PHIM | PUBLIC HEALTH INSTITUTE of MALAWI

# National Public Health Emergency Operations Centre Handbook for Malawi

August , 2024

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# Acronyms

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|---|---|
| **AAR** | After Action Review/Report |
| **CDC** | Centers for Disease Control and Prevention |
| **CIR** | Critical Information Requirements |
| **CMED** | Central Monitoring and Evaluation Division |
| **CSO** | Civil Society Organization |
| **DC** | District Commissioner |
| **DHIS** | Digital Health Information System |
| **DoDMA** | Department of Disaster Management Affairs |
| **DRRT** | District Rapid Response Team |
| **GIS** | Geographical Information System |
| **HETC** | Health Emergency Technical Committee |
| **HMIS** | Health Management Information System |
| **HR** | HR |
| **HRH** | Human Resources for Health |
| **HRIS** | Human Resources Information system |
| **HTSS** | Health Technical Support Services |
| **IAP** | Incident Action Plan |
| **IAR** | Intra-Action Review |
| **ICT** | Information and Communication Technology |
| **IDSR** | Integrated Disease Surveillance and Response |
| **IHR** | International Health Regulations |

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| **IM** | Incident Manager |
| **IMS** | Incident Management System |
| **IMT** | Incident Management Team |
| **LIMS** | Laboratory Information Management System |
| **LMIS** | Logistic Management Information System |
| **MOH** | Ministry of Health |
| **MRA** | Malawi Revenue Authority |
| **NDPRC** | National Disaster Preparedness and Relief Committee |
| **NFP** | National Focal Point |
| **NPHEOC** | National Public Health Emergency Operations Centre |
| **NRRT** | National Rapid Response Team |
| **NTF** | National Task Force |
| **OHSP** | One Health Surveillance Platform |
| **PHE** | Public Health Emergency |
| **PHEIC** | Public Health Emergency of International Concern |
| **PHEMC** | Public Health Emergency Management Committee |
| **PHIM** | Public Health Institute of Malawi |
| **PoE** | Point of Entry |
| **SME** | Subject Matter Expert |
| **SMT** | Senior Management Team |
| **SOP** | Standard Operating Procedure |
| **TWG** | Technical Working Group |
| **UPS** | Uninterruptible Power Supply |
| **WHO** | World Health Organization |

# Foreword

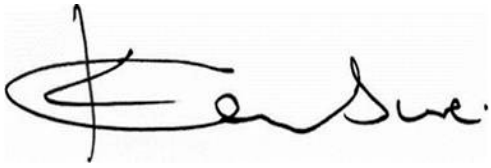
The Government of Malawi remains steadfast in its commitment to ensuring that the people of Malawi achieve the highest possible level of health—physically, mentally, and socially—while enjoying a high quality of life. Central to this commitment is our ability to effectively respond to public health emergencies, which threaten both individual well-being and the nation's social and economic stability. This Public Health Emergency Operations Center (PHEOC) Handbook represents a crucial tool in building our nation's resilience and readiness to manage health emergencies with efficiency and precision.

In alignment with our Health Sector Strategic Plan III (HSSP III), the PHEOC handbook prioritizes a holistic approach for a strong and resilient health system. Public health emergencies—whether caused by disease outbreaks, natural disasters, or global health threats—require coordinated, multisectoral responses. This handbook outlines the structures and systems needed to ensure that our PHEOCs, both at the national and district levels, are well-prepared to provide integrated, timely, and effective response to public health emergencies.

The Government of Malawi recognizes that addressing public health emergencies goes beyond health care delivery—it requires strategic partnerships and collaboration across sectors. As the frequency and impact of climate change, population growth, and urbanization increase, our public health response must be adaptive and robust. The PHEOC Handbook sets clear guidance for joint planning, implementation and reporting processes, fostering cooperation among Ministries, Departments, Agencies (MDAs), donors, and partners in the collective effort to secure Malawi's health.

It is my sincere hope that this PHEOC Handbook will become a key reference for all stakeholders involved in emergency preparedness and response. It represents not only a strategic tool but also a shared vision of a resilient, healthier Malawi—where timely and coordinated responses to public health emergencies protect both lives and livelihoods.

I extend my sincere gratitude to everyone who contributed to the development of this handbook. I am confident that its practical application will significantly enhance Malawi's capacity to withstand public health threats and ensure a resilient, healthy, and prosperous future for our nation.



**Hon. Khumbize Kandodo Chiponda, MP**
**Minister of Health**
**Republic of Malawi**

# Acknowledgements

The Ministry of Health (MOH) would like to thank all individuals, government departments, agencies and institutions that helped to develop the Public Health Emergency Operations Handbook. The MOH acknowledges the financial and technical support from the Africa CDC, World Bank, World Health Organization – AFRO and Country Office, CDC through the International Training and Education Center for Health (I-TECH), the Global Fund, UNICEF, and Luke International Norway (LIN), Malawi Red Cross Society, Cooper Smith

The MOH also extends gratitude to the Public Health Institute of Malawi for providing leadership in the formulation of the handbook, the senior management of the MOH, managers from various response sectors, government agencies, for their participation and support in the successful development of the National Public Health Emergency Operations Centre (PHEOC) Handbook for Malawi.

The Handbook was developed through a consultative process conducted by a task team led by the PHIM, and composed of the Office of President and Cabinet-Covid-19 secretariat, Malawi Revenue Authority, DODMA, Ministries of Education, Local Government, Water and Sanitation, Department of Animal Health, Immigration Services, Malawi Police Services and others for their input. From the Ministry of Health - Community Health Services Section (MOH-CHSS), Nursing, clinical services, Community Health Services, Health Promotion Services, Environment Health Services, Mchinji, Mangochi, Kasungu District Health Offices, Kamuzu Central Hospital.

The MoH is committed to providing strong leadership and stewardship in the implementation of the PHEOC Handbook, building on the collaborative efforts and contributions of all stakeholders involved in its development. This handbook reflects our shared vision for a well-coordinated, resilient, and effective public health emergency response system, aligning with the principles and priorities outlined in the Health Sector Strategic Plan III (HSSP III). Through this commitment, the MoH will ensure that the structures and systems established under this framework are operationalized to safeguard the health and well-being of all Malawians.

**Dr Samson Mndolo**
**Secretary for Health**

# Glossary of Terms and Abbreviations

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| **Action plan** | Often called an incident action plan, this is a statement of intent that is specific to an incident or event. It details the response strategies, objectives, resources to be applied and tactical actions to be taken (see plans). |
| **Activation level** | A level of readiness or emergency response describing an EOC's activities in response to predetermined criteria related to the severity of an incident.s |
| **After action report or review (AAR)** | After an activation, operation or exercise has been completed, a process involving a structured facilitated discussion to review what should have happened, what actually happened, and why. |
| **Chain of command** | A series of command, control, executive, or management positions in hierarchical order of authority. |
| **Common operating picture** | A single, continuously updated overview of an incident compiled throughout its life cycle from data shared between integrated systems for communication, information management, and intelligence and information sharing. A common operating picture is available to all EOC personnel, creating uniform situational awareness. |
| **Continuity of Operation (COOP)** | It is to continue operation of essential response functions under a broad range of circumstances including all-hazard emergencies as well as natural, man-made, and technological threats and security emergencies. |
| **Communications, technical/internal** | The processes, protocols and content of event management information exchanged vertically and horizontally within an incident or event management organization. |
| **Complex emergency** | A disaster complicated by civil violence, government instability, macroeconomic collapse, population migration, elusive political solutions, etc., in which any emergency response has to be conducted in a difficult political and security environment, potentially involving a multi-sectoral, international response that goes beyond the mandate or capacity of any single agency. |

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| **Comprehensive emergency (risk) management programme** | A corporate or government programme that commits resources to a range of measures to implement prevention and mitigation, preparedness, response and recovery (also disaster (risk) management programme). Typically, this programme includes the full range of capacities for managing risks associated with emergencies and disasters. |
| **Comprehensive (progressive) exercise programme** | A training and exercise programme consisting of a progression of increasingly complex exercises designed to increase understanding of, practice, and evaluate different emergency management capabilities. Five general types of exercises comprise a comprehensive programme: orientations; drills; table-top exercises (TTXs); functional exercises; and full-scale exercises. |
| **Concept of operations (CONOPS)** | A section or statement in an agency emergency plan or EOC plan that identifies policies, roles and responsibilities and how the structural or functional elements of the organization will work together to produce a coherent management response. |
| **Contingency plan** | A plan to deal with particular aspects of a specific threat that is different from other threats. For example: while the general management of emergencies is similar for most, and therefore efficiently addressed by a generic (all hazards) approach, the specific resources and actions that would be required to address a communicable disease outbreak are different from those used to respond to an earthquake. Each would require a different contingency plan (see plans). |
| **Disaster** | A type of event which causes serious disruption to the functioning of a community or a society due to hazards interacting with conditions of vulnerability, exposure and insufficient capacity to reduce risks or cope with consequences, leading to widespread human, material, economic and environmental losses and impacts. The impact of a disaster is often widespread and can last for a long period of time. The impact may test or exceed the capacity of a community or society to cope using its own resources, and therefore may require assistance from external sources, which could include neighbouring jurisdictions, or national or international sources. Consequences may include injuries, disease and other negative effects on human physical, mental and social wellbeing, together with damage to property, loss of services and environmental degradation. |
| **Emergency** | A type of event or imminent threat that produces or has the potential to produce a range of consequences, and which requires coordinated action, usually urgent and often nonroutine. Emergencies have effects that may be considered on a continuum from local emergencies with limited consequences to wide area disasters with catastrophic consequences.<br><br>Incidents or events are often referred to as emergencies, with the terms used interchangeably, but not all incidents or events are emergencies. |

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| **Emergency coordination centre** | A term used to describe a type of EOC that has no direct, tactical or operational function, but which serves as a point of control and coordination for the strategic allocation of resources and management of policy issues. |
| **Emergency (risk) management** | Also referred to as disaster (risk) management. Emergency (risk) management is the application of policies, process and actions to prevent new risks, reduce existing risks and manage residual risk. It includes the organized preparedness for and response to risk events and post-event support for recovery, rehabilitation and reconstruction of affected communities and societies. |
| **Emergency (risk) management agency or organization** | An organization, often a government agency, specifically mandated to provide a single point of accountability for the coordination of multi-sectoral and interagency emergency activities, including risk assessment, prevention, mitigation, preparedness, response and recovery activities within a particular area. Also called a disaster (risk) management organization. |
| **Emergency response plan (ERP)** | A document that describes how an agency or organization will manage its responses to emergencies of various types by providing a description of the objectives, policy and concept of operations for the response to an emergency; and the structure, authorities and responsibilities for a systematic, co-ordinated and effective response. In this context, emergency plans are agency- or jurisdiction-specific, and detail the resources, capacities and capabilities that the agency or organization will employ in its response (see plans).<br><br>Also referred to as an emergency or operations plan. |
| **Emergency operations centre (EOC)** | A place within which, in the context of an emergency, personnel responsible for planning, coordinating, organizing, acquiring and allocating resources and providing direction and control can focus these activities on responding to the emergency. An EOC is a generic concept, embracing a range of emergency management facilities from an on-scene incident command post at an emergency site to a national emergency coordination centre providing strategic direction and resources to multiple jurisdictions and agencies in a wide-area disaster. An EOC usually sits between these extremes and provides strategic policy, logistical and operational support to site-level responders and response agencies—see also public health emergency operations centre (PHEOC). |
| **EOC plan** | A document that describes the structure, functions and standard operating procedures for operating an EOC. It is the primary resource manual for EOC staff, containing samples of all necessary forms, role descriptions, concepts of operations and standard operating procedures. |

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| **Event** | An emergency incident or occurrence. 'Event' and 'incident' are often used interchangeably. An event may be insignificant or could be a significant occurrence, planned or unplanned (e.g. extreme weather event or mass gathering), that may impact the safety and security of communities. Under the *International Health Regulations* (2005) (Article 1) an event is defined as 'a manifestation of disease, or an occurrence that creates a potential for disease' (with particular reference to public health events of international concern, or PHEIC). |
| **Health communication** | Activities for informing, influencing, and motivating individual, institutional, and public audiences about important health issues. |
| **Health emergency** | A type of event or imminent threat that produces or has the potential to produce a range of health consequences, and which requires coordinated action, usually urgent and often non-routine. A health emergency may pose a substantial risk of significant morbidity or mortality in a community. |
| **Hot site** | An alternate EOC site that can be either fixed or mobile, and which is fully equipped for swift resumption of the delivery of critical services affected by a disruption. |
| **Hot wash/hot debrief** | A debriefing session held immediately after an exercise or incident to identify the strengths and weaknesses of plans, policies and procedures. See also cold wash. |
| **Incident** | An actual or imminent occurrence of a natural or human-induced event (see event) that requires a response to prevent or minimize illness, loss of life or damage to property or the environment, and to reduce economic and social losses. |
| **Incident action plan** | An oral or written plan outlining objectives related to the strategy for managing an incident. It may include the identification of operational resources, assignments, attachments that provide direction, and important information for management of the incident during one or more operational periods. Also event action plan. |
| **Incident management system (IMS)** | An emergency management structure and set of protocols that provides an approach to guiding government agencies, the private sector, non-governmental organizations and other actors to work in a coordinated manner primarily to respond to and mitigate the effects of all types of emergencies. The incident management system may also be utilised to support other aspects of emergency management, including preparedness and recovery. Also incident command system. |
| **Information management** | A set of processes and procedures to collect, store, analyse and distribute data and information to enable EOC functions. |

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| **Interoperability** | The ability of two or more systems or components to exchange data using common standards. |
| **Liaison** | A process of linking and coordinating joint planning and efforts of agencies that are external to the jurisdiction responsible for the emergency response. Such agencies may have either a policy or an operational interest in the response and may participate through a liaison officer either by assisting in the response (assigning tactical resources to the event) or cooperating (providing external support). Liaison officers are considered part of the command/management staff and report to the incident manager/incident commander. |
| **Operational period** | The time required to achieve a particular set of objectives. |
| **Emergency Operation Centre (EOC)** | Physical location or virtual platform for the coordination of information and resources to support incident management activities. Such a centre may be temporary or may be established in a permanent location. |
| **Operations (EOC function)** | The function that establishes tactics and directs operational resources to achieve incident response objectives. |
| **Operations-based exercises** | Exercises characterized by fully simulated or actual responses with use of equipment and resources and commitment of personnel. Operations-based exercises are used to validate capabilities, plans, policies, agreements and procedures. They include drills, functional exercises and full-scale exercises. |
| **Orientation** | A discussion-based process that is the simplest form of training and evaluation exercise, designed to acquaint users of an emergency plan or emergency management facility with the features of the plan or facility and how they should be used. An orientation uses low levels of simulation to focus on issues of coordination and assignment of responsibilities. |
| **Personal protective equipment (PPE)** | Protective clothing (gowns, gloves, boots etc.) and equipment (masks, shields, respirators, earplugs etc.) necessary to shield or isolate a person from biological, chemical, physical, sonic and thermal exposure. |
| **Public health emergency operations centre (EOC) (PHEOC)** | An emergency operations centre specializing in the command, control and coordination requirements of responding to emergencies involving health consequences and threats to public health. |
| **Public health emergency of international concern (PHEIC) (IHR definition)** | An extraordinary event which is determined, as provided in the [International Health] Regulations: (i) to constitute a public health risk to other States through the international spread of disease and (ii) to potentially require a coordinated international response. |

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| **Public communication** | The discipline and process of providing public audiences with information that creates awareness and knowledge so that people can adjust their personal understanding of risks, and their reactions, decisions and responses to threats and crisis situations. |
| **Risk assessment** | The process of determining those risks to be prioritised for risk management by the combination of risk identification, risk analysis, and evaluation of the level of risk against predetermined standards, targets, risks or other criteria. Risk assessments include a review of the technical characteristics of hazards, analysis of exposures and vulnerability, and evaluation of the effectiveness of prevailing coping capacities in respect of likely risk scenarios. |
| **Risk communication** | Public communication throughout the preparedness, response and recovery phases of a serious public health event to encourage informed decision making, positive behaviour change and the maintenance of trust. |
| **Risk management** | Coordinated activities to direct and control an organization or entity with regard to risk. The systematic approach and practice of managing uncertainty to minimize potential harm and loss (of life, assets and resources, injury, illness and other adverse effectives). Activities include conducting risk assessments, implementing risk treatment measures, and evaluation, monitoring and review. |
| **Scalability** | The capability to expand or reduce in size in order to adjust capacity and capability by adding or deactivating organizational modules to adapt to changes in demand without the need for reconfiguration of a basic structure. |
| **Situation Report (SITREP)** | A routinely produced report that provides current information about an emergency response and immediate and future response actions, an analysis of the impact of the emergency, and identification of related management issues. |
| **Sector** | A division or collective aspect of a geographical area, economy or society. |

# Executive Summary

The Ministry of Health (MOH) has a responsibility to prepare for, prevent, detect, respond to, recover from and mitigate Public Health Emergencies (PHEs) and threats at all levels from within and beyond the country's borders.

The preparedness for, response to and recovery from PHEs is a multi-agency effort and not the sole responsibility of the Health Sector. To effectively coordinate a public health emergency management, guidance is needed on setting up and operating NPHEOC. The NPHEOC is a central hub for the coordination of information and resources to support incident management activities.

This Handbook provides guidance to the national and district levels in their efforts to set up and/or strengthen the PHEOCs, ensure preparedness and guide implementation of an emergency response. It details the key components and requirements of a NPHEOC, the functions of various sections of the NPHEOCs, required staffing, plans and procedures for operationalizing PHEOCs and Concept of Operations (CONOPS) that describes how multi-sectoral coordination mechanisms work at the strategic, operational, and tactical levels.

Further, it details the steps to be carried out in implementing an emergency response and provides guidance on training and exercises to enhance preparedness.

Finally, it provides guidance on monitoring and evaluation in the context of a PHEOC. For each of these sections, the handbook provides templates and/or sample tools to guide use.

# Section I – Introduction

## 1. Introduction

### 1.1. Background

Malawi has been affected by diverse and recurrent Public Health Emergencies (PHEs). These include infectious disease outbreaks (Cholera, Measles, Meningitis, Poliomyelitis, Anthrax, COVID-19), natural hazards and consequences of climate change(floods, cyclones, tropical storms), among others. The overall burden of some threats may be beyond morbidity and mortality. Some public health events can also disrupt livelihoods, destroy infrastructure, interrupt economic activities, retard development and lead to diversion of resources to response activities.

Until 2018, the country was responding to various PHE through the existing structures and emergency coordination platforms: Technical Working Groups (TWG), whose members were from various government sectors, United Nations (UN) agencies and national and international non-governmental organizations (NGOs), Malawi Red Cross Society and other partners.

In 2019, Malawi conducted the first Joint External Evaluation (JEE) of the country's International Health Regulation (IHR) capacity with support from the World Health Organization (WHO) and the Norwegian Institute of Public Health (NIPH). The establishment of national and district level PHEOC was one of the key recommended priority actions. Whilst the Ministry of Health (MOH) through PHIM embarked on strengthening the nation's emergency response operations in early 2020, the Coronavirus disease 2019 (COVID-19) outbreak was declared a PHEIC,and later a pandemic . .

Acknowledging the urgent need for a functional NPHEOC amidst the escalating COVID-19 pandemic, the physical NPHEOC office was established at the PHIM in April 2020. Due to the nature of the PHE , the functions of the NPHEOC were enhanced to enable operations with hybrid mode (physical and virtual approaches).

PHEOCs are essential coordination centers for emergency response, overseeing various functions such as risk assessment, resource mapping, planning, training, and communication. They are crucial in coordinating resources and sharing information during emergencies, promoting cooperation among stakeholders. Within the NPHEOC, the incident management team is hosted, tasked with planning, organizing, acquiring, and allocating resources, as well as providing direction and control in response to emergencies.

The COVID-19 pandemic triggered the MOH to initiate the process of establishing and institutionalizing the NPHEOC so that the structure may exist beyond COVID-19 with a national legal entity, adequate resources such as finance, material (infrastructure, equipment), and permanent staff at the national level and district levels for instance. As Malawi has been responding to PHEs such as COVID-19, Wild Polio Virus, Cholera and Cyclone Freddy, the NPHEOC was activated to coordinate the response. However, the NPHEOC has not been fully operationalized because of inadequate infrastructure and human resources.

From the regional and global perspective, the NPHEOC is part of a network of national and international Emergency Operating Centers (EOCs), including EOCs within the WHO and Africa Centers for Disease Control and Prevention (ACDC). This network plays a central role in the coordination of emergency response using the one health approach.

Further, the objective is to strengthen PHEOCs at the district level to work in close collaboration with PHIM and development partners. These district PHEOCs will collaborate with the NPHEOC during both preparedness and response phases guided by the Concept of Operations (CONOPS) described in detail in this handbook.

## 1.2. Rationale of the PHEOC in Malawi

The COVID-19 pandemic, and other global public health emergencies, have demonstrated that countries inability to prevent, detect, and control an outbreak poses an enormous global threat in terms of lives lost, economic impact, and loss of human development, and thus, full implementation of International Health Regulations (2005) through establishment of PHEOC is critical as proven by evidence from countries which have successfully implemented EOCs.

The necessary efforts to effectively prepare for, respond to and recover from PHEs are beyond the current available capacity of the Ministry of Health of Malawi which requires significant coordination and collaboration. Thus, it is crucial to have in place a functional PHEOC that enhances the multidisciplinary and multisectoral coordination and collaboration of preparedness, response and recovery efforts along with effective real-time communication at all levels of the health system.

The establishment of PHEOC, therefore, is aiming to strengthen the building blocks for the overall coordination of emergency preparedness, response and recovery at strategic, operational and tactical levels building on the existing country's national Public Health Emergency Task Force committees (PHETFC) and Rapid Response Teams (RRT) to support the creation of a fully functional PHEOC, thus strengthening the overall coordination of emergency preparedness and response within the context of the IHR (2005) at national and districts level.

**Purpose and Target Audience of the PHEOC**

## 1.3. Purpose of the Handbook

The purpose of this handbook is to describe the management and operational procedures of the NPHEOC, its functions for effective PHE response, CONOPS including response structure, roles and responsibilities of core functions, information management and communication mechanisms at all levels.

These include , but not limited to:

- Day-to-day management and operations of the NPHEOC facility.
- Procedures to follow to activate the NPHEOC to coordinate responses to PHEs. Operations of the NPHEOC during different modes of operation and levels of activation.
- Organization of response and ensuring multi-disciplinary and multi-sectoral coordination.
- Effective management of data and information for evidence-based decision making
- Coordination of human, financial and material resources

This Handbook shall be reviewed when the need arises and the districts will be adapting it to their specific context.

### 1.4. Target Audience

The Handbook is intended to be utilized by all national PHEOC staff and surge staff joining the NPHEOC to guide PHEOC operations and management. In addition, it will serve as a guide to personnel involve in public health emergency prevention, preparedness, detection, response and recovery efforts at district level in the development of their district specific PHEOC handbooks.

## 2. Scopes, Objectives and Functions of PHEOC

The NPHEOC plays a critical role in fulfilling the areas of emergency support functions of Malawi's International Health Regulations (IHR-2005) obligations.

The NPHEOC acts as the central incident management location for coordinating the response to a PHE. The NPHEOC coordinates the allocation of resources and field investigations; receives analyses and maintains up-to-date information; provides reliable health information to the public, and brings decision-makers and Subject Matter Experts (SMEs) to a central point to coordinate the response to a PHE.

The NPHEOC's mandate is to coordinate the implementation of the emergency response plan

### 2.1. Scope of the NPHEOC

The NPHEOC is an integral part of the public health emergency management in Malawi, coordinating across all phases of emergency management cycle; preparedness, response and recovery to effectively manage any public health emergency allowing multi-sectoral and multi-disciplinary dialogue through "One Health" Approach.

The NPHEOC's focus is on public health aspect of the following events:

- Natural events such as:
    - Disease outbreaks and disasters
    - Other public health emergencies
- Man-made events such as:
    - Radiological or nuclear events
    - Mass casualty incidents
    - Bioterrorism and other biological events
    - Chemical incidents
    - Any other Public Health Events of National and International Concern (PHEICs).

## 2.2. Objectives of the NPHEOC

The main objectives of PHEOC include :

- To coordinate multidisciplinary and multi-sectoral response to public health events / emergencies.
- To facilitate mobilization and deployment of resources.
- To collect, analyze and report public health event data routinely and during emergencies.
- Provision of timely event specific information for operational decision making using the best means with effective use of available resources; both human and material
- To provide event situational awareness to the public and information on alert threshold levels of outbreaks and any appropriate health messages.
- To facilitate demobilization of PHE response
- To evaluate the efficiency and effectiveness of response efforts to inform on-going and future responses.

## 2.3. Functions of the NPHEOC

The NPHEOC serves as the centralized facility for coordinating public health emergency early warning, preparedness, response and recovery operations through “One Health” Approach.

The essential functions of the NPHEOC includes:

- Communicating and coordinating the response to public health events / emergencies with all relevant stakeholders including district and national government entities and non-government agencies entailing:
- Mobilization and deployment of resources, including surge capacity, services and supplies to support all NPHEOC functions.
- Timely, event-specific operational response and decision-making using the best available information, policy, technical advice, and plans.
- Collecting, collating, analyzing, presenting, and utilizing health event data and information to guide the response.
- Monitoring and evaluating the preparedness and response efforts.
- Designing and communicating appropriate health messages for creating public awareness, community engagement and social mobilization and continuously keeping the public informed about the incident and the containment measures adopted to mitigate the risk.
- Advising management on the response mode of the PHE depending on the burden and severity.

# Section II – NPHEOC Policy and Planning

## 3. Legal Authority and Policy Framework

Malawi is a State Party to the IHR (2005). This legal instrument obligates States Parties to develop, strengthen and maintain capacity to respond promptly and effectively to public health emergencies of international concern. As part of the core capacity requirements for detection and response, the State Parties shall ensure that they have the capacities at the national level to ***" establish, operate and maintain a national public health emergency response plan, including the creation of multidisciplinary/multi-sectoral teams to respond to events that may constitute a public health emergency of national and/or international concern".*** Member states are expected to establish NPHEOCs to strengthen communication and coordination for effective public health response.

The Public Health Institute of Malawi(PHIM) shall strengthen the implementation of the IHR through integrated disease surveillance and response strategy. PHIM shall provide the overall leadership and coordination for response and management of all public health emergencies and epidemics of both international and national concern in the country by establishing the NPHEOC. Furthermore, it has the responsibility to enhance epidemics, emergencies and outbreaks preparedness and response capability to mitigate impact of adverse health events. The Public Health Act (1948) is currently under review and will provide the legal mandate for PHIM and the establishment of PHEOC at national and district levels.

Where a public health emergency is graded as a disaster, the Department of Disaster Management Affairs takes the overall leadership as mandated by the Disaster Preparedness and Relief Act of 1991(1).

By operating within this legal national and international framework, the NPHEOC has the necessary authority, support, and guidance to fulfill its crucial role in safeguarding public health security in Malawi.

## 4. Strategic Risk Assessment for Planning

Malawi is vulnerable to the impacts of extreme weather events given its location along the Great Rift Valley, rapid population growth, unsustainable urbanization, climate variability and change, and environmental degradation among others. The most common weather-related shocks affecting Malawi include floods, drought, stormy rains, and hailstorms, most of which happen on an annual basis. In addition to the natural disasters, epidemics are another area of concern. Malawi has been affected by infectious diseases such as Cholera, Typhoid, Measles, Polio and COVID-19.

Although countries may seek to address all risks in a timely and efficient manner, using risk-based approaches can help to optimize resource utilization and allow them to prioritize actions to be ready to respond to potential emergencies. In order to adopt a risk-based approach to managing health emergencies and mitigating risk, countries first need to identify hazards and assess their level of risk within the country. The results from a risk assessment allows proper planning and prioritization of efforts to better prevent, mitigate, detect early, prepare for, be operationally ready for, respond to, and recover from a health emergency or disaster.

The planning process for the NPHEOC is driven by analysis of the hazards, vulnerabilities, and consequent risks to which the NPHEOC may be required to respond. In the face of an imminent threat such as from disease outbreak reports, the NPHEOC baseline response capacity will be assessed to identify gaps.

These processes are described below:

## 4.1. Risk Assessment

**Risk assessment** is a component of a comprehensive risk management program. It helps identify threats, determine their likelihood of occurrence, and the likely magnitude of public health impact to prioritize and plan for a response - all within an all-hazards approach.

A risk assessment will be done by the NPHEOC every 2 years or with emerging hazards. In the face of an imminent threat, the NPHEOC in collaboration with the relevant department/units and key partners will undertake a public health risk assessment. The goal of the risk assessment is to determine the nature and magnitude of the threat to guide the response that will be required to mitigate the impact of the impending hazard.

Risk assessment will follow the following five steps:

1. Identifying hazards and risks (including latent and potential harms)
2. Evaluating the vulnerability of the population(s)
3. Analyzing the risks with respect to consequences of exposures (morbidity, mortality, and overall burden)
4. Prioritizing risks to determine the threat level
5. Evaluating prevention and mitigation options to manage the risks and minimize potential harm.

Hazards will be categorized as follows:

- Natural risks including:
    - Biological: zoonotic, epidemics, vector-borne disease, foodborne disease
    - Hydro-meteorological
        - Hydrological: floods, landslides
            - Meteorological: extreme weather, storms
            - Climatological: drought, wildfire
    - Geological: earthquake, volcanic activity
- Human-induced risks including:
    - Technological: industrial hazards, structural failures, transportation accidents, fire and explosions, hazardous materials (chemical, biological, radio nuclear), food/water contamination, extreme air pollution.

- Societal: armed conflict (national, international), terrorism (chemical, biological, radio nuclear, explosives), refugees and internally displaced persons.

In Malawi, the most recent National Risk Assessment using the STAR Risk Assessment Tool was done in October 2022 and 26 Hazards were identified. From this assessment, 2 hazards were in Very High-Risk Category, 11 were in High-Risk Category, 6 were in Moderate Risk Category and 6 were in Low-Risk Category and none in the Very Low Risk Category. The hazards are subject to reviews every two years or as may be required. The figure 1 below depicts the risk matrix for Malawi and Table 1 lists all identified hazards from the risk assessment.

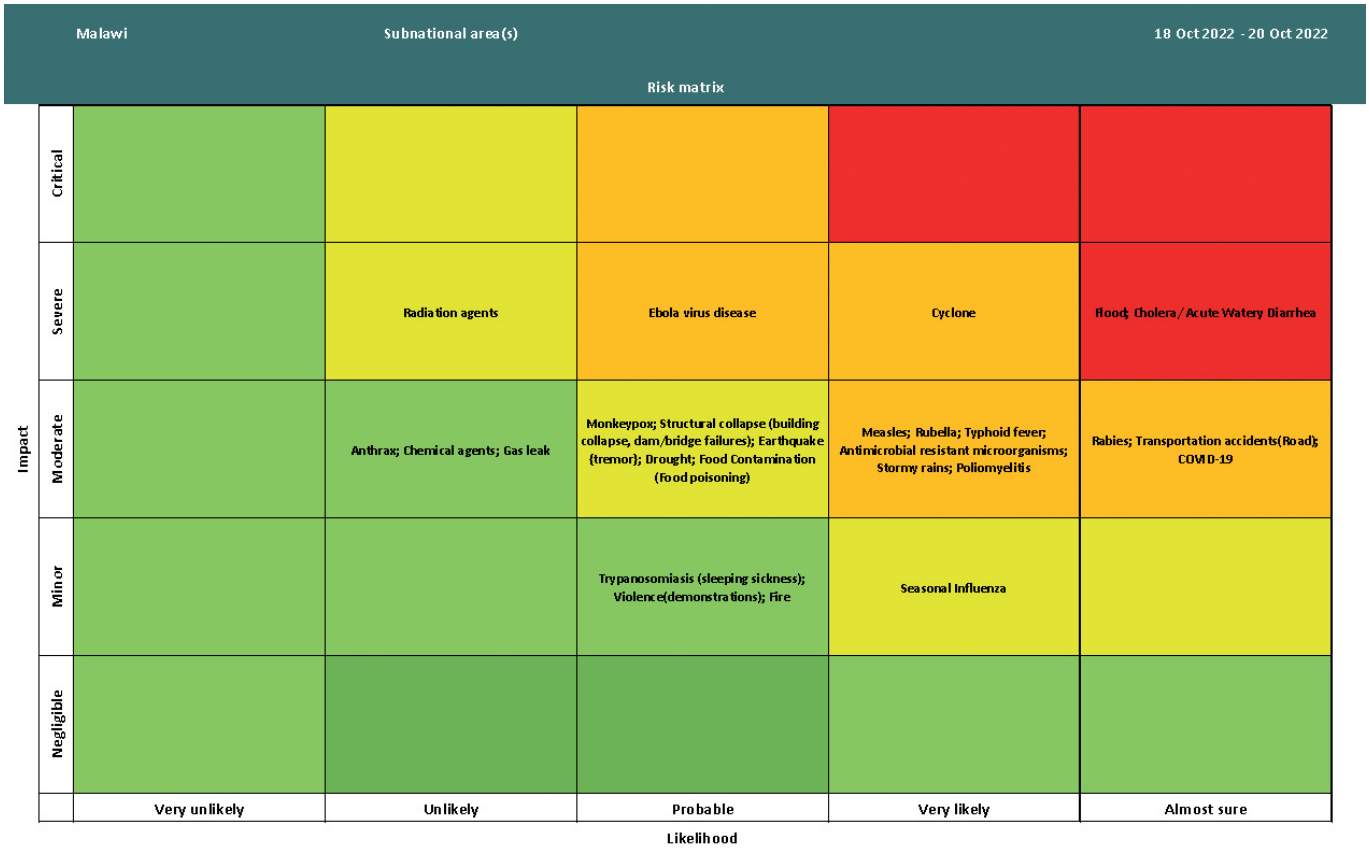


**Figure 1: Malawi Risk Analysis Matrix 2022**

**Table 1: Key hazards or scenarios identified for contingency planning**

| S/N | Specific Hazard | Risk Level |
|---|---|---|
| 1 | Floods | Very high |
| 2 | Cholera | Very high |
| 3 | Measles | High |
| 4 | Rubella | High |
| 5 | Typhoid fever | High |
| 6 | Antimicrobial resistant microorganisms | High |

| | | |
|---|---|---|
| 7 | Rabies | High |
| 8 | Ebola virus disease | High |
| 9 | Transportation accidents (Road Traffic Accidents) | High |
| 10 | Cyclone | High |
| 11 | Stormy rains/Hail storm | High |
| 12 | COVID-19 | High |
| 13 | Poliomyelitis | High |
| 14 | Seasonal Influenza | Moderate |
| 15 | Monkey pox | Moderate |
| 16 | Radiation agents | Moderate |
| 17 | Structural collapse (building collapse, dam/bridge failures) | Moderate |
| 18 | Earthquake (tremor) | Moderate |
| 19 | Drought | Moderate |
| 20 | Food Contamination (Food poisoning) | Moderate |
| 21 | Anthrax | Low |
| 22 | Trypanosomiasis (sleeping sickness) | Low |
| 23 | Chemical agents | Low |
| 24 | Gas leak/Fuel Spillage | Low |
| 25 | Violence (demonstrations) | Low |
| 26 | Fire | Low |

**While some of these hazards are not public health emergencies as such, they may have significant public health consequences necessitating a public health response.**

## 4.2. Capacity and capability assessment

Upon completion of the risk assessment, an estimation of required capacities (resources and infrastructure) and capabilities (knowledge, skills, and abilities) to respond to identified or potential risks will be carried out.

Then a gap analysis will compare the required capacities and capabilities derived from the risk assessment against existing capacities and capabilities.

The **assessment** will allow identifying opportunities to address gaps in the NPHEOC capacity and capabilities through resource mobilization.

## 4.3. Review of findings and recommendations from past events and exercises

The review of the conclusions and recommendations from **intra-action reviews (IAR)** and **after-action reviews (AAR)** will be examined to identify the strengths and weaknesses in existing response and management plans. The AAR will determine the robustness of existing systems and plans, and the investments required to build effective response capability and capacity.

## 4.4. Planning goals of the NPHEOC

Risk and capacity assessments will identify gaps or shortfalls in planning, management, and resources; this will constitute the **needs assessment.**

The needs assessment may identify some needs and opportunities that will need assistance from relevant authorities beyond the NPHEOC. Information derived from the needs assessment will therefore guide planning for collaboration between the NPHEOC and other departments or partners with the relevant mandate and resources.

Based on the needs assessment and recommendations from past reviews, useful information will be extracted to guide planning in the NPHEOC.

The following plans are or will be available for Malawi NPHEOC:

- Multi-Hazard Emergency Response Plan (NMERP)
- Hazard-Specific Response Plan (Contingency Plan)
- Continuity of Operation Plan (COOP)
- Prevention and Mitigation Plan
- Incident Action Plan (IAP)
- PHEOC Internal Communications Plan
- Public Communications Plan

**Note:** Refer to core components of PHEOC section for further explanation

## 5. Core Components of PHEOC

The key components that make a PHEOC functional, as highlighted in the WHO EOC framework are plans and procedures, Physical infrastructures, ICT infrastructure, Information systems and data as well as Human resources. Meeting minimum requirements for each component enables the PHEOC operate according to minimum standards as stipulated in the IHR JEE.

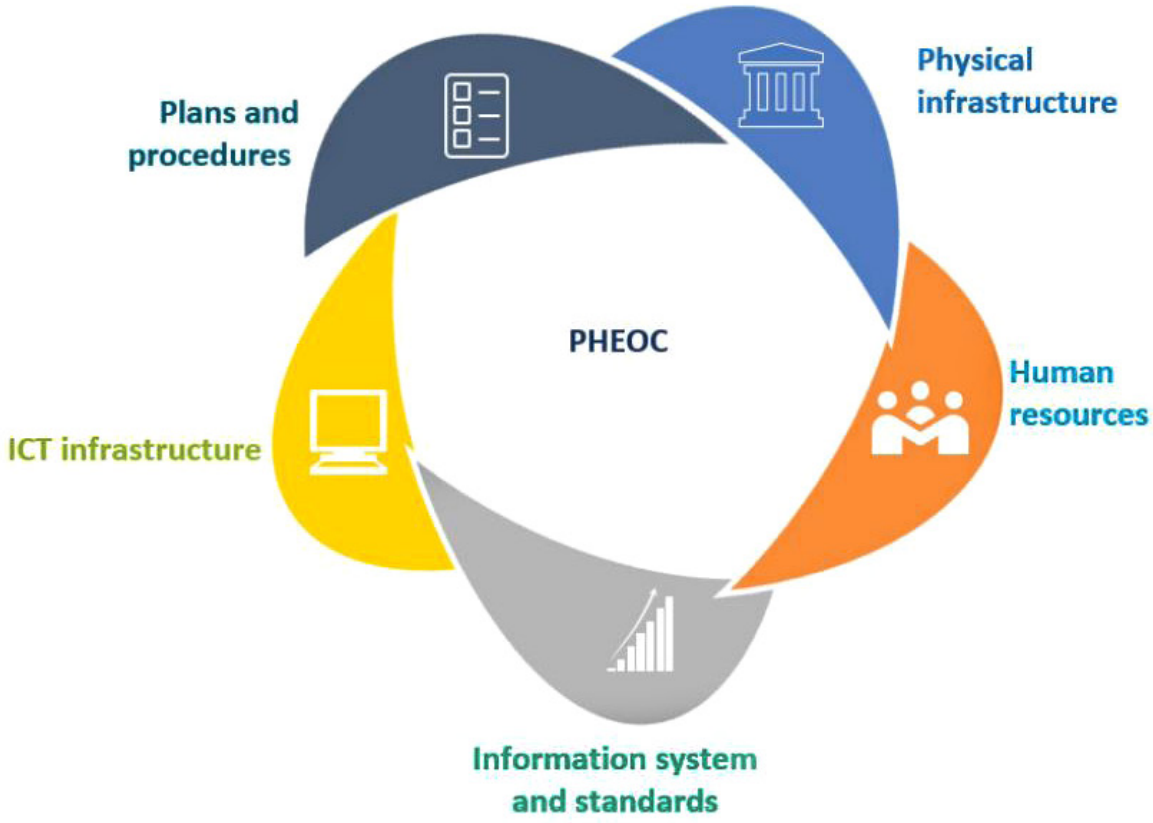


**Figure 2: Core-components of the PHEOC**

Each of these core components is described in the following sections.

### 5.1. Plans and Procedures

A well-designed plan is a prerequisite for the development of a PHEOC. Members of the PHEOC are responsible for working with their respective departments and agencies to produce and evaluate the initial set of working plans and procedures for the PHEOC prior to events and made available to all staff members at the PHEOC.

There are two types of general plans:

- **Operational plans** which describe **WHAT** to do

- **Functional plans** which describe **HOW** to do it.

The NPHEOC operates based on the following plans.5.1.1. Operational Plans

**i. All hazards response plan:**

Malawi has a national multi-hazard emergency response plan which provides for a coordinated, functional, and effective preparedness and response mechanism at different levels. The plan recognizes the capacities, capabilities, organizational structures and roles of the relevant jurisdiction's public health and partner agencies, as identified in the Concept of Operations (CONOPS).

**ii. Hazard-specific response plans (Contingency Plans):**

Based on the prioritized list of threats and hazards identified through the strategic risk assessment, hazard specific contingency plans (Cholera, Measles/Rubella, COVID-19, Typhoid Fever, VHFs, Rabies, Poliomyelitis, Cyclones and Stormy Rains, Floods) were developed and they provide targeted strategies and response procedures for specific scenarios. These plans take into account the specific risks, resources, and coordination needs associated with the identified hazard or event. They provide NPHEOC staff with detailed instructions on the actions to be taken, resources to be mobilized, and communication channels to be utilized for effective response and mitigation.

**iii. Prevention and mitigation plan:**

Should be developed as part of a comprehensive risk management program. The purpose of prevention and mitigation planning is to reduce risk by preventing risk events from occurring and by minimizing the impact when they do happen. Planning should cover three stages: 1) before an event occurs, 2) during a response to an event, and 3) post-event, during recovery.

**iv. Continuity of Operational Plan (COOP):**

The COOP describes what to do when the functioning of the NPHEOC is interrupted or damaged due to physical and operational infrastructure, loss of key personnel or failure of critical elements of the supply chain that provide response resources. The COOP will be developed after a risk assessment analysing potential threats to the NPHEOC and proposing solutions to mitigate these to the greatest extent possible. The alternate NPHEOC is the old PHEOC room, a type A PHEOC housed in the CHSU Campus.

### 5.1.2. PHEOC Functional Plans

**i. Standard Operating Procedures (SOP)**

As part of the planning process, PHEOC SOPs should be developed and distributed to all concerned. The SOPs should be consistent with the national PHEOC handbook. The PHEOC SOPs clearly outline simple processes for operating in the PHEOC, including the following elements: authority, conditions for activation, notice events, alerting, setup, deactivation, review meetings, testing and exercising activation procedures among others.

The Malawi NPHEOC has developed several SOPs. Some are provided in --- of this Handbook.

**ii. PHEOC internal communications plan**

Outlines the mechanism for communications vertically from the PHEOC/Incident Manager to all teams, task forces or single resources, and horizontally across all activated IMS functions. See

chapter 9 for detailed information on internal communication.

### iii. Public communications plan

The purpose of public risk communications plan is to provide clear information to a variety of audiences, ensuring that individuals and communities are enabled and mobilized to take informed actions to reduce their exposure to risk. Refer to chapter 9.

### iv. Incident Action Plan (IAP)

Based on assessment of the scale and impact of the public health emergency and the availability of resources and capacities; a written IAP describes the specific objectives that must be accomplished in succession to achieve larger event management goals. IAP is developed within the planning section and provide all PHEOC supervisory personnel with directions for current and future actions.

These plans are specific to each emergency incident/event, each operational period, and each site. IAP development starts at the onset of the incident and continues until the situation is resolved and a declaration is made. The IAP also defines the operational periods required to achieve the specific objectives and further identifies activities to achieve each objective based on the resources and priorities. Adequate resources will be mobilized to implement prioritized interventions. As the incident situation develops and evolves, the IAP is regularly evaluated and adjusted to meet current situation requirements until the situation is resolved.

## 5.2. PHEOC Physical Infrastructure

The PHEOC can be established either in a dedicated, purpose-built space, or set up in a multi-purpose space. However, it must be physically and environmentally secure, and accessible and survivable in the event of a threat or disaster. The PHEOC should be able to survive the most probable hazards identified through a tailored risk assessment. A PHEOC must be easily accessible for users, with adequate parking for vehicles, adequate security, and reasonable proximity to designated lead and partner agencies.

The PHEOC facility should have sufficient size to accommodate all its functions in reasonable comfort to accommodate the personnel and the equipment required to run it. It must contain both open common areas and closed workspaces suitable for meetings, conference calls and small group activities. It must have adequate sanitary facilities, rest areas and food amenities for the personnel who may on occasion be employed there for considerable periods.

The space/facility should meet the basic requirements of disaster survivability and access and must be able to sustain operations during a natural disaster by virtue of robust structure, secure water and food supply and an emergency source of electricity.

## 5.3. Information and Communication Technology (ICT) Infrastructure

The PHEOC operations rely on a variety of Information and Communication Technology (ICT) infrastructure. PHEOC technological solutions incorporate hardware and software systems, internal and external telecommunications, and all aspects of information management, including:

- Within the PHEOC, personnel will require workstation computers with internet connections and either a mobile or a hardwired telephone.
- For remote locations, radio or satellite telephony may be the only options.

- For all levels of PHEOC, the ability to conduct teleconferences is a key capacity, which optimally includes video conferencing.
- Large screen video displays support visual representation of the status of the event and its contextual aspects that influence decision-making.
- In addition, media monitoring capacity (television, radio, etc.) is required. It is useful to have video recording and playback capability.

In addition, a PHEOC is an office with all the usual office requirements: computers, printers, copiers, document scanners, a fax machine, application hosting and data storage server(s), office supplies, forms designed to provide paper-based backups, in case of technology failure, etc.

To the extent practicable, technologies utilized in a PHEOC should be compatible with those routinely in use in the rest of the facility and in host and partner agencies.

As the needs of the PHEOC change over time and the facility matures from basic to mid-range to optimum capability, with the rapid advancements of technology it is beneficial to consult experts on hardware acquisitions, and to provide expert on-site ICT support within the PHEOC.

Personnel working in the PHEOC must be trained to use and maintain its ICT tools.

The required ICT infrastructure is categorized to serve in physical PHEOC, virtual and hybrid across different levels of health system and response structure. The essence of the ICT infrastructure, as highlighted in the WHO recommended framework, is to provide reliable and available information and communication services. Hence, the ICT infrastructure recommended as minimum requirement at each level and types of PHEOC are presented in the following table (fundamental ICT).

**Table 2: Fundamental ICT requirements**

| Technology | Description | Minimum requirements |
|---|---|---|
| Televisions | Display information and media observation/monitoring | 4K Smart TV, 60 Inch |
| Monitors | Display information and media observation/monitoring | 29 - 34 inch, HDMI/ VGA ports |
| Personal computers | Personal computers (All-in-One desktop) for data analysis, report writing and access information. 5 PCs in each District PHEOC (DPHEOC) and 10 PCs in NPHEOC | i5 - i8 10th generation processor, 16 Gb Ram,1-2 TB HDD OS included (Windows) and Office |
| Local and Inter Network Switch Services | Hardware's (including cables, router, switch, etc.) for establishing network services at NPHEOC and 29 DPHEOCs (one per DHO) | 8-16 ports switch, Wi-Fi router, CAT-6 cables, trunking, network cabinet |
| Printers and scanners | All-in-one printer for office paperwork and record keeping in each NPHEOC | Function: print, copy, scan - First page out: 7.9 seconds - Resolution: 600 x 600 dpi - connectivity Hi-speed USB 2.0, built in WIFI, USB flash Scan/print option, Black and White |

| | | |
|---|---|---|
| High speed internet access | Connectivity purposes (2 connections at NPHEOC and 1 connection in each DPHEOC) | 10-20 Mbps or Caped 1TB per 6 month or 3 Months |
| Toll free hotline | Toll free hotline that includes a Private Branch Exchange that directs calls to appropriate personnel including 29 DPHEOCs and the NPHEOC. | Nationwide coverage System configuration and staff orientation included (3 users per district, and 5 operators from NPHEOC, n=95) External interface cards Call centre agents desktops Call centre monitoring screen Internet subscription Local Area Network (materials and labour) VPN to Airtel and TNM VPN service costs Content development session COVID-19 screening protocols embedded in exchange system Asterisk add ons; (provisional; based on arising needs) |
| Smart phones | Mobile devices for remote connection, answering instant calls and access to digital health mobile applications (4 in NPHEOC and 2 in each DNPHEOC) | Android Version 10- 11, 128Gb internal storage, 4- 8 |
| Antivirus | Software used to prevent, scan, detect and delete viruses from a computer | One subscribed licence per 100 users to protect laptop, PCs, tablet, and server |
| Instant messaging application | *Not applicable* | Able to create groups and communicate without any delay |
| Voice-over-IP application | *Not applicable* | *Not applicable* |
| Incident Triage Management and Tracking software | Log and triage all emergency instants into the digital system for tracking and monitoring | |
| Online/ distance learning and training platform subscriptions | *Continuous professional development* | *Not applicable* |
| Microwave radio system | *Not applicable* | *Not applicable* |

| | | |
|---|---|---|
| Projector | Project presentations during the discussions and meetings outside of conference room | Bluetooth, Built in WIFI, HDMI/VGA |
| Teleconferencing hardware | Hardware required to set up a virtual conference room in a physical space | Public address system, Web camera, Microphones |
| Portable storage devices | Hard drive for securely saving data off-side | 8TB, SSD |
| Statistical analysis software package | Data analysis tool | Not applicable |

These technologies apply to both National and Districts EOCs

### i. Information Technology Physical Infrastructure

**Table 3: Additional ICT requirements for NPHEOC**

| Technology | Description | Minimum requirements |
|---|---|---|
| Media (TV) Subscription | Subscription for international media monitoring | |
| Biometric security access system | Security system for NPHEOC access | |
| CCTV security system cameras | Surveillance cameras and system to help monitor events and security in the NPHEOC workspace | *Not applicable* |
| Container Type Data centre | Including redundancy for the data centre, the country will need 3 in total to accommodate all health security related data services Cloud storage | Tier III standard compliant container type data centre Condensers protected High temperature range +39°C rating Power distribution inside the UPS Rack load over 1400kg High power density that the IT load per rack is 6.36KW (For 70KW Smart Node) Dedicated data centre module |

### ii. Virtual PHEOC

**Table 4: ICT requirements for virtual PHEOC**

| Technology | Description | Minimum requirements |
|---|---|---|
| Website | Website(s) that includes official MOH information and communication, as well as embedded interactive dashboards available for the public and NPHEOC internal consumption. | PHIM Website + Emergency Specific Official Website (i.e., COVID-19 dashboard) |
| OS and Server software subscription | Software license to manage hardware, software resources, and provide access to common computer services especially for the centralized services at NPHEOC | Windows Server 2019 version with License key |
| Data visualization software | Software licenses for a data visualization tool that provides real-time access to graph and charts summarizing operations and assist with decision making | Web integrated, API included, creator, viewer licenses included |
| Firewall | System that monitors and controls incoming and outgoing network traffic, providing security services for malware protection, antispam web, and web filtering | Hardware and Software firewall |
| Satellite phones | For emergency communication back-up during catastrophic emergencies, mainly for PHEOC usage to contact outside world | Satellite phone with pre-load communication units |
| Local cloud hosting | Local hosting service for digital applications and data storage | *Not applicable* |
| Geographical Information System (GIS) software package | Conceptualized framework that provides the ability to capture and analyse spatial and geographic data | *Not applicable* |

### iii. Communication technology infrastructure

**Table 5: Communication technology infrastructure for NPHEOC**

| Technology | Description | Minimum requirements |
|---|---|---|
| Video/ teleconferencing software subscription | Enables online communication for audio meetings, video meetings, and seminars, with built-in features such as chat, screen sharing, and recording. These applications are implemented to enable long-distance or international communication, enhance collaboration, and reduce travel costs. | Able to record meetings, allow 1,000+ participants, integrated with meeting/ calendar management applications |

## 5.4. Information Systems and Standards

The goal of an effective PHEOC information system is to increase the availability, accessibility, quality, timeliness, and usefulness of emergency operations information for public health action. The PHEOC information system must be seamlessly integrated with other relevant national information systems.

This information system supports all the functions of the PHEOC, and has the capacity to:

- Ensure data security, privacy, and confidentiality.
- Ensure uninterrupted availability of information
- Adopt data and information technology standards, to ensure interoperable PHEOC information system that integrate seamlessly with other relevant national health information systems.

The PHEOC information system includes the following six components:

- Resources (e.g., leadership, policies, financial and human resources, infrastructure).
- Indicators (e.g., morbidity, mortality, environmental risks, health resources availability and preparedness, vaccine coverage).
- Data sources (e.g., common surveillance/laboratory/operational datasets such as OHSP/DHIS-2, HMIS/DHIS-2, LIMS, Human Resources Information system (HRIS), Logistic Management Information System (LMIS, data on stockpiles of medicines and commodities), other health facilities data, reports from district PHEOCs and coordination structures, financial data)
- Data management (e.g., collection, storage, quality assurance, processing, compilation, analysis, visualization of data, and geospatial information presentation)
- A collaborative platform for information sharing (public and within NPHEOC)
- Information products (e.g., situation reports, 5Ws report (who does what, where, when and to whom), case summary statistics, media/communication reports, financial reports, Human Resources for Health (HRH) reports, etc.)

There are three general types of data and standards that need to be routinely captured, processed, and displayed in a PHEOC:

- **Event specific data:** what, how many, where, who, how quickly and status (e.g., clinical, and epidemiological data).
- **Event management information:** organized for the functional domains in the PHEOC-human and material resources on hand, status of interventions, partner activities, resource deployments, expenditure, progress on achievement of objectives.
- **Context data:** geographic information mapping, population distribution, transportation links, locations of fixed and temporary facilities, availability of clean water, climate, weather, and any other significant contextual information.

Development and improvement of a PHEOC information system should follow general approaches, principles, and processes for strengthening health information systems in the country at national, regional, and local level.

## 5.5. Human Resources

A PHEOC requires competent and trained persons to achieve its objectives and functions successfully. PHEOC staff should be familiar with the structure and systems of the components of Public Health Emergency Management (PHEM). Human resource needs for maintaining and operating a PHEOC include both **routine/permanent** and **surge staff** (for detail refer to the CONOPS part of this handbook below).

# 6. Description and Management of PHEOC

In this section, the existing national PHEOC facility located at PHIM, CHSU compound is described in detail.

## 6.1. Organizational Structure of the NPHEOC

The NPHEOC falls under the Public Health Institute of Malawi under the Ministry of Health. Figure 4 below illustrates the organizational structure of Malawi NPHEOC under the routine and emergency modes. Depending on type of event, the structure can expand or collapse.

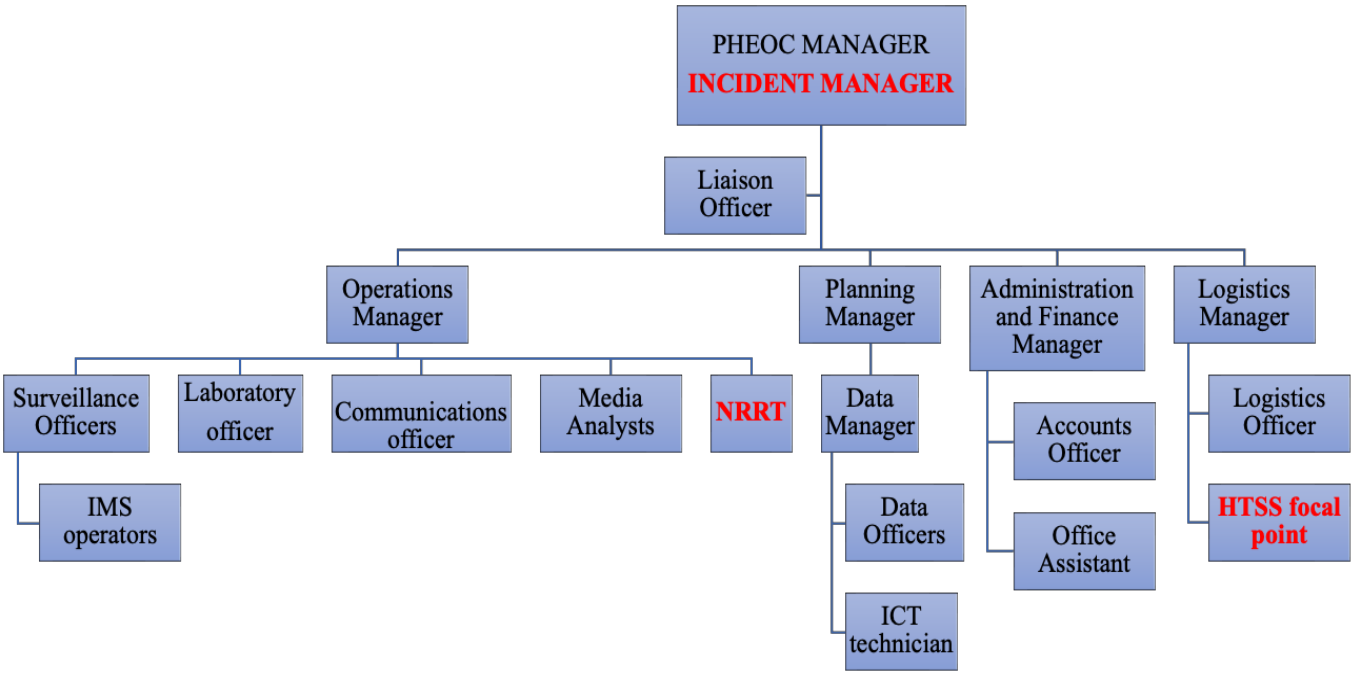


**Figure 3: The organizational structure of Malawi NPHEOC under the routine and emergency modes**

## 6.2. Physical Location and Security Control

Currently, the NPHEOC facility is located at the Community Health Sciences Unit (CHSU) compound, P.O. Box 30377, Lilongwe 3, Malawi.

The PHEOC space has been renovated to accommodate routine and incident response staff. It has one conference room and operation area, two shared offices, a recreation room, one control room and one server room. There is also a space for rest/store room for duty officers and wash rooms for Gents and Ladies.

There is water connection from the Lilongwe Water Board with a water reservoir.

**Security monitoring**

As the NPHEOC hosts equipment and processes information that is sensitive, the access is controlled by a door fitted with biometric locks and key card/ fingerprint entrance ensuring only authorized persons have access. For guest access, there is a registration log to track entrance.

Security guards are positioned at the main gate and at the building entrance. There will be solar security lights with motion sensors and daylight switches for the perimeter and building. Both security and office staff have access to internal and external panic buttons. The property will be equipped with CCTV surveillance systems that monitor activity 24-hours 7 days a week.

**Emergency**

Emergency exit doors and adequate signage is placed on the floor. There will be fire alarms, first aid kits, and fire extinguishers throughout the facility. Emergency evacuation plans will be established and implemented. Designated assembly points will be on the property. Security drills will be conducted periodically to ensure that staff are conversant with emergency security systems of offices

In the event of power interruption, the NPHEOC has a power generator and solar system as power back-up solutions that can be used 24/7. In addition to the connection to Lilongwe Water Board, a water tank is installed.

## 6.3. Requests to use the NPHEOC Facility

All requests for the use of the NPHEOC facilities (conference meeting room, video conference, teleconference etc.) should be sent by email to the Administration unit and NPHEOC Manager.

The following information should be provided in the email request:

1) Facility requested (video conference, teleconference, conference room, etc.)

2) Purpose

3) Date

4) Duration of time required

5) Number of participants

6) Number of locations to be connected for video or teleconference

Requests to utilize any of the NPHEOC facilities should be forwarded at least five working days before the event to allow for necessary scheduling and prior preparations. Priority will be given to public health emergency response activities and high-level visits over routine meetings as well as on first come first serve basis. The Administrative unit will enter the scheduled appointments into the NPHEOC Conference Room Meeting Calendar. E-mail confirmation of appointments and availability of the NPHEOC facilities will be sent by email to the requestor.

## 6.4. NPHEOC Information System and Data Security

The NPHEOC information system is integrated with Health Management Information System with District Health Information System-2 (HMIS/DHIS-2)[1], One Health Surveillance Platform (OHSP[2])/ DHIS-2 and Laboratory Information Management System (LIMS).

The **Event specific data, Event management information and Context data are routinel**y captured, processed, and displayed in the NPHEOC.

Depending on the needs of the event, varying levels of detail or other data can be monitored.

Standardization and interoperability of data systems are crucial to the functions of the NPHEOC. Data is thus collected through standardized forms that allow aggregation, reporting and sharing of healthcare information.

**Data security**

The NPHEOC processes large amounts of information that is often sensitive, frequently on open displays. The information that the systems contain requires frequent, routine backup to mitigate the potential impact of a technological failure resulting in a loss of data.

Maintaining security of the PHEOC data and the systems that process and store requires routine use of firewalls, encryption, password protection, up-to-date antivirus software, and redundancy of data to support rapid service recovery in the event of a security breach (see the redundancy/ continuity of operation plan part in this handbook).

## 6.5. Staffing and Training

The national PHEOC has been making an effort to ensures that various positions are filled by the right and competent person. Currently the center is working with its capacity of seven (7) staffs.

## 6.6. Toll free Hotline

The hotline is part of the national PHEOC function. It's one of the platforms to conduct Event Based Surveillance (EBS) that help to receive public health alerts or rumors, provide health education and public awareness creation. PHIM has dedicated toll free lines, 929 starting from the COVID-19 pandemic response time.

## 6.7. NPHEOC Financing

There is a budget line secured through PHIM to support PHEOC operation and management. The budget is mobilized from different sources, government, and partner agencies. There is a mechanism in place to pay per-diem during field deployment depending on the situation. There is no scheme for risk allowance payment.

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[1] The District Health Information System (DHIS) is the Malawi national system for Health Management Information System (HMIS) reporting since 2002. It has been upgraded to a web-based open-source information system, DHIS2 in 2012.

[2] Under the One Health approach, the One Health Surveillance Platform (OHSP) is aimed and developed to collect, analyze and provide feedback on data in real time to provide a coordinated and effective surveillance and response system to a PHE.

# Section IV – Executing an Emergency Response

## 7. Concept of Operations (CONOPS)

A Concept of Operations, or CONOPS, is a core element of emergency operations plans. The CONOPS explains how the system is intended to function.

### 7.1. Modes of operation of the NPHEOC

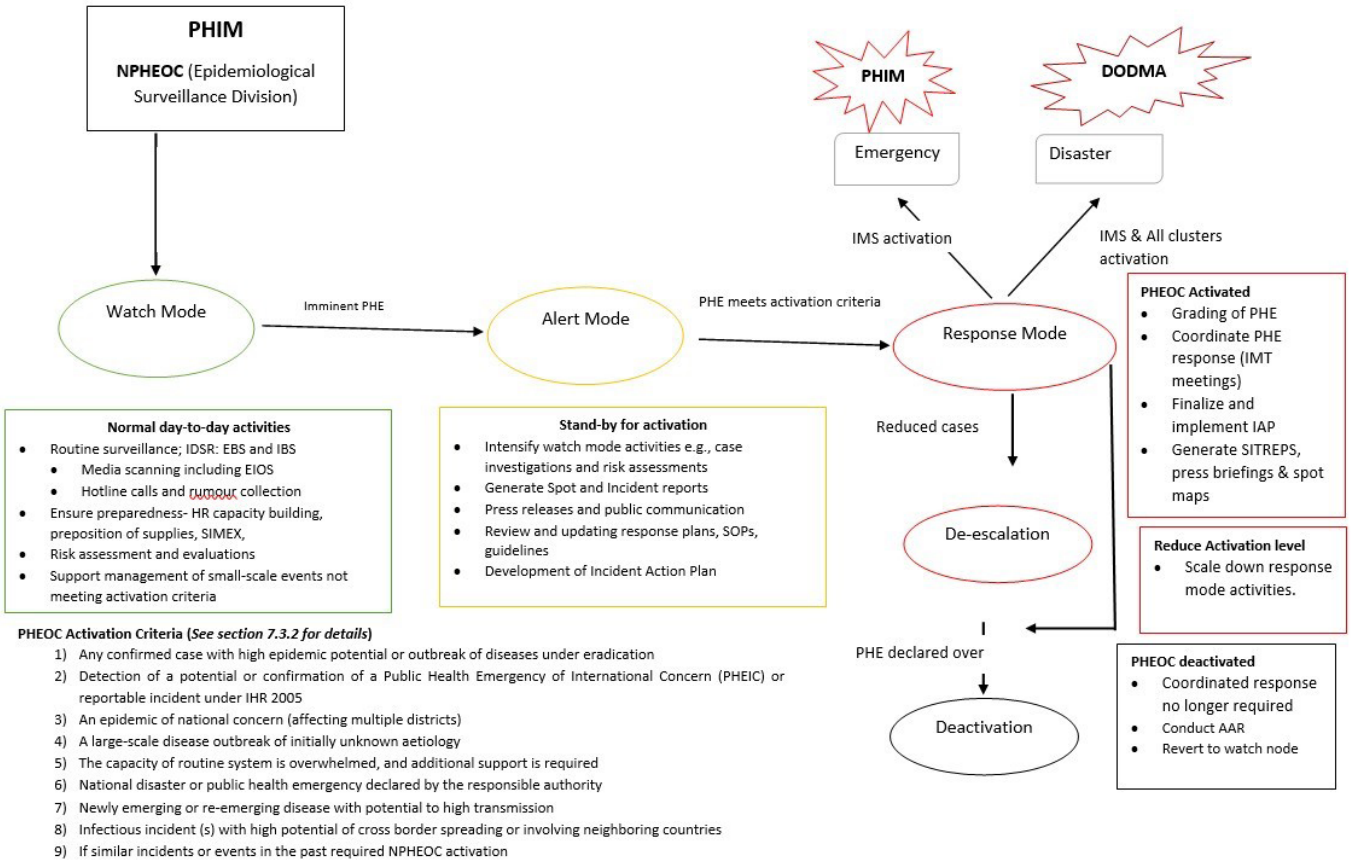



**Figure 4: Modes of Operation of the NPHEOC**

#### 7.1.1. Watch Mode

The watch mode corresponds to the normal day-to-day activities. The NPHEOC is constantly in watch mode, in a constant state of preparedness and readiness to alert any escalation of operation levels. The operation of the watch mode is guided by Critical Information Requirements (See Section III STRUCTURE AND FUNCTION OF THE NPHEOC -. This information is obtained through the IDSR technical guidelines.

The watch staff constantly monitor and triage the information on public health events by facilitating the collection, organization, analysis, interpretation, dissemination and archiving of information. All diseases being monitored under IDSR have defined thresholds constituting triggers which when met, notifications are made to trigger the next mode of operation. Similarly, information on events is also triaged, verified, and investigated to ascertain the level of risk posed to public health.

Routinely, watch mode staff officers in the NPHEOC need to analyse data from the OHSP/DHIS-2 (including IDSR and all sort of surveillance data from human, animal, and environmental sectors), LIMS, HMIS/DHIS-2, routine health data collected by Central Monitoring and Evaluation Division (CMED) and all disease programs, and other international sources to note any alerts.

The responsibilities of watch staff include, but are not limited to, the following:

- Rumour collection, communication and/or verification
- Media (social media, TV news, newspaper, radio etc.) and web scanning
- Responding to the hotline calls
- Screening routine public health surveillance data for unusual occurrence
- Preparing and sharing of weekly summary report of the state of top priority conditions and any alerts of event-based surveillance to the NPHEOC Manager
- Preparing and sharing alerts and incident reports to the NPHEOC Manager (See Annex 1 for template)
- Ensuring that the NPHEOC has supplies and is functional
- Supporting management of small-scale events that do not meet criteria for activation
- Compilation and documentation of events and intervention activities
- Maintenance of a 24/7 duty schedule

### 7.1.2. Alert Mode

This is the standby phase of activation when a PHE has occurred or is imminent. The NPHEOC conducts intensive monitoring in preparation for a potential NPHEOC activation.

Besides the watch mode activities, the alert mode activities include, but not limited to:

- Maintaining situational awareness by enhancing surveillance, receiving, and collating data on the incident/event
- Distributing reports and documents to designated distribution lists and coordinating response activities as required
- Conducting a preliminary risk assessment to determine if the incident will require NPHEOC activation and determine the level of activation
- Providing GIS displays of public health information including physical locations of Health facilities and shortest distance routes for quick medical evacuation
- Displaying assorted information pertaining to Health Facility logistics, staffing levels and other information necessary during an outbreak
- Producing GIS displays/maps showing areas of potential spread of the outbreak
- Informing senior staff with updates as required using incident report/SITREP

- Coordinating conference calls with SMEs and technical partners, as required
- Coordinating deployment of rapid response team(s)
- Coordinating the rational release of supplies and equipment
- Monitoring specimen transport including shipment forms and laboratory test results through the LIMS and OHSP/DHIS2

The NPHEOC will generate the following documentation during alert mode:

- SITREPs as needed or official letter signed by the Director of PHIM or designee to be sent to all stakeholders and external partners to notify them about the possible NPHEOC activation
- GIS maps showing event/outbreak locations and supporting information, plus incident data
- Heat maps showing areas of potential spread of the outbreak based on characteristics of outbreak disease
- Incident Reports
- Timelines for planned response activities (action points)

Pre-activation notification will be sent by the PHEOC manager to the pre listed IM, Section Managers, and general staff from the available duty roster through phone calls / SMS, followed by email to fill the IMS functions.

If needed, the NPHEOC will be activated immediately after the risk assessment is completed and relevant consultations have been conducted (see NPHEOC activation criteria below).

The NPHEOC should be capable of activation within 120 minutes of the identification of a PHE, as required by IHR 2005.

### 7.1.3. Response Mode

During the response mode, the NPHEOC is partially or fully activated guided by pre-defined criteria for levels of activation corresponding to levels of response (see Section IV (2).

Full activation occurs when the PHE requires a coordinated national response and may have more than one Ministry, Department or Agency engaged following the Incident Management System. In the initial phase of NPHEOC activation, the NPHEOC Manager shall temporarily assume the IM position. In the meantime, PHIM management including the NPHEOC Manager in liaison with the Secretary for Health will assign the IM from a prequalified list of public or private subject matter experts within 48 hours of activation decision. The PHIM management including the NPHEOC Manager and SMT will be responsible for producing and periodically updating the prequalified list.

Partial activation occurs when PHE requires national response but not all functions of IMS are activated.

All NPHEOC established/permanent staff shall be available during the response mode and additional surge staff shall be mobilized to assist existing teams of PHIM, MOH, partners and other staff depending on the level of the activation, type, and scale of the incident.

The multi-sectoral rapid response team from the National level, depending on the geographical area and nature of the PHE, shall be deployed to the affected area (s) to investigate the situation and initiate immediate mitigation measures. The NRRT will be deployed by the IM/NPHEOC Manager and the NRRT lead will share resource requests and situational reports with NPHEOC. The NRRT lead is responsible for the on-scene or field level activities. National IM shall collaborate with the District IM to deploy the District Rapid Response Team (DRRT).

The appropriate IMS structure and staff needed for the response will be evaluated by the IM and continuous assessment will be done to determine the structure and staffing levels.

As multiple departments, agencies and partners continue to become involved in the response, the management team and staffing will evolve even further into a national-wide response. In addition, any incident of national significance or public health emergency, or any incident with a confirmed terrorist origin, or a situation indicating a potential terrorist attack may necessitate the country moving to Response Mode.

International requests for assistance from/to other nations or international organizations (e.g., World Health Organization, United Nations International Children's Fund (UNICEF), CDC, etc.) will be done by the IM in collaboration with PHIM Director.

### i. NPHEOC Manager roles in Response mode

- Recommends the activation of the NPHEOC and appropriate staffing level once the PHE has been confirmed.
- Informs the IHR-NFP to notify WHO within 24 hours of confirmation of the event in accordance with IHR 2005.
- Facilitates deployment of the incident management team according to the event being responded to.
- In collaboration with the IM coordinates conference calls and meetings to facilitate the response (the frequency depends on the severity of the event).
- Assists the IM in dispatching the NRRT to strengthen district response mechanisms as required.
- Ensures that the IM has all the resources necessary for efficient response.

### ii. NPHEOC actions

NPHEOC watch staff shall continue watching for other possible outbreaks and hand over confirmed outbreaks to response staff for action.

- NPHEOC data officers shall receive, collate, and analyse data on the incident from different stakeholders at all levels of response
- NPHEOC data officers shall provide GIS displays of public health emergency information related to the incident
- NPHEOC watch staff shall produce and distribute reports and other documents to designated distribution lists

- Incident manager shall share situation information with PHIM management, MOH, SMT and Policy Group
- Incident Manager shall develop action points for each stakeholder, share them in the daily meetings and receive feedback of the previous action points from the stakeholders
- The IMT shall execute the Incident Action Plan
- Incident Manager shall coordinate response activities as required
- The logistics section shall coordinate requests for assets, equipment, ground vehicles and personnel
- Data officer team shall maintain a rumor book on the particular incident being responded to

**iii. NPHEOC documents**

During Response Mode, the NPHEOC will generate the following documents:

- SITREPs, dash boards and updates
- GIS road maps and related displays of outbreak and incident data
- Incident Action Plans including timelines for planned response activities
- Pressers as required
- IMS staff rosters
- Phone in summaries and rumour book

## 7.2. PHEOC Staffing

To achieve its objectives and function successfully, the NPHEOC requires competent and well-trained staff. The NPHEOC has two types of staff for maintaining and operating the NPHEOC: Permanent and Surge staff.

### 7.2.1. Permanent Staff

The permanent staff are responsible for the day-to-day operation of the NPHEOC. These include NPHEOC Manager, the leads and members of: Operations, Planning, Logistics, Administration and Finance and watch staff (Surveillance data manager, data officers, IMS operators, ICT Technician, surveillance and laboratory officers and media analyst).

The role of the watch staff is to collect, organize, analyse, interpret, disseminate, and archive the data on public health events to monitor disease trends and triage the information on a regular basis.

The major role of the NPHEOC ICT technician is to ensure that all ICT equipment are up and running and are always ready to support NPHEOC operations.

The NPHEOC Manager oversees monitoring of NPHEOC daily activities and ensuring availability of key facilities and their maintenance. Besides, at least one person will be assigned as a lead for each of the five other key functions (Figure 5 below).

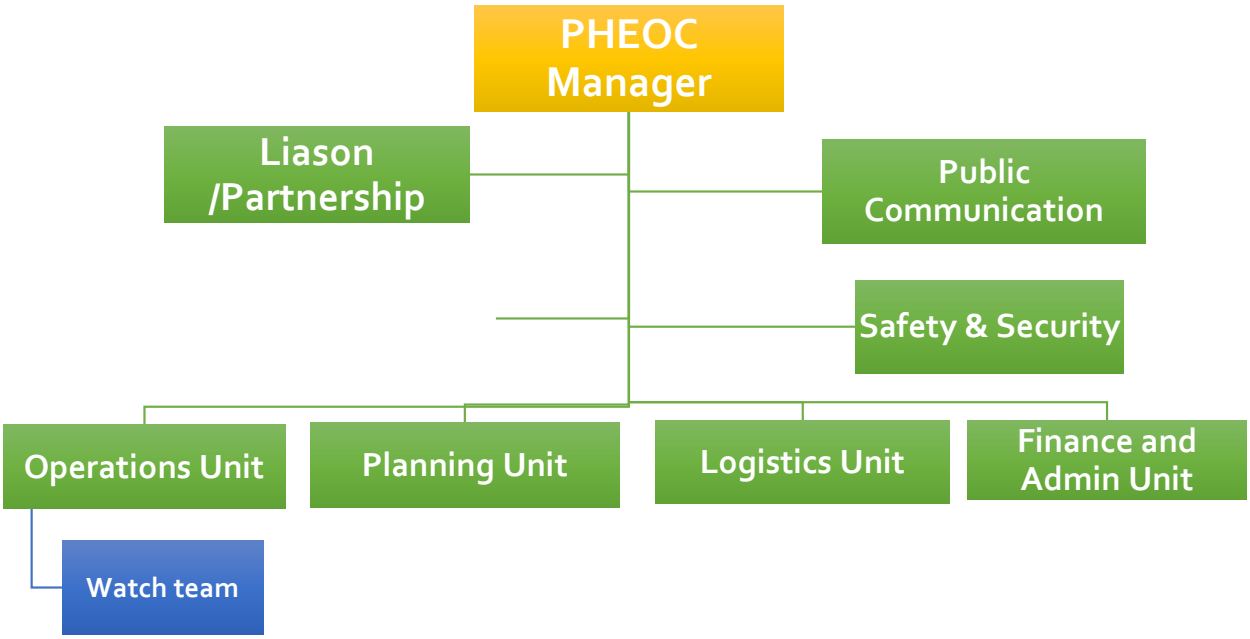



**Figure 5: Routine PHEOC functional Organizational Structure**

PHEOC Manager roles **in watch and alert modes**

The NPHEOC Manager organizes regular training of PHEOC staff and roster and conducts simulation exercises to test the NPHEOC plans, procedures, and systems during the non-response phase.

The management operates in different modes depending on the emergency situation vis-à-vis watch, alert and response mode.

The PHEOC manager leads the PHEOC activities and is responsible for:

During the watch and alert modes, the NPHEOC Manager is responsible for the management of the NPHEOC. The leads who oversee each established section are responsible for managing or supervising their respective functions and directly report to the NPHEOC Manager.

**Response mode**

Upon activation of the IMS, an Incident Manager will be appointed to coordinate the response activities in collaboration with the PHEOC manager. Secretary for Health is responsible for appointing the IM from a pre-selected IMs list when PHE is graded level 2 and the DC will appoint the district IM if the PHE is level 1. The OPC will appoint IM when the PHE is graded level 4. The IM in collaboration with the PHEOC manager sets the response objectives, strategies and priorities to the particular PHE with other section heads and the PHEOC staff.

The IM is responsible for overall management of the response. The IM delegates the other five sections (Operations, Planning, Logistics, Administration and Finance), depending on the type, size and complexity of the incident. Section chiefs who are in charge of each established section are responsible for managing or supervising their respective sections and directly report to the IM during the response mode, and is also responsible for the overall incident action plan.

The PHEOC manager or Incident Manager will delegate the tasks by assigning a public communication officer, liaison officer, and safety and security officer to support on those specific

functions.

**Communications officer**

**Watch mode**

- Assists the PHEOC Manager by serving as point of contact for representatives from other agencies/ministries.
- The Communications officer is personnel with strong communication skills.
- S/he shall be responsible for all communications within and outside of the NPHEOC in the MOH.
- S/he shall be responsible for Communicating goals of NPHEOC and maintaining the reputation of the NPHEOC

**Alert mode**

- Holding regular press briefings on the situation
- Receive analysed data to make meaning
- Daily monitoring of news channels, including social media to spot any misinformation or rumours circulating
- Using social media platforms to disseminate key information and to dispel rumours, as well as to identify issues of concern
- Media training of key journalists and outlets to sensitize them to key prevention and other measures
- Working with risk communications, health promotion and community engagement colleagues to disseminate key prevention and other measures through radio, social media, and other communications channels
- Updating Event status dashboards for sharing with PHEOC staff, and the public
- Producing Service Announcements that are community –oriented to raise awareness on the PHEIC

**Response mode**

- Receive analysed data to make meaning
- Posting the daily situation update on the MOH and PHIM websites and sending out to key media and stakeholder contacts
- Holding regular press briefings on the situation
- Issuing press releases at key moments in the response: announcement of the PHE, scaling up of support and key control measures such as vaccination campaigns and then containment and end of outbreak.

- Daily monitoring of news channels, including social media to spot any misinformation or rumours circulating
- Using social media platforms to disseminate key information and to dispel rumours, as well as to identify issues of concern
- Media training of key journalists and outlets to sensitize them to key prevention and other measures
- Working with risk communications, health promotion and community engagement colleagues to disseminate key prevention and other measures through radio, social media, and other communications channels
- Updating Event status dashboards for sharing with PHEOC staff, and the public
- Producing Service Announcements that are community –oriented to raise awareness on the PHEIC

**Liaison / Partnership Officer**

**Watch mode**

- The Communications officer is personnel with strong communication skills. S/he shall act as the contact person for the NPHEOC within and outside of the NPHEOC in the MOH.
- Liaison officer shall also identify, address, and solve issues that occur within the different sections of the NPHEOC and outside entities.
- The officer shall be responsible for tracking, coordinating and the goals of the NPHEOC as well as performing post-mortem whenever an incident is complete.
- Coordinates timely information exchange between internal and external stakeholders, and partners.
- Assists the PHEOC Manager by serving as point of contact for representatives from other agencies/ministries.

**Alert mode**

- Receive analysed data to make meaning
- Sharing key messages regularly with partners to ensure everyone is speaking with one voice

**Response mode**

- Receive analysed data to make meaning
- Sharing key messages regularly with partners to ensure everyone is speaking with one voice

## Safety and Security Officer

### Alert & Response modes

The safety and security officer:

- Monitors the health, welfare, and safety of all responders.
- Provides safety and security briefings to response teams.
- Gives guidance on the psychological and emotional challenges that staff may face during response activities.
- Advises the PHEOC Manager/Incident Manager on issues regarding safety.

## 1. Operations Unit

### Watch mode

The Operation Section:

- Monitors country, regional and global situation
- Conduct surveillance
- Develops periodical reports for the NPHEOC Manager
- Develops roaster for NFP's 24/7 functions during the watch mode
- Facilitates simulation exercises to test functionality of PHEOC
- Implementation of recovery plan

### Alert

- Makes recommendations to the PHIM director through the PHEOC Manager and Incident Manager regarding the situation awareness
- Provides technical guidance and guides the use of resources to prepare for respond to the event,
- Continuously monitors operational effectiveness during alert mode
- Presents updates to the health cluster
- Recommends activation and escalating of the IMS to the IM when an outbreak is about to be declared

### Response mode

- Makes recommendations to the PHIM director through the Incident Manager regarding response mechanisms
- Provides technical guidance and guides the use of resources to directly respond to the event

- Sets priorities and defines the organisation of the response teams,
- Oversees all operations of the outbreak response,
- Continuously monitors operational effectiveness of the response,
- Develop the sitreps periodically
- Presents updates to the health cluster
- Ensures availability of the end of PHE after action report,
- Recommends deactivation and deescalating of the IMS to the IM when the outbreak is declared over

**2. Planning Unit**

**Watch Mode**

The Planning Section:

- Conducts multi-hazard risk assessment regarding current environment and prepare accordingly
- Updates risk assessment to fit current hazards
- Compiles data that will be relevant for further decision making
- Conducts training and awareness for the PHEOC information application
- It supports the development, revision or updating of preparedness and response multi-hazard and specific contingency plans for a PHE
- Keeps track of, ensures adequate recording, storage and archiving of all documentation related to a PHE
- Tracks current status and location of tactical resources
- Coordinates development of collective plans
- Prepares and maintains resource status boards, and displays
- Coordinate the development of IAP

**Alert mode**

The Planning Section:

- Prepares and maintains resource status boards and displays status and location of tactical resources
- It supports the, revision or updating of preparedness and response of multi-hazard and contingency plans for a PHE
- Keeps track of, ensures adequate recording, storage and archiving of all documentation related to a PHE

- Prepares and maintains resource status boards, and displays
- Tracks current status and location of tactical resources
- Coordinates development of collective plans

**Response mode**

- Keeps track of, ensures adequate recording, storage and archiving of all documentation related to a PHE
- Tracks current status and location of tactical resources
- Development of recovery plan
- Coordinates development of collective plans
- Prepares and maintains resource status boards, and displays
- Liaise with Operations during implementation of the IAP
- Supports coordination of Intra Action Review and after review at an end of an event

**3. Logistics Unit**

**Watch mode**

- The logistics section conducts resource needs analysis and quantification
- Stockpiles essential supplies responding to PHEICs
- Monitors viability of resources in all facilities and reallocates for use those pending expiry
- Maintaining an inventory of resources as distributed to all facilities
- Prequalification of contracts

**Alert mode**

The logistics section is responsible for:

- Prepositioning supplies during alert
- Real-time monitoring resource status
- Identification of storage space and maintenance of warehousing facility
- Stockpiling
- Mobilization and transportation boxes
- Sample packages and RTD
- Sending critical stocks to most Districts

**Response Mode**

- Coordinates the distribution of supplies to end users
- Conducts re-quantifying of supplies
- Monitors viability of resources in all facilities and reallocates for use those pending expiry
- Maintains an inventory of resources as distributed to all facilities

**4. Administration and Finance Unit**

**Watch mode**

***Administration related tasks:***

- Ensures routine office administration and support,
- Keeps records of staff and maintains a rotation plan for administrative staff and ensures welfare, overtime and other benefits are in place,
- Handles all routine correspondence,
- Monitors and maintains office supplies,
- Ensures that printers, scanners, and copiers are functional and stocked with paper and toner,
- Ensures that all memos, letters, and other documents are handled effectively, rapidly and disseminated accordingly.
- Manages compensation for injury claimed by personnel

***Finance related tasks:***

- Organises all financial tasks including accounting and procurement
- Manages financial resources
- Supports funding proposals
- Clears all financial documents
- Support auditing procedures for the funds used in the PHEOC

**Alert mode**

***The Administration related tasks:***

- Ensures office administration and support
- Monitors and maintains office supplies; ensures that printers, scanners, and copiers are functional and stocked with paper and toner
- Keeps records of staff and maintains a rotation plan for administrative staff and ensures welfare, overtime and other benefits are in place,

- Ensures that all memos, letters, and other documents related to the response are handled effectively, rapidly and disseminated accordingly.
- Manages compensation for injury claimed by personnel.
- Ensures that personnel are compensated for time worked and that documentation meets policy standards.

***The Finance related tasks:***

- Manages financial resources.
- Supports funding proposals.
- Clears all financial documents, supervising cash flows by estimating, tracking, and approving expenditure.
- Monitors and coordinates funding from all sources.
- Creates and maintains cumulative cost records.
- Provides regular financial reports and advises on potential cost savings.
- Prepares procurement instruments.
- Ensures accounts for all properties utilised in the response.

**Response Mode**

***The Administration related tasks:***

- Ensures office administration and support
- Handles all correspondence related to the response.
- Monitors and maintains office supplies; ensures that printers, scanners, and copiers are functional and stocked with paper and toner.
- Ensures that all memos, letters, and other documents related to the response are handled effectively, rapidly and disseminated accordingly.
- Prepares and maintains a rotation plan for administrative staff beyond normal hours in line with the SOPs.
- Manages compensation for injury claimed by response personnel.
- Ensures that personnel are compensated for time worked and that documentation meets policy standards.
- Updates arrival and departure dates of deployed personnel.

***The Finance related tasks:***

- Manages financial resources.
- Organises rapid transfer of funds if/when required.

- Supports funding proposals.
- Organises Emergency funds for staff deployed to the field (for emergency procurement in the field and / or cash advance on per diem) if needed.
- Monitors expenditure for the response, including cash flows and works with partners for cost sharing arrangements.
- Clears all financial documents, supervising cash flows by estimating, tracking, and approving response related expenditure.
- Monitors and coordinates funding from all sources.
- Creates and maintains cumulative response cost records.
- Provides regular financial reports and advises on potential cost savings
- Prepares procurement instruments.

### 7.2.2. Surge staff

The NPHEOC maintains a roster of multi-disciplinary and multi-sectoral experts who could be mobilized to staff the NPHEOC when necessary. When activated, depending on the scale of the incident, positions will be identified in the IMS roster by the NPHEOC Manager. Based on the identified positions needed, a human resource response plan will be developed. Experts will be identified from the roster to fill the identified positions. Upon analysis of the needs and based on the list from the roster, personnel requests shall be sent by the NPHEOC Manager through PHIM Director to the Secretary for Health.

When the NPHEOC is activated, an Incident Manager (IM) is assigned, an Incident Management Team (IMT) assembled and IMS established. The IM assumes the role to organize and coordinate the overall management of a PHE with support from the NPHEOC Manager. The IMS may expand, depending on the type, size, and complexity of the PHE.

The IMT is disassembled and return to their routine job when the response is over and the NPHEOC is deactivated. Criteria and procedure for activating and deactivating the NPHEOC are presented in detail in PHEOC Activation and Deactivation part of this section.

## 7.3. NPHEOC activation

### 7.3.1. Authority to Activate the NPHEOC

The Secretary for Health has the authority to pass decisions to activate the NPHEOC following the advice from the Director of PHIM upon the receiving of recommendations from the NPHEOC Manager. The NPHEOC is activated within 120 minutes after the decision to activate passed when the criteria listed below is met.

### 7.3.2. Activation criteria

The NPHEOC is immediately activated whenever one or more of the following conditions exist:

1) Any confirmed case with high epidemic potential or outbreak of diseases under eradication

2) Detection of a potential or confirmation of a Public Health Emergency of International Concern (PHEIC) or reportable incident under IHR 2005

3) An epidemic of national concern (affecting multiple districts)

4) A large-scale disease outbreak of initially unknown aetiology

5) The capacity of routine system is overwhelmed, and additional support is required

6) Resource coordination is required because of limited local resources, and/or significant need for external resources

7) Uncertain conditions posing a significant potential threat to people, property and/or the environment

8) National disaster or public health emergency declared by the responsible authority

9) Newly emerging or re-emerging disease with potential to high transmission

10) Infectious incident (s) with high potential of cross border spreading or involving neighboring countries

11) Whenever there are mass returnees from epidemic affected countries

12) Natural and man-made disaster with potential significant public health impact

13) Bioterrorism, chemical spill, and radiological incidents

14) Upon direction of the Minister or Secretary for Health

15) If similar incidents or events in the past required NPHEOC activation

During activation, the NPHEOC supports the response by:

- Providing a physical and virtual coordination space
- Providing communications capabilities
- Coordinating resource allocation and tracking
- Coordinating information collection, analysis, interpretation, and dissemination this is a role of the PHEOC data manager
- Availing existing emergency management documents: established protocols, Guidelines and SOPs

### 7.3.3. Grading of an emergency

Grading is an internal activation procedure that triggers emergency procedures and activities for the management of the PHE response (WHO, 2017). The grading assigned to PHEs indicates the level of strategic, operational, and tactical response required for that emergency.

The grading system is largely dependent on the risk assessment associated with the event. It takes into consideration the severity of the event and its impact in terms of population, geographical, economic and mortality. The grading helps develop a standardised way of determining the activation and response levels, the scope, capacity, and capabilities required and enable a shared understanding of the event by all responders and stakeholders.

The risk assessment or situation analysis report will inform response to PHEs grading system. The Director of PHIM in consultation with Secretary for Health and NPHEOC Manager will be responsible for the grading process through the technical team, the NRRT, and thereafter will activate the Incident Management System.

### i. Grading criteria

Grading of the PHE in Malawi will be dependent on the:

1. **Severity/Complexity:** Seriousness of consequences (morbidity and mortality) measured by level of disruption of critical health and other services, urgency of response required including attack rate, type of PHE, risk of international transmission/spread of the infection/ event, perception of community and practitioners, experts' insight and use of precedent data or projected data from modelling.

2. **Scale:** Type and extent of hazard, geographical areas that are likely to be affected and population settings (rural, urban, concentrated/ closed, dispersed/open setting)

3. **Vulnerability:** Characteristics and circumstances of a community system or asset that makes it susceptible to the damaging effects of a hazard such as access to health services, health status of a population at risk, social determinants of health, presence of vulnerable groups.

4. **Coping capacity:** Ability to detect, identify and respond to a hazard and its health consequences at a given scale, functional capacity to manage caseloads in potentially affected areas, community knowledge about the hazard and risk minimizing attitudes and practices.

5. **Population at Risk:** The proportion of individuals who are affected/expected to be affected by the PHE and their resilience

6. **Reputational Risk:** A measure of the threat or danger the PHE poses on the reputation of the country or institution involved, influenced by political, religious, or social risk. This is a subjective/qualitative measure that will be determined by the assessment team.

**Use of initial Rapid Risk Assessment**

The grading will be dependent on the risk assessment associated with the event. The DRRTs in conjunction with NRRT will be conducting rapid risk assessments. This activity will be repeated as and when necessary.

**Grading recommendation process**

Based on the above criteria, the following emergency grading shall apply:

**Table 6: Levels of grading of emergencies**

| Level | Scale (Geographical Spread) | Severity | Vulnerability | Population at Risk | Coping Capacity | Reputational Risk |
|---|---|---|---|---|---|---|
| 1 | One or more districts in a health zone | Low | Low | < 0.1% | High | Low |
| 2 | Two to three health zones | Moderate | Partial | 0.1– 0.25% | Partial | Medium |
| 3 | More than three health zones | High | High | >0.25 % | Low | High |
| 4 | All health zones | Very high | Very high | >0.5% | Very low | Very high |

### ii. Levels for Grading

#### 1) Level 1

A PHE with minimal consequences and limited to one or more districts that requires response at district level and does not require response at the national level.

Coping capacity is high within the district while reputational risk and severity are low.

#### 2) Level 2

Two to three health zones by the PHE.

Coping capacity is partial within the districts, whereas reputational risk and severity is medium with moderate public health consequences. This requires some support from the national level when the district's capacity is exceeded.

#### 3) Level 3

More than three health zones are affected, with threat of spread internationally.

Coping capacity is low at national level and may require international level support, whereas reputational risk and severity are high. It may be considered for declaration of national public health emergency.

#### 4) Level 4

All health zones are affected by PHE, with threat of further spread locally and internationally.

Coping capacity is very low at national level and may require international level support, whereas reputational risk and severity are vey high. It may be considered for declaration of national disaster.

## 7.3.4. Activation Notification

Once the decision to activate is made, the Secretary for Health or delegate from PHIM, shall notify the NDPRC, relevant directorates within MOH staffs, line ministries, relevant government sectors and authorities and relevant IHR focal persons, District Health Office's and key partners within one hour after the decision to activate is made through a phone call or WhatsApp followed by

email. An official letter signed by the Secretary for Health or delegate will also be sent to response partners.

The pre-notified IM, PHEOC manager, Section Managers, and general staff, during the activation mode, will arrive at the NPHEOC to begin the assigned tasks within 48 hours of activation notification. However, the established NPHEOC staff will begin responding until the assigned Incident Management System team comes in.

**Steps in Activation**

The following actions are taken to activate the NPHEOC in response to a certain PHE.

1. When an incident is reported to the NPHEOC Manager by a watch staff – duty officer (24/7), the NPHEOC Manager will bring this to the attention of the National IHR focal point. The NFP will determine the relevant expertise regarding the notification and call to inform the relevant IHR focal persons and Subject Matter Experts (SME) of the reported incident. SMEs will work with the NPHEOC Manager to gather scientific facts regarding the situation and make recommendations for the NRRT to go and assess the reported incident.
2. The NPHEOC Manager will facilitate the convening of the preliminary assessment team, which is comprised of SMEs assembled to assess the situation, provide recommendations needed for supporting the response and determine the level of the response to the incident and the team and additional functional expertise needed. The meeting can be conducted via teleconference to carry out a timely response.
3. The NPHEOC Manager will coordinate to call additional personnel as dictated by the urgency of the required response.
4. The NPHEOC Manager will inform the Director of PHIM and provide situation awareness and updates.
5. Upon confirmation of the incident the NPHEOC Manager in consultation with the PHIM director or delegate and the Secretary for Health will decide to activate the NPHEOC and determine the activation level.

### 7.3.5. NPHEOC Activation Levels

When the above criteria are met, the NPHEOC will be activated; partially or fully, and staffed to meet the demands of the situation. There are three operational levels of activation identified through numbers 1 to 3; where 1 is the lowest and 3 is the highest level of activation (Table 7).

The level of activation of the NPHEOC is aligned to the level of the emergency (Table 7). Alternatively, they are respectively labelled by colours as yellow, orange and red. A minimum staffing requirements guide has been developed for each activation level and is depicted in Table 7.

Scale of the event, level of urgency, complexity of the incident, level of response capacity should be assessed and considered for determining activation level.

NPHEOC will use alert and action thresholds in the IDSR guidelines for every condition. Alert threshold of the IDSR will correspond to activation level 1 of the NPHEOC. Action threshold of the IDSR will correspond to level 2 and 3 of the activation levels in Table 7. In addition, the priority list of conditions in the IDSR guidelines will be used to guide NPHEOC staff to identify the conditions that are outbreak prone amongst the reported conditions.

Command and control in levels of activation is presented in Table 8.

**Table 7: Activation levels of NPHEOC Malawi**

| Level | Conditions | NPHEOC Duties | Staffing | Activities |
|---|---|---|---|---|
| **Level 1 - ALERT (Yellow)** | 1. Outbreak suspected<br>2. Small incidents involving one health facility<br>3. Serious increase in international tension | 1. Continuous monitoring of event<br>2. Check & update all resource lists<br>3. Distribute PHE status report and analysis to NPHEOC personnel and authorities.<br>4. Receive briefing from field personnel as necessary<br>5. Maintenance of a rumour book<br>6. Provide GIS displays of public health emergency information related to the incident<br>District level PHEOC gets activated | 1. Onlyestablishedsupport staff or as determined by NPHEOC Manager | 1. NPHEOC Section leads /NFP continue reviewing Preparedness and Response Plans,<br>Guidelines and check readiness of staff and resources.<br>Provides briefings to NPHEMC and SMT |
| **Level 2 Response (Orange)** | 1. Increase in number of reported outbreak cases<br>2. Incidents involving 2 or more facilities/districts<br>3. Reported imported cases of an international outbreak | 1. Continuous monitoring of event<br>2. Initiate NPHEOC start-up checklist<br>3. Facilitate field personnel<br>4. Provide status updates to NPHEOC personnel<br>5. Receive, collate, and analyse data on the incident from different stakeholders at all levels of response<br>6. Provide GIS displays of public health emergency information related to the incident<br>7. Produce and distribute reports and other documents to designated distribution lists | 1. Staffed as situation warrants and liaison to other agencies<br>2. Established NPHEOC personnel will be available and check-in regularly | 1. Incident briefings to IM<br>2. IMT begins full operation<br>3. Periodical* PHEOC meetings<br>4. Periodical* NPHEMC and SMT briefings |

| | | | | |
|---|---|---|---|---|
| | | 8. Develop action points for each stakeholder, share them in the daily meetings and receive feedback of the previous action points from the stakeholders led by the IM<br>9. Execution of the Incident Action Plan by the IMT<br>10. Coordinate response activities as required<br>11. Coordinate requests for assets, equipment, ground vehicles and personnel<br>12. Maintenance of a rumour book by IMT staff about the incident | | |
| **Level 3 Response (Red)** | 1. The impact of incident has significant national and or international implications<br>2. Public health impact including public interest or concern for the national population is severe<br>3. Civil disorder with relatively large-scale localized violence.<br>4. Hazardous conditions that affect a significant portion of the Country requiring full coordination of NPHEOC. | 1. Brief arriving staff on current situation<br>2. Receive, collate, and analyse data on the incident from different stakeholders at all levels of response<br>3. Provide GIS displays of public health emergency information related to the incident<br>4. Produce and distribute reports and other documents to designated distribution lists<br>5. Develop action points for each stakeholder, share them in the daily meetings and receive feedback of the previous action points from the stakeholders led by the IM<br>6. Execution of the Incident Action Plan led by the IMT<br>7. Coordinate response activities as required | 1. As determined by the NPHEOC Manager/ IM, essential and necessary staff<br>2. PHEOC key departmental heads<br>3. Required support staff<br>4. Surge staff<br>5. Surge resources | 1. Full activation of IMT, Briefings to NPHEOC Manager / IM who in turn briefs the Director of PHIM<br>2. NPHEOC begins full operations situation warrants<br>3. Daily PHEOC briefings.<br>4. Frequent (biweekly) SMT briefings.<br>5. Weekly NPHEMC meetings |

| | | | | |
|---|---|---|---|---|
| | 5. Verified and present threat to critical facilities such as a hospital<br>6. Condition is forcing citizens to be displaced internally or externally | 8. Coordinate requests for assets, equipment, ground vehicles and personnel led by the IMT<br>9. Maintenance of a rumour book by IMT staff about the incident | | |

**Table 8: Command and control in levels of activation**

| LEVEL 1 (YELLOW) | LEVEL 2 (ORANGE) | LEVEL 3 (RED) |
|---|---|---|
| **Grade 1 PHE**<br>• Disease condition/ Public Health Event localized within a district<br>• Coping capacity is high within the district<br>• Reputational Risk is low and<br>• Severity is low | **Grade 2 and 3**<br>• Disease/Public Health Event affected more than one district but localized within a zone<br>• Coping capacity is high within the zone with minimal support from national level<br>• Reputational Risk is medium and severity is medium | **Grade 4**<br>• Disease/PHE affected more than one zone with threat of spread locally & internationally<br>• Coping capacity is high at national level but may require international level support<br>• Reputational risk is high Severity is high |

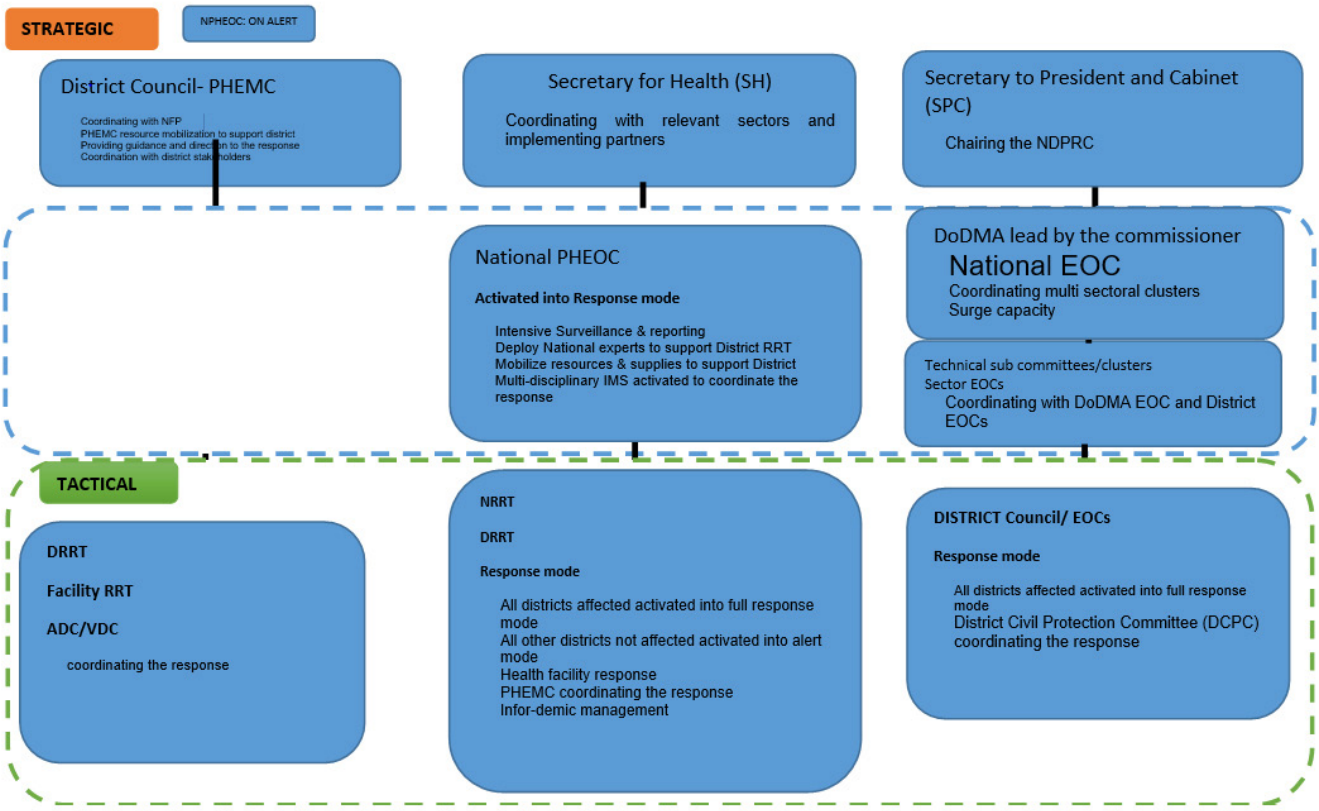



**Figure 6: Command and Control in levels of Activation**

## 7.4. NPHEOC de-escalation

De-escalation is when response requirements have reduced due to contraction in size, scope, complexity of the event. The PHEOC will conduct risk assessment and review of activation level in order to make the decision for de-escalation.

Considerations for de-escalation include a decrease in one or more of the following:

- No longer a public health event of international concern (PHEIC) in line with IHR 2005 guidelines
- Human resource surge support required
- Resources required
- Media interest
- Geographic extent
- Executive / leadership directives

## 7.5. NPHEOC Deactivation

### 7.5.1. Deactivation criteria

When the emergency has progressed to the point that high-level coordination is no longer required and operation can return to routine, the NPHEOC is deactivated by the order of the Secretary for Health/Minister of Health or delegate on recommendation of the IM when the following conditions are met:

1. The scope / scale of the incident has reduced, and requirements can be managed without NPHEOC capabilities and resources
2. Resources that were deployed on the ground to support the response are no longer required
3. The Epidemic curve of confirmed cases has peaked and shows continuous deceleration for an extended timeframe (to be determined depending on the event)
4. No evidence of sustained or efficient human (or animal) to human transmission for a predetermined time frame (to be determined depending on the event)
5. Incident action plan objectives have been satisfied
6. Cases are having no or minimal impacts to national, social, business, or economic affairs and the condition has been integrated into the routine monitoring mechanisms
7. Coordination of response activities is no longer required
8. The incident or public health emergency has been declared over by the Secretary for Health on recommendation of the IM.

### 7.5.2. Deactivation Notification

Once it is decided to deactivate, notification will be sent via email from the Secretary for Health or delegate from PHIM to notify the NDPRC, relevant directorates within MOH staff, line ministries, relevant government sectors and authorities, District Health Offices, and key partners. The notification will also be recorded at the NPHEOC (Refer to Annex 5 for deactivation checklist).

## 7.6. Emergency Response Levels and Roles and Responsibilities

Public health emergencies generally involve more than one sector or technical area operating under a single coordination entity.

In this multi-stakeholder context, the Concept of Operations (CONOPS) describes how multi-sectoral and transnational coordination work at the strategic, operational, and tactical levels. Furthermore, it also describes how and when to engage different branches and levels of government, private sector as well as other partners (including international agencies) in the IMS.

The three key levels of response to a public health emergency are strategic, operational, and tactical level with the designated organizations and their respective responsibilities at each level are presented below.

### 7.6.1. Strategic level

This is the highest level of the emergency response management structure and is responsible for strategic coordination and policy making.

When a public health event meets the definition of a disaster[3], under a multi-hazard approach, this function (strategic level) is assigned to the Department of Disaster Management Affairs (DoDMA)

[3] Under the Malawi Disaster Preparedness and Relief Act of 1991: “disaster” means an occurrence (whether natural, accidental or otherwise) on a large scale which has caused or is causing or is threatening to cause: (a) death or destruction of persons, animals or plants; (b) disruption, pollution or scarcity of essential supplies; (c) disruption of essential services; (d) influx of refugees into or out of Malawi; (e) plague or epidemic of disease that threatens the life or well-being of the community; and includes the likelihood of such occurrence.

which was established through the Disaster Preparedness and Relief Act of 1991 (1) in Malawi.

The DoDMA is the Government agency responsible for coordinating and directing the implementation of disaster risk management programs in the country to improve and safeguard the quality of life of Malawians, and those vulnerable affected by disasters.

The Disaster Preparedness and Relief Act also established the National Disaster Preparedness and Relief Committee (NDPRC) which is composed of:

- The Secretary to the President and Cabinet
- The Secretary for Health
- The Secretary for Community Services
- The Secretary for Local Government
- The Secretary to the Treasury
- The Secretary for Economic Planning and Development
- The Secretary for Works
- The Secretary for Agriculture, or a representative
- The Secretary for Forestry and Natural Resources
- The Secretary for Transport and Communications
- The Secretary for Homeland Security
- The Secretary for Education
- The Secretary for Defence
- The Secretary for Labour
- The Secretary for Youth and Culture
- The Inspector General of Police
- The Director General of Immigration and Citizenship Services
- The Defence Force Commander

The NDPRC represents the Policy Group and is responsible for coordinating the implementation of measures to alleviate disasters in Malawi. This may include coordination with international partners to ensure strategic-level unity of effort.

The NDPRC may establish any number of sub-committees to carry out any special or general functions.

It ensures that close coordination and timely information exchange is in place between the responding agencies.

The organogram of the public health disaster coordination structure is presented in figure 7 below.

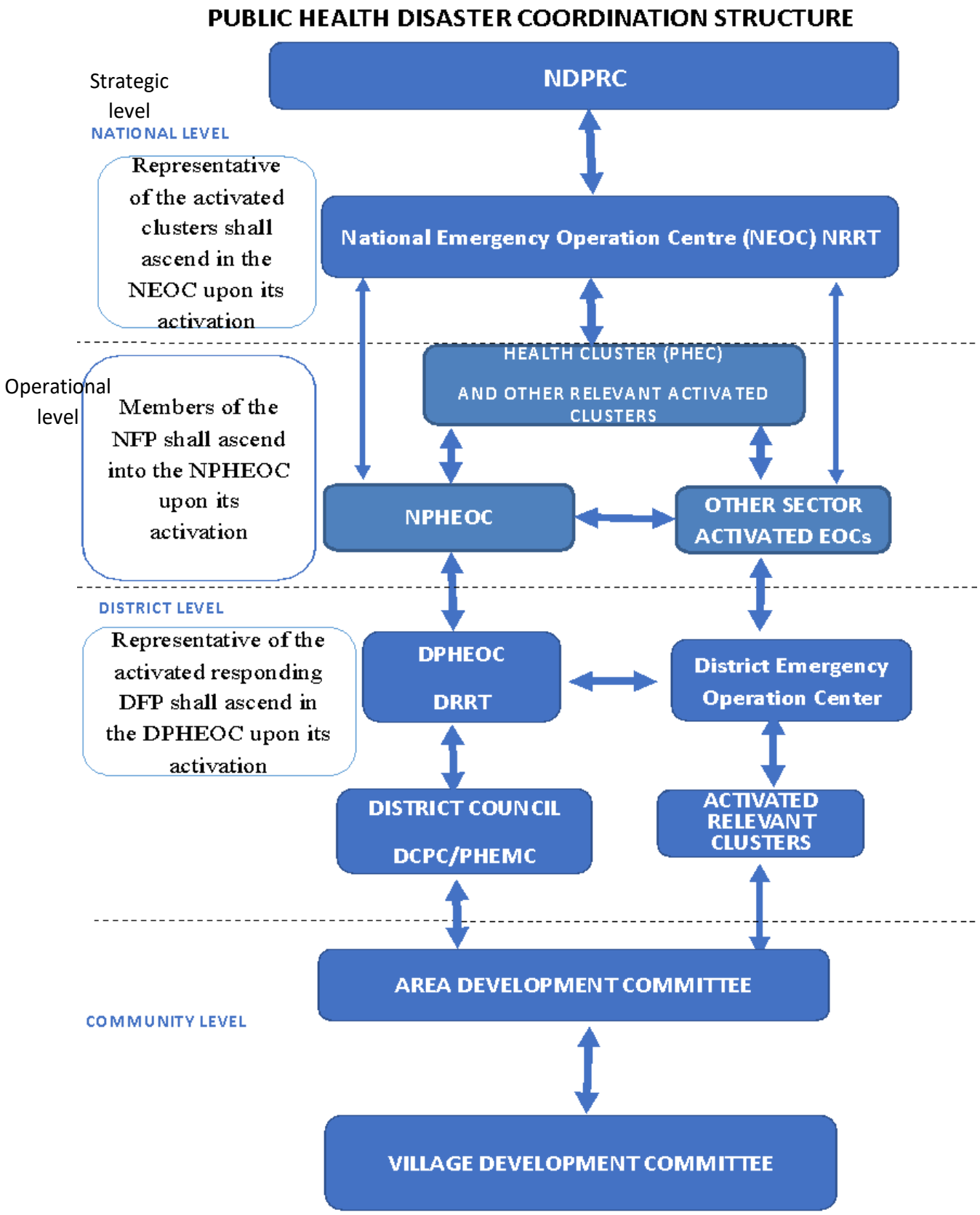



**Figure 7: Malawi NPHEOC Disaster Coordination Structure**

When a public health event is of a smaller scale and does not meet the definition of a disaster (i.e., an outbreak), coordination will be achieved through the NPHEOC alone and the full national disaster management structure will not takeover. The NPHEOC will continue to coordinate planning

and operations with other responding ministries and partners and coordinate the activities of field-level EOCs at district level.

In this case, the NPHEOC Policy Group and Steering Committee represent the strategic level of the NPHEOC and are represented by the Senior Management Team (SMT) at the Ministry of Health. The organogram of the Public Health Outbreak Coordination structure is presented in Figure 8.

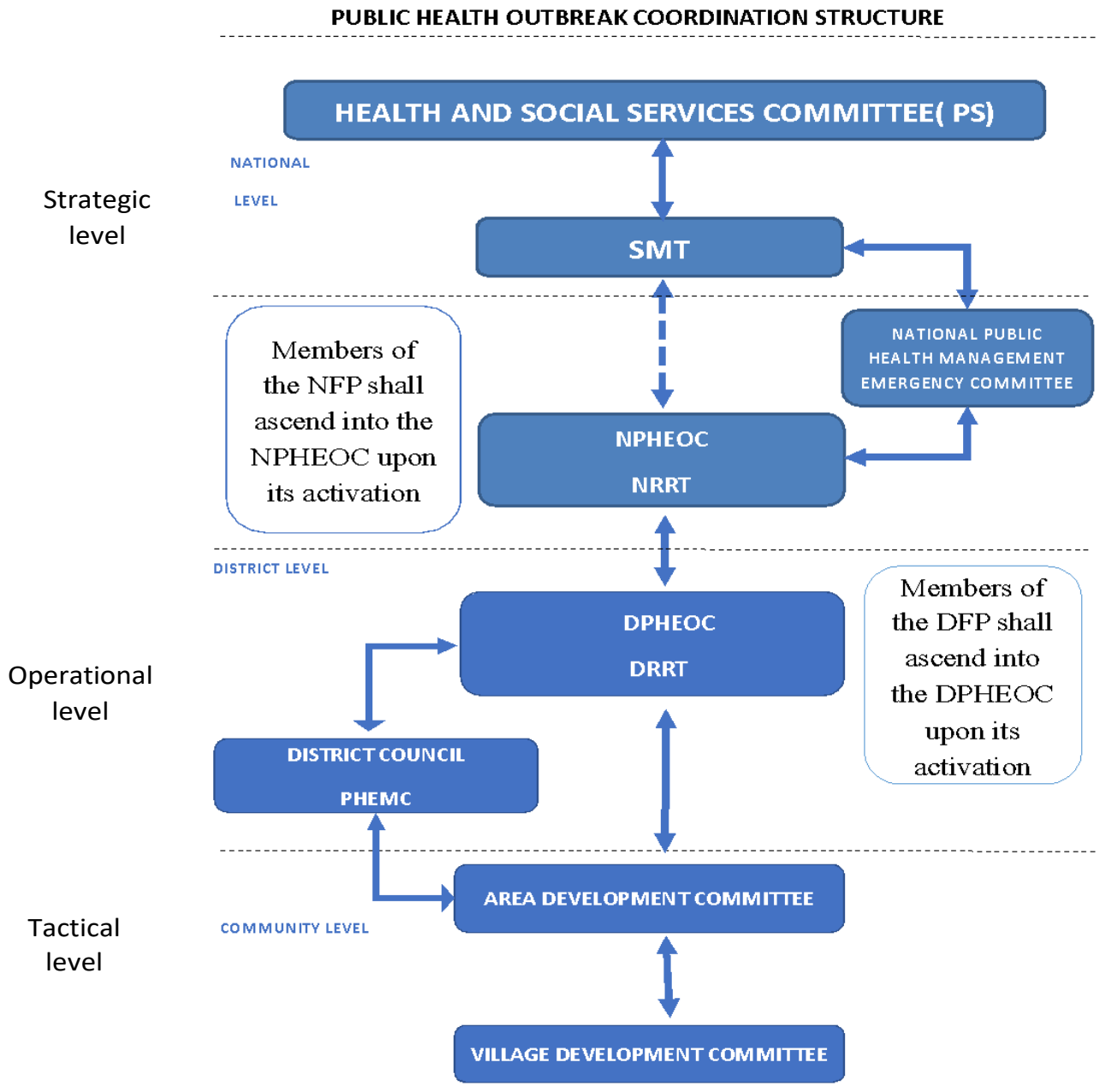



**Figure 8: Malawi NPHEOC outbreak coordination structure**

### 7.6.1.1. NPHEOC Policy

The role of the Policy Group is to act on the policy recommendations from the NPHEOC and provide oversight in the response mechanisms, including securing funding for NPHEOC development and operation.

The Policy Group encompasses the top decision-making bodies (comprising Principal Secretaries) and is the highest governing body of the NPHEOC. The Policy Group is composed of:

- Secretary for Health
- Chief of health services
- PHIM Director
- Director of Preventive health services
- Director of Curative and Medical Rehabilitation services
- Director of Nursing and Midwifery
- Director of Planning and Policy Development
- Director of Quality Management
- The Judiciary
- Health Donor Group country representatives
- Secretary for Treasury Office of President and Cabinet
- Ministry of Foreign Affairs
- Ministry of Education
- National Commission for Science and Technology (NCST)
- Ministry of Agriculture
- Department of Disaster Management Affairs (DoDMA)
- Ministry of Homeland Security
- Malawi Defence Force
- Ministry of Justice and Constitutional Affairs (Legal adviser)
- Ministry of Natural Resources, Energy and Environment
- Ministry of Labour
- Ministry of Tourism
- Ministry of Local Government
- Representative of Academia

***Depending on the nature of the PHE; other Ministries, Departments and Agencies' heads of the major stakeholder institutions, key subject matter experts or any other professionals may be incorporated in the Policy group*** as holding the **strategic level,** the objectives of the Policy Group are to:

- Provide high-level direction for the public health emergency response.
- Receive recommendations from the NPHEOC and make policy decisions regarding further response to the outbreak
- Monitor implementation of the response plan.
- Ensure provision of human resources and other capabilities as needed to support operations and to achieve established objectives.
- Ascertain funding for emergency operations.
- Ensure multi-sectoral and multiagency coordination and collaboration.

#### 7.6.1.2. National Public Health Emergency Management Committee

The NPHEMC is a steering committee that will provide overall management guidance and recommend courses of action for the entire NPHEOC development process. Beyond the development phase, the NPHEMC will ensure that the NPHEOC's many different needs are met for effective implementation of its functions.

The NPHEMC is responsible for ensuring that planning goes ahead in an orderly manner, prevention and mitigation strategies, preparedness, and readiness activities, and plans for continuity of operations.

The Secretary for Health is the chair of the NPHEMC which comprise the following stakeholders:

- MOH Senior Management Team including PHIM management staff
- NPHEOC Manager and other NPHEOC section managers: Operations, Planning, Logistics, Finance and Administration and Human Resource
- Multi sectoral PHEIC responders' heads
- Multi-sectoral National Rapid Response Team (NRRT) Lead
- Representatives of Academia and key subject matter specialists
- Development partners and CSOs

### 7.6.2. Operational level

The PHEOC is the operational level responsible for effective leadership and coordination of all response elements and maintenance of situational awareness for strategic-level authorities. During response, the Incident Management System will be activated and the incident manager will be appointed by the SH to lead the PHE response at national level. Depending on the level of response, at district level, the District Commissioner will appoint the IM.

The district PHEOC and National PHEOC will coordinate Level 1 and Level 2 events respectively. The PHEOC coordination will be led by a designated Incident Manager for the reported event and will be responsible for the implementation of the response actions.

The operational level provides;

- The technical lead (IM) for the operational response based on strategic guidance;

- Develops operational-level plans to meet strategic objectives;
- Coordinates the response with other responding agencies, including international partners responding at the operational level;
- Prioritizes and provides the resources to support response activities at the tactical level.
- Monitors the operational coordination and implementation of the strategy
- Prepares and/or approves public communications materials, technical guidance and activities.

#### 7.6.2.1. Response Pillars

In order to act on all the potential specific areas of the response and advance implementation process, response pillars are used. The pillars fall under the operations section of the IMS and they cover the following technical areas: surveillance (epidemiological data management), laboratory, NRRT, Risk Communication and Community Engagement, Case Management and IPC.

Depending on the size and type of the incident, technical areas, response sectors and command staff will be established to respond adequately to the PHE.

In the Alert and Response modes (see section IV (1.) Modes of operation of the NPHEOC), depending on the nature and the needs for a specific PHE, specific response pillars will be activated to assess and respond to the emergency.

The pillars will continuously collaborate with the Planning and Operation Sections of the Incident Management System during response to:

- Conduct risk and capacity assessments
- Provide the technical lead for the operational response based on strategic guidance
- Develop national operational level plans to meet strategic objectives
- Control and maintain situational awareness of tactical units and their actions
- Prioritize and provide the resources to support response activities at the tactical level
- Provide the ‘common operating picture’ against which strategic and operational decisions are made
- Submit recommended guidelines on the particular response pillar to the NPHEOC for further submission to the Policy group for approval
- Provide technical guidelines to all stakeholders affected by the PHE
- Submit reports of their response actions to the incident management team
- Participate in the PHEOC regular feedback and planning meetings

### 7.6.3. Tactical (Implementation) level

The third level of the response is the tactical management of response operations, at district or community level. This is composed of all agencies responding locally, or in a public health-specific district EOC.

This level is responsible for the day-to-day actions that will achieve the established strategic and operational goals and objectives. To accomplish these actions, the tactical EOC will generally develop incident action plans that focus on measurable and achievable actions by tactical resources during a set 'operational period' (typically 24 hours for a public health response). Tactical planning within the incident action plan will describe what mechanisms will be used with the available resources to achieve the desired results.

The tactical level has the discretion to determine a course of action based on assigned objectives within reason.

The Council Management should provide guidance and support on specific actions. The tactical level should be able to reach up to the operational level to request resources as needed to complete assigned objectives/actions.

Coordination between the PHEOC and other responding agencies within the district is crucial to ensuring the best outcomes in the response to PHE.

### 7.6.3.1. Rapid Response Teams

National Public Health Rapid Response Teams (NRRT) are multidisciplinary and multi-sectoral teams which provide technical support to the overall emergency coordinating committees like PHEOC and Health Cluster. They support these committees with risk assessment, outbreak investigation reporting, emergency management and outbreak control. They work in coordination with the district level which is at the operational level. During an emergency, the NRRTs are deployed within 24 - 48 hours. Selection of members into the NRRTs depends on the nature of the emergency. Each member in this team has a specific role to carry out.

**i. The Composition of PHERRT is as follows:**

**Core Members**

- Epidemiologist
- Laboratory personnel
- Clinician
- Nurse
- Environmental Health Officer
- Psychosocial Councilor
- Health Promotion officer
- Public Health Officer
- Pharmacist

**Co-opted Members**

- Security Agency personnel
- Animal Health personnel

- Forestry personnel
- Representatives from partner organizations
- Others as per required expertise

**ii. Roles and Responsibilities of PHERRT at National level**

- Investigate reported outbreaks, and other public health emergencies
- Develop an epidemic preparedness and response plan
- Stock management for outbreak response
- Risk mapping for outbreaks and other public health events
- Collect and provide adequate data related to outbreak and public health emergencies
- Reporting on issues investigated to PHEOC
- Provide support to district level PHERRTs as needed

### 7.6.3.2. Emergency Medical Teams (EMT)

The National EMT (N-EMT) will beef up the district medical emergency team to provides immediate basic outpatients and in patients clinical services focused on basic trauma care, communicable and non-communicable diseases

The purpose of the N-EMT is to improve the timeliness and quality of health services provided by the district emergency medical teams. N-EMT will offer support to enhance the capacity of the district health systems in leading the activation and coordination of the rapid response capacities in the immediate aftermath of a disaster, outbreak or other emergencies. The team is mainly composed of health professional (doctors, nurses, paramedics etc.) with the proven experience in humanitarian crises (emergency and trauma care, control of communicable diseases) and are familiar with the national operation procedures in emergency. Types of EMT include:

## 7.7. Incident Management System

IMS is a standardized approach to the management and coordination of emergency response providing a common hierarchy for response staff during a public health emergency. The NPHEOC uses the IMS, primarily to respond to and mitigate the effects of all types of PHEs. The IMS is an emergency management tool which provides a common organizational model for all hazards and emergencies. The IMS is scalable and depending on the size and type of the incident, divisions, groups or units can be formed under the sections.

**The IMS serves to:**

- Provide a standardized, scalable, and flexible approach to respond to PHEs (meets the needs of all incidents, regardless of cause, size, location, or complexity).
- Enable a coordinated response among various jurisdictions and agencies.
- Establish a common process for planning and management of resources by objectives.
- Improve effective communication.

- Enhanced cooperation and interoperability through clearly defined roles.
- Efficient resource coordination.
- Comprehensive all-hazards preparedness.
- Incorporate measurable, achievable objectives.
- Avoid duplication of efforts.

The IMS plays a vital role in the NPHEOC, as it is the focal point or hub for the coordination of information and resources to support incident management activities.

The Malawi NPHEOC follow the IMS structure to coordinate:

- Planning
- Information collection and dissemination
- Resource requests, acquisition, and allocation

The five recognized essential IMS functions, management, planning, operations, logistics and administration and finance, plus a human resource component are applied in the Malawi NPHEOC during the response to PHEs depending on the scale, type, and complexity of the incident (Figure 9).

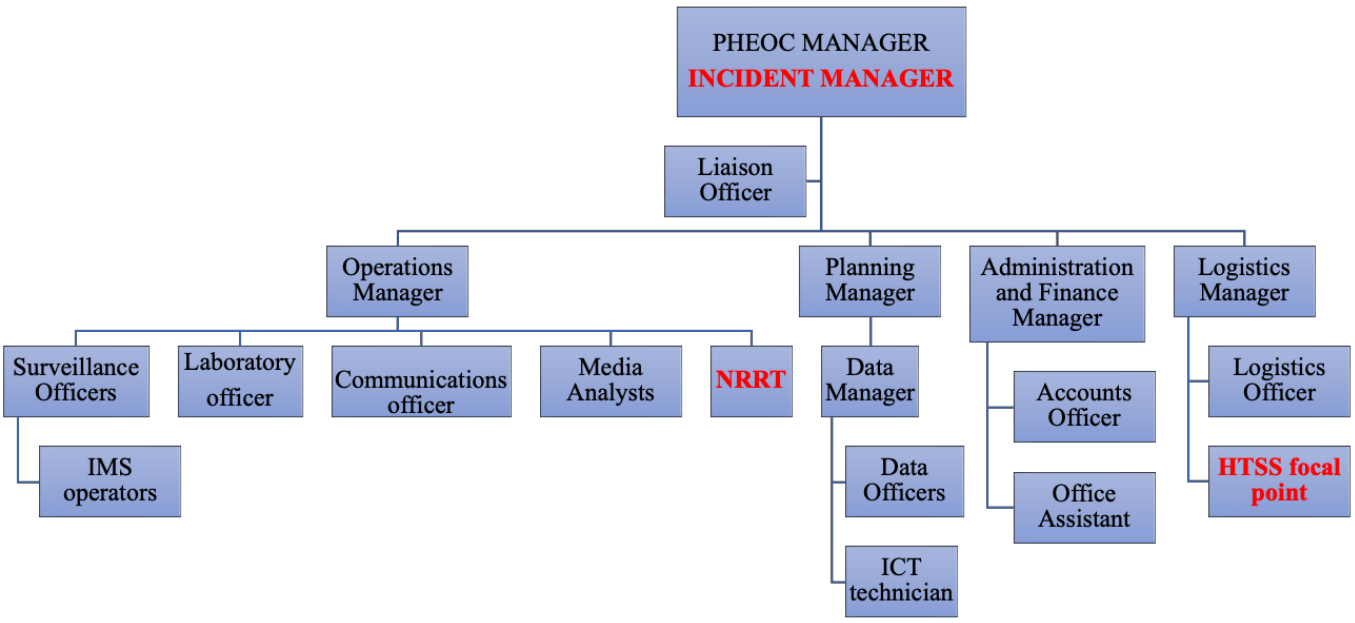



**Figure 9: The Organization structure of Malawi NPHEOC under the routine and emergency modes**

### 1) Management Section

The Management Section sets the response objectives, strategies, and priorities, including public communication and liaising with agencies.

The following members constitute the management section: Incident Manager, the Public Information Officer, Liaison Officer, the Safety and Security Officer and the PHEOC Manager.

**2) Operations**

Provides technical guidance and guides the use of resources to directly respond to the event.

**3) Planning Section**

The Planning Section is responsible for supporting development of the event/incident action planning and budgeting process by tracking resources, collecting, and analysing operational information related to the event such as human resource deployment and status of materials allocation.

It is also responsible for maintaining and securing the Information Technology (IT) infrastructure that hosts applications used by NPHEOC, developing applications as per NPHEOC needs, as well as capacity building for district teams in applications.

The director in the Department of Planning from the MOH will appoint an officer to lead the Planning section in supporting the event/incident action planning and budgeting process by tracking resources, collecting and analysing operational information related to the event such as status of materials deployment.

The section through its digital health division is also responsible for maintaining and securing the Information Technology (IT) infrastructure that host applications used by PHEOC, developing applications as per PHEOC needs as well as capacity building for district teams in the applications.

**4) Logistics Section**

The logistics Section oversees acquiring, tracking, storing, distributing, maintaining, and disposing of material resources required for managing the incident.

**5) Administration and Finance Section**

The Administration and Finance Section manages all financial and administrative tasks including accounting.

## 7.8. Resource Mobilization

The IM and/or NPHEOC Manager will identify the resource requirements for the response. The resource requirements will be documented and submitted for approval to the PHIM director. The PHEOC will be responsible for resource mobilization, monitoring and accountability.

Approved requests for assistance that can be met with available national resources will be channeled to local governmental or non-governmental agencies for action.

The logistics Section will support the IM to maintain a Notification and Resource list to provide a comprehensive listing of agencies and organizations and available resources within the affected areas.

If the scale and scope of the PHE escalates and requires external assistance, DoDMA will coordinate the Public Health Emergency Response.

## 7.9. Emergency fund

Emergency fund is a central pot of money through which funds are released rapidly to disaster response sectors for early action and immediate disaster response. It is a cash reserve that is specifically set aside for unplanned expenses or financial emergencies.

In Malawi, there is a National Disaster Preparedness and Relief Fund which has been established by Act of Parliament for management of funds during emergencies/disasters. The Fund consists of funds received directly from treasury, by way of voluntary contributions, donations from foreign governments, international agencies or foreign institutions.

## 7.10. Linkages with other sectors and agencies

The entities responsible for coordinating public health emergencies within the Ministry of Health is the Public Health Institute of Malawi (PHIM) which also serves as the National IHR Focal Point for Malawi (NFP). Other departments support PHIM in responding to public health emergencies and the ministry works with the local government, where district health offices report to, at the implementation level. The PHIM leads the PHEOC, which consists of members from different sectors and development partners.

The non-health stakeholders are incorporated at all the levels in the various committees described above. The composition of PHEMC at national and district level includes multi-sectoral stakeholders such as police, immigration, MRA, and Education. Additionally, the health component takes the One Health Approach with animal and environmental health stakeholders.

The health cluster level includes all the relevant health partners and the interaction with non-health stakeholders at this level meets at the National Disaster Preparedness and Relief Committee (NDPRC) level with all cluster representatives such as security, social protection, food security and education clusters.

# 8. Information Management

Coordination of information on PHEs is crucial. The NPHEOC serves as a hub for reporting PHEs and coordinating the information. All response-related information is thus available in the NPHEOC.

There are three general types of information that need to be routinely captured, processed, and displayed in a PHEOC:

- **Event specific data:** what, how many, where, who, how quickly and status (e.g., clinical, and epidemiological data).
- **Event management information:** organized for the functional domains in the PHEOC-human and material resources on hand, status of interventions, partner activities, resource deployments, expenditure, progress on achievement of objectives.
- **Context data:** geographic information mapping, population distribution, transportation links, locations of fixed and temporary facilities, availability of clean water, climate, weather, and any other significant contextual information.

## 8.1. Essential elements of information (EEIs)

Essential Elements of Information (EEI) are standards for information that is required for decision-

making in the NPHEOC in a timely manner across all IMS functions. EEIs vary and are determined for each PHE. The level of urgency and the need for action distinguish Critical Information Requirements (CIRs) from the regular EEIs.

EEI include standard data and information items for routine situational awareness. They provide context, contribute to analysis, are included in response situation reports (SITREPs), and facilitate identifying response activities and materials requirements.

For each incident, the following regarding EEI are documented:

- Which incident? E.g., outbreak
- Who generates the incident?
- How are the incident generated? E.g., via phone, email, SMS, social media (e.g., WhatsApp)
- Who receives the incident? E.g., NPHEOC Manager
- What action is taken upon receipt of the incident report? E.g., activate the NPHEOC
- How is the incident status tracked/ stored? E.g., incident tracker (rumour and events logbook) regular updates.
- How is the incident closed? E.g., by whom, and on what conditions/occurrence/ outcome?

## 8.2. Critical information requirements (CIRs)

Critical information requirements (CIRs) are the high priority subset of EEIs. This information needs prompt reporting by the NPHEOC staff to the NPHEOC Manager/Incident Manager and is used to trigger immediate mandatory action.

CIR includes the collection, analysis, and dissemination of relevant information on public health risks, epidemic investigation and response needs assessment, overall health sector response, gaps, and performance.

CIR are vital information to facilitate situational awareness and decision-making regarding:

- All PHEICs in accordance with IHR requirements
- An event that exceeds the threshold defined in the IDSR guidelines
- An unusual or unexpected event reported from a lower level (districts, health facilities or community) or through One Health Surveillance Platform

There are two types of CIRs:

- **Standing CIR:** critical elements on emerging/ evolving events to be monitored by the watch staff during all operational modes of the NPHEOC
- **Response-specific CIR:** detailed and targeted CIR for a specific response

The list of CIRs below has been defined for general outbreak requirements that need prompt reporting by the NPHEOC and are monitored on a regular basis. Some of the CIRs, but not limited to, are:

- Interventions / response actions, including who is doing what, where, when and who are the beneficiaries (whom) (5W)

- Critical resources (Logistics, finances etc.).
- High media reporting coverage on the event
- Retrogressive response of the public to response measures
- Number of new confirmed cases of the condition being responded to.

During activation of the NPHEOC, the NPHEOC Manager in consultation with the IM develops incident specific targeted CIRs to guide information gathering and reporting for the specific event.

## 8.3. Information flow

All information on PHEs systematically flows to the NPHEOC. These include information flowing from community, event sites, health facilities (including treatment centres and points of entry) to district level (district PHEOC) then national level where it is received at the NPHEOC.

NPHEOC Sections are responsible for ensuring that the flow of their respective information related to the response is made available to the NPHEOC instantly.

All communication to the NPHEOC is done using the official NPHEOC email (phimeoc@gov.mw). Any information going out from the NPHEOC is also done through the NPHEOC email. The NPHEOC provides feedback to the district level creating an information loop. The NPHEOC email serves as a central communication repository. The designated staff is mandated to share the information using the email.

Figure 10 below illustrates how information flows to and from the NPHEOC as well as how information is managed in the NPHEOC.

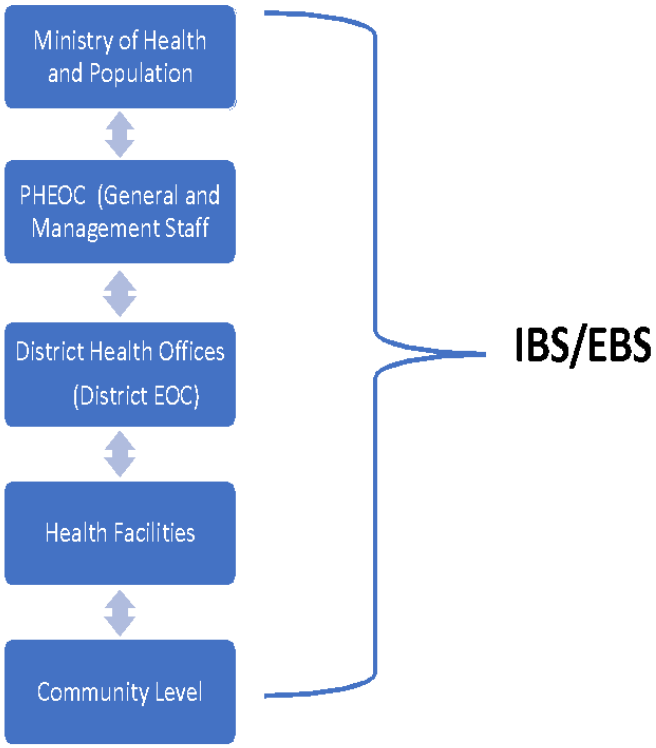



**Figure 10: Information flow among the different level of response to public health event in Malawi**

**Note:** NPHEOC will verify all rumors received directly from the communities through the toll-free lines **(929 or 0887371288).**

## 8.4. Information Triaging

The information triaging flow is presented in Figure 11.

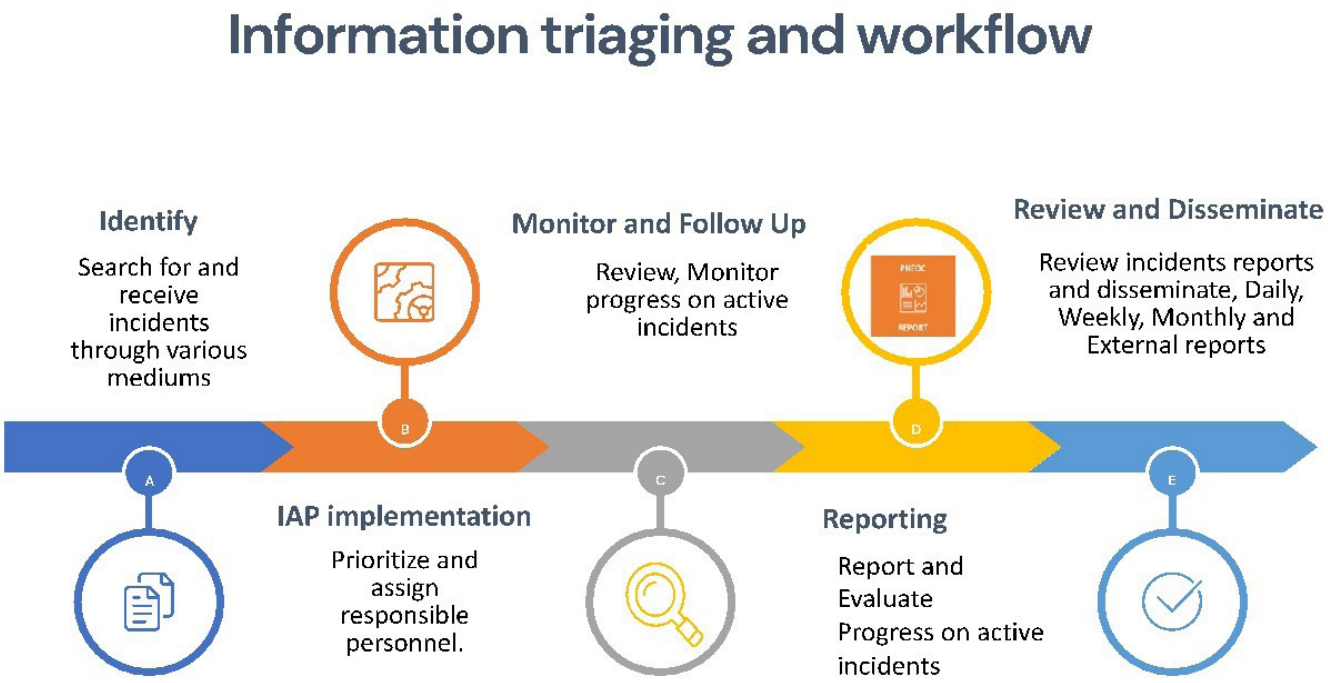



**Figure 11: Information triaging flow at the NPHEOC**

## 8.5. Recording and Documentation

It is crucial that information on the PHE itself, the response activities and actions taken are accurately documented to track and monitor the effectiveness of the interventions. All documents related to a PHE are properly archived in the NPHEOC. The Planning Section is responsible for the documentation. All incidents are recorded into the rumor and event logbook with the source of the incident, the actions taken and the outcome(s).

The information on the response is recorded and uploaded to the NPHEOC server. This includes logging activities, tracking HR deployment, tracking of partner's activities, tasking, scheduling etc.

## 8.6. Analysis and Visualizations

The watch mode staff under the Operation Section regularly analyses epidemiological and related data to generate trends and situation maps to inform incident progress, interventions' impact and decision making.

The Planning Section is responsible for collecting, analysing, and visualizing other operational information such as human resource deployment, status of materials and supplies allocation (what has been allocated, when and where) and 5Ws mapping activities of external partners.

## 8.7. Information products

To support informed decision-making, the NPHEOC produces various information products. The NPHEOC Manager and the IM must approve the information products produced during the watch and response mode respectively.

Table 9 below provides a list of information products with the source of information, frequency of reporting, target audience and the persons/ departments responsible for producing the product.

During an emergency response, the two main information products from NPHEOC are:

- **Situation reports (SITREPs):** is a priority message that provides a summary of the situation (confirmed or verified information and explicit details) to designated decision makers. It gives status updates and is prepared for each defined operational period. It provides a record of the event, analysis, progress towards major goals and objectives, the status of resources, and public risk management messages. SITREPs are prepared by Operations Section staff, approved by the IM, and submitted in electronic form. They should be disseminated widely to the NPHEOC members, all levels of the health system delivery (district, health facilities, etc.), relevant government and private sector agencies and partners, and displayed in the NPHEOC. A SITREP template is provided in Annex 12.

- **Dashboards (status boards):** provide real-time visual updates on much of the same material as SITREPs and are posted prominently in the NPHEOC for all to observe, creating a common operating picture and uniform awareness of the situation. A public version of the dashboard can be made available on PHIM, MOH and DoDMA websites.

**Note:** All managers at each level and across all functions within the response, are responsible for maintaining feedback situational reports on their work section.

**Table 9: Information products of the NPHEOC**

| Information product | Source of information | Frequency of report | Report distribution List | Responsible |
|---|---|---|---|---|
| **Watch or Routine Mode** | | | | |
| Weekly Report | NPHEOC<br>e-IDSR: DHIS-2, OHSP<br>Global situation alert | Weekly | MOH Senior management team, Health Cluster, WHO and other key development partners (Unicef, CDC), local government authorities, other line Ministries EOCs. | **Operations Section** |
| Monthly Report | NPHEOC<br>e-IDSR: DHIS-2, OHSP<br>Global situation alert | Monthly | MOH Senior management team, Health Cluster, WHO and other key development partners (Unicef, CDC), local government authorities, other line Ministries, general public (electronically), EOC com. | **Operations Section** |
| Quarterly Report | NPHEOC<br>e-IDSR: DHIS-2, OHSP<br>Global situation alert | Quarterly | MOH Senior management team, PHEMC, WHO and other key development partners (Unicef, CDC), local government authorities, other line Ministries, general public (electronically), EOC com. | **Operations Section** |
| Annual reports (data and activities) | NPHEOC<br>e-IDSR: DHIS-2, OHSP<br>Global situation alert Activity report | Once a year | MOH Senior management team, PHEMC, WHO and other key development partners (Unicef, CDC), local government authorities, other line ministries and the general public (electronically), EOC com. | **Operations Section** |
| Simulation/ Exercise report | NPHEOC | Following the exercise | MOH Senior management team, local government authorities, PHEMC, WHO and other key development partners and other relevant ministries (Unicef, CDC) | **Operations Section** |
| Guidance or public service announcement | NPHEOC | As need arises | General public | **Communications and Liaison** |

| | | | | |
|---|---|---|---|---|
| **Alert Mode** | | | | |
| Incident report | NPHEOC<br>e-IDSR: DHIS-2, OHSP<br>Field investigation report<br>Rumour and event logbook | Immediately after initial investigation of the unusual incident | MOH Senior management team, Concerned local government authorities, PHEMC, WHO and key development partners (Unicef, CDC, WHO) and the general public | **Operation Section** |
| Situation report (SITREP) | NPHEOC<br>e-IDSR: DHIS-2, OHSP | Daily to weekly | MOH Senior management team, PHEMC, WHO and other key development partners (Unicef, CDC), local government authorities, media, public (electronically), EOC com. | **Operations Section** |
| **Response Mode** | | | | |
| Incident report | NPHEOC<br>e-IDSR: DHIS-2, OHSP<br>Field investigation report<br>Rumour and event logbook summary | Immediately after initial investigation of the unusual incident | MOH Senior management team, Concerned local government authorities, PHEMC, WHO and other key development partners (Unicef, CDC), EOC com. | **Operation Section** |
| Situation report (SITREP) | NPHEOC<br>e-IDSR: DHIS-2, OHSP | Daily to weekly | MOH Senior management team, PHEMC, WHO and other key development partners (Unicef, CDC), local government authorities, media, public (electronically), EOC com. | **Operations Section** |
| Event status dashboards (if created)<br>- NPHEOC version<br>- public version | NPHEOC<br>e-IDSR: DHIS-2, OHSP | Real-time | MOH Senior management team, PHEMC, WHO and other key development partners (Unicef, CDC), local government authorities + media and public for the public version, EOC com. | **Operations Section** |

| | | | | |
|---|---|---|---|---|
| NPHEOC internal feedback report | NPHEOC Sections | Weekly | IM & NPHEOC Manager | **Each NPHEOC section**<br>**Compiledby M&E officer** |
| Regular Response update | NPHEOC<br>Responding pillars and sectors | Daily to weekly | MOH Senior management team, PHEMC, WHO and other key development partners (Unicef, CDC), Responding sectors, EOC com. | **IM/PHEOC Manager** |
| Activity report | Activity | Within a week after each activity | MOH Senior management team, PHEMC, WHO and other key development partners (Unicef, CDC), concerned local government authorities, IM & NPHEOC Manager, activity sponsor, EOC com. | **Operation Section**<br>**Responding sector? M&E** |
| Incident Response Action (IRA) report | Field data | Within 72 hours after each incident response | SMT, PHEMC, Relevant responding sector(s), EOC com. | **Operation Section** |
| After Action review reports | NPHEOC | Once the response is over | MOH Senior management team, key development partners PHEMC, (WHO, Unicef, CDC), concerned local government authorities, activities sponsors, EOC com. | **Planning Section** |
| Media/ communication reports (press statements/ releases…) | NPHEOC | Daily to weekly | General public | **Communications and Liaison** |
| 5Ws report | Stakeholders | Weekly to monthly | MOH Senior management team, PHEMC, key development partners (WHO, UNICEF, CDC), concerned local government authorities, other stakeholders, EOC com. | **Planning Section** |

When an outbreak or a situation has been declared a disaster; the PHEMC committee will transcend into the Health Cluster committee and the EOC committee shall continue to provide feedback to the health cluster.

## 8.8. Emergency Contacts

The NPHEOC has a manned full-time/toll-free (24/7) dedicated call line which will be used as an emergency contact point: 929. The NPHEOC maintains a list of contacts of key stakeholders, including all levels of health services delivery (National, District and Community), relevant government sectors, key staff, and partner organization representatives. In addition, the NPHEOC maintains contacts of all collaborating EOCs including telephone number, email addresses and location.

## 8.9. Partner Mapping and Activity Tracking

In order to:

- gain a clear understanding of the response interventions carried out by partners, as well as their target groups and their locality.
- coordinate all the interventions effectively
- ensure the needs are met without gaps or duplication,
- reach the targets on time,
- report progress against priority needs

It is essential to map and regularly monitor and track the response sectors interventions and achievements.

A matrix generated by the Planning Section of the NPHEOC (the 5Ws matrix) will be regularly (on a regular agreed basis) completed by the partners with the activities they are doing. The 5Ws will be available on a web-based platform.

For each activity, information on Who, What, Where, When and Whom is provided (Annex 10) and the excel sheet is submitted to the NPHEOC on a regular agreed basis, defined by the NPHEOC Manager/IM. The NPHEOC Manager/IM is responsible for ensuring updated information, is maintained in the NPHEOC.

## 8.10. NPHEOC Activities Scheduling

Meeting minutes and attendance are taken for all meetings (regular and ad hoc). The information is regularly shared with NPHEOC committee and displayed in the NPHEOC for situational awareness. The NPHEOC Manager or his/her designee is responsible for updating the information. Records and minutes of all NPHEOC meetings are stored on the NPHEOC Manager file cabinet and desktop saved in the folder and on the NPHEOC server.

# 9. Communication and Coordination

An effective, accurate and timely communication system is crucial during response and the NPHEOC is the platform that facilitates effective communication. The NPHEOC establishes internal and external communication with government, private sector, partners (WHO, Africa CDC, CDC Atlanta among others) and the general public.

## 9.1. NPHEOC Internal Communication

All NPHEOC section heads and all response sectors/pillar leads, are responsible for maintaining

a high level of situational awareness in their section/unit. This entails frequent exchanges of information on progress in achieving objectives, changes in the situation, and the status of material and human resources.

**The communication is in two ways:**

- **Vertical communication** is the primary communication mechanism between members who are on different levels of the NPHEOC. In this case, the communication is between the NPHEOC Manager/Incident manager, the Communications and liaison officer and all sections, across all NPHEOC sections to achieve coordination and unity of effort to enhance efficiency.

- **Horizontal communication** is the standard mechanism for information flow across NPHEOC sections. It allows efficient information sharing, problem solving, collaboration and conflict management. It is commonly used during planning meetings that engages supervisors and staff from all sections and agencies that are contributing to the response.

To establish effective communication within the different NPHEOC sections and the district PHEOCs and improve coordination, the following actions/mechanisms will be put in place during a response:

**a. Response Coordination meetings**

A regular *(frequency to be determined depending on the event)* NPHEOC meeting is held at the NPHEOC conference room or virtually to share situational updates on the event and response coordination efforts. Each NPHEOC section, the IMT, all responding sectors, SMEs, Relevant IHR Focal persons and external partners shall participate in the meeting. Responding sectors will update the larger audience about their response activities and raise any concerns that require decisions or support from the NPHEOC and partners. They will also receive actions from the IM on what to do next. The meeting minutes (see Annex 9) will be compiled and shared with the NPHEOC members immediately after the meeting. Members of the NPHEOC should review the minutes for accuracy, bring a copy of the minutes to the next meeting and take note of their action points and act accordingly. The meeting shall be chaired by the IM or the PHEOC Manager in the absence of the IM.

**b. NPHEOC sections meetings**

Each NPHEOC section should meet regularly (frequency to be determined depending on the event) to coordinate response efforts in their section. Minutes of such meetings will be shared across all sections of IMS in NPHEOC.

**c. Weekly plan and feedback report**

Once a week, each section should submit its weekly schedule of activities to the Incident manager. The Planning Section coordinates and compiles documentation of the actions and monitoring of accomplishments for each section. It then shares the compiled list with each section, so they have situational awareness and common understanding of what the other sections are doing in the response. Each section will provide an update on the previous week's accomplished activities before submitting the new weekly schedule.

**d. Interface among NPHEOC sections**

The NPHEOC Liaison officer is the in charge ensuring liaison between each NPHEOC sections.

### e. Response information repository

Response information is managed in the NPHEOC secured Incident Management System and is accessible from any location. It's a web-based system to provide remote access. Key response personnel have access to the system so that all responders have the same information (common operating picture). It is a repository of all data and information in response to the NPHEOC.

### f. NPHEOC Email

The NPHEOC email (phimeoc@gov.mw) serves as a central mail repository. Any communication coming to and going out from the NPHEOC should be done through this email. All email addresses of the responding sectors will be copied to the main email address for awareness and intervention when required from management.

### g. Communication with the district PHEOCs

The NPHEOC will be regularly updated from the concerned district PHEOCs on the situation and the multi-sectoral and multi-disciplinary response and coordination through for example phone calls, dedicated instant message applications forum, email, meeting. Concerned district PHEOCs will also get feedback/guidance from NPHEOC using the same channels.

### h. Other Internal Communication Mechanisms

The status of coordination at different levels may be included in the SITREP after compilation by NPHEOC strategic communication.

In addition to the SITREP, the NPHEOC regularly prepares a response summary and shares with MOH SMT, the Health Cluster and the NDPRC. This summary can be presented in a form of a power-point presentation or written report. The summary includes a review of the event, actions taken and next steps, issues and challenges that require high-level decision making. However, depending on the urgency of the need, the MOH SMT should be contacted any time of the day and week.

The other forms of internal communication in the NPHEOC are through briefings:

- **Staff orientation briefing -** when new staff are deployed to the NPHEOC, a formal orientation briefing/ induction is conducted by the supervisor.
- **Staff meetings/briefing -** are conducted to update the NPHEOC staff on new information. It is the primary means of communication when a new incident has been reported.
- **Handover briefing -** when staff finishes a period of duty, it is mandatory to brief their replacement. It will be written and at a minimum should provide details of the whole shift. The new team will be briefed by both the outgoing team and the supervisor. Situation reports (SITREPs), rumor logbook and status boards will be used to support the handover briefing. It is expected that the new team shall arrive 30 minutes before start of shift, to allow adequate time for handovers.
- **Debrief/ hot wash meeting -** when an outbreak is finally declared over, the PHEOC Incident Manager will conduct a hot wash to obtain experiences of PHEOC staff during the response. It is also meant to de-role members from the positions they played during the response as they go back to non-response mode. Further, members also brainstorm what went well and what did not go very well in the response continuum.

## 9.2. NPHEOC External Communication

The NPHEOC communicates externally with relevant partners, government, and private sectors as well as the general public.

The IM shall approve the information before it goes out to internal and external stakeholders and the general public.

### a. Internal and External Stakeholders

The NPHEOC communicates with key development partners (WHO, UNICEF, CDC), government, private sectors, Civil Society, and the media by sharing SITREPs. The communications include situation updates, actions taken and areas that need support.

### b. General public

The NPHEOC makes the following public communication through the communications officer:

- Communicate with the public to inform them on the situation, control measures and risks through SITREPs and/or dashboards and/or PHIM and MOH websites and press briefings
- Send out SMS on interventions, when required
- Develop press release to inform the public about the response and the measures to prevent further spread to reduce morbidity and mortality

### c. Public communication plan

Frequent, high-quality, public risk communication is a primary product of the NPHEOC. It is event and context specific. It provides clear information to a variety of audiences, ensuring that individuals and communities are enabled and mobilized to take informed actions to reduce their exposure to risk.

This plan includes the identified key audiences, spokespersons and subject-matter experts and the processes for securing approvals for messages. The plan is tailored to the incident and the context; it identifies the information needs of different audiences and the most effective communication methods.

**Note:** Community engagement in the communication plan is essential. To achieve effective community engagement, it is necessary to pre-identify community leaders on whom residents rely for their information. In addition, timely involvement of the community with the right messages is also important as it assists in avoiding firefighting after communities seek information from unreliable sources.

**Example of communication methods:**

**Situation report** is written status updates on a specific event, for given period, which provide at least:

- epidemiological data
- current response activities and interventions
- public risk management messages.

**Event status dashboard** provides real-time updates on the event situation. It is displayed and updated in real time in the NPHEOC, creating a common picture and uniform awareness of the situation. Some aspects of the Event status dashboard can be made available to the public.

**Press release/statement** is a written essential communication tool which allows to accurately and timely provide information. It can be distributed by press briefings, social and mainstream media, notice boards, email, etc.

**Public service announcement** is a short community-oriented message in a film or audio or visual format designed to raise awareness about an important issue.

# Section V – NPHEOC Monitoring, Evaluation and Performance

## 10. Training and Simulation Exercises

### 10.1. Trainings

The NPHEOC Manager in liaison with section heads develops a training plan and regularly train both NPHEOC permanent and surge staff. These allow development and maintenance of critical set skills, and continuous improvement of NPHEOC functions. During normal time watch mode, the NPHEOC Manager trains its staff and conducts simulation exercises on functionality of the PHEOC.

Some of the considerations while preparing training plan are:

- Types of training to be conducted e.g., CPD, on-job or initial training.
- Persons to be involved in the training (need to be multi-disciplinary / multi-sectoral including response partners).
- Frequency of trainings per year.

### 10.2. Simulation Exercises

Exercises are also a primary training tool. The NPHEOC Manager conducts coordinates simulation exercises to test skills acquired, functionality of plans and procedures and systems. The training plan shall cover types of exercise to be conducted, frequency of exercise per year, persons to be involved in the exercise in a One Health approach (Need to be multi-disciplinary / multi-sectoral including response partners). In addition, the PHEOC manager will also plan on how to build capacity of PHEOC staff from gaps that would be identified during SIMEX.

There are two broad categories of exercise, each with different costs and benefits. The two categories are:

- **Discussion-based exercises,** which are useful for learning and understanding plans and procedures. The common types are **Seminars** and **Table-top exercise (TTX).**
- **Operational exercises,** which are useful for practicing and evaluating response and management procedures. The common types are **Drill, Functional exercise and Full-scale exercise.**

The WHO has developed a manual which provides an overview of the different simulation exercises, tools and guidelines which is available at: https://www.who.int/ihr/publications/WHO-WHE-CPI-2017.10/en/.

The Malawi NPHEOC will use standard procedures from WHO to conduct simulation exercises.

### 10.3. Monitoring and Evaluation (M & E)

Following a simulation exercise or when a real incident is declared over and the NPHEOC is deactivated, performance of the centre must be evaluated by conducting an AAR. This evaluation will consider facility availability, connectivity with the field and other levels of NPHEOC operations,

availability of information, functionality of plans and procedures; coordination mechanisms and linkages with lower and upper levels, including policy recommendations which were made to feed further response to the PHEIC; availability of resources and how it was rationalized to ensure equity. Input will be collected from NPHEOC staff, NPHEOC committee, PHEMC committee/ Health cluster and other incident management staff regarding NPHEOC support to the response.

This process will identify key challenges that the NPHEOC needs to improve to fully support response operation. Results of the evaluation will inform development of a corrective action plan to rectify weaknesses. The NPHEOC Manager will ensure development and implementation of the action plan, and reports to the director on implementation of the plan within timeframe.

The NPHEOC will use the checklist for implementing a NPHEOC of the WHO Framework to track the progress of the NPHEOC core capability against the minimum standards (7).

#### 10.3.1.1. Intra Action Review

In an ideal situation, the management of PHE is 3 months, after which the response plans are reviewed. Intra-action review (IAR) should be conducted six months after a graded emergency persists, a case of protracted emergency.

An intra-action review (IAR) is a country-led, facilitated discussion that allows national and subnational stakeholders of the PHE response to:

1) Reflect on actions being undertaken to prepare for and respond to the outbreak/PHE at the country level in order to identify current best practices, gaps and lessons learned, and

2) Propose corrective actions to improve and strengthen the continued response to the PHE

3) Additionally, IAR findings and recommendations contribute to improving the management of concurrent emergencies and to long-term public health security.

An IAR provides an opportunity to review the functional capacity of the public health and emergency response systems at the national and subnational levels and to identify practical areas that need immediate remediation or can be targeted for sustained improvement of the outbreak response when a PHEIC is extended or prolonged.

The purpose of an IAR is fourfold:

- To provide an opportunity to share experiences and collectively analyse the ongoing in country response to the PHE by identifying challenges and best practices.
- To facilitate consensus building among and the compiling of lessons learned by various stakeholders during the response to improve the current response by sustaining best practices that have had demonstrated success and by preventing recurrent errors.
- To document and apply the lessons learned from the response efforts to date to enable health system strengthening.
- To provide a basis for updating and validating the country's PHE strategic preparedness and response plan and other strategic plans accordingly.

Key findings from IARs should be documented, and they should be shared to inform decision-making and allow for immediate improvement in the response and operational planning for PHE at the national and subnational levels. The report should be ratified by a higher authority who will take responsibility of overseeing the implementation of the recommendations made in the report.

### 10.3.1.2. After Action Review

After Action Review (AAR) is a review of actions taken to respond to a real event as a means of identifying best practices, weaknesses, lessons learnt and gaps in capacity after the outbreak is declared over. At least, it should address the following key issues:

- What was in place before the response?
- What happened during the response?
- What went well? What went less well?
- Enabling and limiting factors for doing well and for doing less well
- What can we do to improve next time?
- Way forward

The key objectives of AAR are but not limited to:

- Demonstrate the functional capacity of existing systems to prevent, detect, report and respond to a public health event.
- Identify lessons and develop practical, actionable steps for improving existing preparedness and response systems.
- Share lessons learnt from the review with other public health professionals at both national and international level.
- Provide evidence for the development of Informs the After-Action Review report for the development of National Action Plan for Health Security (NAPHS) and contribute to other evaluations such as the Joint External Evaluation or simulation exercises.

The AAR of the emergency response shall be conducted within two weeks (up to three months) once the emergency response is declared over. A hot wash debrief will be given to all personnel involved in the response by IM during or soon after declaration. This can be built into the end of mission debrief of the response.

An after-action review report will be produced for each response or simulation exercise. Findings of the review will be documented in the NPHEOC and used to update the NPHEOC Handbook, NAPHS, Multi Hazard Response plan, protocols, and procedures to strengthen emergency preparedness and response capacity for future response.

At the end of every AAR, an action plan is developed, and the activities are prioritized for implementation with clear timelines to address the identified gaps.

In order to build capacity, PHIM will make a formal request to the Africa CDC and WHO-AFRO for support to conduct the AAR. The health sector AAR is led and coordinated by PHIM from national level down to the district level depending on the degree of the emergency, in collaboration with partners and other stakeholders. It also needs to be linked with humanitarian coordination mechanisms as well as with pre-existing multi-disciplinary and multisector coordination and development partners – One Health approach.

## 10.4. Redundancy Plan / Continuity of Operation Plan (COOP)

### Physical security

A PHEOC processes large amounts of information that is often sensitive, frequently on open displays. On-site provisions are required to ensure protection and security of the facility, resources and personnel from routine hazards and possible attack. These may entail measures such as closed-circuit television, camera surveillance systems, perimeter protection, and/or access/entry controls.

Emergency exit doors and adequate signage is placed on the floor. There are fire alarms, first aid kits, and fire extinguishers throughout the facility.

### Data security

In order to maintain security of the NPHEOC data and systems that process and store data and information, routine use of encryption; password protection; up-to-date antivirus software; and redundancy of data (and, to some extent, redundancy of hardware) to support rapid service recovery in the event of a security breach are used. All electronic linkages are encrypted, and password protected, and computer networks are protected from external threats, including network attacks, power surges and outages.

To avoid loss of data following failure of ICT systems, a backup system is in place at the PHIM server room, and this will automatically take over when the main IT system fails, and login audits must be conducted routinely (see above: Information and communication technology infrastructure).

### Communications system backup

Technologies that support telecommunications, data analysis, event information management and visualization of operational information can be prone to failures. Consequently, the information that the systems contain requires frequent, routine backup to mitigate the potential impact of a technological failure resulting in loss of data. In the event of communication breakdown, the backup communication system will enable continuity of operations. This will include internet connectivity, phones, radio etc.

### Power backup

In the event of power interruption, the NPHEOC have a power generator and solar system as power back-up solutions that can be used 24/7.

### Backup/Alternative facility

In case of any event that would make the PHEOC facility inaccessible, the old/previous facility will be quickly set up for the continuity of EOC activities virtually and physically. In case of interruption of services, operations will take place from DODMA EOC if responding to an outbreak. But if responding to a disaster, then KUHES Lilongwe campus will allocate space for the purpose.

### Virtual Infrastructure

The NPHEOC in Malawi operates with both a physical and virtual infrastructure. The virtual NPHEOC facilitates communication and meetings with more flexibility and efficiency. Development, deployment, and maintenance of the virtual infrastructure is handled at the national level by the IT personnel and the Digital Health Division.

The infrastructure needed to facilitate the virtual NPHEOC will be highlighted in the Information and communication technology infrastructure section below.

# Section VI – Standard Operating Procedures

## 11.1 PHEOC Surge staff / Service corps

### a) Introduction

#### i. Background

It is important for the PHEOC to identify possible surge/ service corps to support the functions of the PHEOC in case of a surge. Thus, the PHEOC should have MoUs with relevant public health staff resource both internally and externally and maintain a list of candidates who could be deployed to the PHEOC at a short notice. During the response, selection of surge personnel depends on the nature, the magnitude and the needs for a specific public health event/emergency (PHE). Depending on the PHE, different health resources and expertise may be required.

#### ii. Purpose

The purpose of this SOP is to provide standard for selection, engagement and deployment for additional personnel for response. Successful PHE response is directly dependent, among others, on expertise, competence, developed skills and attitudes of the personnel taking part in response.

#### iii. Scope

The SOP will be used by the PHEOC, the MOH and partners to identify and assemble relevant surge staff to support response.

#### iv. Responsibility

The Human Resource Unit of the NPHEOC is responsible for implementation of this SOP.

### b) Procedures

- The NPHEOC will maintain and update on a regular basis a roster of relevant and varied multi-disciplinary and multi-sectoral skilled experts who could be mobilized to staff the NPHEOC when necessary
- Upon activation of the NPHEOC, the NPHEOC manager will do an analysis to quantify the human resource and identify the experts required in terms of skills and expertise and advice the Secretary for Health through the Director of PHIM on the human resource requirement.
- The surge staff will be mobilized and oriented on the PHE and their expected roles and then deployed.
- The Human Resource Unit of the NPHEOC will regularly review the performance and the number of surge staff based on the evolution of the PHE
- The Secretary for Health is responsible for Memorandum of Understanding between MOH and other agencies, partners that provide surge staff/ service corps.

## 11.2 Activation & Deactivation of PHEOC

### a) Introduction

### i. Background

The watch staff in the NPHEOC routinely monitor events of public health concern. When an incident of public health concern, that meets criteria, is reported and requires a health response, the NPHEOC is activated to coordinate the response. When the response is declared over, the NPHEOC will be deactivated and return to routine monitoring.

### ii. Purpose

The purpose of this SOP is to provide guidance for the activation and deactivation of the NPHEOC.

### iii. Scope

The SOP will be used by the Secretary for Health and the PHEOC teams.

### iv. Responsibility

The NPHEOC manager is responsible for the implementation of this procedure.

### b) Procedures

### i. Activation

Whenever one or more of the following conditions exist, the NPHEOC Manager should advise the Director of PHIM who will advise the Secretary for Health in writing to activate the PHEOC:(Consider the two scenarios where a public health emergency escalates to disaster and also straight away declared a disaster) roles of the NDPRC and the policy group.

- Any confirmed case with high epidemic potential or outbreak of diseases under eradication.
- Detection of a potential or confirmation of a Public Health Emergency of International Concern (PHEIC) or reportable incident under IHR 2005.
- An epidemic of national concern (affecting multiple districts)
- A large-scale disease outbreak of initially unknown etiology
- Uncertain conditions posing a significant potential threat to people, property and/or the environment
- National disaster or public health emergency declared by the responsible authority
- Newly emerging or re-emerging disease with high spread potential
- Infectious incident (s) with high potential of cross border spread or involving neighboring countries
- Whenever there are mass returnees from epidemic affected countries
- Natural and man-made disaster with potential significant public health impact

- Bioterrorism, chemical spill, and radiological incidents
- Upon direction of the Minister or Secretary for Health
- If similar incidents or events in the past required NPHEOC activation

During activation, the NPHEOC supports the response by:

- Providing a physical and virtual coordination space
- Providing communications capabilities
- Coordinating resource allocation and tracking
- Coordinating information collection, analysis, interpretation, and dissemination
- Availing existing emergency management documents: established protocols, Guidelines and SOPs

The Secretary for Health will then take the following steps:

- Assemble an Incidence Management Team with clear Terms of Reference to coordinate response.
- Deploy an Incidence Manager from the pre-enlisted list, who shall:
    - Be responsible for the overall management of the PHE in collaboration with the NPHEOC Manager
    - Set the response objectives, strategies, and priorities of the PHE with other Section Managers and the NPHEOC staff
    - Provide continuous updates about the response activities to the NPHEOC committee
    - Evaluate stocks of supplies for the response and ensure backups are brought in good time to prevent stock outs
    - Provide regular updates to the PHEMC/ Health cluster committee.
    - Submit policy recommendations to policy maker on how to further the response
    - Makes recommendations to deactivate the PHEOC when criteria to deactivate has been met.

**ii. Deactivation**

When the emergency has progressed to the point that high-level coordination is no longer required and operation can return to routine, the NPHEOC is deactivated by the order of the Secretary for Health or delegate on recommendation from the IM when the following conditions are met:

- The scope / scale of the incident has reduced, and requirements can be managed without NPHEOC capabilities and resources
- Resources that were deployed on the ground to support the response are no longer required

- The Epidemic curve of confirmed cases has peaked and shows continuous deceleration for an extended timeframe (to be determined depending on the event)
- No evidence of sustained or efficient human (or animal) to human transmission for a predetermined time frame (to be determined depending on the event)
- Incident action plan objectives have been satisfied
- Cases are having no or minimal impacts to national, social, business, or economic affairs and the condition has been integrated into the routine monitoring mechanisms
- Coordination of response activities is no longer required
- The incident or public health emergency has been declared over by the Secretary for Health on recommendation of the IM.

Once it is decided to deactivate, notification will be sent via email from the Secretary for Health or delegate from PHIM to notify the Health and Social services Committee, relevant directorates within MOH staff, line ministries, relevant government sectors and authorities, District Health Offices, and key partners.

The following activities should be carried out to effect deactivation. The Incidence Manager will:

- Notify appropriate agencies regarding the individual sites where the public health emergency is being deactivated
- Develop and disseminate the deactivation plan
- Monitor the deactivation process
- Ensure that all forms, reports, and documents from each section are completed and submitted to the Planning Section
- Make recommendations regarding the timing and sequence of demobilization of all resources used in the response to the NPHEOC manager
- Authorize the deactivation of IMS resources
- Transfer of authorities/responsibilities/missions to the relevant authorities
- Fold and repack re-usable maps, charts, materials
- Collect items that have been deployed in the field for future response use
- Make a list of all supplies that need replacement and forward to the Logistics Section manager
- Generate the deactivation report
- Ensure open action items that are to be addressed by the agency are completed or will be addressed after deactivation
- Conduct a de-brief/ hot wash for PHEOC staff and committee members
- Conduct the after-action review meeting

- Submit the AAR report for approval
- Handover to the NPHEOC manager
- Return identification credentials to the NPHEOC Manager

## 11.3 Information Management

### a) Introduction

#### i. Background

The information management system includes data and information reception, recording, documentation, analysis, generation of different information products, displaying and sharing of information.

#### ii. Purpose

The purpose of the SOP is to ensure that there is an effective information management system which enables enhanced early detection and response to Public Health Events (PHEs).

#### iii. Scope

Data will be collected from all the levels in Malawi health system (Community, Health facility, district, zone and national level) and processed at the National level and disseminated to health care levels and stakeholders. Real time information will also be gathered through media monitoring (Local and International TV channels) and social media.

### b) Procedures

- At the occurrence of a PHE, a citizen or a health worker that witnesses the event or is notified reports to NPHEOC through the NPHEOC toll-free number (929) or to a district EOC, who communicates the information to the NPHEOC Manager through a phone call.
- events from mass media or social media of the occurrence of a PHE and advise from mass media or social media about the occurrence of a PHE and advise the source of information not to share unconfirmed information about the incident but to refer to t the incident but to refer all enquiries to the NPHEOC and DPHEOC for advice.
- The event is captured in the NPHEOC and DPHEOC reporting system.
- The NPHEOC information system will generate a basic analysis of the event.
- NPHEOC watch staff will gather further in-depth information from the source and follow it with the district PHEOC to verify and give feedback. Where necessary, the DRRT will be dispatched to analyse the situation, take samples, and/or transport victims to the health facility.
- Event analysis will be presented to the Operation Section lead, which will determine the severity of the incidence and determine communication urgency to the NPHEOC manager. Reporting will be in the form of an incident report.
- Upon confirmation through laboratory analysis by the Public Health Institute Laboratory that the PHE is infectious and serious, the following measures should be taken.

- the laboratory informs the NPHEOC and other levels on the results using the laboratory information sharing SOPs
- the NPHEOC manager informs health workers handling the event via email and text message or phone call on the investigation results

- Informs the Secretary for Health through the PHIM Director
- For purpose of official communication and in compliance with the IHR 2005 of the event, the NPHEOC Manager informs the IHR-NFP to notify WHO within 24 hours of confirmation of the event using the decision instrument
- The NPHEOC Communications and liaison officer will develop communication release to be shared with the public. This will be done based on the information needs.

## 11.4 NPHEOC weekly reports

### a) Introduction

#### i. Background

The watch staff on duty at the PHEOC should generate reports summarizing their activities for each week.

#### ii. Purpose

This SOP describes the procedures to be followed for development and dissemination of the PHEOC daily report by the watch staff on duty at the NPHEOC on a weekly basis.

#### iii. Scope

This SOP applies to all permanent and temporary watch staff assigned in the NPHEOC.

#### iv. Responsibility

The NPHEOC Manager is responsible for ensuring that the designated personnel are sufficiently trained to competently perform this as prescribed. All permanent and temporary staff assigned to the NPHEOC are responsible for compliance with this SOP.

### b) Procedures

- The NPHEOC watch staff on duty gather information on potential and confirmed public health incidents throughout the week by review and surveillance of various information sources (PHIM disease surveillance and information systems, social media, TV news, newspaper, radio, calls through the toll-free line). Before capturing the report, the watch staff counter checks the tabular report to make sure that it has not been captured in the emergency reporting system.
- The daily report includes information about:
  - Incidents and updates that occurred locally, regionally and globally in the course of the week from all varied available sources
  - Call data from the NPHEOC toll free line
  - Field deployments

- Other PHEOC activities

- The watch staff on duty compile the first draft of the report
- Sources of information include:
  - PHIM disease surveillance and information systems
  - Reports from the public, Districts IDSR focal point, DFP and the media reports (i.e., e-mails and phone calls regarding emerging events and incidents of significant importance that are either new or have increased public health impact).
  - Daily survey of media information
  - Weekly SITREPs
  - Minutes of the National Task Force meetings task force for what?
  - Other disease surveillance or outbreak reports
- The first draft of the daily report is sent to the operations lead for review and additional comment. The original report is contained in the NPHEOC Alert Reporting System whilst the summary daily and weekly report is shared with NPHEOC Manager and the entire rapid response teams within NPHEOC.
- The team will then circulate the weekly report internally, with NPHEOC manager and members of the rapid response teams at the end of the week respectively via email and any other dedicated platform (e.g., WhatsApp).
- The NPHEOC Manager to share the report with the MOH Senior management team, NPHEMC, Africa CDC, WHO and other key development partners (Unicef, CDC), local government authorities, other line Ministries at the end of the week via email.

## 11.5 NPHEOC Weekly Situation Report (SITREP)

### a) Introduction

### i. Background

The weekly epidemiological situation report (SITREP) captures information regarding confirmed disease outbreaks or public health emergency (PHE) in the country as well as reported health alerts, public health incidents and the actions taken.

The information is provided in the narrative form and, epidemic curves and tables or figures for each disease outbreak in three primary sections: (i) Highlights, (ii) Overview of the disease outbreak/disease outbreak status, and (iii) Summary of Prevention and Response Activities.

Sharing information with key response stakeholders and partners supports situational awareness and decision-making at all levels of emergency management. Timely communication of incident information, including impact to the public health and medical system, current and anticipated resource needs, and the capacity to respond are essential to developing a common operating picture and planning the response.

### ii. Purpose

This SOP describes the procedures to be followed for development and dissemination of the weekly epidemiological situation report.

### iii. Scope

This SOP is applicable in the management and dissemination of disease outbreak/PHE information that is collected on a weekly basis from districts with confirmed disease outbreaks/PHEs and shared to the relevant stakeholders for public health action every Tuesday afternoon. The weekly SITREP shall be the primary means of information sharing with stakeholders in order to develop a common picture for effective coordination of response activities.

### iv. Responsibility

The Incident manager through the Operations Section Chief is responsible for compliance with this SOP.

### b) Procedures

- The Operation Section downloads cases information on One Health Surveillance Platform or collects case lists / line list in MS Excel format from all districts every Monday at 10:00am via email or any other dedicated channel (e.g., WhatsApp, SMS).
- The Operation Section then compile the case lists based by disease.
- The Operation Section Chief and the Operation Section Team then analyze each by time, place and person (descriptive epidemiology).
- The Operation Section then prepare the first draft of the weekly SITREP to include additional information from the weekly watcher's reports.
- The Operation Section Chief shares the first draft with the editorial team for review every Monday by end of business.
- The editorial team shares feedback with the Operation Section Chief every Tuesday by 10:00am who incorporates the feedback and finalizes the weekly SITREP by 12:00pm
- The Operation Section Chief then shares the final weekly SITREP with the Incident Manager for approval by 3:00pm.
- The Incident Manager sends out the weekly disease SITREP every Tuesday by 5pm to relevant stakeholders, namely: MOH Senior management team, Africa CDC, WHO and other key development partners (Unicef, CDC), local government authorities, media, public (electronically) via email and any other dedicated platform (e.g., WhatsApp).

## 11.6 Management of Hotline Information

### a) Introduction

### i. Background

The PHEOC has a toll-free hotline (929) for enhancing event-based surveillance.

### ii. Purpose

This SOP describes the specific procedures to be followed in managing the information received from the hotlines

### iii. Scope

The NPHEOC hotline is used from any part of the country and report events that affect humans, animals or the environment.

### iv. Responsibility

The watch staff on duty manning the hotline shall ensure that information is well captured as per category logs and in correct format as per the weekly report template in the NPHEOC Alert Reporting System. In addition, the watch staff is expected to indicate the status of follow up information whether rumour or confirmed and determine the significance of the event and indicate as per the NPHEOC system.

### b) Procedures

- Once information is received from the calls, the watch staff shall log the information in the NPHEOC Alert Reporting System.
- The watch staff who received and entered the information into the NPHEOC Alert Reporting System will then verify the information by calling the DPHEOC.
- In the event of significant finding, the watch staff shall inform the NPHEOC Manager through Operations lead via phone call and email.
- The NPHEOC manager, based on the nature of event and its importance shall then escalate it to the senior management. Where necessary the national RRT may be dispatched to verify the situation and support the district accordingly.

### c) Steps for conducting Hotline EBS

### 1. Signal detection

Detecting a signal means identifying or suspecting the occurrence of one of the pre-determined signals designated by EBS committee. Signals that are captured from hotlines and correspond to the pre-defined list of signals, should be registered in Event Management System (EMS). Signal information for hotline can be received through telephone calls, text messaging and in-person reports.

### i. Calls

- Start by greeting and thanking the caller for being proactive to report to the hotline, concerning potential public health events.

  *E.g., Welcome to the Public Health Emergency Call Center. My name is [INSERT CALL NAME]. How can I help you?"*

- Obtain the name of the caller, and where they are calling from.
- Allow the caller to introduce the report (the call may be recorded where possible)

- Engage the caller, and follow a prepared set of questions that directly reflect the questions posed in the signal logbook. A signal registration should include enquiries for the following data set for tracking the signals:
    - Date and Time of signal/ event
    - Place of occurrence (geographical area) – where it starts and spread
    - Nature of event (description)
    - Magnitude of event – who is affected (number of cases and/or deaths)
    - Date and time of the call/detection
    - Date of reporting the event to the next level
    - Source for event identification; informant: Name, contact phone
- Briefly summarize what has been accomplished on the call (The set of people involved (children, adults, male or females) or animals must be documented. Place of event and time noticed must be clearly documented)
- Let the caller know what happens next (and include a timescale).
- Ask the caller if there is anything else they wish to report or add to the report
- End by thanking the caller for their time, patience and pro-activity.
- Return the call as soon as possible in situations where a call is interrupted or disconnected or if calls are received while the responder is busy; this will ensure that all signals are collected
- There may be an automated response (BOT1), if calls are received while the responder is busy. The automated message should tell the caller to leave the message, or that the responder is busy, and the call will be returned immediately.
- Record the message for future reference (where possible)

**ii. Messaging**

- Once an SMS or a social media message (direct message) is received, an instant automated message is sent to greet the sender, thanking them and stating that an operator will contact them.
- **Note:** Automated questions (BOTs[4]) or responders can collect information from the sender.
- Hotline operator registers in the signal logbook according to the pre-defined list of signals for the country.
- Collect information about the sender for further communication and details about the signals reported. A direct call to the sender may be needed if more information is required.

[4] BOT, is a software application that runs automated tasks (scripts) over the Internet/communication channel

## 2. Triaging

The objective of triaging raw information is to minimize analysis of duplicate or irrelevant signals and limit unnecessary verification of irrelevant signals, as well as to ensure that genuine events will elicit an effective response.

Triage of raw EBS information can be divided into two steps: **filtering** and **selection.**

i. **Filter** the information to screen out duplicates (the same event reported by the same source) and information that is not relevant for EWAR.

   Identify and discard the information which is not relevant or does not relate to EWAR (information that matches the criteria for public health events but is irrelevant for early warning, such as a generic review of a disease).

ii. **Select** the information according to national prioritized list of EBS signals, and the information that is not relevant for early warning (for example, reports related to a non-prioritized mild disease or an increase in disease cases that is consistent with known trends and seasonal variations) is discarded

   From the above assessment, if the Operations Lead finds that the signal may pose a public health threat, then proceed to subject the signal for verification.

## 3. Verification

Verification is an essential step in confirming the authenticity and characteristics of the signal. Verification should be done at the local level nearest to the location of the signal. The following are the steps for verification:

- Hotline operator will contact the Integrated Disease Surveillance Focal Person/IHR focal point at the district level for verification and notifies the National Integrated Disease Surveillance Focal Person/ IHR focal point for awareness purposes.
- The Integrated Disease Surveillance Focal Person proceeds to verify using the verification tool.

**Table 10: Signal Verification for Hotline EBS**

| Discard | Confirm as Event |
|---|---|
| • Report is a hoax or a false rumour<br>• Information has been reported by an unreliable source<br>• Report does not meet pre-defined signals | • Information is accurate and true<br>• Report meets one or more pre-defined signals<br>• Information has been reported by a credible source(s) (e.g., Community Health Worker, health facility focal point, or key informants) |

**Examples**

| Discard, if | Confirm as an event if |
|---|---|
| Signal: Two or more persons presenting with similar severe illnesses in the same setting (e.g., household, workplace, school, street) within one week | |
| • There is only one person presenting with illness<br>• The persons present with dissimilar signs and symptoms<br>• There is no temporal association, and >1 week separates the patients' illness<br>• The persons presenting with similar symptoms reside in different settings that are physically well-separated | • There are two or more persons presenting with similar signs and symptoms who live or work in the same setting<br>• The ill persons had an opportunity for exposure or close contact with one another<br>• The persons' illness requires hospitalization<br>• One or more persons has died<br>• There is a common source of exposure |
| Signal: Unexpected large number of deaths of poultry, livestock, other domestic animals or wildlife | |
| • The number of animal deaths is what is normally expected<br>• There is a reasonable explanation for the animal deaths | • The number of animal deaths is not what is usually expected<br>• There are multiple clusters/groups of animal deaths<br>• There is no explanation for the animal deaths |
| Signal: Severe illness of a healthcare worker after exposure to patients with similar symptoms | |
| • The ill healthcare worker did not have exposure to patients with similar symptoms<br>• The healthcare worker's illness does not require hospitalization<br>• The healthcare worker did not have exposure to patients | • The ill healthcare worker had exposure to patients with similar symptoms<br>• There are multiple clusters/groups of severely ill healthcare workers with exposure to patients with similar symptoms<br>• The healthcare workers' illness requires hospitalization<br>• One or more patients have died<br>• One or more healthcare workers have died |

| Signal: One or more hospitalized patients with unexplained severe illness, including failure to respond to standard treatment | |
|---|---|
| • The patient is not severely ill (i.e., does not require hospitalization)<br>• There is a reasonable explanation for the patient's illness<br>• The patient is responding to standard treatment | • The patient is severely ill (i.e., requires hospitalization)<br>• There are multiple clusters/groups of severely ill patients and/or deaths with similar symptoms<br>• There is no explanation for the patient's illness<br>• The patient is not responding to standard treatment<br>• One or more patients have died |

- If the signal is true, it becomes an event and if not true discard, and record accordingly in the relevant tool (Annex 1).
- Report immediately to higher level (e.g., National) and proceed to conduct risk assessment
- Provide feedback to the reporting party

**4. Risk assessment and characterization**

Risk Assessment is systematic process for gathering, assessing, and documenting information to assign a level of risk of an event to human health. Risk assessment is conducted as part of an investigation of an event. This should take place within 48 hours of the detection of one or more signals. It is conducted by the district and/or national levels depending on capacity, after receiving the report of an event.

**Key steps for conducting rapid risk assessment:**

1. The IDSR focal person at District level convenes the PHERRT to determine the extent and magnitude of the event.
2. The team then conducts rapid risk assessment by considering the following factors:
   a. The nature and magnitude of the suspected/confirmed hazard.
   b. The extent of exposure of members of the community.
   c. The context of the event: social, political, economic, population immunity.
   d. Likelihood of occurrence of the event.
3. Determine the risk level using risk assessment algorithm provided in (Figure 11). At the end of the assessment, the risk of the event is chracterized to indicate whether it is: low, moderate, high, or very high.

4. Recommend public health response based on rapid risk assessment findings.

5. Provide feedback to the reporting party

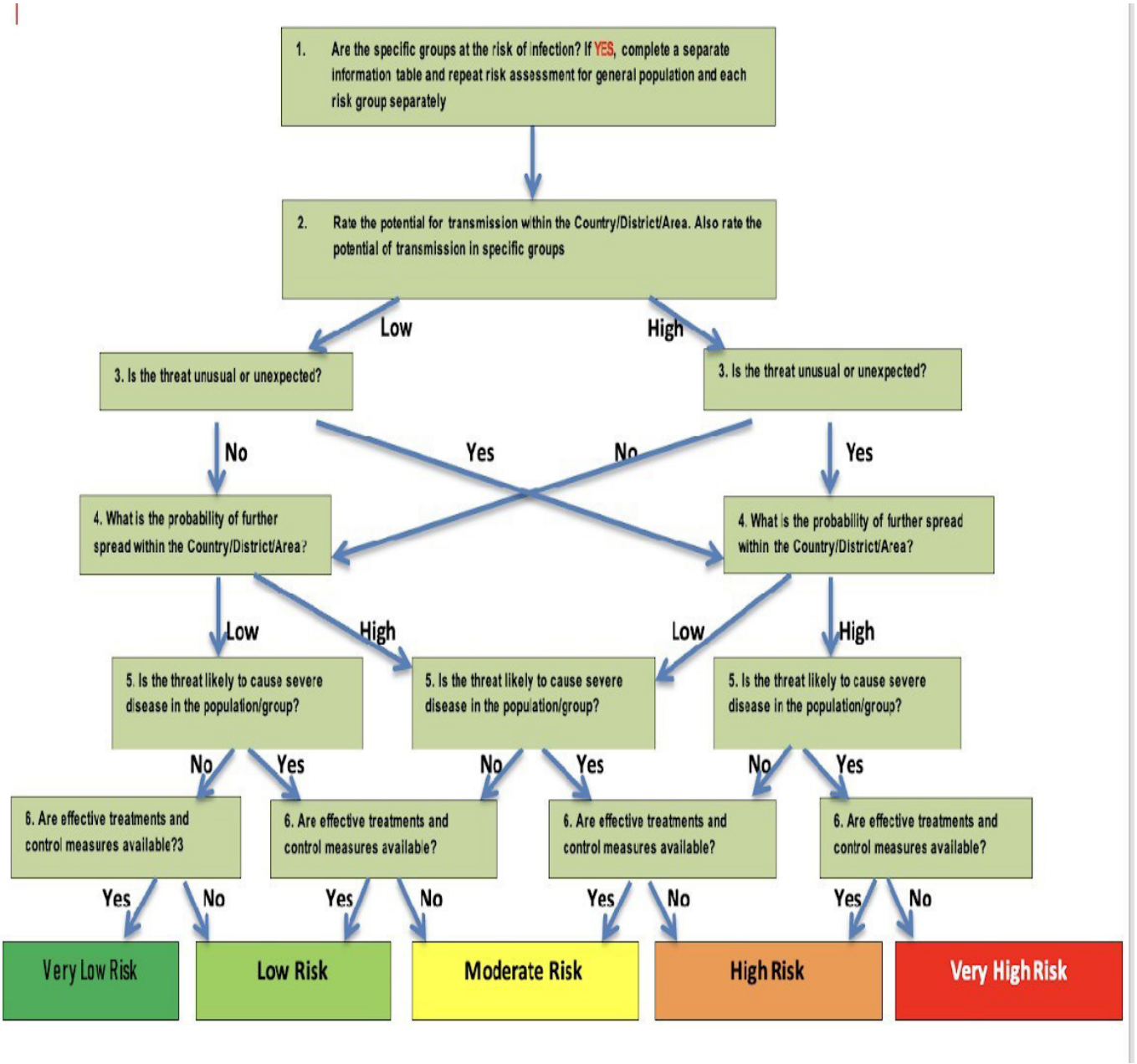



**Figure 12: Rapid Risk Assessment Algorithm for Public Health Threats**

**Note:** At the end of the assessment, the risk of the event is characterized to indicate whether it is: **Low, Moderate, High, or Very high.**

**Table 11: Risk Characterization Matrix**

| Risk Assessment | Consequences | What to Do |
|---|---|---|
| **Very LOW** | No impact for a small population or at-risk group; agent has no potential to cause morbidity/mortality No disruption to normal activities and services<br><br>A small number of additional control measures will be needed that require no resources<br><br>No costs for authorities and stakeholders. | **Stop assessment and continue monitoring** |
| **Low** | Minor impact for a small population or at-risk group; agent has low potential to cause morbidity/mortality Limited disruption to normal activities and services A small number of additional control measures will be needed that require minimal resources<br><br>Low increase in costs for authorities and stakeholders. | Continue to monitor; repeat risk assessment if situation changes |
| **Moderate** | Moderate impact as a large population or at-risk group is affected; agent has moderate potential to cause morbidity/ mortality<br><br>Moderate disruption to normal activities and services Some additional control measures will be needed and some of these require resources to implement Moderate increase in costs for authorities and stakeholders | Discuss with affected health facilities and relevant communities about needs |
| **High** | Major impact for a small population or at-risk group; agent has potential to be highly pathogenic, highly transmittable, or has significant potential to disrupt travel/trade<br><br>Major disruption to normal activities and services<br><br>A large number of additional control measures will be needed and some of these require significant resources to implement<br><br>Significant increase in costs for authorities and stakeholders | Consider deployment (as requested) in consultation with affected health centre and relevant communities. |
| **Very High** | Severe impact for a large population or at-risk group; agent is highly pathogenic, highly transmittable, new or emerging, or has significant potential to disrupt travel/trade<br><br>Severe disruption to normal activities and services A large number of additional control measures will be needed and most of these require significant resources to implement<br><br>Serious increase in costs for authorities and stakeholders | Consider deployment and need for National support |

### 5. Reporting

A comprehensive report of all above steps and findings has to be documented and of various steps of EBS process including detection, triaging, verification and risk assessment.

The reporting can be in form of:

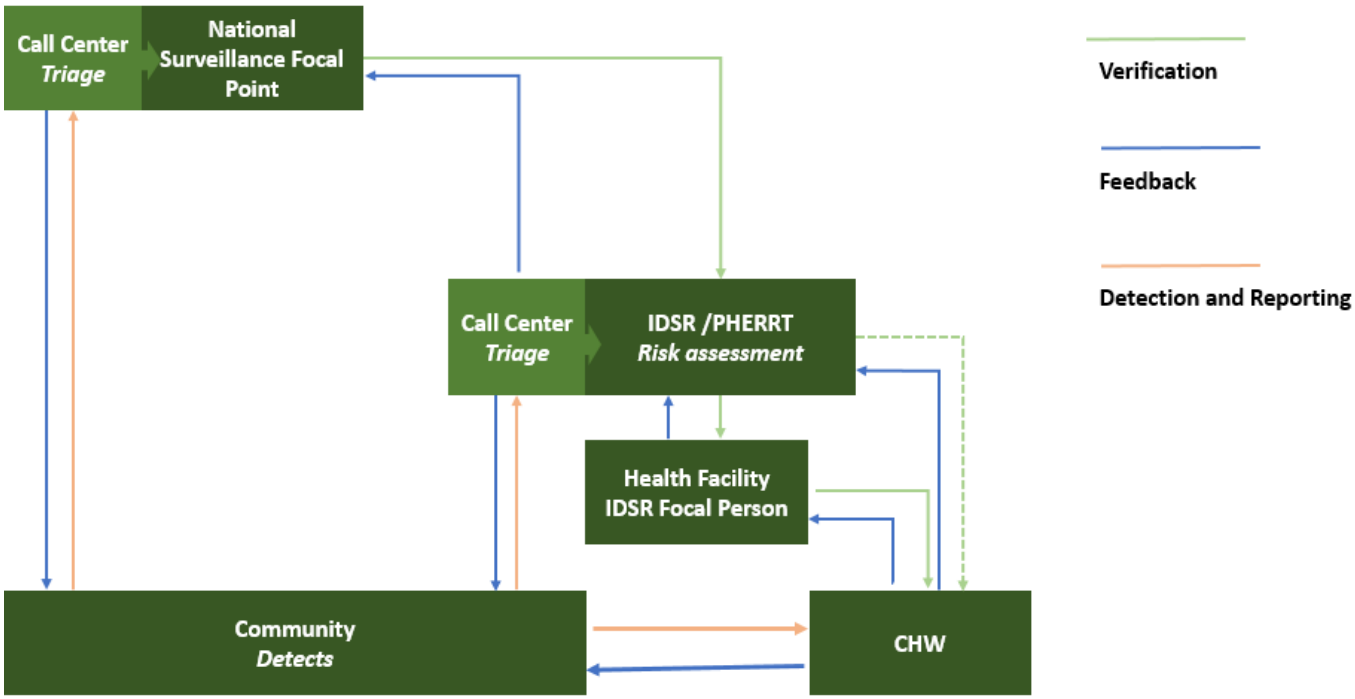
i. **Spot Report (SPOTREP):** case specific briefs that should be shared as soon as a new case is detected.

ii. **Hotline log reports:** describes the effectiveness of the response.

**Table 12: Reporting formats for Hotline EBS**

| Spot Report (SPOTREP) | Hotline Log report |
|---|---|
| a) SPOTREP number | a) Title |
| b) Date and time | b) Number of log report |
| c) Incident title or name | c) Date |
| d) Information source | d) Executive Summary or Highlights |
| e) Narrative | e) Background |
| f) Actions taken | f) Update of: |
| g) Submitters name/contacts | i. Number of Events recorded |
| h) Submitter's duty station | 1) Types of events/incidents recorded |
| | 2) Demographic distribution |
| | 3) Maps |
| | ii. Status of events |
| | iii. Constraints, challenges, priority needed |

## HOTLINE EBS WORKFLOW



## Annex 1: Alerts and Incident Report Template

**ALERT/INCIDENT REPORT**

**TO:**

**THROUGH:**

**FROM:**

**SUBJECT:**

**DATE:**

---

There was/were <##> **new incident/s** of **health emergency** monitored at the **National Public Health Emergency Operation Centre** from **6:00 am** of <starting date> to **6:00 am** of <ending date>:

| No | New Incident | Brief Description | Health Effects | Actions Taken |
|---|---|---|---|---|
| 1 | <Title: What and Where of the Incident> | <Nature of emergency, Time, Exact location, How the incident started> | <No. of deaths, ill, injured> | <Agency, actions> |
| 2 | | | | |
| 3 | | | | |

**NPHEOC** is continuously coordinating with the **districts** to gather updates on previously reported incidents. The following updates are available:

| No | Old Incident | Update | Follow-up Actions |
|---|---|---|---|
| 1 | <Title: What and Where of the Incident> | <Updated information on casualties, actions taken, problems encountered> | <Follow-up actions needed> |
| 2 | | | |
| 3 | | | |

For your information.

Cc: <Name of Office 1>

<Name of Office 2>

## Annex 2: Incident Action Plan

| INCIDENT NAME AND INCIDENT ACTION PLAN VERSION | | | |
|---|---|---|---|
| Incident Name: | Operational Period (Date/Time): From:<br><br>To: | IAP Type: Initial ☐<br><br>Update ☐ Final ☐ | |
| **Functional IMS Position** | **Name** | **Email** | **Phone** |
| Incident Manager | | | |
| Operations Section | | | |
| Plans Section | | | |
| Logistics Section | | | |
| Finance & Administration Section | | | |
| **Expanded IMS Functions** | | | |
| Liaison Officer | | | |
| Safety Officer | | | |
| Public Information Officer | | | |
| Current Operations Branch | | | |
| Laboratory Branch | | | |
| Case Management Branch | | | |
| Epidemiology Branch | | | |
| **DESCRIPTION of the SITUATION**<br>*Brief summary of the incident (e.g., disease, affected community, environment…)* | | | |
| **Background:**<br><br>**Current/completed actions and tasks:** | | | |
| **Planning Assumptions**<br>(Evidence based facts and assumptions in the context of developing the plan.) | | | |
| **MISSION/ OBJECTIVES** | | | |
| **Ministry/Department Response Mission:**<br><br>**Response Objectives** (SMART: Specific, Measure, Achievable, Realistic, Timeframe)<br><br>**Sections / Functional Area Operational Objectives** | | | |

| EXECUTION Strategy(s) and tactic(s) |
| --- |
| |
| **Triggers That May Increase the Response Tempo and/or Raise the Response Level** |
| |
| **Triggers That May Return Centralized Response Operations to a Program Management Level** |
| |
| **Safety and Security Concerns** |
| |
| **Place a visual depiction of the incident location or locations here.** |
| |
| **Current Organization** |
| |
| Prepared by:_____Signature:_____ Date: _____ |
| Reviewed and approved by:_____Signature:_____ Date: _____ |
| |

## Annex 3: Activation Checklist

During activation, the activities to be carried out are summarized in the checklist below:

- Notify the IHR NFP, appropriate agencies and partners that the NPHEOC is being activated
- Determine appropriate level of activation based on criteria/situation
- Determine staffing needs and acquire additional support as required
- Call all the required Section Chiefs and management staff (Operations, Logistics, Human resources, Planning, Communication, Liaison and Finance) and notify the relevant stakeholders
- Deploy the pre-enlisted IM
- Assign personnel to positions on the NPHEOC, report to the NPHEOC and check in with section leads
- Develop incident action plan
- Orient surge staff on the NPHEOC
- Conduct NPHEOC staff briefing on the incident and situation
- Assign tasks to IMT, monitor using tasks tracking tool and confirm shift assignments
- Issue job action sheets
- Begin activity logs
- Ensure situation report is regularly disseminated
- Develop and share Emergency contacts list
- Ensure proper documentation of relevant information in a central location
- Ensure communications equipment is working and ready for operation (telephones, fax machines, radios).
- Check assistance availability from the Communications Team
- Ensure necessary logistical supplies and materials are available
- Ensure partners activities are tracked and used for planning and coordination

## Annex 4: Deactivation Checklist

During deactivation, the activities to be carried out are summarized in the checklist below:

- Notify appropriate agencies through mail &/or instant messaging applications, phone &/or email regarding the individual sites where the NPHEOC is being deactivated
- Develop and disseminate the deactivation plan
- Monitor the deactivation process
- Collect all data, logs, situation reports, message forms, and other significant documentation
- Place in a secure file box at NPHEOC and mark the outside with the date and any state or National numbers associated with the response
- Deliver the information and recommendations regarding the timing and sequence of demobilization of all resources used in the response to the NPHEOC Manager
- Fold and repack re-usable maps, charts, materials
- Make backups or archives of all computer records
- Collect items that have been deployed in the field for future response use
- Make a list of all supplies that need replacement and forward to the Logistics Section
- Return identification credentials to the NPHEOC Manager
- Develop close out report
- The IM authorizes the deactivation of IMS resources
- Transfer of authorities/responsibilities/missions to the relevant authorities
- The IM to hand over to the NPHEOC Manager
- Conduct a hot wash/ debrief for PHEOC staff and committee
- Prepare for the after-action review meeting

**Note: Return to steady-state or routine activity**

## Annex 5: Emergency contact list

| S/No | Name | Position | Organization | Location | Contact number | Email address | Carbon Copy (CC) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

## Annex 6: Regular facility checklist

| S. N | Equipment | Frequency | Date | Status | Remedy |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## Annex 7: Job action sheet template

| Incident Management System Job Action Sheets | |
|---|---|
| A Job Action Sheet, or JAS, is a tool for defining and performing a specific IMS response functional role. The tasks on the Job Action Sheet can and should be amended to fit the situation by adding or deleting tasks. The Section leader who is issuing the Job Action Sheet should review for applicability and add in writing any incident-specific instructions or changes. The key elements are: | |
| | |
| **Position Title** | |
| The name of the emergency response functional role. Note that these generally are not the same as every day, non-emergency job titles. | |
| **Reports to:**<br>The supervisor that has direct authority over the staff. | |
| **Mission**<br>The purpose of the role, and a brief guiding principle for the responder to keep in mind. | |
| **Immediate**<br>Tasks that must be completed first upon assuming the role or coming on duty. | |
| **Intermediate**<br>Tasks to be completed after the immediate tasks are addressed. | |
| **Extended**<br>Tasks to be completed later or on an ongoing basis | |
| | |

## Annex 8: Public Health Emergency Operation Centre Meeting

### a) Attendance register

| | | | WEEK XX | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | SUN | MON | TUES | WED | THU | FRI | SAT |
| | NAME | ORGANIZATION | | | | | | | |
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |

**PHEOC meetings schedule:** ***XXXXXX (day(s)) – time***

**Next meeting on** ***date & time***

### b) Urgent issues and action points

#### i. Response Pillars updates and issues:

1. Update from Coordination
2. Update from RCCE
3. Update from Surveillance
4. Update from laboratory
5. Update from Case management
6. Update from IPC
7. Update from POE
8. Update from Digital team
9. Update from Education

#### ii. AOB

## Annex 9: Partner Resource Mapping Matrix

| MALAWI Preparedness and Response Intervention Tracking Matrix (WHO, WHAT, WHERE, WHEN, WHOM (5W) | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WHO | | WHAT | | | | | | WHERE | | | WHEN | | | WHOM | | | Funding | | | | | | | |
| Organisation Name | Organisation Type | Cluster | Area of Response /Pillars | Main Activity | Implementing Partners | Type of Relief materials | Quantity of Relief materials (optional) | Region | District | TA | Start Date | End Date | Project Status | Indicators as per the National Response Plan | Baseline | Target | Budget Planned (USD) | New Available Funding (USD) | Reprogrammed Funding (USD) | Expenditure (USD) | Source of Funds (Type) | Contact person (Full Name, Email & Phone Number) | Date of Entry | Comment |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |

## Annex 10: SPOTREP template

| PHEOC Spot Report | |
|---|---|
| **Date / Time:** | |
| **Incident Title or Name:** | |
| **Information Source:** | |
| **Narrative:**<br>*Include Who, What, When, Where, and Why.* | |
| **Actions:**<br>*Include actions taken and/or not taken, next steps, notifications, health and safety actions, follow-up requirements, etc.* | |
| **Information Controls:**<br>*Included when and who to distribute.* | |
| **Submitter's Name:** | |
| **Submitter's Duty / Position:** | |
| **Submitter's Contact Number:** | |
| **Submitter's Email Address:** | |

## Annex 11: SITREP template

| | | | | | | |
|---|---|---|---|---|---|---|
| **Title of STIREP (should indicate the specific PHE and reporting week)**<br>**Situation Report:_____ (Report No.)** | | | | | | |
| Status (activation level):<br><br>Report Date and Period (timeframe):<br><br>IMS Activation Date (dd/mm/yyyy):<br><br>Location(s) of Event (geographical response location):<br><br>Lead Ministry/Department (lead agency assigned to the response):<br><br>Response Title (year and name): | | | | | | |
| **PHE Highlights** | | | | | | |
| ***Give summary of the pertinent issues about the PHE to date (Maps can be used to show spatial distribution of cases).* Significant Activities** (accomplishments summary related to the response objectives within the reporting timeframe): | | | | | | |
| | | | | | | |
| **General overview of the specific PHE: Background (a description of how the situation initially occurred):** | | | | | | |
| **Cumulative data of PHE *(Summary for the entire period of specific PHE)*** | | | | | | |
| Confirmed cases | Recoveries | Deaths | Admissions | Tests conducted | Vaccines administered | |
| 0 | 0 | 0 | 0 | 0 | 0 | |
| | ***Epidemiological Week data summary*** | | | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | |
| Overview of the specific PHE: (updates to the response description (e.g., case counts to date, new clusters detected, scientific updates, etc. and outline activities for the reporting period; submitted to Plans by functional sections in bullet form) | | | | | | |
| **Field surveillance description *(in details; charts and figure tables are used)*:** | | | | | | |
| **Laboratory surveillance description *(in detail; charts and figure tables are used)*:** | | | | | | |
| **Summary of the Prevention and Response Activities *(in detail; charts and figure tables are used)*:** | | | | | | |
| **Conclusion:** | | | | | | |
| The next (insert response name) Response Situation Report will be published on or about (insert date).<br><br>**Point of contact for the report** (the person to whom questions regarding the report are directed):<br><br>**Disclaimer:** Sensitive but Unclassified (SBU). This document may contain sensitive information that may be exempt from public release. This information is for internal Ministry use only. Further distribution to personnel with a "need to know" and for situation awareness most be authorized. | | | | | | |

***Note: the template should be modified to suite a specific PHE***

## Annex 12: Resource request Template

### a) Resource request Template

| Event: | Date: | Time (24hr): |
|---|---|---|

| To: | |
|---|---|

| Requesting officer's name, Institution, District & 24hr contact details:<br>(Must be the person who has detailed knowledge of the request & is able to answer any questions) | | |
|---|---|---|
| Name: | Telephone #: | Mobile #: |
| Org: | E-mail: | District: |
| Delivery address: | | |
| On-site contact person & phone no.: (must be available to accept delivery) | | |
| Name: | Phone #: | |
| Alternative Name: | Phone #: | |
| Priority: to be delivered on-site by "detail time & date" (Urgent or ASAP is not acceptable) | | |
| Time: | Date: | |
| Details of request be specific about the required outcome OR clearly detail the resources required. Do not use acronyms, state unit quantities only and list skill sets for human resources. | | |

| Authorizing Officers | | |
|---|---|---|
| Name: | Position: | |
| Signature: | Date: | Time: |
| (Name) | | |
| Signature: | Date: | Time: |

**b) Resource request narration template**

The fields contained in the resource request form all provide vital information for those actioning the request and therefore it is most important that each field be correctly completed.

- **Event description, Date and Time (24hrs)**

Official name of the event. Date and time the form was prepared.

Requesting officer's name, Institution & 24hr contact details. The requesting officer is the person who has firsthand knowledge of the request requirements and is therefore best placed to provide additional information. It is vital this officer remain readily contactable especially if the request is time critical.

- **Delivery address**

Detail the delivery address in such a way that it assumes the delivery operator has never been to that location before. This includes providing additional information that will assist in locating the delivery point e.g., landmarks.

- **On-site contact person and phone no.**

Required to identify or confirm particular issues that may not be noted on the resource request form. It also enables the delivery to be coordinated locally between the transporter and the on-site officer.

- **Priority**

Terms such as "urgent" or "as soon as possible" have little meaning in the provision of resources. A specific time and date provide all parties with a definitive target to work towards. It also enables the identification of issues that will affect the timeframe.

Issues impacting on the ability to meet a timeframe include whether inside or outside of normal business hours, quantities required, acquisition, loading, transport including access issues and unloading.

- **Details of request:**

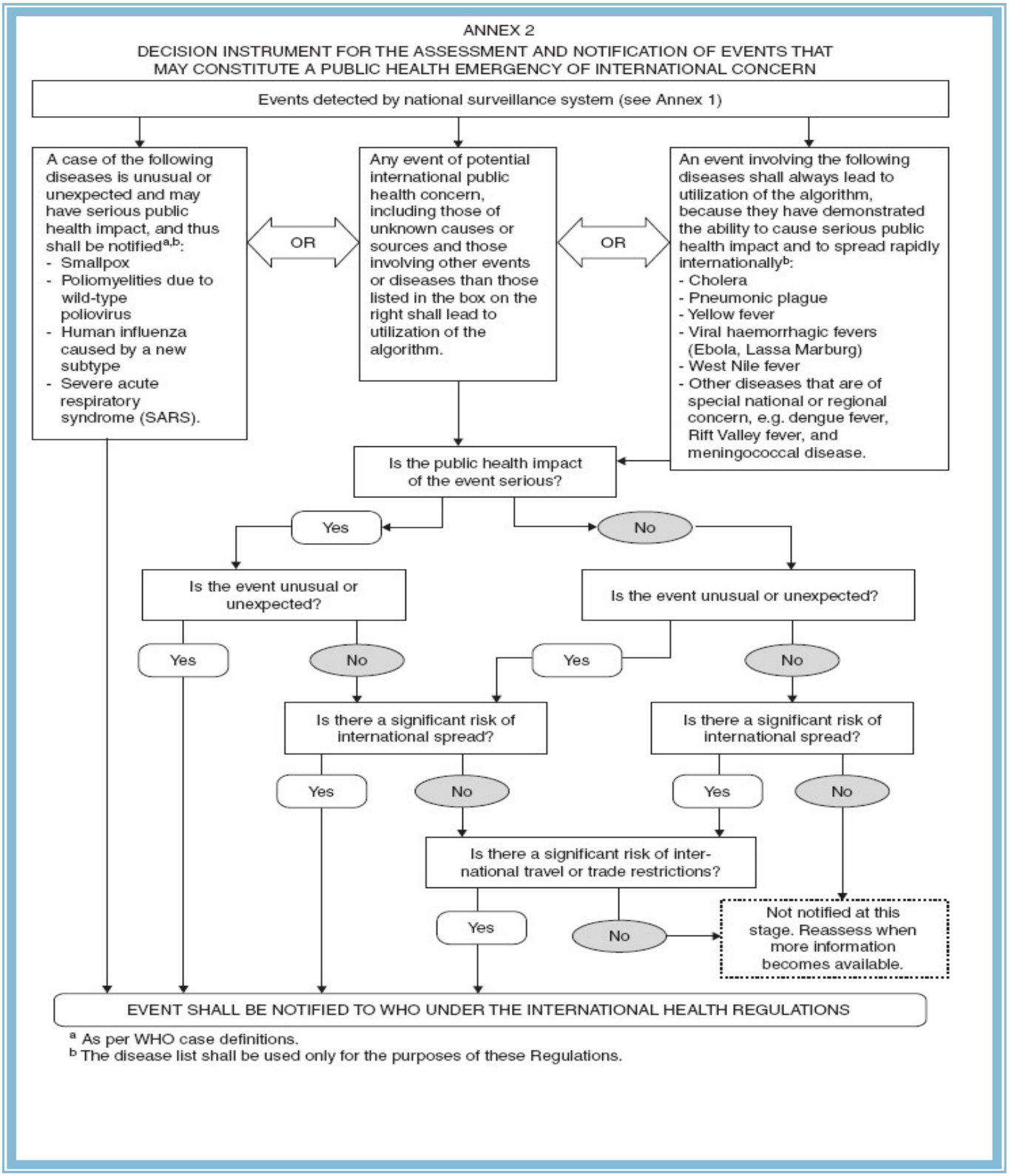
The information provided needs to be as detailed as possible. If an outcome is required be specific about what is to be achieved. If resources are required, ensure unit quantities and any specifications that will assist in acquiring the resources are provided.

Do not use acronyms or jargon, write clearly and be specific. Information considered irrelevant to the requesting officer may be important to those who action the request.

- **Authorizing officer**

Authorization indicates the request is legitimate; the information is accurate, and the resource request form has been completed correctly. Ensure the name is clearly written and signed.

## Annex 13: Decision Instrument of the IHR (2005)



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