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هيئة الصحة العامة
PUBLIC HEALTH AUTHORITY

Guideline for Preventive Measures for Priority Infectious Diseases During Hajj 1447 AH - 2026 AD

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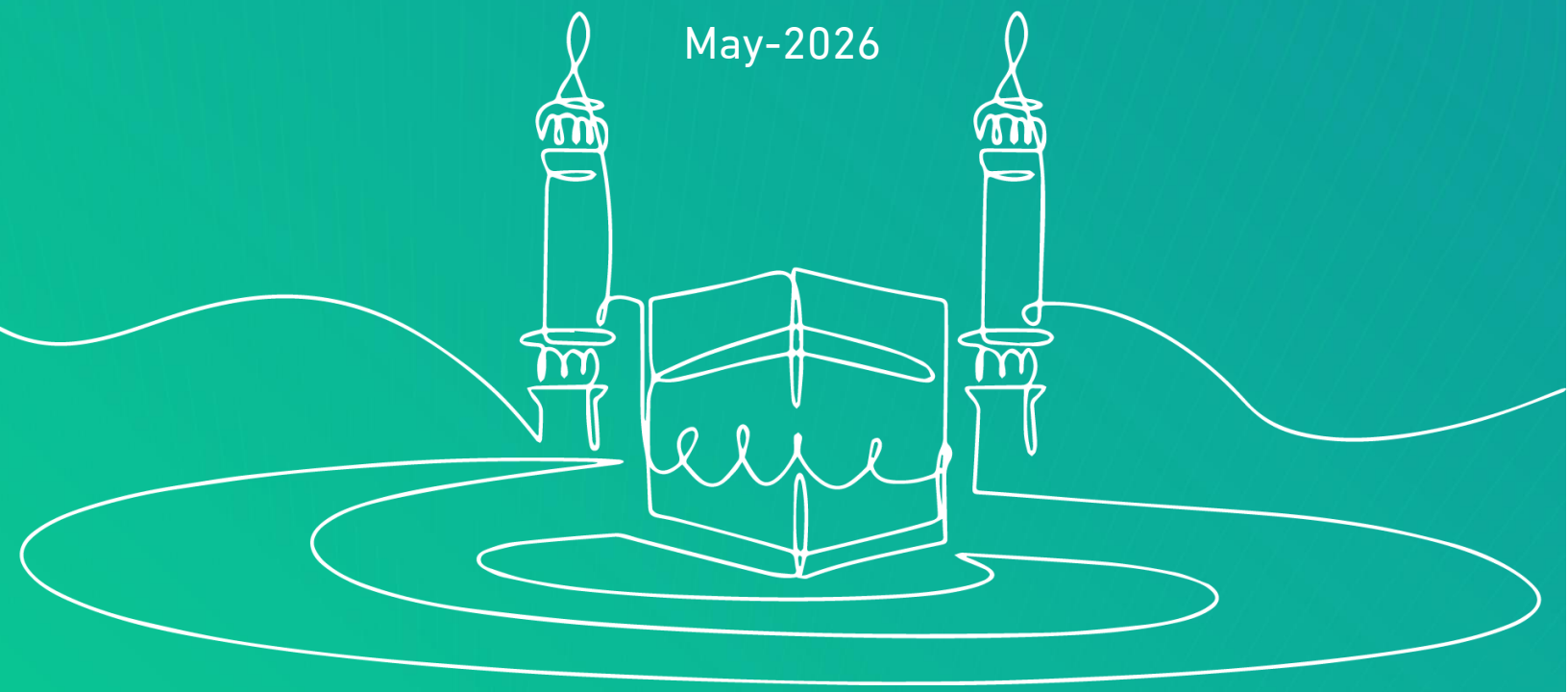

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Scope and Objectives of the Guideline

This guideline aims to standardize and organize the operational procedures related to preventive measures, surveillance, and response for priority infectious diseases during the Hajj season 1447 AH (2026 AD). It also clarifies the roles and responsibilities of the relevant entities, in order to strengthen public health preparedness and reduce the risk of infectious disease transmission during the Hajj season.

This guideline applies to pilgrims, workers participating in the Hajj season, and healthcare facilities located in the Hajj areas and the Holy Sites.

The guideline serves as a seasonal operational reference to support the management of public health risks during the Hajj season. Detailed disease-specific guidelines should be consulted when additional scientific or clinical clarification is required.

Chapter 1: Roles and Responsibilities of Health Entities During the Hajj Season

Introduction

The Hajj season is considered a unique global event in terms of human density and operational complexity, which requires a high level of coordination and integration among various health authorities. This integration aims to ensure the safety of pilgrims, enable rapid response to emergencies, and prevent the spread of infectious diseases—reflecting the readiness and efficiency of the Kingdom's public health system in managing mass gatherings in accordance with international standards.

Importance of Interagency Integration

- Ensuring rapid and coordinated response to health incidents and emergencies.
- Unifying official reporting and decision-making channels.
- Preventing duplication and overlap of responsibilities among sectors.
- Enhancing the operational efficiency of health services.

Key Health Entities and Their Roles During the Hajj Season

1. Public Health Authority (Headquarters)

Supervisory Role – Overall Oversight During the Hajj Season

The Public Health Authority (PHA) serves as the national technical reference body for prevention and public health. It is mandated to lead epidemiological surveillance, investigation, and technical analysis during the Hajj season to ensure preparedness, early response to potential health risks, and protection of public health for pilgrims and workers.

Key Roles of the Public Health Authority During Hajj:

- Develop public health policies for the Hajj season, including health requirements for domestic and international pilgrims, regulations governing pilgrims' entry in coordination with relevant authorities, guidelines for the management of priority infectious diseases during the Hajj season, and frameworks for implementing health awareness pathways and related educational materials.
- Provide overall supervision of the public health system performance in Hajj-related regions and monitor the level of preparedness for the season, including field readiness.
- Lead epidemiological surveillance activities for diseases of public health importance, including early detection and rapid response.

- Monitor and evaluate infectious disease surveillance activities and guide epidemiological investigations according to epidemiological scenarios through the Public Health Authority regional branch.
- Produce technical reports and epidemiological analyses (daily and final) to support evidence-based decision-making.
- Activate and implement the requirements of the International Health Regulations (IHR 2005) concerning potential public health events.
- Provide recommendations in the areas of prevention, public health response, and risk-based preventive vaccination.
- Operate the Mobile Public Health Authority Laboratory in the Holy Sites to provide rapid field diagnostic support through laboratory testing of priority diseases and timely reporting of results to relevant authorities.
- Conduct post-season performance review and evaluation by analyzing operational reports, identifying challenges and lessons learned, and proposing improvement opportunities for future Hajj seasons.

2. Public Health Authority Branch / Office /Section at the Region

Guidance and Coordination Role

Key Roles During the Hajj Season:

- Coordinate with the regional partner entities within and outside the health sector, such as the Ministry of Health, Ministry of Hajj and Umrah, Ministry of Interior, Customs Authority, General Authority of Civil Aviation, Health Clusters, and other relevant entities to facilitate the implementation of health procedures.
- Establish and activate communication channels with all health entities operating healthcare facilities during the Hajj season — including seasonal healthcare facilities of the health clusters, Ministry of Defense facilities, private sector healthcare facilities, and others — in addition to medical missions. This includes designating focal points for each entity and coordinating with them regarding notification reporting and relevant procedures.
- Follow up on the implementation of Public Health Authority initiatives and pathways during the season in coordination with relevant stakeholders.
- Monitor the implementation of approved operational plans for public health activities and ensure integration of field roles and responsibilities.
- Oversee the implementation of the International Health Regulations (IHR 2005) requirements at air, land, and sea points of entry.
- Monitor health screening procedures for incoming travelers and verify compliance with the required vaccinations and approved health requirements.
- Review and endorse reports received from health clusters, healthcare facilities, and hospitals in the region during the season, and share them with the headquarters for review and guidance.

- Conduct epidemiological surveillance and proactive monitoring of public health events in the region, receive notifications, and maintain direct communication with health clusters and participating health entities to track developments, verify the status of notifications, and ensure continuous updates.
- Perform advanced epidemiological analysis of incoming data to assess patterns and trends at the regional level, detect unusual signals or potential outbreaks, and escalate them to the headquarters according to approved mechanisms.
- Ensure operational coordination among public health teams to maintain integration of activities and avoid duplication of efforts.
- Oversee the preparedness of Rapid Response Teams for public health emergencies in the region and monitor their field deployment when required.
- Prepare and submit regular reports on the regional health situation during the Hajj season to the headquarters.
- Ensure the quality of public health performance and compliance with the approved preventive and epidemiological measures issued by the Public Health Authority across all operational sites during the season.
- Participate in the development and implementation of public health emergency response scenarios and plans, ensuring alignment with the overall regional Hajj emergency preparedness plans.

3. Health Clusters

Operational Role in Health Services Management

Health Clusters are responsible for managing field-based healthcare and preventive services during the Hajj season in accordance with their designated roles and guidelines, ensuring the readiness of their affiliated facilities and a rapid response to health events, in coordination with the Public Health Authority and relevant entities.

Key Roles During the Hajj Season:

- Operate hospitals and health centers participating in the Hajj season and ensure continuity of healthcare services.
- Implement health and preventive programs in the field in accordance with approved operational plans.
- Monitor the performance of participating hospitals and health centers and submit periodic reports on the level of readiness.
- Assess the risk level of notifications and escalate them based on priority through approved channels.
- Direct medical and field teams according to approved response plans.

- Deploy field teams based on coverage areas and ensure full readiness in terms of training, equipment, and implementation.
- Conduct field epidemiological investigations.
- Verify the quality of data entered into approved platforms and complete case closure procedures in accordance with guidelines.
- Monitor the implementation of isolation procedures and electronic notification of cases through the HESN Plus system in affiliated facilities, in line with approved policies.
- Analyze epidemiological reports to detect any unusual signals or potential outbreaks and report them immediately.
- Prepare epidemiological reports, including health and epidemiological situation reports, and submit them to the relevant authorities.

4. Healthcare Facilities

Operational Role in Delivering Health Services

Healthcare facilities are responsible for providing preventive and curative health services during the Hajj season in accordance with approved policies, ensuring quality of care, early detection of cases, efficient case management, and coordination with relevant entities.

Key roles of healthcare facilities during the Hajj season:

- Providing preventive and curative health services to pilgrims and workers within the facility's scope of services.
- Early detection of suspected infectious disease cases and managing them in accordance with approved operational guidelines.
- Implementing isolation procedures, standard precautions, and infection prevention and control measures based on the type of disease.
- Reporting suspected and confirmed cases through the *HESN Plus* system in line with approved policies.
- Collecting samples and transporting them to designated laboratories according to established procedures.
- Collaborating with epidemiological investigation teams and facilitating their tasks within the facility.
- Entering data into approved systems, ensuring accuracy, and completing case closure requirements.
- Adhering to referral and escalation pathways as per directives from the competent authorities.
- Submitting required notifications and reports through approved channels.
- Complying with health directives and instructions issued during the Hajj season.

Chapter 2: Preventive Requirements and Measures for Target Groups During the Hajj Season

Introduction

This chapter aims to organize the health requirements and preventive measures applied to target groups during the Hajj season, in order to reduce the risk of infectious disease transmission, enhance the safety of mass gatherings, and strengthen public health preparedness and response.

The scope of application of this chapter includes:

- Pilgrims arriving from outside the Kingdom of Saudi Arabia.
- Citizens and residents in the Hajj areas and the Holy Sites during the season.
- Workers in health and service sectors participating in Hajj operations.

Pilgrims Arriving from Outside the Kingdom

First: Screening and Management of Suspected Infectious Disease Cases

- Health surveillance centers at points of entry monitor the health status of travelers in coordination with operating authorities and conduct visual screening upon arrival during the Hajj season or upon issuance of international or national health alerts.
- If symptoms are identified, health surveillance centers immediately refer the case for assessment and appropriate action.
- If an infectious disease is suspected, health surveillance centers transfer the traveler to a designated healthcare facility for medical evaluation and implementation of infection prevention and control measures.
- Health surveillance centers assess symptoms, epidemiological history, and exposure or contact history, complete the risk-factor assessment form, and identify close contacts when required.
- Health surveillance centers temporarily isolate suspected cases at the point of entry and coordinate their transfer through a designated safe pathway to the assigned referral hospital.
- Health surveillance centers immediately notify the relevant health cluster of suspected or confirmed cases, as well as the regional branch of the Public Health Authority and the PHA Global Health Department, and coordinate with PHA branches if the traveler or contacts move to other regions.

Second: Verification of Compliance with Health Requirements

1. Health Fitness for Hajj

- Health surveillance centers at points of entry verify that pilgrims arriving from outside the Kingdom carry a **Health Fitness Checklist Form**, completed with personal data and officially signed and stamped by the authorized authority in the pilgrim's country.
- Countries must ensure that all pilgrims meet the minimum health fitness requirements to perform Hajj rituals and provide official certification confirming their medical fitness. This includes verifying that pilgrims are free from medical conditions that may prevent the performance of rituals or pose a public health risk in mass gatherings, including but not limited to:
    - Failure of major organs, including:
        - Advanced renal failure requiring dialysis
        - Advanced heart failure with symptoms on minimal exertion
        - Chronic lung diseases requiring intermittent or continuous oxygen therapy
        - Advanced liver cirrhosis with signs of hepatic failure
    - Severe neurological or psychiatric disorders impairing cognition or associated with severe mobility disability.
    - Advanced age associated with dementia.
    - Pregnancy during the last two months, as well as high-risk pregnancy at any stage.
    - Active infectious diseases with public health implications in mass gatherings, such as active pulmonary tuberculosis and viral hemorrhagic fevers.
    - Patients with active cancer receiving chemotherapy or similar immunosuppressive treatments.
- Health education must be strengthened through distribution of multilingual awareness materials addressing potential diseases and preventive measures. Education must also be delivered in pilgrims' countries of origin through ministries of health, including recognition of symptoms, early healthcare seeking, preventive practices, vaccination importance, and general preventive measures.
- Compliance with this requirement must be monitored and reported within daily statistics according to the approved mechanism.
- Coordination must be conducted with Hajj missions to ensure adherence to approved health requirements and to provide them with necessary guidance and preventive plans.
- Additional preventive measures must be applied to pilgrims arriving from countries or regions classified as high public-health risk based on approved risk assessment, which may include random sampling upon arrival for epidemiological surveillance purposes.

2. Mandatory Vaccination Certificates

Meningococcal Disease

Health surveillance centers at points of entry verify that all arrivals from the countries listed in **(Annex 1-A)** possess a vaccination certificate confirming receipt of one of the following vaccines:

1. Quadrivalent conjugate meningococcal vaccine (ACWY) or pentavalent conjugate vaccine (ACWYX), administered not less than **10 days** and not more than **5 years** prior to arrival.
2. Quadrivalent polysaccharide vaccine (ACYW), administered not less than **10 days** and not more than **3 years** prior to arrival.

- The health authority in the pilgrim's country must ensure timely vaccination and clearly document the vaccine name and date of administration on the vaccination certificate.
- If the type of quadrivalent vaccine is not specified, the certificate is considered valid for **three years** from the date of vaccination.
- Health surveillance centers must strictly verify vaccination certificates for all travelers arriving from designated countries.

Poliomyelitis

1- Health surveillance centers at points of entry verify that arrivals from the countries listed in **(Annex 1-B)** possess a vaccination certificate confirming receipt of Oral Polio Vaccine (OPV) within a period of no less than four (4) weeks and no more than six (6) months prior to arrival, or Inactivated Polio Vaccine (IPV) within a period of no less than four (4) weeks and no more than twelve (12) months prior to arrival.

2- Health surveillance centers at points of entry verify that arrivals from the countries listed in **(Annex 1-C)** possess a vaccination certificate confirming receipt of one dose of Inactivated Polio Vaccine (IPV) within a period of no less than four (4) weeks and no more than twelve (12) months prior to arrival. Evidence of receipt of Oral Polio Vaccine (OPV) containing type 2 poliovirus, including the novel type 2 Oral Polio Vaccine (novel OPV2), may also be accepted if administered within a period of no less than four (4) weeks and no more than six (6) months prior to arrival.

Yellow Fever

All arrivals from the countries listed in (Annex 1-D) are required to present a valid yellow fever vaccination certificate confirming receipt of the vaccine at least ten (10) days prior to arrival. The certificate remains valid for the lifetime of the traveler.

- The branch/office/section of the Public Health Authority in the relevant region/governorate must be notified with the pilgrim's complete details, including full name, nationality, passport number, flight number, date of arrival, complete accommodation information, in addition to the contact details of the campaign supervisor.
- The traveler must be monitored daily until the certificate becomes valid or until six (6) days have elapsed, whichever occurs first.

3. Disinfection Certificates for Aircraft, Ships, and Other Conveyances for the Prevention of Vector-Borne Diseases

- All aircraft, ships, and other means of transport arriving from the countries listed in **(Annex 2)** are required to present a certificate confirming that disinfection has been carried out in accordance with the standards approved by the World Health Organization (WHO).

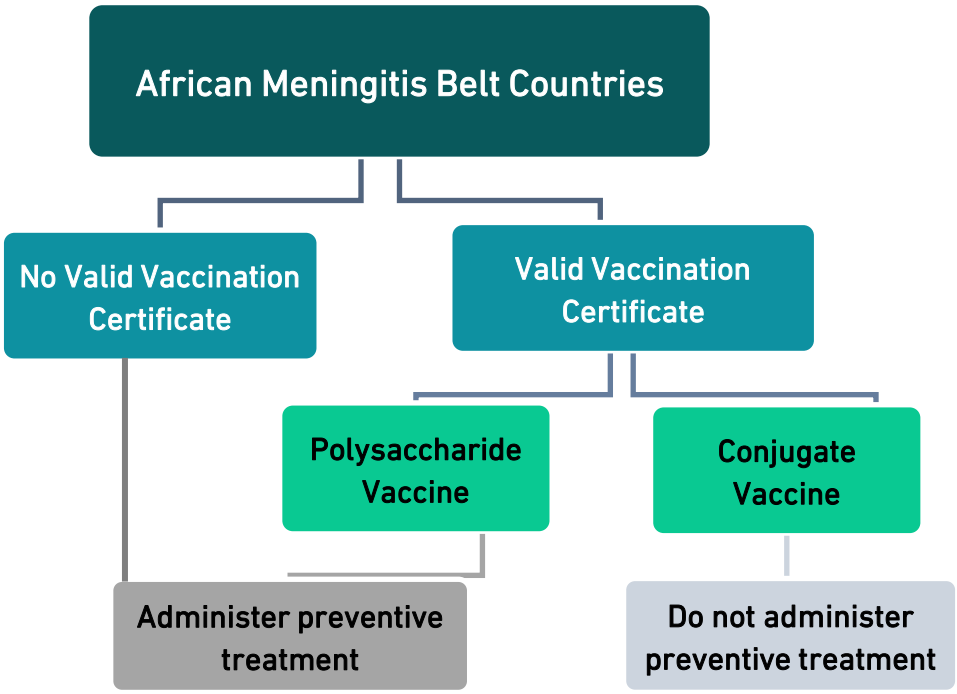
Third: Additional Measures at Points of Entry

Additional measures must be implemented at health points of entry based on public health risk assessment and targeted countries, in accordance with approved guidance issued by the Public Health Authority, to enhance prevention and reduce the risk of infectious disease transmission.

1. Meningococcal Disease

- Preventive chemoprophylaxis must be administered to travelers arriving from designated countries under the direct supervision of health surveillance centers at points of entry, in accordance with approved procedures, with adherence to the following:
    - Verification that the traveler has not received the conjugate vaccine within the approved validity period.
    - Confirmation of absence of medical contraindications.
    - Compliance with approved dosage according to age group and health status.
    - Documentation of chemoprophylaxis administration in official surveillance records.

Target group:
All travelers arriving from designated countries of all age groups, except those who have received the conjugate vaccine.



Mechanism for Administering Preventive Treatment at Points of Entry For all medications listed below, the accompanying package insert must be carefully reviewed and all instructions strictly followed, particularly those related to storage conditions, technical administration procedures, and contraindications.

#	Group	Medication/Dose
1	Children	**Rifampicin syrup**, as follows: • **Infants less than one month of age:** 5 mg/kg every 12 hours for two days (4 doses). • **Children aged one month and older:** 10 mg/kg every 12 hours for two days (4 doses).
2	Adults	-A single dose of **Ciprofloxacin 500 mg** orally. -If contraindications exist, it may be replaced with **Rifampicin 600 mg** orally **twice daily for two days** (total of four doses).
3	Pregnant Women	A single intramuscular dose of **Ceftriaxone 250 mg**.

2. Poliomyelitis

The following procedures must be applied to travelers arriving from countries targeted for poliomyelitis:

- Administration of **one dose of bivalent oral poliovirus vaccine (bOPV)** at points of entry within the Kingdom.
- Adherence to approved scientific guidance regarding contraindications to vaccine administration.
- Administration of **one dose of inactivated poliovirus vaccine (IPV)** to pregnant women instead of the oral vaccine.
- Documentation of vaccine administration in approved forms and records.

Target group:

All travelers arriving from designated countries, regardless of age or previous vaccination history.

3. Cholera

All travelers arriving from countries affected by cholera outbreaks are required to undergo the following procedures:

- Monitoring health status upon arrival and conducting visual screening.
- Clinical assessment at the health surveillance center at the point of entry.
- Completion of the risk-factor assessment form.
- Activation of the safe referral pathway when suspicion arises.
- Identification of direct contacts and documentation of their contact information.
- Performance of rapid cholera diagnostic testing for suspected cases.

In the event of a positive test:

- Immediate initiation of treatment according to the approved protocol.
- Administration of chemoprophylaxis to contacts in accordance with national guidance.
- Coordination with the relevant health cluster for follow-up of the case.

Fourth: Preventive Measures During the Departure Phase

• Health surveillance centers at points of entry must coordinate with port operators and transport companies to monitor the health status of departing travelers and refer any individual exhibiting symptoms to the port health surveillance center.

• Health surveillance centers must apply visual screening to departing travelers at the end of the Hajj season or in response to international public health risks, as determined by the Public Health Authority.

• If a departing traveler is referred to a health surveillance center, staff must verify symptoms consistent with suspected infectious disease and apply the procedures for managing suspected cases.

Preventive Measures for Citizens, Residents, and Workers During the Hajj Season

Meningococcal Disease Vaccination

The following preventive measures must be applied to citizens, residents, and workers during the Hajj season to reduce the risk of meningococcal disease transmission and enhance public health protection in mass gathering settings:

1. Health Education and Vaccination of Citizens and Residents

Citizens and residents intending to perform Hajj should be educated and encouraged to receive the meningococcal vaccine at least 10 days prior to travel or arrival in the Hajj areas, to ensure adequate immune response before performing rituals.

2. Vaccination of Assigned and Participating Personnel

All personnel assigned or participating in Hajj operations from all sectors must receive the meningococcal vaccine at least 10 days prior to arrival in the Holy Sites, including health, service, security, and organizational sectors.

3. Vaccination of Port Workers

Vaccination of workers at land, sea, and air ports against meningococcal disease must be verified in accordance with approved guidance

4. Periodic Vaccination of High-Risk Groups

Revaccination of high-risk groups is recommended every five years, in accordance with Public Health Authority recommendations.

5. Vaccination of Residents of Hajj Areas

Vaccination of citizens and residents in Hajj areas is recommended, with priority given to high-density neighborhoods—particularly areas with undocumented residents—to reduce the risk of disease transmission during the season.

Recommended preventive vaccinations

In addition to the approved mandatory vaccines, other preventive vaccinations are recommended in accordance with the health guidance issued by the Public Health Authority. These recommendations may vary from one season to another based on the global and local epidemiological situation of infectious diseases, as well as the timing of the Hajj season, with the aim of enhancing protection and reducing the risk of disease transmission during Hajj.

Chapter 3: Epidemiological Surveillance During the Hajj Season

Introduction

Epidemiological surveillance constitutes the cornerstone of disease prevention and control during the Hajj season. The success of the public health plan depends on the efficiency of early detection and rapid response. With more than two million pilgrims from over 180 countries, the risk of infectious disease transmission is high, necessitating an integrated surveillance system that combines field, laboratory, analytical, and digital components under the direct supervision of the Public Health Authority, in coordination with the relevant stakeholders.

Types of Surveillance and Field Examples

Type	Operational Mechanism
Routine	Daily electronic reporting from health facilities via HESN Plus
Event-based	Detection of atypical signals or clusters of cases
Proactive	Periodic field visits for investigation prior to case occurrence
Enhanced	Heightened sensitivity during critical days

General Framework of Surveillance During Hajj

- All surveillance activities are managed under the supervision of the headquarters, in coordination with the Authority's branch/office/section in the region and the relevant health clusters.
- The system relies on direct electronic linkage between health facilities (hospitals, field clinics, ambulance points, and mobile units) and the HESN Plus system for case notifications, in addition to daily reports.
- Surveillance operates on a shift system (24/7) to ensure immediate reporting and real-time analysis of indicators.

Core Pillars of Surveillance During Hajj

1. **Development of Guidelines:** Preparation of guidelines for public health events and priority diseases during Hajj, including standard case definitions, preventive measures, and laboratory testing.
2. **Notification and Surveillance:** Reporting and epidemiological surveillance of public health events (infectious diseases, outbreaks, etc.) from all service points in the Western Sector, entry points, and other areas.

3. **Daily Analysis:** Review of notifications, data analysis, performance monitoring indicators, and presentation to decision-makers.
4. **Rapid Response:** Activation of field investigation teams, isolation, and treatment according to the nature of the event.
5. **Feedback:** Follow-up of field investigation outcomes and laboratory results and sharing them with relevant entities to take appropriate action.
6. **Institutional Integration:** Unification of communication channels and ensuring integration of procedures between the Public Health Authority and supporting agencies.

Detailed Objectives of Epidemiological Surveillance

- Detection of suspected and confirmed cases of priority infectious diseases.
- Monitoring daily indicators and disease trends.
- Supporting decision-makers with analytical information to enable informed decisions.
- Ensuring data quality and accuracy through review and field and laboratory verification.
- Preparation of daily reports and final cumulative reports.

Scope of Application

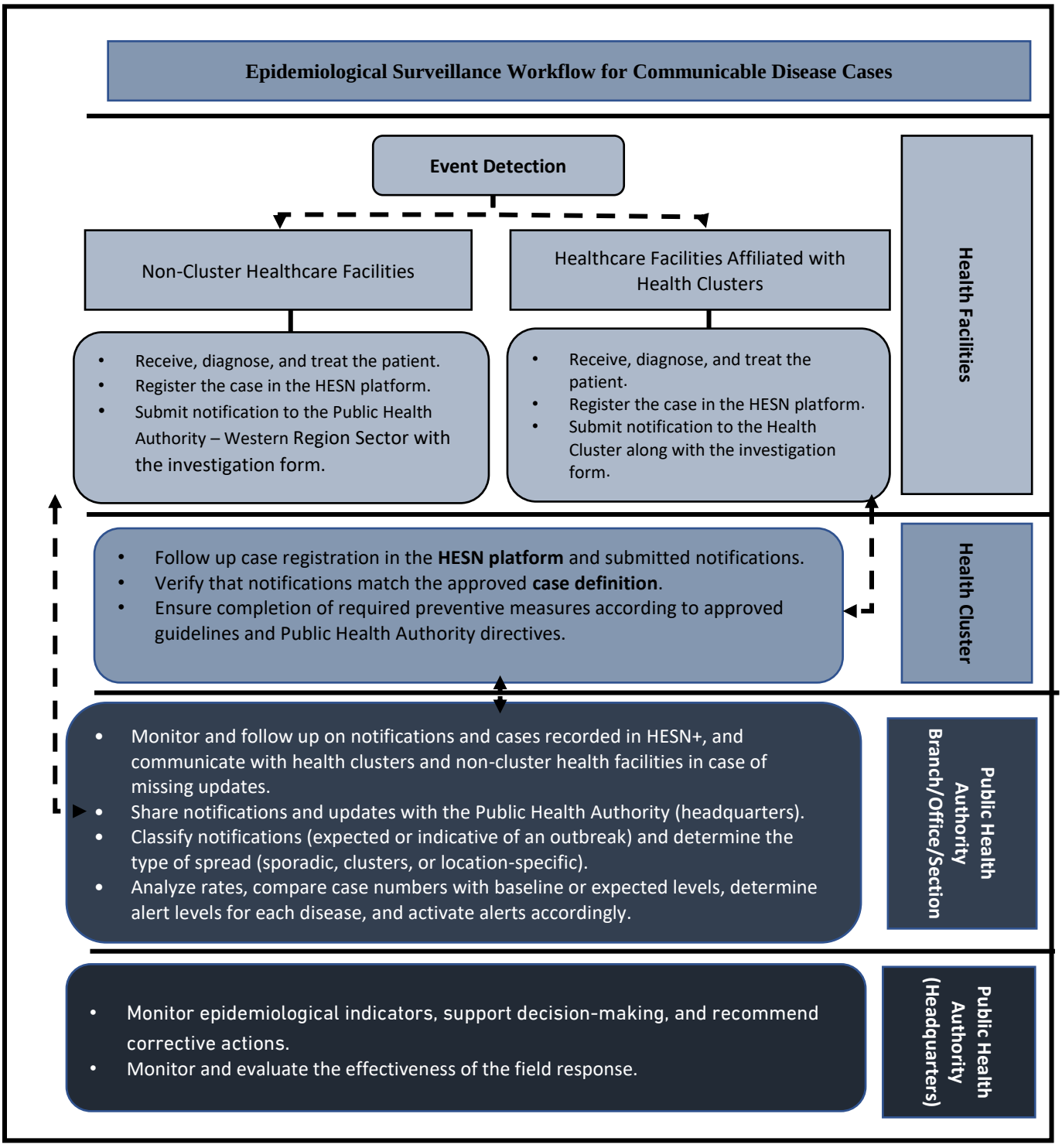
- Health facilities operating in the Western Sector (Makkah, Madinah, Jeddah, and Taif) and the Holy Sites.
- Health surveillance centers at points of entry.
- Medical service offices of Hajj missions.

Implementing Entities and Their Operational Roles

Entity	Key Tasks and Responsibilities
Public Health Authority (Headquarters)	• Provide senior technical leadership, develop unified surveillance guidelines and procedures, oversee technical platforms, operate the mobile laboratory unit, and deliver technical advisory support. • Monitor epidemiological indicators, support decision-making, and recommend urgent corrective actions in response to early outbreak alerts.
Mobile Public Health Authority Laboratory	• Receive samples, conduct field diagnostic tests, and provide preliminary results to field teams to accelerate response.
Authority's Branch/office/section in the Region/Governorate	• Provide general oversight of policy implementation and operational plans in Hajj areas, approve reports, and submit outputs to the Public Health Authority. • Ensure overall supervision of surveillance activities, including data collection and reporting. • Review reports received from health clusters and escalate them to headquarters.
Health Clusters	• Provide field supervision of public health operational plans; coordinate among field teams (epidemiological surveillance, infection control, environmental health, laboratories, etc.); monitor team performance; ensure quality of implementation; and report to the Authority's regional branch/office/section. • Implement field surveillance and investigation activities, receive notifications from facilities, verify data completeness, investigate cases and contacts, apply preventive measures, and analyze daily epidemiological trends. • Ensure immediate reporting of suspected and confirmed cases, oversee sample collection, complete electronic forms, implement isolation measures, and submit notifications.
Medical Service Offices of Hajj Missions	• Coordinate with the health entities regarding cases registered among their pilgrims. • Report suspected cases and exchange information through joint points of contact.

Operational Mechanism of Epidemiological Surveillance During Hajj

Surveillance is implemented through an interconnected series of daily operational procedures aimed at early detection, analysis of epidemiological patterns, and issuance of proactive alerts before an event escalates into an outbreak. This includes:



Sequence of Investigation Procedures for Suspected and Confirmed Cases During Hajj (Field Operational Pathway)

1. **Detection of a Suspected or Confirmed Case**
    - Identify the case by a physician or nurse at a hospital, field clinic, or health camp.
    - Base identification on approved case definitions.
2. **Isolation and Infection Prevention and Control (IPC) Measures**
    - Transfer the patient to an appropriate isolation room according to the transmission mode (airborne, droplet, contact, or fecal–oral), in line with approved guidelines.
    - Provide personal protective equipment according to the risk level.
    - Disinfect equipment and surfaces after each interaction.
    - Restrict unnecessary contact and patient movement.

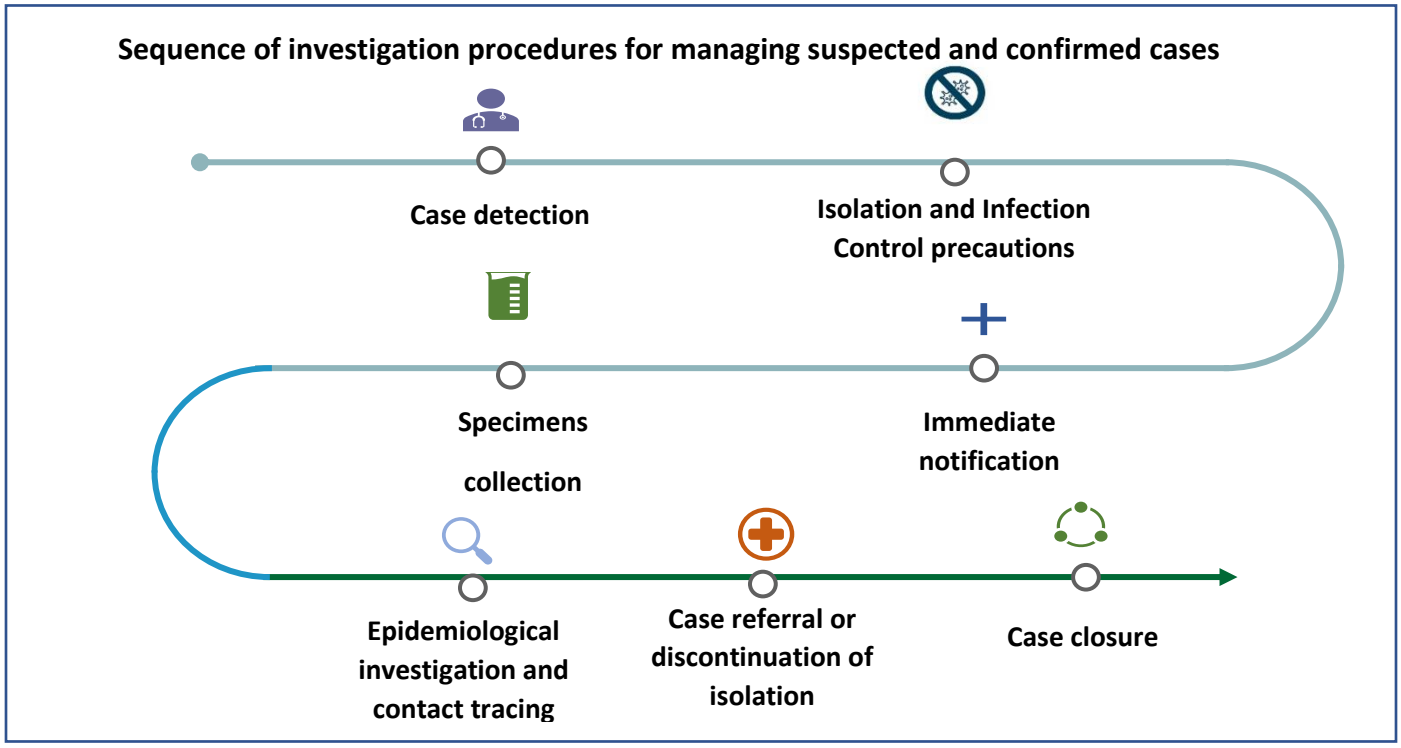
3. **Immediate Case Notification**
    - Submit notification via HESN Plus, in addition to reporting as per the approved infectious disease mechanism.
    - If system access is unavailable, notify by phone the epidemiological surveillance unit at Western Sector offices for subsequent electronic documentation.
4. **Specimens Collection and Transport**
    - Collect specimens according to the disease type and laboratory test requests issued through HESN Plus.
    - Transport specimens as per the approved mechanism to the Mobile Public Health Authority Laboratory in the Holy Sites or to the Public Health Authority Laboratory in Riyadh.
5. **Epidemiological Investigation and Contact Follow-up**
    - **Initiate investigation** within 24 hours of notification.
    - **Identify** the exposure period and potential source of infection.
    - **List and classify contacts** (high, medium, or low risk).
    - **Follow up contacts** according to the disease-specific incubation period.
    - **Collect specimens** only from symptomatic contacts (unless otherwise specified in the protocol).
6. **Case Referral or Discontinuation of Isolation**

Case Type	Action
Case not requiring admission	Initiate the treatment and the patient education
Case requiring medical isolation	Admit with appropriate IPC measures
High-risk case	Refer to a designated referral hospital using dedicated ambulance
Infectious disease–related fatality	Implement the procedures for managing infectious disease–related fatalities.

7. **Final Report and Case Closure**

   Close the notification when:

   - The incubation period ends without new cases.
   - Closure is approved by the Health Cluster and the Public Health Authority.
   - A copy of the final report must be submitted to the headquarters for event archiving.



Levels of Alert and Associated Actions During the Hajj Season

Alert Level	When Issued? (Indicators)	Required Actions
Level 1: Internal Alert	• A single case of a priority disease. • Slight increase in an expected disease (e.g., diarrhea or influenza).	✓ Conduct routine investigation procedures.
Level 2: Field Alert	• Two or more cases recorded at the same location within a short period. • Initial indication of a cluster.	✓ Implement additional corrective measures (disinfection, movement control, awareness, etc.).
Level 3: Epidemiological Alert	• Significant increase above the normal rate. • A case of a rare or high-risk disease (e.g., MERS-CoV, Ebola, or Marburg).	✓ Escalate to the Public Health Authority to support decision-making and recommend urgent corrective actions. ✓ Activate the rapid response plan to immediately control the outbreak.

Quality Assurance and Continuous Improvement

- Conduct daily periodic audits on a sample of activities and notifications to verify accuracy of implementation and compliance with approved policies and procedures.
- Review operational performance indicators and compare actual results with targets to ensure continuous improvement in service efficiency and output quality.
- Hold regular analytical meetings among concerned entities to review indicators, discuss challenges, identify improvement opportunities, and take necessary corrective decisions.
- Document lessons learned after the season through a comprehensive report highlighting strengths, development opportunities, and recommendations for upcoming seasons.
- Promote a culture of quality and continuous improvement through field follow-up, feedback, and exchange of expertise among teams.

Epidemiological Surveillance Indicators

Domain	Indicator	Calculation Method
Immediate reporting timeliness	Percentage of immediate notifications reported within ≤ 8 hours from diagnosis	(Notifications within ≤8 hours ÷ total immediate notifications) × 100
Non-immediate reporting timeliness	Percentage of non-immediate notifications reported within ≤ 72 hours from diagnosis	(Notifications within ≤72 hours ÷ total non-immediate notifications) × 100
Notification completeness	Percentage of notifications with complete data per the form	(Completed notifications ÷ total notifications) × 100
Response speed	Average time between notification and arrival of the field investigation team (≤ 4 hours)	(Total time between notification and team arrival for all notifications ÷ total notifications)
Preventive actions completion	Completion of required preventive measures for infectious diseases and food-borne poisonings detected among pilgrims or Hajj workers	(Notifications with completed preventive actions ÷ total notifications) × 100
Case closure	Percentage of notifications closed after completion of preventive measures	(Closed notifications ÷ total notifications) × 100
Field investigation	Percentage of investigations completed within the specified time (24 hours for immediate cases) ≤ 90%	(Investigations completed within timeframe ÷ total investigations)
Alerting & early warning	Number of documented early warning alerts	—
Epidemiological analysis	Issuance of two analytical reports daily with surveillance indicators	100% daily compliance

Rapid Response

Rapid Response: A coordinated and timely intervention activated immediately upon suspicion or notification of a public health event, aimed at prompt investigation, verification of the event, and implementation of necessary preventive measures to control the event, in addition to effective communication with relevant entities to limit its spread and protect public health.

The response is based on the following principles:
Speed – coordination – efficiency – staff safety – containment of spread.

Determining the Response Level

The event is classified to activate the Rapid Response Team (RRT). The response level is determined by the Authority's branch/office/section in the region/governorate, in technical coordination with the headquarters, according to the following criteria:

Level	Description	Activation Criteria
Normal	A single case that can be contained within the facility	One suspected or confirmed case with no secondary transmission
Urgent	A limited event requiring rapid field action	More than one case linked to a single location (camp or hotel)
Emergency	An outbreak or risk of wide spread	Transmission across multiple locations or infection among healthcare workers

Rapid Response Team (RRT)

A multidisciplinary team trained in a range of essential skills (technical and field-based) to respond effectively and efficiently to public health emergencies, including:

- Risk assessment
- Epidemiological investigation
- Infection prevention and control
- Surveillance and follow-up
- Reporting
- Laboratory testing

Team Objectives:

1. Early detection and verification
2. Coordination and effective response
3. Rapid containment and limitation of spread

Activation of the Rapid Response Team:

After classifying the event, the urgent and emergency response levels may be activated.

❖ **When more than one case is suspected and linked to a single location, such as:**

- The appearance of two or more cases with the same symptoms.
- Recording a cluster of cases among healthcare workers or staff within the same facility.

❖ **When a high-risk or rapidly transmissible disease is detected.**

❖ **When there are confirmed infections or fatalities among healthcare workers:**
Any confirmed infection or fatality of a healthcare worker resulting from occupational exposure is considered a high-risk event requiring an urgent response and evaluation of preventive measures.

❖ **When unusual epidemiological indicators appear, such as:**

- A sudden increase in the number of clinically similar cases within a short period.
- Notifications from medical missions or Public Health Authority Laboratories regarding epidemiologically linked cases.

❖ **When a directive is issued by the Public Health Authority.**

Chapter 4: Management of Infectious Disease–Related Fatalities During Hajj

Introduction

This chapter aims to regulate the operational procedures for managing infectious disease–related fatalities resulting from infectious diseases during the Hajj season, in a manner that ensures the protection of healthcare workers, prevents the transmission of infection, and guarantees coordination among health authorities, security agencies, and Hajj missions.

Risk Classification of Infectious Disease–Related Fatalities

Handling of the body is determined based on the mode of disease transmission and risk categories:

- **Category 4:** High-risk diseases (Crimean-Congo hemorrhagic fever, Marburg, Ebola, and Middle East Respiratory Syndrome).
- **Category 3:** Moderate-to-high risk diseases (tuberculosis, cholera, and meningitis).
- **Category 2:** Low-to-moderate risk infectious diseases.
- **Category 1:** No risk to low risk of disease transmission.

First: General Procedures for infectious disease–related fatalities

- **Certify the death** by the attending physician, identifying the direct cause of death and the causative disease in accordance with approved regulations.
- **Adhere to infection prevention and control procedures** when handling the body, including the use of appropriate personal protective equipment based on the level of risk.
- **Limit handling of the body** to the minimum number of qualified and trained personnel.
- **Handle the body** in a designated room or isolated area away from patients and visitors.
- **Place the body** in a special, tightly sealed body bag according to the risk classification.
- **Disinfect the external surface** of the body bag using an approved disinfectant.
- **Do not open the body bag after sealing** except in cases of absolute necessity and in accordance with the instructions of the competent authorities.

Second: Infection Prevention and Control Measures During Handling of the Body

- **Strictly adhere** to standard isolation precautions and additional precautions based on the type of disease (contact, droplet, or airborne).
- **Dispose safely** of all used tools and medical waste in accordance with the approved medical waste management system.
- **Perform final disinfection** of the place of death, isolation room, and transport vehicle using approved disinfectants.
- **Prohibit any practices** that may lead to the release of fluids or aerosols from the body.

Third: Transport of the Body

- **Transport the body** through a designated and secure route within the health facility, preventing contact with patients or visitors.
- **Coordinate in advance** with relevant authorities to determine the transport mechanism and the receiving location.
- **Use a dedicated, properly equipped transport vehicle** and **disinfect it immediately** after completion of transport.
- **Preserve the dignity of the deceased** during transport and **strictly observe** approved religious and regulatory requirements

Fourth: Notification and Coordination

- **Immediately notify deaths** resulting from infectious diseases to:
    - The relevant Health Cluster
    - The Regional Branch of the Public Health Authority
- **Register the death** in the approved electronic system and **complete all required notification forms**.
- **Coordinate with relevant competent authorities** if the deceased is a pilgrim or Umrah performer, in accordance with the approved pathway.

Fifth: Management of Contacts

- **Identify all contacts** of the case prior to death, including staff, companions, and medical personnel.
- **Conduct health assessment** of contacts based on the type of disease and level of risk.
- **Apply follow-up, isolation, or chemoprophylaxis measures** as determined by the competent authorities.

Sixth: Follow-up and Documentation

- **Document all procedures** from the moment of suspicion until handover of the body.
- **Retain records and reports** within the facility's files for reference when needed.
- **Send a copy of the report** to Headquarters for event archiving.
- **Review procedures periodically** to enhance preparedness and response during Hajj seasons.

Washing, viewing, and embalming

Washing	Viewing:	Embalming
-**Permitted** for Categories **2–3** with the use of personal protective equipment (PPE). -**Prohibited** for **Category 4**.	-**Permitted with limitations** for Categories **2–3**. -**Prohibited** for **Category 4**. -**Contact with the body is prohibited in all cases.**	-**Permitted** for low-risk cases. -**Prohibited** for high-risk cases. -**International repatriation is prohibited** unless embalming has been completed in accordance with official regulations.

Disease-Specific Procedures

Disease-specific procedures must be applied according to the type of disease and its mode of transmission. Refer to the *"Infection Prevention and Control Guideline for Mortuary Departments,"* which outlines the mechanism for handling bodies of infected cases according to the level of risk.

Disease-specific procedures for priority diseases during the Hajj season:

High-Risk Respiratory Diseases (Middle East Respiratory Syndrome and Severe Influenza)

- Wear the required personal protective equipment in accordance with the specified isolation precautions for handling the body.
- Washing is permitted in accordance with infection prevention and control procedures.
- Use a single or double body bag based on risk assessment.
- Viewing is prohibited or strictly limited, with no physical contact.
- Autopsy and embalming are prohibited.

Viral Hemorrhagic Fevers (Ebola, Marburg, and Crimean-Congo Hemorrhagic Fever)

- Apply the highest level of protection.
- Use a double body bag.
- Washing and viewing are prohibited.
- Do not remove any medical devices attached to the deceased.
- Autopsy and embalming are prohibited.
- Isolate the area until all procedures are fully completed.

Bacterial Meningitis

- Wear personal protective equipment in accordance with the required and specified isolation precautions for handling the body.
- Washing is permitted with full personal protective equipment.
- Use a double body bag.
- Provide chemoprophylaxis to contacts.

Pulmonary Tuberculosis

- Wear personal protective equipment in accordance with the required and specified isolation precautions for handling the body.
- Washing is permitted with caution and without generating aerosols.
- Use a double body bag.
- Autopsy is prohibited except in cases of absolute necessity.

Cholera

- There is a potential risk of disease transmission through body fluids.
- Washing is permitted with strict precautions.
- Use a double body bag.
- Comprehensive disinfection of the site.

Chapter 5: Priority Infectious Diseases and Their Management During the Hajj Season

COVID-19

Disease Description	An acute respiratory illness caused by the SARS-CoV-2 coronavirus, with severity ranging from mild symptoms to severe disease that may result in fatal outcomes, especially among high-risk groups. Symptoms include fever (above 38°C), dry cough, shortness of breath, generalized fatigue, and loss of smell or taste, and may sometimes include diarrhea and gastrointestinal symptoms.
Suspected Case Definition	Definition 1: A patient presenting with acute onset of respiratory symptoms, with at least one of the following: - Fever measured at the time of suspicion or a history of fever - Cough - Shortness of breath Definition 2: A patient with sudden onset of at least one of the following: headache, sore throat, runny nose, nausea, or diarrhea, and who, within the 14 days prior to symptom onset, met at least one of the following: - Had documented contact with a confirmed COVID-19 case, or - Resided in or worked at a facility known to be experiencing a COVID-19 outbreak. Definition 3: Any adult patient with severe acute respiratory infection (SARI) of unknown cause, including community-acquired pneumonia (CAP) or hospital-acquired pneumonia (HAP).
Confirmed Case Definition	A suspected case that is laboratory confirmed.
Incubation Period	Ranges from 2 to 14 days.
Period of Infectivity	From 48 hours before symptom onset up to 10 days after symptom onset.
Modes of Transmission	Through respiratory droplets and aerosols during coughing, sneezing, or talking, or by touching contaminated surfaces followed by touching the nose or mouth.
High-Risk Groups	Older adults, individuals with chronic diseases (diabetes, heart disease, lung disease), and immunocompromised persons.
Preventive Measures	Wearing masks, hand hygiene, physical distancing, adequate ventilation, and vaccination against the disease.

Managing COVID-19 case

Case Management

-Suspected or confirmed case: Isolate in Holy Sites hospitals.

-Case not requiring admission: Isolate in a camp or residence for **5 days** from symptom onset, they may continue performing rituals, provided that necessary support is ensured to complete the rites, while preventing contact with other pilgrims throughout the isolation period and adhering to preventive measures (wearing a mask).

Treatment

-Supportive care: Oxygen therapy and supportive medications as indicated.

-Antivirals: As per case severity and clinical guidelines.

- Paxlovid might be prescribed for mild to moderate cases, based on the treating physician's assessment, for patients who do not require hospitalization. The dose is 300 mg nirmatrelvir with 100 mg ritonavir, taken orally. It is indicated for non-hospitalized immunocompromised patients or those with chronic conditions to reduce the risk of complications and mortality, particularly among unvaccinated individuals.

Diagnosis

-Specimen: Nasopharyngeal/oropharyngeal swab.

-Testing: Rapid **antigen** test or **polymerase chain reaction (PCR)**.

Specimen Referral: send the positive specimens from health facilities **inside and outside the Holy Sites** (Makkah, Madinah, Jeddah, and Taif) to the **Public Health Authority Laboratory in Riyadh**.

Notification:

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately.

-Register the case in the HESN Plus system.

Contact Follow-up

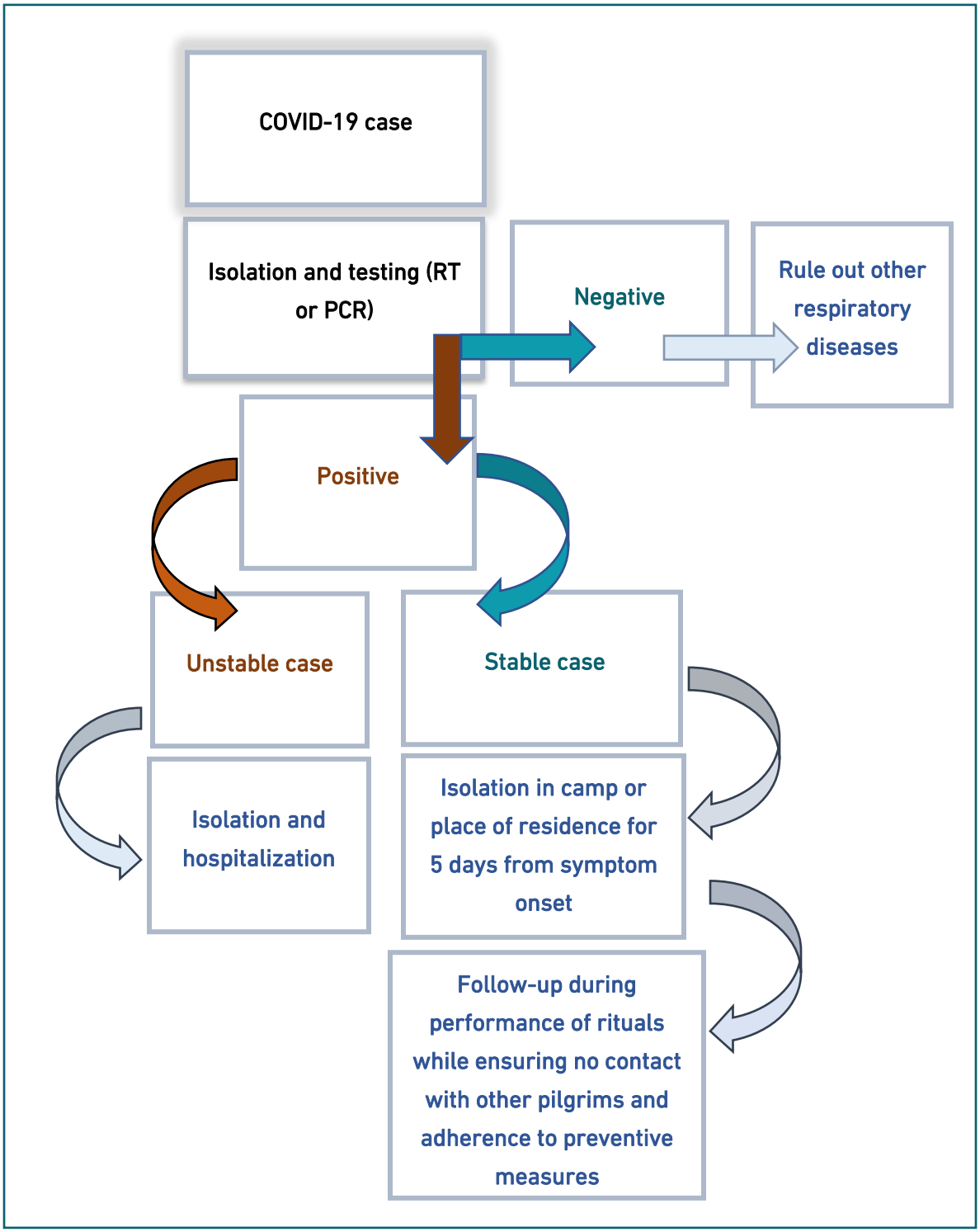
-Daily symptom monitoring and testing **as needed**.

- Provide health education to contacts on symptom monitoring and general preventive measures.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

- If there is an increase in the number of cases.
- If there is a critical case or a fatality associated with the disease.

Workflow for Managing a COVID-19 Case



Seasonal Influenza

Disease Description	An acute viral respiratory illness caused by influenza A or B viruses, characterized by the sudden onset of symptoms that may include fever, chills, dry cough, muscle aches, severe fatigue, sore throat, runny or blocked nose, and headache. The severity of illness ranges from mild symptoms to severe disease, and it may lead to complications, particularly among high-risk groups.
Suspected Case Definition	A case with fever ≥38°C accompanied by cough within the previous 10 days, that required hospital admission, or resulted in complications or fatal outcomes.
Confirmed Case Definition	A suspected case that is laboratory confirmed.
Incubation Period	Usually 1–4 days.
Period of Infectivity	Ranges from 2–7 days from onset of clinical symptoms.
Modes of Transmission	Through respiratory droplets (during coughing or sneezing) or via contaminated surfaces.
High-Risk Groups	Older adults, children <5 years, pregnant women, individuals with chronic diseases (heart or lung disease, diabetes), and immunocompromised persons.
Preventive Measures	Seasonal influenza vaccination before the season, wearing masks, regular hand hygiene, physical distancing, and adequate ventilation.

Managing Seasonal Influenza Case

Isolation

-Droplet isolation in a separate room when needed, especially for severe cases.

-Isolate the patient for **at least 24 hours after fever resolution**.

Notification:

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately.

-Register the case in the HESN Plus system.

Specimen Referral: send the positive and negative specimens from health facilities **inside and outside the Holy Sites** (Makkah, Madinah, Jeddah, and Taif) to the **Public Health Authority Laboratory in Riyadh**.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

- If there is an increase in the number of cases.
- If there is a critical case or a fatality associated with the disease.

Diagnosis

-Specimen: Nasopharyngeal/oropharyngeal swab.

-Testing: Polymerase Chain Reaction (**PCR**) or **rapid test**.

Contact Follow-up

-Conduct **immediate epidemiological investigation** and identify all contacts.

-Monitor contacts for **symptoms throughout the incubation period**.

-Refer contacts to the nearest health facility if symptoms develop.

-Chemoprophylaxis: Antivirals may be used for high-risk groups (e.g., **Tamiflu**) as preventive therapy.

Treatment

-Treatment should ideally begin **within 48 hours of symptom onset** to reduce complications and mortality.

-Oseltamivir (Tamiflu) orally.

-Zanamivir by inhalation *(contraindicated in patients with asthma or chronic lung disease)*.

-Symptomatic treatment:

- Analgesics/antipyretics (paracetamol, ibuprofen).
- Adequate oral fluids to prevent dehydration.
- Rest and sufficient sleep to support the immune system.

Middle East Respiratory Syndrome (MERS)

Disease Description	An acute respiratory illness caused by the Middle East respiratory syndrome coronavirus (MERS-CoV), characterized by the onset of fever, chills, cough, shortness of breath, and muscle aches, sometimes accompanied by gastrointestinal symptoms such as diarrhea. The condition may progress to severe pneumonia or respiratory failure and can lead to fatal outcomes, especially among high-risk groups.
Suspected Case Definition – Adults	Suspected when any one of the following is present: 1) Moderate to severe acute pneumonia (≥3 points according to the pneumonia severity score) or acute respiratory distress syndrome (ARDS) based on clinical assessment or imaging; or 2) Sudden, unexplained deterioration of a chronic condition (e.g., heart failure or end-stage renal disease on dialysis).
Suspected Case Definition – Adults & Children	Suspected when both criteria below are present: 1. Clinical/Laboratory: Fever ≥ 38°C with or without respiratory symptoms, or gastrointestinal symptoms (vomiting/diarrhea), plus one laboratory indicator: • White blood cell count < 3.5×10^3/L, or • Thrombocytopenia; occurring within 14 days of symptom onset. 2. Epidemiological Link (within last 14 days): • Contact with a confirmed case; or • Visit to a healthcare facility where a confirmed case was present or treated; or • Direct contact with camels or consumption of camel products (unpasteurized milk, raw meat, urine).
Confirmed Case Definition	A case laboratory confirmed by detection of MERS-CoV using polymerase chain reaction (PCR) testing.
Incubation Period	3–14 days.
Period of Infectivity	Preliminary studies indicate no transmission before onset of clinical signs and symptoms.
Modes of Transmission	Respiratory droplets during coughing/sneezing; direct contact with respiratory secretions; or contact with infected camels.
High-Risk Groups	Older adults; individuals with chronic diseases (diabetes, cardiac, pulmonary, renal diseases); healthcare workers; persons in contact with camels.
Preventive Measures	Wearing masks in crowded places, regular hand hygiene, avoiding direct contact with camels and camel products, and ensuring good ventilation.

Managing MERS-CoV Case

Infection Prevention and Control Measures

-Strictly adhere to the **droplet and contact precautions** for respiratory secretions.

- Adhere to the specified personal protective equipment for the required isolation and the procedure indicated for the case.

-Reusable equipment must be **cleaned and disinfected** per manufacturer's instructions.

-Clean and disinfect all surfaces using **virucidal disinfectants**.

-Restrict patient movement outside isolation rooms; if necessary, the patient must wear a mask.

-Minimize visitors and ensure full compliance with preventive measures.

-Perform handwashing **before and after glove use** and after any contact with contaminated surfaces.

-Aerosol-generating procedures (e.g., intubation, bronchoscopy, suctioning, non-invasive ventilation) require **enhanced precautions**.

-Handle sharp instruments with extreme caution.

-Prepare patients' linens inside their rooms and place them in biohazard waste bags before sending them to the laundry.

Notification: Register the case in the HESN Plus system and complete the notification form, with immediate reporting to the relevant health cluster upon case confirmation, in addition to notifying the branch/office/section of the Public Health Authority in the region or governorate.

specimens Transport

-Place the specimens in a **sterile, tightly sealed container** and send them **immediately** to the laboratory **within 2–8 hours**.

-A **laboratory request form** must be attached to each specimen, in accordance with the approved transport mechanism.

Specimen Referral

-Send the specimens from health facilities **within the Holy Sites** t to the **Mobile Public Health Authority Laboratory.**

-Send the specimens from facilities **outside the Holy Sites** to the **designated regional laboratories** in **Makkah and Madinah**.

-Send positive specimens to the Public Health Authority Laboratory in Riyadh. Two specimens (EDTA & Serum) should be sent from the patient to the Laboratory in Riyadh.

Diagnosis

-Specimen: Sputum, endotracheal aspirates, bronchoalveolar lavage, or nasopharyngeal swab.

-Testing: Polymerase Chain Reaction (**PCR**).

Case Isolation

-**Isolate the case** in a separate area, ensuring separation of suspected cases from probable cases.

-**Provide the patient with a medical mask** immediately.

-**Ensure healthcare workers wear appropriate personal protective equipment** and **perform proper hand hygiene** before and after patient contact.

-**Discontinue isolation** after clinical improvement and obtaining two negative lower respiratory specimens 24 hours apart for ventilated patients, or one negative respiratory specimen for other patients.

Hierarchy of Isolation Rooms (by priority)

1. **Negative-pressure rooms** with tightly sealed doors (preferred).
2. **Single rooms** equipped with a **private bathroom**.
3. **Protective rooms** with an independent ventilation system and separate air circulation.
4. If none are available, **open windows** to ensure good ventilation with confirmed airflow.
5. Select a location **away from public areas**.

Case Management

Supportive treatment for symptoms, with **oxygen therapy** and **intensive care** as needed.

Pneumonia Severity Score

Score	Description	Criterion
1	Presence of confusion or altered mental status	Altered level of consciousness
1	Blood urea nitrogen (BUN) ≥ 19 mg/dL	Elevated blood urea nitrogen
1	Respiratory rate ≥ 30 breaths/min	Respiratory rate
1	Systolic blood pressure < 90 mmHg or diastolic ≤ 60 mmHg	Hypotension
1	Patient age ≥ 65 years	Age ≥ 65 years

Managing MERS-CoV Case

Important Guidance on Specimen Collection for Diagnosis

-It is preferable to collect specimens from the **lower respiratory tract** (sputum, endotracheal aspirate, or bronchoalveolar lavage), as this increases diagnostic sensitivity.

-For **suspected pneumonia**, a **nasopharyngeal swab** should be collected and sent for testing, with the option to collect additional specimens if needed.

-If **upper respiratory tract specimens are negative** despite high clinical suspicion, repeat sampling from the **lower respiratory tract** or collect additional specimens at different times.

-Supporting specimens may be collected (throat swab, blood, serum, urine, stool); however, these are **not confirmatory for diagnosis**.

-Testing for **other causes of pneumonia** should be conducted at the same time (e.g., *Legionella*, *Streptococcus pneumoniae*, RSV, Influenza A & B).

-Diagnosis of another respiratory disease **does not exclude** co-infection with MERS-CoV.

Confirmed Cases

- Conduct **initial epidemiological investigation** with **daily case updates**.
- Collect **nasopharyngeal swabs daily** and send them to the **regional laboratory** until a **negative result** is obtained.

Contacts

- Complete the **case investigation form** and identify the patient's residence and **all contacts**.
- **Monitor contacts for 14 days** and **do not allow travel** during the incubation period.
- Collect specimens from **symptomatic contacts**.
- Discontinue epidemiological follow-up if symptoms resolve and another cause is identified.

Additional Reference

- For more information on **case and contact management**, refer to the official guideline:

Respiratory Syncytial Virus (RSV)

Disease Description	A common viral respiratory illness affecting the respiratory tract, caused by the Respiratory Syncytial Virus (RSV). It often causes mild cold-like symptoms in adults, but may progress to pneumonia or acute bronchiolitis, particularly in infants, older adults, and individuals with chronic medical conditions. Symptoms include runny or blocked nose, cough, mild fever, wheezing, difficulty breathing, and loss of appetite, especially in infants.
Suspected Case Definition	Any case with a respiratory infection or a fatality, who had cough within the previous 10 days and required hospital admission. In infants <6 months, suspected cases also include any of the following: apnea (temporary cessation of breathing for any cause), sepsis, fever >37.5°C or hypothermia (<35°C), shock (lethargy, rapid breathing, cold skin, prolonged capillary refill, or weak rapid pulse).
Confirmed Case Definition	A suspected case with a positive nasopharyngeal or nasal specimen by rapid antigen test or PCR.
Incubation Period	4–6 days after infection.
Period of Infectivity	3–8 days; however, infants and immunocompromised individuals may continue to shed the virus for up to 4 weeks after symptom resolution.
Modes of Transmission	Via respiratory droplets, aerosols, or direct contact with contaminated hands or surfaces followed by touching the nose, mouth, or eyes.
High-Risk Groups	Infants and young children, older adults, individuals with chronic heart or lung disease, and immunocompromised persons.
Preventive Measures	Thorough hand hygiene, mask use in crowded places, cleaning and disinfection of surfaces, and isolation of infected patients.

Managing Respiratory Syncytial Virus Case

Case Management and Symptomatic Treatment

-There is **no specific antiviral treatment** for RSV; management focuses on **supportive care** to reduce complications.

1. **Oxygen therapy** and **bronchodilators** as needed.
2. **Analgesics/antipyretics** (paracetamol, ibuprofen).
3. **Adequate oral fluids** to prevent dehydration.
4. **Rest and sufficient sleep** to support the immune system

Diagnosis

-Specimen: Nasopharyngeal or nasal swab.
-Testing: Polymerase Chain Reaction (**PCR**) or **rapid antigen test**.

Isolation

-Droplet isolation in a **separate, designated room** within hospitals.
-Isolate the patient for **at least 24 hours after fever resolution** or **improvement of respiratory symptoms.**

Notification

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately.
-Register the case in the HESN Plus system.

Contact Follow-up

-Monitoring only; isolation of contacts is **not required unless symptoms develop**.
-Provide **health education** to contacts on symptom monitoring and preventive measures.

Specimen Referral

-Send the positive specimens from health facilities **inside and outside the Holy Sites** (Makkah, Madinah, Jeddah, and Taif) to the **Public Health Authority Laboratory in Riyadh**.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

- If there is an increase in the number of cases.
- If there is a critical case or a fatality associated with the disease.

Pulmonary Tuberculosis (TB)

Disease Description	An infectious disease caused by *Mycobacterium tuberculosis complex*. It primarily affects the lungs but may also involve lymph nodes, meninges, bones, and the genitourinary system.
Suspected Case Definition	Any person with a productive cough lasting more than two weeks, with or without associated symptoms such as shortness of breath, chest pain, hemoptysis, fever, weight loss, loss of appetite, night sweats, or fatigue.
Probable Case	A suspected TB case with a history of contact with a confirmed tuberculosis case.
Confirmed Case Definition	A laboratory-confirmed case identified through detection of the bacteria in sputum or another biological specimen by microscopy, culture, or rapid molecular testing (e.g., Xpert MTB/RIF). Clinically diagnosed pulmonary TB: A case diagnosed clinically by a physician and started on anti-TB treatment despite lack of laboratory confirmation.
Incubation Period	2–12 weeks.
Period of Infectiousness	Infectious while sputum smear remains positive; may persist without treatment and usually decreases within 2–4 weeks after treatment initiation.
Contact Definition	Exposure to an infectious TB case during the infectious period.
Household Contact	A person sharing the same residence or enclosed living environment long enough for transmission, including family members, roommates, or workplace contacts.
Modes of Transmission	• Inhalation of airborne droplets from coughing or sneezing. • Contact with contaminated instruments or materials. • Consumption of unpasteurized milk from infected cattle.
Prevention Measures	• Early detection and isolation of cases. • Use of masks and infection prevention precautions. • Adequate ventilation and avoidance of overcrowding.

Managing Pulmonary Tuberculosis Case

Notification

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately and register the case in the HESN Plus system.

Isolation and Infection Prevention & Control

-Isolate the case in a **separate location away from other patients**.

-Preferably isolate in a **negative-pressure airborne infection isolation room**.

-If unavailable, isolate temporarily in a well-ventilated single room.

-If the case is smear-negative and clinically diagnosed, strict airborne isolation may not be required; mask use and treatment initiation should follow physician guidance.

-Continue isolation of confirmed or suspected patients until: **Three consecutive negative sputum smears (AFB)** collected within **24–48 hours**, including at least one early morning specimen.

-In **drug-resistant TB (MDR-TB)**: Obtain negative sputum specimens in addition to **two negative cultures taken one month apart**.

Treatment

-Treat cases according to the **National TB Program protocol** approved by the Ministry of Health and the health cluster.

Reference: National TB Program Guideline

-Drug-susceptible TB: Standard regimen (HRZE/4HR) for 6 months. While Shorter regimens may be used for eligible cases per protocol.

-Drug-resistant TB: Managed by a specialized reference team using approved regimens.

-Latent TB infection: Preventive therapy is provided to eligible contacts after exclusion of active disease.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

-If there is an increase in the number of cases.

-If there is a critical case or a fatality associated with the disease.

Patient Transfer

-Transfer the confirmed case via a **designated ambulance** to the nearest hospital in Makkah or Madinah.

-The patient must wear a **medical mask** during exit and transportation.

Specimen Collection

-Collect **three sputum specimens**:

- Within **8–24 hours**, including an early morning specimen.

-Prefer sputum specimens obtained in a **well-ventilated or outdoor area** to reduce airborne transmission risk.

-Healthcare workers must wear **N95/FFP2 respirators** during procedures.

-If the patient cannot produce sputum:

- Perform **induced sputum** or bronchoscopy as clinically indicated.

- **Testing:** Microscopy, culture, rapid molecular testing, and genomic sequencing (*positive NAAT result, together with a compatible clinical presentation, is sufficient to confirm the diagnosis of pulmonary tuberculosis even if the sputum smear is negative, while culture and drug susceptibility testing should be completed.)*

Specimen Referral: Send the specimens to the **Regional Laboratory** according to laboratory referral procedures. **While** Positive specimens should subsequently be referred to The **Public Health Authority Laboratory in Riyadh**.

Contact Management

-Identify all household and close contacts.

-Obtain medical history and clinical evaluation.

-Screen contacts using **TST or IGRA** according to national policy:

- IGRA preferred for previously BCG-vaccinated individuals.

-If screening is positive:

- Exclude active TB through clinical and laboratory assessment.

-If initial test is negative:

- Repeat screening after **8–10 weeks** from last exposure.

Yellow Fever

Disease Description	An acute viral disease transmitted by mosquitoes. It causes severe fever and may progress to hemorrhage, hepatic and renal failure, with a high fatality rate in severe cases.
Suspected Case Definition	Sudden rise in body temperature exceeding 38°C accompanied by general symptoms, followed by a short asymptomatic period, then recurrence of fever, hepatitis, and development of jaundice within two weeks from the onset of symptoms, presence of albumin in urine, and sometimes signs and symptoms of renal failure, general hemorrhagic manifestations, and shock, with an epidemiological link such as travel history from an endemic country or presence in an area where a confirmed case has been detected.
Probable Case Definition	A suspected case that has not been laboratory confirmed.
Confirmed Case Definition	A suspected or probable case confirmed laboratory by detection of Yellow Fever virus or its specific antibodies.
Incubation Period	3–6 days.
Period of Infectivity	The patient's blood is infectious to mosquitoes before the onset of fever, i.e., during 3–5 days from disease onset, while mosquitoes become infectious after an extrinsic incubation period of 9–12 days and remain infectious for life.
Modes of Transmission	Through mosquito bites (*Aedes aegypti*). Less common routes of transmission include blood transfusion, organ transplantation, needle-stick injuries, and transmission from a pregnant woman to the fetus.
High-Risk Groups	Individuals arriving from endemic areas without vaccination.
Preventive measures	- Travelers arriving from Yellow Fever endemic countries must present a valid vaccination certificate, valid for life, provided that vaccination was administered at least 10 days prior to arrival. - In the absence of a valid certificate, traveler data should be referred to the epidemiological investigation team in Makkah and the holy sites to apply strict measure. A valid disinfection certificate confirming mosquito eradication is required for aircraft, ships, and means of transport arriving from those countries.

Managing Yellow Fever Case

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Management of Confirmed Cases
-Provide supportive treatment (fluids, antipyretics, and monitoring of liver and kidney functions and bleeding).
-No specific antiviral treatment is available.
-Continue isolation until the patient's condition stabilizes.

Notification: Register the case in the HESN Plus system and complete the notification form, with immediate reporting to the relevant health cluster upon case confirmation, in addition to notifying the branch/office/section of the Public Health Authority in the region or governorate.

Post-Case Follow-Up
-Monitor the epidemiological situation at the site for **14 days**.
-Submit daily reports to the Epidemiological Surveillance Operations Room.
-Complete mosquito control measures and elimination of breeding sites in the area.

Management of Contacts
-Immediately initiate epidemiological investigation and complete the investigation form.
-List and clinically monitor all contacts.
-Identify locations visited by the patient during the previous **3–6 days**.
-Spray accommodation sites, workplaces, and outbreak areas with an effective insecticide.
-Immediately vaccinate unvaccinated contacts.

Isolation
-Immediately transfer the patient to a designated isolation room.
-Apply blood and body fluid isolation precautions.
-Prevent mosquitoes from reaching the patient for at least **5 days** through:
- Installing window and door screens.
- Using a bed mosquito net.
- Spraying the room with a residual-effect insecticide.
- Increased caution at dawn and dusk and avoidance of mosquito bites during these times

Specimen Collection: Collect a serum blood specimen and send it to the laboratory to perform polymerase PCR testing or ELISA.

Specimen Referral: Send all specimens from suspected cases for diagnostic testing from all health facilities inside and outside the holy sites to the Mobile Public Health Authority Laboratory.

Diagnosis
-Diagnosis is based on clinical symptoms and characteristic signs, particularly liver involvement.
-Laboratory confirmation is achieved through detection of viral antigen using ELISA or isolation of the virus from blood specimens.
-Detection of early IgM antibodies, differentiation from vaccination using Complement Fixation Test (CFT), or demonstration of rising IgG titers between acute and convalescent samples.

Vaccination After Detection of a Confirmed Case or Contact

Objective: Limit disease spread and contain the outbreak

Emergency Vaccination (Ring Vaccination)
-Vaccinate all unvaccinated contacts as soon as possible.
-Includes family members, coworkers, neighbors, and all individuals who were in the same focus within **6 days** prior to symptom onset

Mass Vaccination
-Implemented in surrounding communities or areas where vector mosquitoes have been detected.
-Priority is given to individuals aged ≥ 9 months who are at risk due to residence or occupation.

Dose: One subcutaneous dose of live attenuated Yellow Fever vaccine (**D17**) Provides immunity in **99% of cases within 7–10 days**. And the Immunity lasts for life.

Vaccine Administration Conditions and Guidelines

Duration of Immunity:
-Immunity may persist for **30–35 years or longer**.
-Revaccination every **10 years** may be required in accordance with the International Health Regulations for travel to endemic areas.

Contraindications:
-The vaccine should not be given to infants under **4 months** of age.For infants aged **4–9 months**, vaccination should only be considered when the risk of exposure outweighs the risk of vaccine-associated encephalitis, which is the most significant complication in this age group.
-Vaccination should be postponed during the **first trimester of pregnancy** unless the risk of infection exceeds potential harm. The vaccine can be safely administered to **HIV-positive individuals without symptoms**

Dengue Fever

Disease Description	An acute viral illness caused by the dengue virus, transmitted through the bites of Aedes mosquitoes, primarily Aedes aegypti and Aedes albopictus, and characterized by fever and severe pain. Symptoms include fever, pain behind the eyes, joint and muscle pain, skin rash, nausea, and vomiting, and mild bleeding may occur. In advanced cases, plasma leakage may develop, leading to shock, severe bleeding, and other serious complications.
Suspected Case Definition	Any person presenting with high fever lasting 2 to 7 days accompanied by two or more of the following symptoms: • Nausea• Vomiting• Lymph node enlargement• Skin rash• Severe headache• Retro-orbital pain• Joint and muscle pain
Confirmed Case Definition	A suspected case with laboratory confirmation.
Incubation Period	Ranges from 3 to 14 days (commonly 4–10 days) from the bite of an infected mosquito until onset of symptoms.
Period of Infectivity	The disease is not transmitted directly between humans. The patient is infectious from before symptom onset until the end of the febrile period for 4–5 days, while the mosquito becomes infectious after an extrinsic incubation period of 8–12 days and remains infectious for life.
Modes of Transmission	Bite of an infected female *Aedes aegypti* mosquito. Less common routes include blood transfusion, organ transplantation, needle-stick injuries, and transmission from mother to fetus.
High-Risk Groups	Residents of or travelers arriving from endemic areas.
Preventive Measures	-Mosquito control (elimination of water breeding sites and spraying) -Use of mosquito nets and repellents -Wearing protective clothing

Managing Dengue Fever Case

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Notification

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately and register the case in the HESN Plus system.

Epidemiological Investigation

The investigation team conducts a joint field visit, completes the approved form, and submits it to the relevant health cluster

Isolation

-Apply blood and body fluid isolation precautions.

-Prevent mosquito access to the patient through:

- Installing window and door screens.
- Using bed mosquito nets and insect repellents.
- Eliminating mosquito breeding sites (stagnant water & uncovered containers)

Case Management: Provide supportive treatment (fluids & antipyretics), Monitor vital signs, Close follow-up in warning or severe cases and admission indicated when complications identified.

Hospitalization: The patient must be admitted in the following cases: presence of warning signs (severe abdominal pain, bleeding, persistent vomiting), high-risk groups (pregnant women, children, elderly, patients with chronic diseases), patients living alone or in remote areas, or severe dengue cases (severe plasma leakage, shock, severe bleeding or organ failure)

Management of Contacts

-List all contacts and monitor them throughout the incubation period (3 days to 2 weeks).

-Identify the patient's place of residence during the last two weeks to determine the source of infection.

- No vaccine is available for contacts; however, if a potential exposure to yellow fever is identified, vaccination against yellow fever must be provided in accordance with approved guidance.

-Educate contacts on preventive measures and advise them to visit health facilities if symptoms appear.

Specimen Collection

-Collect two blood specimens (3–5 ml each) in yellow SST tubes.

-Separate serum using a centrifuge and label specimens with patient name, HESN Plus number, and date of collection.

-Red tubes may be used for PCR testing only when SST tubes are unavailable. While SST tubes must be used for IgM testing.

- Specimens must be placed in tightly sealed containers and transported in a cold box at 2–8°C without freezing. If transport exceeds 24 hours, the serum must be separated and frozen only, while avoiding freezing the blood before separating the serum.

Diagnosis

Diagnosis is confirmed by:

- Detection of dengue IgM antibodies.
- Detection of NS1 antigen.
- Polymerase Chain Reaction (PCR).

-If **IgM is positive while NS1 and PCR are negative**, possible explanations include:

- True dengue infection beyond 7 days of illness.
- Infection with another viral hemorrhagic fever.
- Dual infection with dengue and another viral hemorrhagic fever

Specimen Referral

Inside the Holy Sites

-Send the specimens to the **Mobile Public Health Laboratory** if diagnostic testing is not available at the health facility.

-If testing is available at the health facility, **both positive and negative specimens** should be referred to the **Public Health Authority Laboratory in Riyadh**.

Outside the Holy Sites

(Makkah, Jeddah, Madinah and Taif)

-Send the positive specimens diagnosed at health facilities or regional laboratories to the **Public Health Authority Laboratory in Riyadh**.

-If diagnostic testing is not available at the facility, specimens should be referred to the **Mobile Public Health Laboratory**.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

- If there is an increase in the number of cases.
- If there is a critical case or a fatality associated with the disease.

Malaria

Disease Description	An acute parasitic disease caused by *Plasmodium* species—including *Plasmodium falciparum, P. vivax, P. ovale,* and *P. malariae*—and transmitted by the bite of Anopheles mosquito. It is characterized by recurrent fever and may lead to serious complications or fatal outcomes if left untreated. Symptoms include intermittent or continuous fever accompanied by sweating, chills, headache, muscle pain, and fatigue. In severe cases, danger signs may appear, such as altered level of consciousness or renal failure.
Suspected Case Definition	Intermittent fever accompanied by chills and sweating, with general weakness, headache, nausea, and loss of appetite, appearing 7–15 days after the bite of an infected mosquito.
Confirmed Case Definition	A suspected case confirmed laboratory through microscopic examination or rapid diagnostic test (Pf/Pan antigen).
Incubation Period	The incubation period ranges from 7 to 30 days.
Period of Infectivity	A person remains infectious as long as the sexual stage of the parasite is present in the blood.
Modes of Transmission	Transmission occurs through the bite of an infected female *Anopheles* mosquito.
High-Risk Groups	Travelers arriving from endemic areas without adequate immunity, pregnant women, children, and immunocompromised individuals.
Preventive Measures	- Mosquito control and insecticide spraying -Sleeping under mosquito nets -Wearing long clothing and using insect repellents -Chemoprophylaxis (when recommended)

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Managing Malaria Case

Isolation: Prevent the patient from becoming a source of infection by:

- Using mosquito nets in the room.
- Applying insect repellent sprays

Case Management:

- Administration of antimalarial medications according to parasite type (e.g., chloroquine, artemisinin).
- Close monitoring for complications and organ support when required

Reference: Saudi National Guideline for Malaria Management

Hospitalization

The patient should be admitted in the following cases: Presence of warning signs, complications, or conditions that make outpatient management unsafe, such as severe malaria, inability to tolerate oral treatment, or high-risk groups (e.g., children under 5 years, the elderly, pregnant women, and patients with chronic diseases), as well as in cases of treatment failure or suspected complications.

Management of Contacts

-Conduct epidemiological investigation and complete investigation forms for all contacts.
-List and monitor contacts throughout the incubation period (**7–30 days**).
-Advise contacts to attend health facilities immediately if symptoms develop.
-Identify patient movements during the infectious period to detect undiagnosed cases.

Diagnosis and Specimen Collection:

-Rapid diagnostic testing must be performed for all suspected cases.
-Confirmation of infection is achieved through microscopic blood examination using **Thick and Thin smears** to identify the parasite species.

Specimen Referral

Inside the Holy Sites

-Send the specimens to the **Mobile Public Health Laboratory** if diagnostic testing is not available at the health facility.
-If testing is available at the health facility, **both positive and negative specimens** should be referred to the **Public Health Authority Laboratory in Riyadh**.

Outside the Holy Sites

(Makkah, Jeddah, Madinah and Taif)

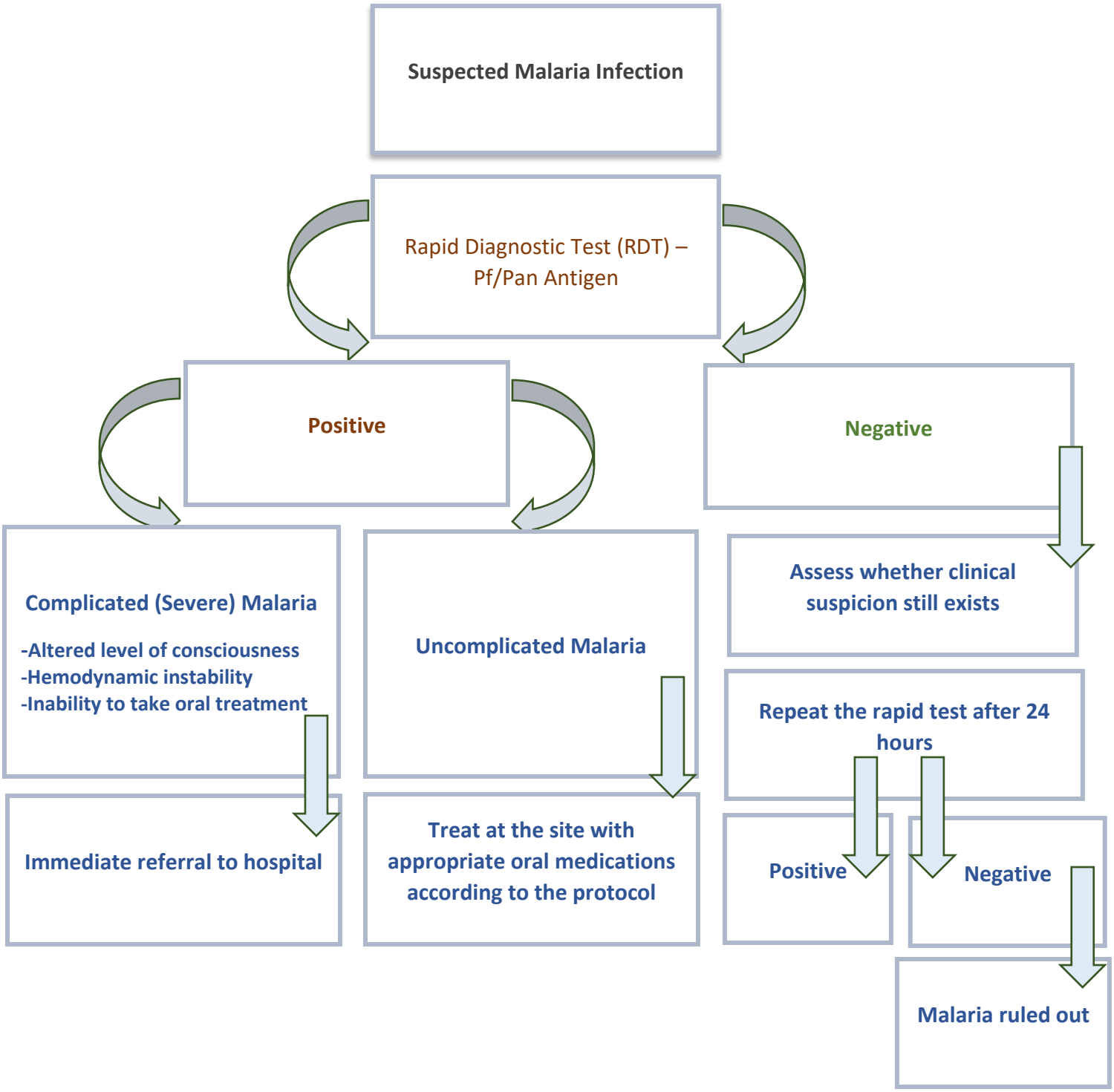
-Send the Positive specimens diagnosed at health facilities or regional laboratories to the **Public Health Authority Laboratory in Riyadh**.
-If diagnostic testing is not available at the facility, specimens should be referred to the **Mobile Public Health Laboratory**.

Notification

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately.
-Register the case in the HESN Plus system.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

- If there is an increase in the number of cases.
- If there is a critical case or a fatality associated with the disease.


Suspected Malaria Infection
Rapid Diagnostic Test (RDT) – Pf/Pan Antigen
Positive
Negative
Complicated (Severe) Malaria
-Altered level of consciousness
-Hemodynamic instability
-Inability to take oral treatment
Uncomplicated Malaria
Assess whether clinical suspicion still exists
Repeat the rapid test after 24 hours
Immediate referral to hospital
Treat at the site with appropriate oral medications according to the protocol
Positive
Negative
Malaria ruled out

Rift Valley Fever

Disease Description	An acute zoonotic viral disease caused by the Rift Valley fever virus, characterized by the sudden onset of fever accompanied by general symptoms such as conjunctival injection, back pain, retro-orbital pain, and muscle aches. Symptoms include fever ranging from 37.8–40°C, headache, generalized weakness, joint and muscle pain, nausea, vomiting, and photophobia. In severe cases, hemorrhagic manifestations may occur, including petechiae, epistaxis, and gastrointestinal bleeding. The disease may progress to severe hepatitis, encephalitis, or retinitis that may result in vision loss, and jaundice or additional bleeding symptoms may appear in advanced stages.
Suspected Case Definition	Any person with sudden fever accompanied by one or more of the following: facial flushing, eye congestion, generalized body pain, back pain, retro-orbital pain, muscle pain, visual impairment or blurred vision, and retinitis involving the macula and surrounding areas, with the presence of jaundice or hemorrhagic signs.
Confirmed Case Definition	A suspected case with laboratory confirmation.
Incubation Period	Usually 2–6 days after exposure to the virus.
Period of Infectivity	No human-to-human transmission. Mosquitoes remain infectious for life after acquiring the virus.
Modes of Transmission	-Bites of multiple mosquito species -Inhalation of the virus during slaughtering or animal delivery -Contact with contaminated animal blood, body fluids, or animal products -Blood transfusion or organ transplantation from an infected person -Mother-to-fetus transmission
Preventive Measures	-Vector and mosquito control -Use of personal protective equipment when slaughtering or handling animals -Avoid consumption of undercooked animal products -Community awareness on transmission routes and symptoms

Managing Rift Valley Fever Case

Isolation

-Immediate isolation in a designated room equipped with mosquito control measures:

- Mosquito nets
- Insect-killing devices

-Ensure the patient wears long-sleeved clothing covering the extremities to reduce mosquito exposure

-Healthcare workers must use personal protective equipment and perform proper hand hygiene before and after handling the patient.

Management of Contacts

-Completion of the epidemiological investigation form for hemorrhagic fevers

-Identification of contacts exposed to blood, body fluids, or animal secretions

-Monitoring contacts for **2–6 days**

-Educating contacts on preventive measures and advising immediate medical review if symptoms develop.

Isolation and Infection Control Measures

-Prevent exposure of blood or body fluids to others

-Safe disposal of medical waste in designated sealed bags

-Transfer specimens in leak-proof, labeled containers

-Terminal disinfection using **0.5% chlorine solution**

-Clean and disinfect patient room surfaces after removal of organic matter.

Diagnosis

Isolation of the virus from blood, or the use of molecular tests such as reverse transcription polymerase chain reaction (RT-PCR), or serological tests to detect (IgM, IgG)

Specimen Referral: Send all the specimens of suspected cases for diagnostic testing from all healthcare facilities inside and outside the Holy Sites (Makkah, Madinah, Jeddah, and Taif) to the **Mobile Public Health Laboratory.**

Case Management

-Supportive treatment according to symptoms

-Administration of intravenous fluids and antipyretics

-Monitoring of liver function and neurological status

-Hospital admission for severe cases or upon appearance of hemorrhagic or neurological signs.

Notification: Register the case in the HESN Plus system and complete the **Viral Hemorrhagic Fever notification form**, with immediate reporting to the relevant health cluster upon case confirmation, in addition to notifying the branch/office/section of the Public Health Authority in the region or governorate.

Integrated Reporting and Coordination

1. **Public Health Authority** – surveillance, prevention, and evaluation
2. **Ministry of Municipalities and Housing** – vector control
3. **Ministry of Environment, Water and Agriculture** – animal surveillance and management of livestock infections

Ebola / Marburg Viral Hemorrhagic Fever

Disease Description	An acute viral hemorrhagic disease caused by either the Ebola virus or Marburg virus, both belonging to the Filoviridae family. The disease is characterized by high infectivity and a high case fatality rate, particularly when diagnosis or supportive treatment is delayed. It usually begins suddenly with high fever, accompanied by general malaise, headache, muscle aches, sore throat, vomiting, diarrhea, and skin rash. In severe stages, the condition may progress to internal or external hemorrhage, hepatic or renal failure, and an ultimately result in fatal outcomes.
Suspected Case Definition	A person presenting with fever >38°C and one or more of the following: severe headache, myalgia, vomiting, diarrhea, abdominal pain, or unexplained bleeding, with an epidemiological link within the previous 21 days, such as: • Contact with blood or body fluids of a confirmed or suspected case. • Residence in or travel to an endemic area. • Direct contact with infected animals (alive or dead).
Confirmed Case Definition	A suspected case with laboratory confirmation of Ebola or Marburg virus from a clinical specimen.
Incubation Period	2–21 days
Period of Infectivity	Begins with onset of symptoms and continues as long as the virus is present in blood and body fluids; it may persist after recovery in certain secretions such as semen.
Modes of Transmission	-Direct contact with blood, secretions, body fluids, or semen of an infected person - Contact with infected animals or bats -Healthcare-associated infection -Sexual transmission via semen after recovery (up to 7 weeks after clinical recovery)
High-Risk Groups	Close contacts, healthcare workers, caregivers, laboratory staff, and individuals handling wild animals.
Preventive Measures	-Strict isolation -Use of personal protective equipment (PPE) -Full adherence to infection prevention and control measures

Managing Ebola / Marburg Viral Hemorrhagic Fever Cases

Notification: Register the case in the HESN Plus system and complete the **Viral Hemorrhagic Fever notification form**, with immediate reporting to the relevant health cluster upon case confirmation, in addition to notifying the branch/office/section of the Public Health Authority in the region or governorate.

Contact Management

- Identify and list all direct contacts for **21 days**
  - Healthcare workers
  - Family members
  - Visitors and caregivers
- Monitor contacts daily for fever and symptoms
- Immediately isolate and evaluate any contact who develops symptoms
- Provide health education to contacts on modes of transmission and the importance of seeking medical care if symptoms develop.

Specimen Referral: Send all the specimens of suspected cases for diagnostic testing from all healthcare facilities inside and outside the Holy Sites (Makkah, Madinah, Jeddah, and Taif) to the **Mobile Public Health Laboratory.**

Disinfection and Infection Control

-All staff must strictly follow **standard and additional infection control precautions in accordance with the *Ebola and Marburg Guidelines* issued by the Public Health Authority.**

-Surfaces, instruments, and contaminated materials must be disinfected using:

- **0.5% sodium hypochlorite**
- Approved phenolic disinfectants

-Thermal disinfection methods such as **autoclaving or incineration** should be used when appropriate

-Laboratory testing must be conducted under **biosafety level requirements**

Specimen Collection: Diagnostic testing must be performed only when clinically indicated and strictly limited to essential investigations required for diagnosis and patient care, to reduce the risk of infection exposure.

Diagnosis

After clinical suspicion, laboratory confirmation is performed through detection of:

-Viral antigens or antibodies (IgM / IgG)

-Viral genetic material using RT-PCR

Advanced laboratory tests may include:

-Immunofluorescence assay (IFA) on infected cell cultures

-Electron microscopy to detect viral particles

-Virus isolation and propagation in cell cultures or experimental animals conducted in high-biosafety laboratories

Case Transfer

-Rapid response teams should arrange patient transfer according to location and safety considerations:

- **Makkah:** Transfer to Al-Noor Specialist Hospital
- **Madinah:** Transfer to King Fahad Hospital
- **Jeddah:** Transfer to East Jeddah Hospital

-Patients must be transferred using **fully equipped isolation ambulances**

-Air medical evacuation may be used for critical case

Isolation

-Immediate isolation in a **single room with a closed door and private bathroom**

-Location should be away from population density

-Restrict visitors and non-essential staff

-Strict handling of all body fluids and waste

Treatment

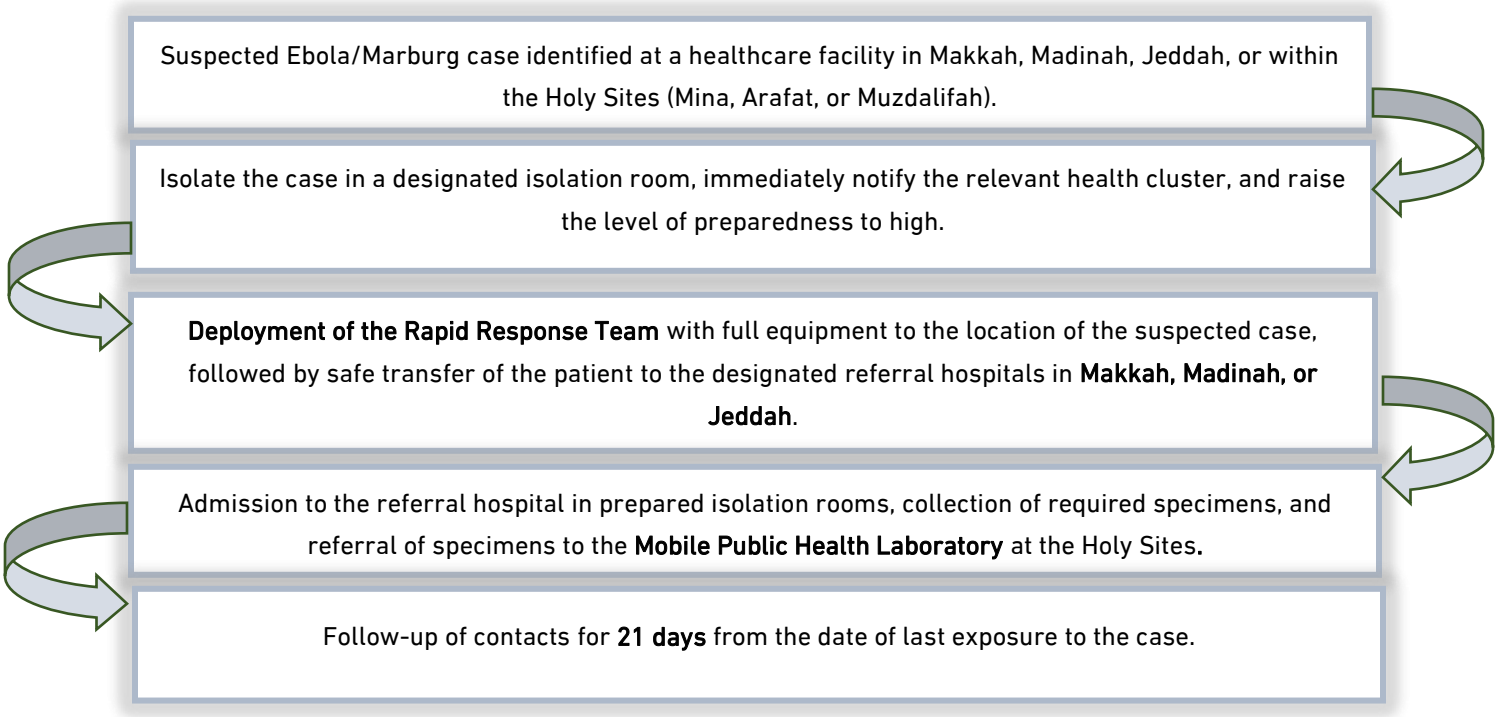
-No specific antiviral treatment available

-Supportive care may include:

- Intravenous fluids
- Antipyretics
- Organ support therapy

-Survivors should be advised to avoid sexual intercourse or use condoms for at least 3 months until viral clearance is confirmed.

Workflow Diagram for the Management of Ebola / Marburg Viral Hemorrhagic Fever Cases



Crimean–Congo Hemorrhagic Fever (CCHF)

Disease Description	An acute viral illness caused by the Crimean-Congo hemorrhagic fever virus (CCHFV), characterized by a sudden high fever and severe muscle pain, and it may sometimes progress to internal and external bleeding with failure of vital organs. The initial symptoms appear abruptly and resemble influenza-like illness, including high fever, muscle pain, headache, generalized fatigue, and photophobia. After the fifth day of illness, the condition may progress to bleeding from the nose, gums, or under the skin, or to renal or hepatic failure in severe cases.
Suspected Case Definition	A disease with sudden onset of high fever lasting 5–12 days, accompanied by abdominal pain and hemorrhagic manifestations, with the appearance of a skin rash.
Confirmed Case Definition	A suspected case that is laboratory confirmed by detection of the virus or its specific antibodies.
Incubation Period	Usually 1–3 days following a tick bite; may range from 3–12 days following contact with blood or body fluids of infected humans or animals.
Period of Infectivity	Infection may occur after exposure to blood and secretions in healthcare settings within 6–13 days.
Modes of Transmission	- Bite of an infected tick. - Contact with blood or tissues of infected animals. - Exposure to body fluids of infected persons. - Healthcare-associated (nosocomial) transmission.
High-Risk Groups	- Exposure through infectious tick bites. - Direct contact with blood and secretions of infected individuals. - Direct contact with infected animals during slaughtering.
Preventive Measures	- Avoid contact with blood and animal fluids. - Wear protective clothing in farms and slaughterhouses. - Control ticks and use insect repellents. - Frequent handwashing and continuous disinfection.

Managing Crimean–Congo Hemorrhagic Fever Case

Isolation
-Mandatory isolation in designated rooms within hospitals.
-Strict implementation of infection prevention and control measures when handling blood and secretions.
-Restriction of visits and controlled access for healthcare staff only, with assignment of a dedicated care team.
-Safe handling of all body fluids and waste.

Notification: Register the case in the HESN Plus system and complete the **Viral Hemorrhagic Fever notification form**, with immediate reporting to the relevant health cluster upon case confirmation, in addition to notifying the branch/office/ section of the Public Health Authority in the region or governorate.

Treatment
-Supportive treatment based on symptoms.
-Consider intravenous **ribavirin** or oral ribavirin for severe cases.
-Avoid use of **aspirin** or **ibuprofen** to prevent bleeding.
-Educate the patient to avoid contact with animals and individuals, and reinforce preventive measures.

Follow-up of Contacts
-Conduct field investigations to identify contacts and assess exposure risk.
-Implement medical surveillance of contacts throughout the incubation period (**up to 14 days**).
-Prohibit contacts from donating blood or organs during the follow-up period.

Diagnosis: Laboratory diagnosis includes virus isolation from blood or tissue specimens during the **first five days**, and detection of specific antibodies **IgM and IgG** using **ELISA** starting from **day six**. **IgM** appears from the **sixth day** of illness and persists for **up to four months** is used to detect viral genetic material. PCR can also be used to detect the viral genetic material.

Specimens Referral: Send all the specimens of suspected cases for diagnostic testing from all healthcare facilities inside and outside the Holy Sites (Makkah, Madinah, Jeddah, and Taif) to the **Mobile Public Health Laboratory.**

Infection Prevention and Control:
-**Ensure full compliance** with personal protective equipment.
-**Disinfect environmental surfaces** surrounding the patient using approved disinfectants, or **process the patient's linens** according to recommended and approved temperature standards.
-**Dispose of medical waste** from the patient's room in accordance with approved national regulations.
-**Train laboratory teams** on safe handling of specimens.

Cholera

Disease Description	An acute bacterial disease caused by Vibrio cholerae, affecting the gastrointestinal tract and most commonly transmitted through the ingestion of contaminated food or water. It is characterized by profuse watery diarrhea that can rapidly lead to severe dehydration and electrolyte imbalance, which may become life-threatening without prompt treatment. Symptoms include copious watery diarrhea resembling "rice-water stools" and vomiting, which may be severe, along with signs of acute dehydration such as intense thirst, hypotension, tachycardia, and reduced urine output. Muscle cramps may occur due to electrolyte loss, while fever is absent in most cases.
Suspected Case Definition	Any person arriving from a country experiencing an active cholera outbreak or considered endemic, or who has had contact with someone arriving from such areas within the last 5 days, and presents with: acute watery diarrhea (≥3 times/day) for less than one week, which may be associated with one or more of the following: severe vomiting, signs of severe dehydration, absence of abdominal pain and/or fever.
Confirmed Case Definition	A suspected case that is laboratory confirmed by one of the following methods: - Primary cases: Positive culture for *Vibrio cholerae* 01/0139 or positive serological tests confirming recent infection. - Epidemiologically linked cases: Positive rapid diagnostic test (RDT) for cholera.
Incubation Period	From several hours up to 5 days (most commonly 1–3 days).
Period of Infectivity	The person remains infectious throughout the period of diarrhea; bacterial shedding in stool may continue for several days and up to two weeks.
Modes of Transmission	- Consumption of water or food contaminated with *Vibrio cholerae*. - Poor personal hygiene. - Unsafe food preparation practices. - Transmission by flies under poor environmental conditions.
High-Risk Groups	- Travelers to countries with active outbreaks. - Children and the elderly. - Malnourished individuals. - Workers in settings with poor sanitation.
Preventive Measures	- Thorough handwashing with soap and water. - Drinking treated or boiled water. - Thoroughly cooking food and consuming it hot. - Safe disposal of waste. - Providing chemoprophylaxis to contacts as per guidelines. - Strengthening health education in gathering sites.

Managing Acute Watery Diarrhea (Cholera) Case

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Isolation
-Isolate the patient in a designated room with application of **contact precautions** for body fluids and excreta.
-Restrict visitors and assign a **dedicated medical and nursing team**.
-Assess the patient's condition (level of consciousness, blood pressure, pulse, respiration, and dehydration status).
-Triage cases according to severity (mild, moderate, or severe).

Notification: Register the case in the HESN Plus system and complete the notification form. Report suspected cholera cases and acute watery diarrhea immediately to the relevant health cluster. Upon confirmation, notify the Public Health Authority branch/office/section in the region or governorate.

Management of Contacts
-Identify and monitor all **direct contacts** for **5 days** after last exposure.
-Conduct **clinical and laboratory assessment** if symptoms appear.
-Provide health education on **personal hygiene**, handwashing with soap and water, and food safety.
-Investigate and control shared infection sources (water and food).
-Chemoprophylaxis may be given to direct contacts (e.g., **Doxycycline 300 mg as a single dose**), as per guidelines.

Treatment
-Start treatment **immediately** without waiting for laboratory results.
-80% of cases: Manage with **oral rehydration solution (ORS)**.
-20% of cases: Require **intravenous fluids** (e.g., **Ringer's lactate**), followed by oral fluids once stabilized.
-Refer to the **case management and classification table** for detailed treatment pathways.

Case Severity Classification
-Mild: Total score < **7 points**.
-Moderate: 7–10 points.
-Severe/Critical: > **10 points**.
(Severity is assessed based on diarrhea frequency, vomiting, dehydration, and overall clinical status.)

Specimen Collection and Referral:
-Collect **stool or rectal swab specimens** for rapid cholera testing.
-If the rapid test is positive, send a **confirmatory specimen** to the **Public Health Laboratory** in Riyadh for culture.
-Send specimens to the Mobile **Public Health Laboratory** in the Holy Sites for initial testing.

Epidemiological Investigation and Coordination
-Mobilize the **field epidemiological investigation team** from Public Health and Hajj missions.
-Conduct field visits to identify the **likely source of infection** (water, food, or location).
-Perform **rapid testing** for at least one additional suspected case at the site.
-If a case is confirmed:
- Activate the **cholera response plan** and coordinate with emergency management and relevant authorities.
- Secure the site, isolate non-infected individuals, and transfer severe cases to hospitals.
- Establish an **on-site treatment corner** for mild cases.

Specimen Collection and Referral
-Collect **stool or rectal swab specimens** from suspected cases (up to **5 specimens per cluster**).
-Collect specimens **before starting antibiotics**.
-Place specimens in tightly sealed containers or in **alkaline transport media**, such as **Cary–Blair** or **alkaline peptone water**.
-Transport the specimens immediately to the **Public Health Authority Laboratory-Riyadh** or the **Mobile Public Health Authority Laboratory** within **24 hours**.
-If transport is delayed, store specimens at **25–28°C** until transfer.

Medical Waste and Infection Control
-Strict adherence to **personal protective equipment>**
-Proper handling of waste at the event site
-Dispose of waste in designated closed containers in accordance with **infection control guidelines**.
-Disinfect contaminated surfaces and patient fluids using **chlorine solution**:
- **10,000 ppm** for heavily contaminated fluids.
- **1,000 ppm** for surface disinfection.

-Wash hands thoroughly with soap and water after any direct contact.

Risk Classification for Acute Watery Diarrhea (Cholera)			
Item	**Score**		
	Mild (1 point)	**Moderate Risk (2 points)**	**Severe / Critical (3 points)**
Number of diarrhea episodes	1–3 episodes	4–5 episodes	≥6 episodes
Duration of diarrhea (days)	< 1 day	1–2 days	≥3 days
Number of vomiting episodes per day	< 1 episode	1–2 episodes	≥3 episodes
Duration of vomiting (days)	1 day	2 days	≥3 days
Degree of dehydration ×2	Mild	Moderate	Severe
* **The dehydration score is weighted double** in the risk assessment (dehydration score ×2). The degree of dehydration is classified based on an overall clinical assessment considering the following parameters: **pulse, systolic blood pressure, respiration, oral mucosa, eyes, skin, and urine output**, as detailed below.			
Parameter	**Mild**	**Moderate**	**Severe**
Pulse	Strong, normal	Rapid	Weak and rapid
Systolic blood pressure	Normal	Normal to mildly low	Very low
Respiration	Normal	Deep, increased rate	Very deep and very rapid
Oral mucosa	Slightly dry	Dry	Markedly dry, intense thirst
Eyes	Normal	Sunken	Markedly sunken
Skin	Normal	Cool	Cool, rough, peripheral cyanosis
Urine output	Slightly reduced	Very low	Absent

Table of Case Management Details by Classification				
Category	**Type of Treatment**	**Key Procedures**	**Antibiotic**	**Field Notes**
Mild (< 7 points)	Oral Rehydration Solution (ORS) only + antibiotic	- Start rehydration immediately on site or at a rehydration corner. - Establish **peripheral IV access**. - Patient requires approximately **6 liters** during the first **24 hours**. - Reassess every **2 hours**. - Monitor vital signs and progression of dehydration.	- **Doxycycline 300 mg** single dose. - **Azithromycin 1000 mg** for pregnant women or **20 mg/kg** for children.	Can be managed in the field without transfer.
Moderate Risk (7–10 points)	Intravenous fluids + antibiotic	- Insert **two peripheral IV lines** or a **central venous catheter** if qualified staff are available. - Assess every **1–2 hours**. - Continue oral rehydration after improvement.	- **Doxycycline 300 mg** single dose. - **Azithromycin 1000 mg** for pregnant women or **20 mg/kg** for children. - **Zinc for children:** 10 mg (<6 months) / 20 mg (≥6 months) for **10 days**.	Immediate referral to hospital. Close and continuous monitoring to prevent progression to severe disease.
Severe / Critical (> 10 points)	Urgent intravenous fluids + antibiotic	- Insert **two peripheral IV lines** or a **central venous catheter** if qualified staff are available. - Administer **3 liters of Ringer's lactate** within the first **3 hours**. - Resume oral rehydration once stabilized. - Monitor urine output and level of consciousness.	- **Doxycycline 300 mg** single dose. - **Azithromycin 1000 mg** for pregnant women or **20 mg/kg** for children. - **Zinc for children:** 10 mg (<6 months) / 20 mg (≥6 months) for **10 days**.	Immediate referral to hospital.

Foodborne Disease Outbreaks During the Hajj Season

Item	Operational Description During Hajj
Suspected Outbreak Definition	Illness in two or more persons who consumed a common food and developed similar symptoms (diarrhea, vomiting, nausea, fever, and abdominal pain).
Confirmed Outbreak Definition	A suspected outbreak in which the causative microorganism is isolated from ≥2 patients or from the implicated food, with epidemiological linkage established.
Notification	- Immediately notify the epidemiological surveillance team at the health facility. - Immediately notify the relevant health cluster and the Food Safety Unit. - In cases of suspected botulism (*Clostridium botulinum*), notification is required even for a single case.
Patient Sample Collection	- Collect samples (vomitus, stool, or swabs) according to symptoms and incubation period. - For outbreaks with <10 cases: collect samples from all patients. - For outbreaks with ≥10 cases: collect samples from 10% of patients, with a minimum of 10 samples.
Food Sample Collection	Collect samples of: - Suspected leftover food. - Similar foods. - Random samples of other foods. - Swabs from food preparation tools, storage areas, and water.
Laboratory Procedures	Send samples to: - The health facility laboratory (if kits are available). - The regional laboratory in Makkah when needed.
Descriptive Epidemiological Investigation	- Interview affected individuals individually. - Identify suspected meals. - Analyze data by time, place, and person. - Identify the implicated food.
Environmental Investigation	Conduct a joint inspection by the Quadripartite Committee, including representatives from: - Ministry of Municipalities and Housing - Saudi Food and Drug Authority - Ministry of Interior - Ministry of Health / Public Health Authority Activities include interviewing the facility manager, assessing workers' practices, verifying certificates, and collecting swabs from food handlers. - The Ministry of Health representative collects samples and swabs from food handlers who prepared the suspected food, or from all food handlers if the responsible individuals cannot be identified, including: throat, nasal, and nail swabs, stool samples or rectal swabs, and samples from any boils or wounds, which are sent to the laboratory. - Representatives of the Food and Drug Authority and the Ministry of Municipalities collect samples of suspected, similar, and random foods, swabs from food preparation tools and areas, and water samples (including measurement of residual chlorine), all sent to the regional laboratory for microbiological and chemical testing.
Laboratory Investigation	Follow up laboratory results from patients, food, food handlers, and environmental samples, and document all findings.
Post-Outbreak Actions	- Submit preliminary and final reports to the health cluster. - Attend the Quadripartite Committee meeting to approve penalties and fines. - Submit the final report to the Food Safety Program. - Conduct root cause analysis and issue recommendations to prevent recurrence.

Most Likely Microorganisms Causing Foodborne Disease Outbreaks During the Hajj Season

Microorganism	Incubation Period	Symptoms	Foods Most Commonly Associated
Staphylococcus aureus	30 minutes to 8 hours	Nausea, vomiting, abdominal pain, diarrhea (rare)	Ready-to-eat foods and finished food products
Clostridium perfringens	6–24 hours	Diarrhea, abdominal pain, vomiting, fever (uncommon)	Meat, poultry, gravies, and other foods cooked in large batches
Salmonella (Typhi)	3–60 days	Fever, loss of appetite, malaise, headache, muscle aches, sometimes diarrhea or constipation	Poultry, eggs, meat, milk, raw fruits and vegetables; often linked to contaminated water or food prepared outside regulated kitchens
Salmonella (non-typhi)	6 hours to 10 days	Diarrhea, often accompanied by fever and abdominal cramps	Poultry, eggs, meat, milk, raw fruits and vegetables
Clostridium botulinum	2 hours to 8 days	Variable severity; common symptoms include double vision, blurred vision, weakness of swallowing and speech muscles; descending paralysis that is bilateral and may progress rapidly	Improperly canned or fermented foods
Campylobacter	2–10 days	Diarrhea (often bloody), fever, abdominal cramps	Poultry, milk, and contaminated water
Enteropathogenic *E. coli* (EPEC)	Not specified	Watery diarrhea, fever, vomiting	Undercooked meat (especially beef and burgers), unpasteurized milk, contaminated food and water
Enterotoxigenic *E. coli* (ETEC)	6–48 hours	Diarrhea, abdominal pain, nausea, vomiting, fever (uncommon)	Contaminated food and water
Bacillus cereus (Emetic syndrome)	1–6 hours	Vomiting, nausea, diarrhea (sometimes), fever (uncommon)	Starchy foods such as rice and pasta; inadequately refrigerated meats
Bacillus cereus (Diarrheal syndrome)	6–24 hours	Diarrhea, abdominal pain, nausea (sometimes), fever (uncommon)	Meat products, sauces, meat gravy, vanilla sauce, vegetables, and dairy products
Shigella	12 hours to 6 days	Diarrhea (mucoid or bloody), fever, abdominal pain	Food or water contaminated by an infected person
Norovirus	12–48 hours	Diarrhea, vomiting, nausea, abdominal pain, fever, headache	Vegetables, fruits, shellfish (e.g., raw oysters), food or water contaminated by an infected person

Mpox

Disease Description	A rare viral disease caused by the Mpox virus belonging to the *Orthopoxvirus* genus. Transmission occurs from animals to humans and between humans through direct contact with infected skin lesions, body fluids, or contaminated materials. The illness usually begins with a prodromal phase lasting 0–5 days, characterized by fever, severe headache, lymphadenopathy, back pain, myalgia, and marked fatigue. Prodromal symptoms may occasionally be absent or appear after rash onset. Lymphadenopathy is a distinguishing feature that helps differentiate Mpox from similar diseases such as chickenpox and measles. The rash typically appears 1–3 days after fever onset, may be localized or generalized, and often starts on mucous membranes (oral, genital, or perianal areas). Lesions evolve sequentially from macules → papules → clear vesicles → pustules → crusts that later dry and fall off. Complications may include proctitis causing rectal pain, tenesmus, or bleeding, and oropharyngeal inflammation leading to tonsillar swelling, abscess formation, and difficulty swallowing. Disease severity may increase among immunocompromised individuals.
Suspected Case Definition	A case meeting clinical and epidemiological criteria with rash plus one or more of the following: • Fever ≥ 38.2°C • Lymphadenopathy • Headache • Muscle or back pain • General fatigue
Confirmed Case Definition	A suspected case laboratory-confirmed by PCR testing or viral isolation.
Contact Definition	Any person exposed to a confirmed Mpox case during the infectious period through: • Close face-to-face contact • Respiratory or mucosal exposure • Physical or sexual contact • Providing care without PPE • Living in the same household • Contact with patient clothing or personal items
Incubation Period	5–21 days (average 6–13 days). Contacts are advised to undergo home quarantine for 21 days to reduce transmission risk.
Period of Infectiousness	Infectiousness usually begins 1–3 days after fever onset and continues throughout the symptomatic period until all lesions crust, scabs fall off, and new skin forms. The infectious period may last 2–4 weeks. Patients must remain isolated until complete lesion healing.
Modes of Transmission	• Direct contact with infected persons (skin, respiratory secretions, or mucous membranes) • Indirect contact with contaminated surfaces or materials • Contact with infected animals or their secretions • Animal bites or scratches • Vertical transmission to the fetus during pregnancy
Prevention Measures	• Avoid close contact and handling of animals, especially sick or dead animals. • Avoid contact with pilgrims presenting with rash or fever symptoms.

Managing Mpox Case

Case Transfer
-Suspected Mpox cases inside the Holy Sites are transferred via **designated ambulance** to the nearest hospital within the Holy Sites for isolation and necessary evaluation.
-Confirmed cases inside or outside the Holy Sites are transferred to **East Jeddah Hospital**.

Notification: Register the case in the HESN Plus system and complete the **notification form**, with immediate reporting to the relevant health cluster upon case confirmation, in addition to notifying the branch/office/section of the Public Health Authority in the region or governorate.

Epidemiological Investigation and Surveillance
-The epidemiological investigation team conducts a **field visit** to the confirmed case location in coordination with relevant authorities.
-Perform epidemiological investigation and identify the potential source of infection.

Management of Contacts
-Identify and list close contacts at residence or within the Hajj mission.
-Screen contacts to detect suspected cases.
-Refer suspected contacts to designated hospitals for isolation and specimen collection.
-Monitor all contacts for 21 days (incubation period) from the last exposure.
-Consider vaccination for contacts when indicated.
-Provide health education regarding isolation if symptoms develop.

Specimen Collection and Diagnosis
-Collect **three swab specimens** from different body sites.
-Diagnosis is confirmed using **PCR testing**.

Specimen Referral
Send all specimens collected from healthcare facilities within the Holy Sites to the Mobile **Public Health Authority Laboratory**.

Isolation
-Immediately isolate the patient in a **designated isolation room**.
-Apply appropriate infection prevention and control precautions.
-Restrict patient visits and assign a dedicated healthcare team to provide care.

Infection Prevention and Control Measures
-Follow infection prevention and control guidelines and standard precautions for handling suspected cases.
-Apply Mpox-specific IPC measures according to the approved guideline.
-Dispose of contaminated waste and patient materials safely using approved procedures.
-Ensure proper use and disposal of personal protective equipment.

Treatment
-No specific antiviral treatment is routinely required.
-Management is supportive, including treatment of symptoms and complications such as:
- Antipyretics
- Analgesics
- Treatment of secondary conditions as needed.

Diphtheria

Disease Description	A serious bacterial infection caused by toxin-producing strains of *Corynebacterium diphtheriae*. The disease may lead to breathing difficulties, cardiac rhythm disturbances, and can result in fatal outcomes. Clinical features include inflammatory signs of the throat, tonsils, and larynx; an adherent gray membrane over the nose, throat, tonsils, or larynx; fever; and in severe cases, cervical lymphadenopathy causing airway obstruction. Late complications may occur after 2–6 weeks, including cranial nerve palsy, peripheral motor and sensory neuropathy, and myocarditis.
Suspected Case Definition	Acute upper respiratory infection with sore throat congestion and mild fever, accompanied by an adherent gray membrane on the tonsils, pharynx, and/or nose, without laboratory confirmation or epidemiological linkage to a laboratory-confirmed case.
Confirmed Case Definition	A suspected case laboratory-confirmed by isolation of toxin-producing *Corynebacterium diphtheriae*, or epidemiologically linked to a laboratory-confirmed case.
Epidemiologically Linked Case	A case with direct contact with a confirmed case within the previous 10 days, without laboratory confirmation.
Discarded Case	A suspected case with negative laboratory test results for diphtheria.
Incubation Period	Usually 2–5 days, occasionally longer.
Period of Infectiousness	Continues until the organism disappears from respiratory secretions and skin lesions, usually within 2 weeks or less, and rarely longer than 4 weeks. Appropriate antibiotic treatment rapidly terminates transmission. Rare chronic carriers may transmit infection for 6 months or more.
Modes of Transmission	• Direct contact with infected persons or carriers. • Contact with contaminated objects or materials containing respiratory secretions. • Consumption of raw (unpasteurized) milk may act as a vehicle for transmission.
High-Risk Groups	Unvaccinated individuals, children, elderly persons, healthcare workers, and individuals living in crowded settings or camps.
Prevention Measures	• Vaccination of contacts and unvaccinated individuals according to the recommended immunization schedule. • Administration of prophylactic antibiotics to close contacts. • Health education and reduction of overcrowding.

Managing Diphtheria Case

Notification

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately.

-Register the case in the HESN Plus system.

Preventive Measures for Contacts

The epidemiological investigation team should visit the case location and performs the following:

1. Identify close contacts during the **previous 10 days**.
2. Monitor contacts for symptoms for **10 days**.
3. Refer any symptomatic contact to a healthcare facility for evaluation and sampling.
4. Provide **prophylactic antibiotics** to contacts.
5. Assess vaccination status and administer **diphtheria vaccine** according to the recommended schedule.
6. Provide health education regarding transmission, prevention, and when to seek medical care if symptoms appear.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

- If there is an increase in the number of cases.
- If there is a critical case or a fatality associated with the disease.

Specimen Collection and Transport

-Three samples should be obtained (two nasopharyngeal and/or throat swabs, in addition to a pure microbial culture) and sent immediately to the Public Health Authority laboratory in Riyadh upon suspicion.

Isolation

- Isolate suspected cases until laboratory confirmation is obtained.
- Apply **droplet precautions** (surgical mask) for respiratory cases.
- Apply **contact isolation** for cutaneous diphtheria cases.

Isolation continues until:

- Two consecutive negative culture results obtained **24 hours apart**, or
- Completion of **14 days of appropriate treatment** if testing cannot be performed.

Treatment

-Begin treatment **immediately without waiting for laboratory results**:

- **Diphtheria Antitoxin (DAT)**
- **Antibiotics**

-Update immunization status during the recovery phase, as infection does **not guarantee immunity**.

Measles

Disease Description	An acute viral disease caused by the Measles virus, which lives in the mucus of the nose and throat of infected individuals and spreads easily through breathing, coughing, or sneezing. The disease may cause severe illness and complications including otitis media, pneumonia, laryngotracheobronchitis, diarrhea, encephalitis, and can result in fatal outcomes. It is characterized by fever accompanied by conjunctivitis, coryza, and cough, followed by Koplik's spots on the buccal mucosa. A characteristic red maculopapular rash appears typically between the 3rd and 7th day of illness, starting on the face and spreading to the rest of the body, lasting 4–7 days. Leukopenia is a common laboratory finding.
Suspected Case Definition	Any case presenting with rash and fever ≥ 37.5°C, or any case clinically suspected by the treating physician to have measles.
Confirmed Case Definition	Any suspected case with a blood specimen tested at a Public Health Authority Laboratories showing positive results for measles or rubella infection.
Clinically Diagnosed Case	Any person suspected by a physician to have measles, or presenting with fever ≥37.5°C and a non-vesicular maculopapular rash accompanied by at least one of the following: cough, coryza, or conjunctivitis, without adequate clinical specimen or epidemiological linkage to a confirmed case.
Vaccine-Associated Case	A rash illness occurring 7–14 days after measles vaccination, with laboratory confirmation within 3–56 days, provided there was no exposure to a laboratory-confirmed measles case during the same period.
Incubation Period	Approximately 10 days on average (range 7–18 days from exposure to fever onset, and about 14 days to rash onset). Rarely ranges from 19–21 days. The incubation period may be prolonged if immunoglobulin is administered early.
Period of Infectiousness	From 4 days before rash onset until 4 days after rash appearance.
Modes of Transmission	Airborne transmission or contact with contaminated surfaces entering through mucous membranes of the nose, mouth, or eyes.
Prevention Measures	• Vaccination and maintaining high immunization coverage. • Avoidance of direct contact with suspected or confirmed cases.

Managing Measles Case

Notification:

-Complete all fields of the rash illness notification form.

-Immediately notify the Public Health and Infection Prevention & Control Department and the epidemiological investigation team

-Ensure the case is registered in the HESN Plus

Preventive Measures for Contacts

The epidemiological investigation team performs a field visit to the patient's residence and:

-Identify all close contacts during the infectious period (**4 days before to 4 days after rash onset**).

-Vaccinate unvaccinated direct contacts (children and adults) according to national immunization guidelines.

-Provide post-exposure prophylaxis:

- **MMR vaccine** for eligible contacts when available.
- **Immunoglobulin** for high-risk individuals if vaccination is contraindicated.

-Contacts should complete vaccination and receive a **second dose after 28 days** if required.

-Vaccinate non-direct contacts within surrounding residential areas based on epidemiological risk assessment.

-Monitor contacts for **21 days** after last exposure for fever or rash symptoms.

-Refer symptomatic contacts to healthcare facilities with implementation of infection control precautions.

-Provide health education on symptoms, transmission, prevention, and when to seek medical care.

Specimen Collection and Transport

-Collect **blood specimens and throat swabs** from suspected cases.

-Send specimens to the **Public Health Authority Laboratory in Riyadh**.

Diagnosis

-Diagnosis is usually clinical based on the **characteristic maculopapular rash and Koplik's spots**.

-Laboratory confirmation includes:

- Serological testing (IgM antibodies), or
- Virus isolation from blood, nasopharyngeal swab, throat swab, or urine.

-If IgM is negative, testing should be repeated after **4 days from rash onset** or confirmed by rising **IgG titers** approximately **10 days after infection**.

Isolation

-Immediately isolate suspected cases in a **negative-pressure room**, if available.

-Assign a dedicated medical and nursing team for patient care.

-Prevent patient movement between hospital departments.

-Continue isolation until laboratory results are confirmed.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

- If there is an increase in the number of cases.
- If there is a critical case or a fatality associated with the disease.

Poliomyelitis (Polio)

Disease Description	Poliomyelitis is a highly contagious viral infection caused by the Poliovirus. The virus enters through the mouth, multiplies in the intestines, and may invade the nervous system, causing paralysis within hours. It primarily affects children under five years of age and rarely affects adults. Clinical presentations vary: • **Subclinical infection (90–95%)**: Asymptomatic or mild nonspecific fever, detected only by laboratory testing. • **Abortive infection (4–8%)**: Mild fever for 2–3 days with malaise, myalgia, and headache without paralysis. • **Non-paralytic infection (aseptic meningitis)**: More severe symptoms with meningeal irritation. • **Paralytic infection (<1%)**: Begins with mild illness followed by muscle pain and stiffness of the neck and back, progressing to asymmetric flaccid paralysis within 3–4 days, affecting legs more than arms, with preserved sensation.
Suspected Case Definition	Any case of acute flaccid paralysis (AFP), including Guillain–Barré syndrome, in a child under 15 years of age for any cause except severe trauma, or any person of any age with acute flaccid paralysis suspected to be poliomyelitis.
Confirmed Case Definition	A case of acute flaccid paralysis with isolation of wild poliovirus from stool specimens of the case or their contacts.
Incubation Period	Usually 7–21 days, ranging from 3–35 days.
Period of Infectiousness	Not precisely defined; infected persons are contagious as long as the virus is shed. Virus can be detected in throat secretions after 36 hours and in stool after 72 hours of exposure. Typically persists in the throat for about 1 week and in stool for 3–6 weeks or longer. Infectiousness is highest during the few days before and after symptom onset.
Modes of Transmission	• Fecal–oral transmission via contaminated food or water. • Transmission through contaminated hands. • More common in areas with poor sanitation and hygiene.
High-Risk Groups	Unvaccinated children, children under five years of age, and individuals with malnutrition or immunodeficiency.
Risk Factors for Severe Disease	• Immunodeficiency: May lead to severe or chronic infection, including vaccine-derived disease after OPV. • Malnutrition: Weakens intestinal immune response. • Physical exertion: Activity within 48 hours after paralysis onset may worsen severity. • Pregnancy: Pregnant contacts may have increased risk of paralysis; no evidence of fetal harm from virus or OPV vaccine.
Prevention Measures	• Improve personal hygiene and regular handwashing. • Adherence to childhood immunization schedules.

Managing Polio / Acute Flaccid Paralysis Case

Ring Immunization Around the Case

-Conduct vaccination of all individuals surrounding the confirmed case within the case's residential area.

-Administer **two doses of Oral Polio Vaccine (OPV)** one month apart.

For travelers arriving from countries with circulating poliovirus:

1. Administer **bivalent OPV (bOPV)** for travelers from countries with circulating **cVDPV1 or cVDPV3**.
2. Administer **IPV vaccine** for travelers arriving from countries with circulating **cVDPV2**.

-OPV vaccine should not be administered to pregnant women; IPV should be used as an alternative.

Notification

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately.

-Register the case in the HESN Plus system.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

- If there is an increase in the number of cases.
- If there is a critical case or a fatality associated with the disease.

Specimen Collection and Referral

-Collect **two stool specimens** from the suspected case within **14 days of paralysis onset**, with an interval of **24–48 hours** between samples.

-Send specimens to the **Public Health Authority Laboratory in Riyadh**.

-If poliovirus is isolated, **PCR testing** should be performed to determine:

- **Wild Poliovirus (WPV)**, or
- **Circulating Vaccine-Derived Poliovirus (cVDPV)**.

Contact Management

-Identify all contacts of the case (household, residence, workplace, or school).

-Monitor contacts for symptoms and collect stool specimens when indicated.

-Provide health education regarding hygiene practices and symptom monitoring.

-Implement **Ring Immunization** in the surrounding geographic area of the case.

Infection Prevention and Control Measures

Standard and contact isolation precautions must be implemented with emphasis on hygiene and prevention of fecal–oral transmission of infection:

- **hand hygiene**.
- Proper **environmental sanitation**.
- Safe disposal of **stool and contaminated waste**.

Meningococcal Meningitis

Disease Description	Acute inflammation of the membranes surrounding the brain and spinal cord, most commonly caused by Neisseria meningitidis. The disease is characterized by sudden high fever, severe headache, neck stiffness, nausea, and vomiting. It may be accompanied by rash, respiratory symptoms, and altered consciousness ranging from confusion to coma. Severe cases may rapidly progress to septic shock, hypotension, and may result in fatal outcomes if not treated early.
Suspected Case Definition	Any person with sudden onset fever (>38°C) and neck stiffness or other meningeal signs, including bulging fontanelle in infants.
Probable Case Definition	A suspected case with one or more of the following laboratory findings: • Turbid, cloudy, or purulent cerebrospinal fluid (CSF). • CSF white blood cell count ≥10 cells/mm^3. • Detection of bacteria by Gram stain in CSF. • Positive antigen detection (e.g., latex agglutination) in CSF. For infants: • CSF WBC >100 cells/mm^3, or • CSF WBC 10–100 cells/mm^3 with elevated protein (>100 mg/dL) or low glucose (<40 mg/dL). Or a suspected case with one or more of the following: • Normal CSF glucose with elevated protein (>50 mg/dL), moderate pleocytosis (<500 cells/mm^3), and lymphocyte predominance (>50%). • Positive viral genomic sequences detected by PCR. • Epidemiological linkage to a confirmed case.
Confirmed Case Definition	Any suspected or probable case laboratory-confirmed by culture or PCR identification of causative bacteria (*Neisseria meningitidis*, *Streptococcus pneumoniae*, or *Haemophilus influenzae* type b) from CSF or blood.
Incubation Period	Typically, 3–4 days (range 1–10 days).
Period of Infectiousness	Continues while bacteria are present in the nose or throat; transmissibility decreases significantly 24 hours after initiation of effective antibiotic therapy.
Modes of Transmission	Transmission via respiratory droplets or close contact, particularly through shared living spaces or sharing personal items.
Prevention Measures (General)	• Community awareness on meningitis symptoms and early healthcare seeking. • Health education during mass gatherings. • Identification and registration of all contacts within 10 days from last exposure and during the infectious period. • Administration of chemoprophylaxis to close contacts. • Vaccination of contacts based on epidemiological risk assessment and vaccination status.
Hajj–Specific Preventive Measures	• Activation of active epidemiological surveillance in Holy Sites and seasonal healthcare facilities with immediate reporting and investigation within 24 hours. • Mandatory valid meningococcal vaccination certificate for all pilgrims and seasonal workers (issued ≥10 days before arrival and valid up to 3 years for polysaccharide vaccine or 5 years for conjugate vaccine). • Screening of all arrivals at points of entry and verification of vaccination certificates. • Administration of prophylactic antibiotics at entry points for pilgrims arriving from high-risk African meningitis belt countries according to national protocol to reduce carriage and prevent transmission.

Preventive Measures for Contacts

-Identify and register all **close contacts**, documenting their contact information.

-Conduct **clinical follow-up for 10 days** after last exposure and assess daily for symptoms (fever, headache, vomiting, rash, or altered consciousness).

-Immediately refer symptomatic contacts to healthcare facilities for evaluation and isolation.

-Provide **chemoprophylaxis** to all close contacts as soon as possible, preferably within **24 hours** of diagnosis.

-If administration of chemoprophylaxis is delayed for more than two weeks after the last exposure of the contact, it is not recommended to administer it.

-Chemoprophylaxis should be given as a single dose appropriate for the individual's age and clinical condition.

-Contacts should be informed that chemoprophylaxis does not replace daily symptom monitoring, as disease may still develop despite receiving prophylaxis.

Group	Medication	Dose	Route
Adults	Ciprofloxacin	500 mg single dose	Oral
Adults (alternative)	Ceftriaxone	250 mg single dose	IM
Adults (alternative)	Rifampicin	600 mg twice daily for 2 days	Oral
Children >12 years	Ceftriaxone	125 mg single dose	IM
Children >1 month	Rifampicin	10 mg/kg twice daily for 2 days	Oral
Infants <1 month	Rifampicin	5 mg/kg twice daily for 2 days	Oral
Pregnant women	Ceftriaxone	250 mg single dose	IM

-Consider vaccinating unvaccinated close contacts who have not been vaccinated within the past 3–5 years (depending on the vaccine type) for future protection.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

-If there is an increase in the number of cases.

-If there is a critical case or a fatality associated with the disease.

Specimen Collection

Collect specimens **before starting antibiotic therapy**:

- Cerebrospinal fluid (CSF) Specimen
- Blood Specimen for culture and/or PCR testing.

Isolation

-Apply **contact and droplet isolation precautions** for the patient for **at least 24 hours** after initiation of effective antibiotic therapy.

-Start **empirical intravenous antibiotics immediately** according to approved treatment protocols.

-Follow institutional protocols for management of meningococcal infections.

-Ensure proper handling and disinfection of respiratory secretions and contaminated equipment.

-Reinforce respiratory hygiene (covering mouth and nose during coughing/sneezing) and safe waste disposal.

Treatment

-Provide **targeted treatment** according to hospital protocols based on culture results and antimicrobial susceptibility testing.

Prior to discharge, administer eradication therapy such as: **Rifampicin** or **Ciprofloxacin** or A **third-generation cephalosporin** (e.g., Ceftriaxone)
to eliminate bacterial carriage and prevent further transmission.

Notification

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately and register the case in the HESN Plus system.

Specimen Referral

-Inside the Holy Sites: Send the Specimens to the **Mobile Public Health Authority Laboratory**. If testing is unavailable locally, send the Specimens to the **Public Health Authority Laboratory in Riyadh**.

-Outside the Holy Sites (Makkah, Jeddah, Madinah, and Taif): Send the positive Specimens to the Public Health Authority Laboratory in Riyadh. If testing is not available at the facility, the specimen should be sent to the Mobile Public Health Authority Laboratory

Pneumococcal Meningitis

Disease Description	An acute bacterial disease caused by Streptococcus pneumoniae, characterized by a high case-fatality rate and may present as a fulminant illness accompanied by bacteremia. The disease usually begins suddenly with high fever, lethargy or coma, and signs of meningeal irritation. Symptoms include fever, headache, altered level of consciousness, neck stiffness, vomiting, and seizures. Infants may present with a bulging fontanelle. Meningeal symptoms may be preceded by respiratory symptoms such as rhinorrhea, sore throat, cough, and shortness of breath. The disease typically occurs as sporadic cases, especially among infants, older adults, and individuals with asplenia or hypogammaglobulinemia. Skull base fractures with persistent communication with the nasopharynx represent an important risk factor.
Suspected Case Definition	Any person with sudden onset fever (>38°C) and neck stiffness or other meningeal signs, including bulging fontanelle in infants.
Confirmed Case Definition	Any suspected or probable case laboratory-confirmed by isolation or identification of the causative organism from cerebrospinal fluid (CSF) or blood.
Incubation Period	Usually short, ranging from 1–4 days.
Period of Infectiousness	Continues while the organism is present; may be prolonged in immunocompromised individuals (e.g., persons living with HIV).
Modes of Transmission	Transmission occurs via respiratory droplets or contact with respiratory secretions. Close contact more commonly results in nasopharyngeal carriage rather than disease.
Susceptibility and Immunity	Children under 5 years, older adults, and individuals with chronic diseases are at highest risk of infection and complications.
Signs and Symptoms	Fever, headache, lethargy or altered consciousness, neck stiffness, vomiting, seizures, and bulging fontanelle in infants. Respiratory symptoms (runny nose, sore throat, cough, dyspnea) may precede meningeal manifestations.
Prevention Measures	Pneumococcal conjugate vaccine (PCV)

Managing Pneumococcal Meningitis Case

Notification

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately.

-Register the case in the HESN Plus system.

Preventive Measures for Contacts

- Contact tracing and preventive measures are limited to **outbreak situations only** and are not routinely required for sporadic cases.

During Outbreak:

- Provide appropriate **prophylactic antibiotics** according to susceptibility testing.
- Vaccinate contacts with:
  - **Pneumococcal conjugate vaccine (PCV13)**.
  - **Polysaccharide vaccine:** Recommended for high-risk groups, including adults aged ≥65 years, patients with sickle cell disease, HIV/AIDS, and those with chronic conditions such as chronic heart disease, liver cirrhosis, renal failure, Diabetes Mellitus, and asplenia. It can be administered to all individuals aged over 2 years.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

-If there is an increase in the number of cases.

-If there is a critical case or a fatality associated with the disease.

Specimen Collection and Referral

ollect cerebrospinal fluid (CSF) samples and blood samples.

Inside and outside the Holy Sites:

-Send the specimens from suspected cases to the **Public Health Authority Laboratory in Riyadh** for diagnostic testing.

-If testing is not available at the facility, send the specimens to the **Mobile Public Health Authority Laboratory**. Positive samples are transferred for **genomic sequencing** to the Public Health Authority reference laboratory in Riyadh.

Diagnosis

-Gram stain and culture, with antimicrobial susceptibility testing.

-CSF biochemical analysis (protein, glucose, and differential white blood cell count).

-Latex agglutination testing of cerebrospinal fluid.

Isolation

-Apply the **standard infection prevention and control precautions** according to approved hospital policies

Treatment

-Initiate treatment **immediately without waiting for laboratory results**.

-Recommended empirical therapy:

- **Ceftriaxone or Cefotaxime + Vancomycin**

-Modify treatment later based on:

- Culture results
- Antimicrobial susceptibility testing.

-Administration of **Dexamethasone** before or with the first dose of antibiotics is recommended to improve clinical outcomes.

Haemophilus influenzae type b (Hib)

Disease Description	A bacterial disease with sudden or gradual onset caused by Haemophilus influenzae type b (Hib). It may present with multiple clinical manifestations including meningitis, epiglottitis, pneumonia, pericarditis, and osteomyelitis, with meningitis being the most severe form. Symptoms include fever, vomiting, lethargy, and signs of meningitis such as bulging anterior fontanelle in infants under one year and neck or back stiffness in older children. Coma may occur in severe cases. Mild fever and early central nervous system symptoms may precede the illness for several days.
Suspected Case Definition	Any person with sudden onset fever (>38°C) accompanied by neck stiffness or other meningeal signs, including bulging fontanelle in infants.
Confirmed Case Definition	Any suspected or probable case laboratory-confirmed by isolation or detection of the causative organism from cerebrospinal fluid (CSF) or blood.
Incubation Period	Usually 2–4 days.
Period of Infectiousness	Infectious while the organism is present; transmission may continue even without nasal secretions. Patients are generally no longer infectious 24–28 hours after initiation of effective antibiotic therapy.
Modes of Transmission	Spread through respiratory droplets from nasal or throat secretions during the infectious period, typically entering through the nasopharynx.
Susceptibility and Immunity	Children under 5 years of age, older adults, and individuals with chronic diseases are at higher risk of infection and complications.
Prevention Measures	• Hib vaccination as part of the national immunization program. • Administration of oral rifampicin chemoprophylaxis to all close contacts during outbreaks only, particularly when unvaccinated or partially vaccinated children or infants younger than 7 months are present in households or daycare settings.

Managing Haemophilus influenzae type b Meningitis Case

Notification:

-Notify the Public Health Department, Infection Prevention and Control Department, and the Epidemiological Investigation Team immediately.

-Register the case in the HESN Plus system.

Preventive Measures for Contacts

- Identify and assess contacts and implement preventive measures to prevent disease transmission.
- Preventive measures for contacts are applied **only during outbreak situations** and not for sporadic individual cases.

Chemoprophylaxis During Outbreaks

Provide **oral rifampicin** prophylaxis to close contacts in the following situations:

- Presence of a child **younger than 7 months** in the household regardless of vaccination status.
- Presence of a child **older than 7 months** who has not completed the primary vaccination series.
- Daycare or nursery settings where unvaccinated children are present.

Rifampicin dosage:

- **Adults:** 600 mg once daily for 4 days (maximum dose).
- **Children:** 20 mg/kg once daily for 4 days.
- **Infants (<1 month):** 10 mg/kg once daily for 4 days.
- Vaccinate unvaccinated children under five years of age as soon as possible.

Specimen Collection and Referral

Collect cerebrospinal fluid (CSF) samples and blood samples.

Inside and outside the Holy Sites:

-Send the specimens from suspected cases to the **Public Health Authority Laboratory in Riyadh** for diagnostic testing.

-If testing is not available at the facility, send specimens to the **Mobile Public Health Authority Laboratory**. Positive samples are transferred for **genomic sequencing** to the Public Health Authority reference laboratory in Riyadh.

Diagnosis

Diagnosis is confirmed by:

- **Culture**, or
- **Polymerase Chain Reaction (PCR)** testing.

Isolation

-Apply **contact and droplet isolation precautions** for at least **24 hours after initiation of effective antibiotic therapy**.

Notify the Public Health Authority branch/office/ section in the region or governorate in the following cases:

-If there is an increase in the number of cases.

-If there is a critical case or a fatality associated with the disease.

Annex 1: Countries Subject to Vaccination Requirements

A. Meningococcal Disease (Neisseria meningitidis)

Target countries:
Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Democratic Republic of the Congo, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, South Sudan, Sudan, Tanzania, Togo, and Uganda.

Target group: Pilgrims intending to perform Hajj **aged one year and above**.

Note: Scientific evidence indicates that conjugate vaccines are safe and effective for individuals aged **55 years and above**.

B. Poliomyelitis

Countries subject to poliomyelitis vaccination requirements – Wild Poliovirus (WP1): Afghanistan, Pakistan.
Countries subject to poliomyelitis vaccination requirements – Circulating Vaccine-Derived Poliovirus type 1 (cVDPV1): Mozambique, Democratic Republic of the Congo.
Countries subject to poliomyelitis vaccination requirements – Circulating Vaccine-Derived Poliovirus type 3 (cVDPV3): Guinea.

C. Poliomyelitis

Africa: Angola, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, Ethiopia, Guinea, Kenya, Liberia, Mali, Mauritania, Niger, Nigeria, Republic of the Congo, Sierra Leone, Somalia, South Sudan, Tanzania.
Other Countries: Palestine, Yemen.
Target Group: All travelers arriving from the above-mentioned countries, **regardless of age or previous vaccination status**.

D. Yellow Fever

Africa:
Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Republic of the Congo, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, South Sudan, Sudan, Togo, and Uganda.
Americas:
Argentina, Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Panama, Paraguay, Peru, Suriname, and Venezuela.
Target group: All travelers arriving from the above-mentioned countries **aged over nine months**.

Annex 2: Countries Requiring the Implementation of Vector Control Measures

Africa:
Angola, Benin, Burkina Faso, Cabo Verde, Cameroon, Central African Republic, Côte d'Ivoire, Djibouti, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Guinea, Kenya, Liberia, Mali, Mauritania, Mauritius, Niger, Nigeria, São Tomé and Príncipe, Senegal, Somalia, Sudan, Seychelles, Togo, Uganda.

The Americas:
Anguilla, Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Bonaire, Brazil, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Cuba, Curaçao, Dominica, Dominican Republic, Ecuador, El Salvador, French Guiana, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Easter Island, Jamaica, Martinique, Mexico, Montserrat, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Saint Barthélemy, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Vincent and the Grenadines, Sint Eustatius and Saba, Suriname, Trinidad and Tobago, Turks and Caicos Islands, United States Virgin Islands, Venezuela.

Asia:
Bangladesh, Cambodia, Cook Islands, French Polynesia, Fiji, India, Indonesia, Laos, Maldives, Malaysia, Marshall Islands, Micronesia, Myanmar, Palau, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Sri Lanka, Thailand, Tonga, Vanuatu, Vietnam.

Communicable Diseases Sector

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PUBLIC HEALTH AUTHORITY