<td>SHE will take the lead rollout for IDOM with Management/PIC designee, MOH will assist as needed</td>
</tr>
<tr>
<td>2 <strong>IDOM notification process</strong> and response initiation is in place with person(s) in charge, supervisor(s), and MOH contact(s).</td>
<td></td>
<td></td>
<td></td>
<td>Medic will take the lead and notify the PIC or designee when 2 or more are identified with same symptoms</td>
</tr>
<tr>
<td>3 <strong>Arrival health check</strong> is in place for workforces arriving on site.</td>
<td></td>
<td></td>
<td></td>
<td>Site management along with site dispatcher or clerk will assure health checklist is in place along with orientation for workers</td>
</tr>
<tr>
<td>4 <strong>Awareness materials</strong> are positioned in at least one common area of the targeted locations.</td>
<td></td>
<td></td>
<td></td>
<td>PIC or designee will position materials</td>
</tr>
<tr>
<td>5 At least one <strong>IDOM awareness session</strong> has been organized on-site for the staff.</td>
<td></td>
<td></td>
<td></td>
<td>Local management/PIC or safety advisor will organize the session</td>
</tr>
</tbody>
</table>
Supplies to keep in stock

- Face masks and gloves
- Cleaning and disinfecting supplies, including cleaning cloths, mop heads, soap and disinfecting agents
- Extra disposal bags labelled ‘Biohazard’ for contaminated material
- Extra drinking water and commercial products containing a blend of fluids, electrolytes and carbohydrates
- Disposable plates and cups with Individually wrapped eating utensils (plastic knives, forks, spoons)
- Individually wrapped, single-serving condiments (salt, pepper, sugar, etc.)
- Plastic covers for pillows
- Rapid test and sample collection containers for biological diagnosis

Critical measures to prevent outbreaks

Many people who transmit infectious diseases do not have symptoms or can be infective before becoming sick. Thus, it is vitally important to adopt preventive measures, including:

- **Hand washing** or sanitizer use at cafeteria entrances
- **Limiting/eliminating** self service at food counters
- **Daily disinfection** of frequently-touched surfaces in common areas
- **Self isolation** for sick workers, especially catering staff
- **Arrival health check/completion of an ‘Are you sick?’ health questionnaire**
Hand washing

Hand washing with soap and water is the best way to prevent outbreaks.

Wash your hands BEFORE:
• Touching your hand to your mouth
• Eating or drinking
• Brushing your teeth
• Helping a sick person

Wash your hands AFTER:
• Touching high-hand contact surfaces (door knobs, railings, etc.)
• Touching equipment
• Going to the bathroom
• Blowing your nose
• Helping a sick person

If water and soap are unavailable, use an ethanol alcohol-based (minimum 62%) hand sanitizer, preferably in a gel form.

The US CDC has a video¹ and other resources² for training on hand washing.

¹ [http://www.cdc.gov/CDCTV/healthyliving/hygiene/wash-your-hands.html](http://www.cdc.gov/CDCTV/healthyliving/hygiene/wash-your-hands.html)
² [http://www.cdc.gov/handwashing/resources.html](http://www.cdc.gov/handwashing/resources.html)

---

![Be A Germ-Buster](image-url)
Cough policy:

- **Remember to cover your nose and mouth with a **tissue** or use your **sleeve** when you are coughing and sneezing.**
- **Do NOT use your hand** to cover a cough or sneeze.

---

**Self-questionnaire**

**Are you sick?**

Workers **should not report to work** and should notify a supervisor and their medical provider if answering ‘yes’ to any of the following:

1. Do you feel like you are **getting sick**?
2. Have you had **fever** (37.5°C or 100°F) in the past 24 hours?
3. Have you had fever with **any of the following symptoms** in the past 24 hours?
   - Sore throat
   - Sneezing
   - Chest discomfort
   - Aches, pain
   - Extreme fatigue
   - Diarrhoea
   - Vomiting
   - Upset stomach
### Self-questionnaire

The ‘Are You Sick?’ poster should be displayed in areas where all workers can review it before and during outbreaks. **Locations** can include:

- Sites where workers **assemble before departing** to their work locations (e.g. heliport)
- Locations where personnel live and work together in **close quarters**, such as on offshore installations and ships, and in remote camps.

### Case notification threshold

#### When do I report an outbreak?

<table>
<thead>
<tr>
<th>Two or more cases (consult MOH):</th>
<th>One case (initiate measures in consultation with MOH):</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Diarrhoea and/or vomiting</td>
<td>• Tuberculosis</td>
</tr>
<tr>
<td>• Infectious agents can include Norovirus, salmonella</td>
<td>• Meningitis</td>
</tr>
<tr>
<td>• Pandemic flu</td>
<td>• Cholera</td>
</tr>
<tr>
<td></td>
<td>• Legionella (investigation)</td>
</tr>
<tr>
<td></td>
<td>• New viruses (e.g. Middle East respiratory syndrome coronavirus (MERS-CoV))</td>
</tr>
</tbody>
</table>
Key IDOM measures

Before outbreak
- Training
- Preventive measures
- Identify isolation room
- Supplies, services pre-positioned

During outbreak
- Notification to MOH
- Arrival health check
- Enhanced hand-washing
- Just-in-time training for cleaning/decontamination, food handling, isolation, transportation and incident investigation

After outbreak
- Investigation report
- Lessons learned
- Re-stock supplies as needed

Food handling

The galley cook should help ensure that food served to workers is safe while applying the company’s food safety measures. Food handlers:

- Should have IDOM training and be familiar with the measures that need to be taken before and during an outbreak
- Should have training in food safety and compliance with medical requirements (e.g. immunization, notification when sick, etc.)
- Should isolate themselves if they have symptoms such as fever, cough, chills, sore throat, diarrhoea or vomiting, and should not report to work if they are feeling sick
- Should not be involved in the preparation of food during outbreaks if they have been undertaking cleaning and disinfecting
- Are required to wash hands and have hand sanitizer positioned in each galley for use when soap and water are not available
Food handling

Prevention methods

- Replace shared serving/eating utensils with individually wrapped plastic or silverware utensils.
- Replace communal condiments (salt/pepper, ketchup, mustard, etc.) with single-serving products.
- Use auto-dispensing ice machines to eliminate hand-dipping for ice.
- Discontinue the use of communal bins for cookies, candies and snacks.
- Dispose of any potentially contaminated food or items handled by any non-galley worker.
- Establish hand washing station in the galley/kitchen area.
- Replace communal fabric towels with paper towels to dry hands.

Supplies to pre-order

- Face masks and gloves
- Supplies such as cleaning cloths, mop heads, soap and disinfecting agents
- Biohazard bags for contaminated material
- Extra drinking water and commercial products containing a blend of fluids, electrolytes and carbohydrates
- Disposable plates and cups, individually wrapped eating utensils
- Single-serving condiments (salt/pepper, sugar, ketchup/mustard, etc.)
Procure disinfecting agents

Secure material safety data sheets for each item:

- **Household bleach** (a dilute solution of sodium hypochlorite, about 5-6%):
  - Mix a 10% solution and use within 24 hours.
  - Always dilute and make fresh.
  - Do not mix with acids or ammonia.

- **Disinfecting agents specifically for norovirus**:
  - Accelerated Hydrogen Peroxide™ (AHP™) or other Virox H₂O₂ products
  - Dilute household bleach (solution of 1:10)
  - Parachlorometaxylenol (EcoTru®)
  - Potassium peroxomonosulfate (Virkon®)
  - Virox

- **Ineffective disinfectants**
  - QUAT 1:10
  - Ethanol 75%
  - Anionic detergent
Evacuation by helicopter

Standard operating guidelines for handling the medical evacuation of an infected patient should include the following basic procedures:

a) Any infected patient being transported shall be regarded as potentially contagious.

b) All members of the air ambulance service handling the medevac mission should have adequate immunization as their first line of defense.

c) Any open wound among the flight and medical crew should be kept adequately covered.

d) The medical specialist who will attend to the infected patient should use standard infection control procedures (also known as universal precautions).

Evacuation by helicopter

Sick worker transportation procedures

- The transport service should be notified that a person with a potential contagious illness needs to be transported.

Protect the pilot, crew and other passengers:

- The pilot/crew should wear a mask during transfer (provides limited protection).
- Passengers and pilot should maintain a distance which is as far away as feasible from the ill worker.

Persons assisting the transport of the ill worker should:

- Wear protective equipment adapted to the disease transmission routes
- Ensure that the ill worker washes his/her hands prior to boarding and after arrival
- Ensure that the ill worker wears gloves to minimize contamination in the aircraft
- Put a mask on the ill worker if the disease is airborne and if he/she moves from the isolation room to any common area while on board.
Evacuation by helicopter

Decontamination of the carrier

- Decontamination **after transportation and before remobilization**
- During disinfection, use **adequate PPE** (N95 respirator, nitrile gloves, goggles, gowns, etc.)
- Disinfectant solution used for the carrier should be effective for the disease agent. Note that disinfectants may have different dwell or kill times. These can range from 5-10 minutes.
- **Soft and hard surfaces** should be disinfected, including doors, safety vests, earmuffs, ill worker’s seat and all other seats
- Spray non-porous other surfaces with disinfectant solution (carrier seats, carpeted floors, etc.) and let them dry
- Wipe porous surfaces down with a solution of (5%) bleach and water
- Immediately **dispose of used PPE** into disposable biohazard plastic bag
- **Thoroughly wash hands** and other body parts that have been exposed with soap and water.

Company IDOM Manual

- Owned by the company.
- Should follow pandemic flu guidelines and be developed in line with the needs of company operations.
- Can benefit from the incorporation of MOH guidance into the corporate **business line structure**.
- Provides the opportunity to share proven **tools and practices** for outbreak prevention and mitigation.
Scope relationship to incident severity

- Confirmed outbreak
- Stewardable malaria
- Dengue fever
- Japanese encephalitis
- Tuberculosis
- Meningitis

SIE = Severity Level Cat 1
Single SIE fatality = Cat 2
Multiple fatalities = Cat 3
(cf.: Upstream Incident Severity Matrix)

Investigation

Once an outbreak is suspected, an investigation team should be formed including the PIC, the supervisor, on-site medic and the medical and occupational health (MOH) contact. Health authorities should be included as necessary.

The investigation should attempt to answer the following questions:

- What is the disease and what pathogen is causing it? (Healthcare provider and MOH)
- Are there also outbreaks in the community?
- How severe is the disease and what are the risk factors? (MOH)
- What is the incidence and distribution of the disease? (MOH, local health authorities)
- What is the source of the pathogen? (PIC and MOH)

The MOH contact should summarize this lessons learned report following the outbreak.
Investigation

For the biological determination of the causal agent:

- **The first 48 hours** after the first event are the most critical for collection of specimens/information, and the success of the investigation.
- Lab services should be performed by a **pre-identified provider** with capabilities for bacteriological analysis and when possible virology.
- Sample collection should be performed immediately on sick workers and food to maximize the chances of identifying the pathogen.
- Sample collection with provided containers and recommended forms.
- Pre-positioned **rapid tests** used by medic on site in consultation with MOH personnel.

Notification

**Notification process for an infectious disease outbreak:**

- When **two or more** workers at a facility develop the same symptoms at about the same time, an infectious disease outbreak may be in progress.
- The PIC should notify his/her supervisor and the MOH contact **within 24 hours**.
- In addition to the standard process defined in the company’s health risk assessment, the in-country MOH and HQ should be notified.
- The MOH should be consulted if questions arise regarding implementation of outbreak prevention and mitigation measures.
- Based on the information received, MOH provides guidance to management and the PIC regarding sick worker medical treatment, isolation duration, and whether to evacuate workers.
**Notification**

- If sick worker evacuation is confirmed, MOH determines with the PIC and management when to evacuate the worker and return to the facility.
- Personnel at the site should be regularly updated on the outbreak risk and mitigation measures in place.
- The PIC, management and MOH jointly review the situation and develop appropriate strategies to investigate and manage the suspected outbreak.
- The PIC or supervisor and MOH contact should receive updates at least three times during the first week of the potential outbreak.
- MOH should oversee communications with the medical provider and local health authorities, if required.

**Decontamination**

Decontaminate common areas:

- Wash **hard surfaces** with soap and water using a disposable cloth.
- **Disinfect exposed surfaces** with a 1:10 bleach solution prepared within 24 hours.
- Disinfect door handles, knobs, push plates, tables, chairs, counters, keyboard, telephone, pens, pencils, etc.
- **Steam clean** carpets, curtains and other soft furnishings where possible because some pathogens can live for several days on such surfaces.
- Scrub walls and mop floors. **Do not vacuum carpets or buff floors**, which can potentially recirculate the infective agent.
Decontamination

• Continue enhanced cleaning and disinfection practices for at least 72 hours after the last symptomatic case is reported on-site.
• Protective equipment used during cleaning should be disposed of in biohazard plastic bags.
• Personnel involved in disinfecting should not be involved in cooking for at least 72 hours after the last case occurs.
• Workers involved in cleaning and disinfecting must wear personal protective equipment (clothing, gloves, goggles, etc.).

The ill worker’s room:

• Immediate disinfection of surfaces and materials is critical to disrupting the outbreak.
• From the ill person’s room, collect all exposed bedding and fabrics in large plastic biohazard bags, including roommates’ items.
• Minimize the number of workers handling these fabrics.
• Do not fluff the linens and bedding—doing so may disseminate pathogens into the environment.
Decontamination

The ill worker’s room:

• Launder all collected materials at a minimum 160°F or 71°C for a minimum of 25 minutes. If wash water cannot reach this temperature, consider adding Virkon (or similar) to the wash.

• Launder visibly soiled sheets and blankets twice. Discard heavily soiled sheets, blankets, and pillows.

• Launder contaminated pillows unless they have an impermeable plastic cover; in such case, disinfect with a 1:10 household bleach solution.

• Spray bunks/beds and lockers with disinfectant.

Decontamination

• After use, disinfect non-disposable mop heads or throw away disposable mop heads.

• Continue enhanced cleaning and disinfection practices for at least 72 hours after the last symptomatic case is reported on-site.

• Protective equipment used during cleaning should be disposed of in biohazard plastic bags.

• Personnel involved in disinfecting should not be involved in cooking for at least 72 hours after the last case occurs.

• Workers involved in cleaning and disinfecting should wear personal protective equipment (clothing, gloves, goggles, etc.).
After the outbreak

- Consider the outbreak over when no new cases have occurred after a certain period specific by pathogen. (72 hours for Norovirus)
- The following steps summarize post-outbreak notification activities:
  - Follow-up on ill workers and assess their fitness for duty.
  - Try to determine the specific causative agent and what steps can prevent future outbreaks.
  - The person in charge, supervisor and MOH contact compile lessons learned to improve prevention and response.
  - Share lessons learned with other sites to improve practices.
  - Review and resume the pre-outbreak steps listed under prevention/preparedness strategies.
Appendix 3: Face mask use recommendations

Face masks are recommended for use by the infected person. When worn properly, face masks may help prevent exposing others to large particle droplets, which may contain pathogens (viruses and bacteria).

Many brands of face mask exist, and they are manufactured in a variety of different colours. Only approved face masks should be used.

WHEN TO USE A FACE MASK
Face masks should be worn by workers with suspected or confirmed cases of infectious disease that can be spread by coughing or sneezing, such as influenza or severe acute respiratory syndrome (SARS).

Face masks should be offered to workers with respiratory symptoms like coughing or sneezing. These workers should also be informed about respiratory hygiene and cough etiquette.

Infected workers should wear face masks until they are placed in isolation or until it is determined that their symptoms are not caused by an infection. Once infected workers are placed into an isolation room (either alone or with similarly infected workers), they do not need to wear masks unless they need to leave the isolation room or they have visitors who enter the isolation room.

Disposable face masks should be used once, and then bagged and treated as biohazard waste.

A mask that has become moist, damaged or soiled, or that is difficult to breathe through, should be replaced. Used masks should be bagged and treated as biohazard waste.

HOW TO PUT ON A FACE MASK
If the face mask comes with instructions on how to store and use the mask, wearers should follow those instructions. If instructions are not provided with the mask, the guidance below should be followed:

- Clean hands with soap and water or hand sanitizer before touching the mask.
- Remove a mask from the box and make sure there are no obvious tears or holes in either side of the mask.
- Determine which edge of the mask is the top. This will usually be a stiff, bendable edge that is designed to mould to the shape of the nose.
- Determine which side of the mask is the front. This is usually the coloured side. It should face away from the wearer’s face. The white side should touch the wearer’s face.
- Determine whether the face mask has ear loops, ties or bands, and follow the appropriate step below:
  - Ear loops: hold the mask by the loops and place one loop around each ear.
  - Ties: bring the top of the mask across the midpoint of the nose. Extend the ties behind the back of the head and secure by tying in a bow. The lower tie should be at the nape of the neck and the upper tie above the ears.
  - Bands: hold the mask in front of the face so that the top is at the midpoint of the nose and the bands are dangling. Pull the top band over the head and position it against the back of the head, above the ears. Pull the bottom band around the front of the mask, over the top of the head, and down to the nape of the neck.
- Mould or pinch the top of the mask to conform to the shape of the nose.

HOW TO REMOVE A FACE MASK
To remove a face mask:

- Clean hands with soap and water or hand sanitizer before touching the mask.
- Avoid touching the front of the mask as this will be contaminated. Only touch the ear loops, ties or bands.
- Perform one of the following steps, depending on the type of mask:
  - Ear loops: hold both loops, and gently lift and remove the mask.
  - Ties: untie the bottom bow first. Untie the top bow and pull the mask away from the face while holding onto the ties.
  - Bands: lift the bottom band over the head first (so that the mask does not fall away from the face). Pull the top strap over the head and use it to pull the mask away from the face.
Appendix 3
Face mask use recommendations

- Place the disposable face mask in a plastic bag and treat as a biohazard waste.
- Wash hands with soap and water. Use hand sanitizer if soap and water are not available

N95 RESPIRATORS

- An N95 respirator is a specific type of face mask that is designed to provide a high level of respiratory protection by way of a close facial fit and efficient filtration of airborne particles.
- The manufacturer’s instructions should be followed carefully to ensure a proper fit.
- The ‘N95’ designation indicates that the respirator is deemed capable of blocking at least 95% of very small (0.3 μm) particles; this greatly exceeds the capability of a standard face mask. However, even a properly fitted N95 respirator does not completely eliminate the risk of illness or death.
- N95 respirators are not designed for children or people with facial hair (a proper fit cannot be achieved and the respirator may not provide full protection).
- The US Food and Drug Administration (FDA) has cleared certain N95 respirators for use in various settings. These FDA-cleared respirators are labelled as ‘single-use’, disposable devices. (To safely discard, place into a plastic bag, put in the appropriate waste and wash hands after handling the used respirator).

N95 respirators for use by the general public

The FDA has cleared certain N95 respirators for use by the general public in public health medical emergencies. These devices are labelled ‘Not for occupational use’, and include:
- 3M™ Particulate Respirator 8670F and 8612F;
- Pasture™ F550G and A520G Respirators.

N95 respirators for use in industrial and healthcare settings

N95 respirators manufactured for use in occupational settings are evaluated for effectiveness by the National Institute for Occupational Safety and Health (NIOSH), which is part of the US Centers for Disease Control and Prevention (CDC). They are labelled ‘For occupational use’. N95 respirators cleared by the FDA for use in healthcare settings are referred to as ‘surgical N95 respirators’.

Is fit testing necessary?

Yes. Fit testing helps to ensure that the expected level of protection is provided by minimizing the total amount of contaminant leakage both inward and outward through the face piece.

Are respirator fit tests required?

Yes. The Occupational Safety and Health Administration (OSHA) Code of Federal Regulation no. 29 CFR 1910.134 requires a respirator fit test to be carried out to confirm the fit of any respirator designed to form a tight seal on the wear’s face before being used in the workplace.

Methods for respirator fit testing

These can be either qualitative or quantitative, and there are multiple protocols of each classification that are OSHA-accepted, ANSI-accepted or NIOSH-recommended. The manufacturers’ guidelines should always be consulted.

How often should fit testing be carried out?

Fit testing should be carried out whenever a new model, type, brand or size is worn, and whenever a person’s weight fluctuates or facial/dental alterations have been carried out. Otherwise, fit testing should be completed at least annually to ensure continued adequate fit.
Appendix 4: Outbreak-related items to keep on hand

OUTBREAK-RELATED ITEMS
It is advisable to keep the following items on hand:

- face masks (see Appendix 3);
- gloves;
- cleaning and disinfecting supplies;
- disposable bags labelled ‘biohazard’;
- extra water and electrolyte drinks;
- disposable cutlery (individually wrapped);
- individually wrapped single serve condiments, e.g. salt and pepper;
- plastic covers for pillows; and
- medical diagnosis supplies.

Disinfectant agents
The best compound for the preparation of chlorine solutions for disinfection is household bleach (also known by other names such as Domestos®, Clorox®, Eau-de-Javel). Household bleach consists of sodium hypochlorite dissolved in water, and generally contains 5% (50 g/litre or 50,000 ppm) available chlorine.

Preparation
Disinfectant agents can be prepared by adding household bleach to water at various concentrations according to the nature of the cleaning—see Table A1.

- To prepare a 1:10 bleach solution add one volume (e.g. 1 litre) of household bleach to nine volumes (e.g. 9 litres) of clean water.
- Similarly, a 1:100 bleach solution can be prepared by adding 1 volume of household bleach to 99 volumes of clean water (e.g. by adding 100 ml of bleach to 9.9 litres of clean water).

<table>
<thead>
<tr>
<th>CONCENTRATION</th>
<th>NATURE OF CLEANING</th>
</tr>
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<tbody>
<tr>
<td>1:10</td>
<td>Excreta</td>
</tr>
<tr>
<td></td>
<td>Bodies</td>
</tr>
<tr>
<td></td>
<td>Spills of blood/body fluids</td>
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<tr>
<td></td>
<td>Vehicles and tyres</td>
</tr>
<tr>
<td>1:100</td>
<td>Surfaces</td>
</tr>
<tr>
<td></td>
<td>Medical equipment</td>
</tr>
<tr>
<td></td>
<td>Bedding</td>
</tr>
<tr>
<td></td>
<td>Reusable protective clothing before it is laundered</td>
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</tbody>
</table>
Infectious disease outbreak management

Appendix 5

Appendix 5: CDC fact sheet on food safety

CDC and Food Safety

Foodborne illness is a common, costly—yet preventable—public health problem. Each year, one in six Americans get sick from contaminated foods or beverages; 3,000 die. Salmonella, a bacteria that commonly causes foodborne illnesses, results in more hospitalizations and deaths than any other bacteria found in food and incurs $365 million in direct medical costs annually.

Reducing foodborne illness by 10% would keep five million Americans from getting sick each year.

What is CDC’s role in food safety?

Food safety depends on strong partnerships. CDC, the U.S. Food and Drug Administration (FDA), and the U.S. Department of Agriculture’s (USDA) Food Safety Inspection Service collaborate at the federal level to promote food safety. State and local health departments and food industries also play critical roles in all aspects of food safety.

CDC provides the vital link between illness in people and the food safety systems of government agencies and food producers.

CDC takes action by:

- Tracking the occurrence of foodborne illnesses
- Monitoring antibiotic resistant infections
- Defining the public health burden of foodborne illness
- Attributing illnesses to specific foods and settings
- Investigating outbreaks and sporadic cases (Managing the DNA “fingerprint” network for foodborne illness-causing bacteria in all states to detect outbreaks.)
- Funding state and local health departments
- Targeting prevention measures to meet food safety goals
- Informing food safety action and policy (The Food Safety Modernization Act and the egg safety regulation were driven in part by CDC data and findings.)

Stopping an outbreak with whole genome sequencing

CDC scientists have started using whole genome sequencing (WGS) to see the “DNA fingerprint” of bacteria and distinguish one type from another.

You don’t normally think of caramel apples as deadly. But, in a multi-state outbreak of listeriosis (infections caused by the germ, Listeria) that killed seven people and hospitalized 34, scientists used WGS to help identify an unlikely source: commercially produced, prepackaged caramel apples. Because the WGS results were available, scientists began investigating a cluster of cases one week earlier than if they had used only the traditional technique of pulsed-field gel electrophoresis (PFGE). The product was recalled, which likely prevented illnesses and saved lives.

Listeriosis linked to commercially produced, prepackaged caramel apples sickened 35 persons

National Center for Emerging & Zoonotic Infectious Diseases
Division of Foodborne, Waterborne, and Environmental Diseases

http://www.cdc.gov/foodsafety March 2015
Challenges to America’s Food Safety

Sometimes foods we love and count on for good health are contaminated with bacteria that cause illness and can be deadly for certain people. More progress is needed to protect people and reduce foodborne illnesses in America.

Challenges to food safety will continue to arise in unpredictable ways, largely due to:

- Changes in our food production and supply, including more imported foods
- Changes in the environment leading to food contamination
- Rising number of multistate outbreaks
- New and emerging bacteria, toxins, and antibiotic resistance
- New and different contaminated foods, such as organic sprouted chia powder and prepackaged caramel apples, causing illnesses

Foods that sickened people in 915 outbreaks (2008-2012)

Source: CDC’s National Outbreak Reporting System, 2008-2012

Increases in multi-state outbreaks, 1993-2012

Source: CDC’s Foodborne Disease Outbreak Surveillance System, 1993-2012

The threat of antibiotic resistance

Antibiotic resistance in foodborne bacteria is a growing food safety challenge that is made worse by overuse of antibiotics in humans and food animals. Every year, over 400,000 people in the United States are sickened with resistant *Salmonella* or *Campylobacter*.

The National Antimicrobial Resistance Monitoring System (NARMS), a partnership of CDC, FDA, and USDA, will play an expanded role under the President’s initiative for Combating Antimicrobial-Resistant Bacteria (CARB) by:

- Increasing the number of *Salmonella* bacteria samples tested for antibiotic resistance from 5% to 100%
- Increasing the number of isolates of other foodborne bacteria, including *Campylobacter*
- Expanding data collection (e.g. patient history, food exposure, travel history, etc.) to better understand why people get sick from resistance infections

The future of food safety depends on:

- Supporting Centers of Excellence that are faster at responding to foodborne outbreaks
- Developing and sharing next generation DNA sequencing technology with all states
- Improving integration of foodborne illness surveillance systems and expanded data sharing as required by the Food Safety Modernization Act
Appendix 6: ‘Cover your cough’ poster

Stop the spread of germs that can make you and others sick!

Cover your mouth and nose with a tissue when you cough or sneeze. Put your used tissue in the waste basket.

If you don’t have a tissue, cough or sneeze into your upper sleeve or elbow, not your hands.

You may be asked to put on a facemask to protect others.

Wash hands often with soap and warm water for 20 seconds. If soap and water are not available, use an alcohol-based hand rub.

Appendix 7: ‘Are You Sick’ poster

Do you feel like you are getting sick?

Have you had fever over 38°C or 100°F in the past 24 hours?

Have you had fever with any of these symptoms in the past 24 hours?

- Headache
- Sore throat
- Runny nose
- Shortness of breath
- Rash
- Aches and pains
- Diarrhoea
- Upset stomach
- Vomiting

If you answered YES to any of the questions above, notify a medical professional as soon as possible. Do not report to your work site.

Be alert! If you have had close contact with someone who has these symptoms, you may be at higher risk of infection.

The best way to prevent infectious disease outbreaks is to wash your hands with soap and water for at least 20 seconds.
Appendix 8: Hand washing poster

Stop Germs! Stay Healthy! Wash Your Hands

Keeping hands clean is one of the most important things we can do to stop the spread of germs and stay healthy.

When?
- Before, during, and after preparing food
- Before eating food
- Before and after caring for someone who is sick
- Before and after treating a cut or wound
- After using the toilet
- After changing diapers or cleaning up a child who has used the toilet
- After blowing your nose, coughing, or sneezing
- After touching an animal, animal feed, or animal waste
- After handling pet food or pet treats
- After touching garbage

How?
- Wet your hands with clean, running water (warm or cold), turn off the tap, and apply soap.
- Lather your hands by rubbing them together with the soap. Be sure to lather the backs of your hands, between your fingers, and under your nails.
- Scrub your hands for at least 20 seconds. Need a timer? Hum the “Happy Birthday” song from beginning to end twice.
- Rinse your hands well under clean, running water.
- Dry your hands using a clean towel or air dry them.

For more details on handwashing, visit CDC’s Handwashing Website at www.cdc.gov/handwashing

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CS245364-A
Appendix 9: Hand sanitizer poster

1. Squirt the hand sanitizer
   Squirt the hand sanitizer into the palm of your hand. It should be about the size of a US quarter.

2. Rub hands together
   Lather and scrub, especially the backs of hands, between fingers, and under nails. Hold hands downward to avoid contamination on the upper part of your arms.

3. Dry well
   Don't dry on a towel; air dry.

When?

Before:
- Eating and drinking
- Helping a sick person

After:
- Using the restroom
- Helping a sick person
- Shaking hands
- Handling something that could be contaminated

Washing with soap and water for at least 20 seconds is the best option for cleaning hands, at least for 20 seconds. If using a hand sanitizer, always use an alcohol-based sanitizer that contains at least 60% alcohol.
### Appendix 10: Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>°C</td>
<td>Degrees celsius</td>
</tr>
<tr>
<td>CDC</td>
<td>US Centers for Disease Control and Prevention</td>
</tr>
<tr>
<td>°F</td>
<td>Degrees Fahrenheit</td>
</tr>
<tr>
<td>ID</td>
<td>Infectious disease</td>
</tr>
<tr>
<td>IDOM</td>
<td>Infectious disease outbreak management</td>
</tr>
<tr>
<td>IP</td>
<td>Ill person</td>
</tr>
<tr>
<td>MOH</td>
<td>Medical and Occupational Health</td>
</tr>
<tr>
<td>μm</td>
<td>Micrometre (formerly ‘micron’) = 1 millionth of a metre</td>
</tr>
<tr>
<td>PIC</td>
<td>Person in charge</td>
</tr>
<tr>
<td>POB</td>
<td>Personnel onboard</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal protective equipment</td>
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<tr>
<td>RDT</td>
<td>Rapid diagnostic test</td>
</tr>
<tr>
<td>SARS</td>
<td>Severe acute respiratory syndrome</td>
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<tr>
<td>SIE</td>
<td>Serious illness event</td>
</tr>
<tr>
<td>SSH&amp;E</td>
<td>Safety, security, health and environment</td>
</tr>
</tbody>
</table>
IPIECA

IPIECA is the global oil and gas industry association for environmental and social issues. It develops, shares and promotes good practices and knowledge to help the industry improve its environmental and social performance, and is the industry's principal channel of communication with the United Nations.

Through its member-led working groups and executive leadership, IPIECA brings together the collective expertise of oil and gas companies and associations. Its unique position within the industry enables its members to respond effectively to key environmental and social issues.

IOGP represents the upstream oil and gas industry before international organizations including the International Maritime Organization, the United Nations Environment Programme (UNEP) Regional Seas Conventions and other groups under the UN umbrella. At the regional level, IOGP is the industry representative to the European Commission and Parliament and the OSPAR Commission for the North East Atlantic. Equally important is IOGP's role in promulgating best practices, particularly in the areas of health, safety, the environment and social responsibility.