World Health Organization

Handbook for Developing a Public Health Emergency Operations Centre

Part A: Policies, Plans and Procedures

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Contents

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The handbook was developed on the basis of the Framework for a public health emergency operations centre[1] (the Framework"), the findings of systematic reviews, and expert consultations. The lists of contributors to the PHEOC systematic reviews and development of the Framework are available in the following documents on the WHO website:

- A systematic review of public health emergency operations centres (EOC), December 2013[2]
- Summary report of systematic reviews for public health emergency operations centres. Plans and procedures; communication technology and infrastructure; minimum datasets and standards; training and exercises, July 2015[3]
- Framework for a public health emergency operations centre[1]

This document, the handbook Part A, was written and revised by Mr William Douglas, with contributions by Mr Paul Cox, Dr Eric Sergienko, Mr Peter Rzeszotarski, Dr Jian Li, Mr David Knaggs, Mr Peng Du, Dr Yan Niu, Ms Senait Fekadu, and experts who participated in the following two EOC-NET working group meetings:

1. EOC-NET working groups meeting, 17–19 October 2016

The following experts reviewed in depth the first draft of the handbook Part A (in alphabetical order): Mr Johnathan Abrahams, Ms Tammy Allen, Dr Anurak Amornpetchsathaporn, Dr Tao Chen, Mr Paul Cox, Mr William Douglas, Dr Ahmed Ali Yakoub Elkhobby, Dr Joan Karanja, Dr Ali Okhowat, Dr Tran Dai Quang, Mr Peter Rzeszotarski, Dr Mustafa Bahadir Sucakli, Dr Kokou Tossa, Dr Nevio Zagaria. Further suggestions and contributions were provided by (in alphabetical order): The names are reordered, as below, please replace with the following:

1 See: http://www.who.int/ihr/publications/9789241565134_eng/en/ (accessed 5 August 2018).

2 See: http://www.who.int/ihr/publications/WHO_HSE_GCR_2014.1/en/ (accessed 5 August 2018).

3 See: http://www.who.int/ihr/publications/9789241509787_eng/en/ (accessed 5 August 2018).

Mr Vincent L. Anami, Mr Marshal Bickert, Dr Abdoulaye Bousso, Dr Daouda Coulibaly, Mr Kevin Crampton, Dr Foday Dafae, Dr Enrico Davoli, Dr Peng Du, Dr Pangiotis Efstathiou, Mr Nevashan Govender, Mr Nicolas Isla, Dr Abdurrahman SKM M.Kes, Dr Hyo-Jeong Kim, Mr David G. Knaggs, Dr Jian Li, Dr Nikolay Lipskiy, Dr Issa Makumbi, Dr Wessam Mankoula, Mr Jered Markoff, Mr Cyril Molines, Mr Joel Myhre, Ms Yan Niu, Mr Mark Nunn, Dr Christopher Perdue, Dr Vason Pinyowiwat, Dr Norhayati Rusli, Dr Sohel Saikat, Dr Eric Sergienko, Mr Khaled Shamseldin, Mr Curtis Sizemore, Dr Felipe Cruz Vega, Mr Nicolas Wojnarowski, Dr Teresa Zakaria. The list of participants is contained in Annex 6.

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Based on the discussions at the above October 2016 meeting, the three documents of the handbook were revised. The following experts reviewed the revised version of the handbook and analysed the alignment between Part A, Part B and Part C (in alphabetical order): Names are reordered. Please replace with the following: Mr Johnathan Abrahams, Mr Vincent L. Anami, Mr Marshal Bickert, Dr Abdoulaye Bousso, Dr Tao Chen, Mr Thierry Cordier-Lassalle, Mr Paul Cox, Dr Enrico Davoli, Mr Hani Ali Hafez Dodin, Mr William Douglas, Dr Peng Du, Dr Pangiotis Efstathiou, Dr Kai v. Harbou, Dr Leonardo G. Hernández, Dr Joan Karanja, Dr Pradeep Khasnobis, Mr Hakim Khenniche, Mr David G. Knaggs, Dr Ramesha Saligrama Krishnamurthy, Dr Jian Li, Dr Qun Li, Dr Nikolay Lipskiy, Mr Jered Markoff, Mr Reuben Mccarthy, Mr W. Chuck Menchion, Dr Yan Niu, Dr Ngoy Nsenga, Mr Mark Nunn, Dr Ali Okhowat, Mr Homer Papadopoulos, Dr Christopher Perdue, Dr Jukka Pukkila, Dr Palliri Ravindran, Dr Karen Reddin, Dr Norhayati Rusli, Mr Peter Rzeszotarski, Dr Eric Sergienko, Mr Khaled Shamseldin, Dr Felipe Cruz Vega, Dr Chadia Wannous, Dr Teresa Zakaria. The list of participants is contained in Annex 7.

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Abbreviations

This document uses the same glossary and abbreviations as the *Framework for a public health emergency* operations centre ("the Framework"), with three additions.

The new abbreviations have been added and are in bold in the list below: IAP; IASC; NDMA/NDMO; TOR.

AFRO	WHO Regional Office for Africa
AMRO	WHO Regional Office for the Americas
CONOPS	Concept of operations
EM	Emergency management
EMRO	WHO Regional Office for the Eastern Mediterranean
EOC	Emergency operations centre
EOC-NET	The public health emergency operations centre network
EOP	Emergency operations plan
ERP	Emergency response plan
EURO	WHO Regional Office for Europe
GIS	Geographic information system
IAP	Incident action plan
IASC	Inter-Agency Standing Committee
ICCS	Integrated communications control system
ICT	Information and communication technology
IHR	International Health Regulations
IMS	Incident Management System
MOH/MoH	Ministry of Health
NDMA/NDM	National disaster management agency, authority or organization
P&P	Plans and procedures
PHEOC	Public health emergency operations centre
SEARO	WHO Regional Office for South-East Asia

SOP	Standard operating procedure
T&E	Training and exercises
TTX	Table-top exercise
WHO	World Health Organization
WPRO	WHO Regional Office for the Western Pacific

1. Introduction

Key information:

- Types of PHEOCs
- Guiding concepts

1.1 Background

In 2015, the World Health Organization (WHO) published the *Framework for a public health emergency operations centre* ("the Framework"). The Framework provides guidance to WHO Member States on the development of public health emergency operations centres, or PHEOCs, as part of their work to meet their commitments to the core capacity requirements of the International Health Regulations (IHR (2005)). The Framework is based on the findings of a series of systematic literature reviews and expert consultations.

Building on the Framework, the series of reviews and expert consultations, the *Handbook for developing a public health emergency operations centre* ("the handbook") has been developed to provide more detailed guidance for implementing the Framework. The handbook consists of three separate documents:

- Handbook for developing a public health emergency operations centre, Part A: Policy, plans and procedures ("the handbook Part A")
- Handbook for developing a public health emergency operations centre, Part B: Physical structures, technology, and information systems ("the handbook Part B")
- Handbook for developing a public health emergency operations centre, Part C: Training and exercises ("the handbook Part C").

1.1.1 Scope

Based on the "all-hazards" approach to emergency management recommended in the Framework, this document, the handbook Part A:

- provides practical guidance for public health authorities and PHEOC planners and staff on the general policies, planning processes, outcomes and operational procedures necessary to support a viable PHEOC;
- includes descriptions of best practice and recommended contents of plans and procedures.

The PHEOC concept captured in the Framework and in the handbook is that of a permanent, semi-permanent or possibly mobile coordination-focused centre at national (strategic) level and/or at subnational (operational) level.

Site-level or implementation-level centres (command posts) are typically temporary and are focused on the direct use of resources; most of the planning, procedural and particularly the management concepts for higher-level centres will apply to these site-level centres to some extent, but their temporary nature and tactical focus requires a number of different considerations beyond the scope of this handbook.

1.2 How to use the handbook Part A

The handbook should be used alongside the Framework. Generally, Framework information is not repeated since the intent of the handbook is to expand on concepts in the Framework in order to support implementation.

Recognizing that each jurisdiction has unique characteristics in terms of governance, capacity, capability and vulnerability, the contents of the handbook are not intended to be prescriptive. The word "should" appears frequently and is intended to signal best or recommended practice, either to be adopted outright or to be adapted to a jurisdiction's context and circumstances.

The purpose of the handbook Part A is to provide practical guidance on the development of public health emergency management programmes and "what and how" recommendations to support all jurisdictions in developing or enhancing related capabilities. While the sections of the handbook Part A are interrelated, each section can be used on its own to address specific aspects of PHEOC development and procedures.

Sections 1–4 of this document address issues related to the context of policies, plans and procedures, while sections 5–11 provide information about specific types of plans and operational instructions, as they would appear in a reference manual or handbook for PHEOC personnel.

Throughout the handbook readers will find the terms "emergency", "incident" and "event" used interchangeably, even though they do not technically have exactly the same meaning and despite the fact that multiple definitions for each term exist throughout emergency management literature.[4]

1.3 Types of PHEOC

The original Framework (2015) describes three types of PHEOCs: basic, general and optimum. These categories are based on the PHEOCs' capacities and capabilities.

This typology is changed in the handbook. PHEOCs are now identified as types A, B or C in order to avoid potential problems with one type being perceived as necessarily better or more appropriate than another without full consideration of the intended purpose and required capabilities of an intended centre. Creating more PHEOC (management and coordination) capacity than needed has the potential to waste public resources that could be better applied to enhancing capacity for direct response.

The characteristics associated with each PHEOC type (see Annex 2) describe a mix of resources and functions scaled to address countries' varying public health security requirements, with the IHR (2005) requirements as a baseline.

These three types accommodate a range of needs, from those of countries that are able reasonably to accept a higher level of public health risk (risk tolerance) and with a lower resource commitment to those

4 In "Select emergency management terms and definitions", an appendix to *Hazards, disasters and US emergency management: an introduction* (2006), Wayne Blanchard cites 10 different definitions of "emergency", five different definitions of "incident" and 50 different definitions of "risk". The term "event" tends to be used in many definitions of both "emergency" and "incident" and has a specific meaning in the IHR (2005) as "a manifestation of disease or an occurrence that creates a potential for disease". Events may also be planned activities that have the potential for public health risks.

with a lower risk tolerance/higher resource commitment. The three PHEOC types accommodate missions varying from subnational and national to regional and international.

Risk is the relationship between a hazard or potential harm and the vulnerability of a population to that hazard.[5] Assessing risk and accepting a predetermined threshold of risk are key elements of emergency management. Mitigating a hazard or reducing vulnerability reduces risk. An effective PHEOC is a primary tool for reducing vulnerability.

The Minister of Health or designate and/or the national emergency management authority should define the mission of a PHEOC. The mission should:

- reflect the public health security posture or intentions of senior leaders and policy-makers;
- outline necessary resource commitments;
- articulate the overarching goals and desired outcomes of establishing a PHEOC.

It is anticipated that most countries will have PHEOCs of type A, a few will have a type B PHEOC, and very few will need a type C PHEOC.

> **It is important that the PHEOC should be appropriately scaled for its intended purpose in order to provide effecwtive coordination and management control of national- and/or subnational-level resource allocation, without detracting from the required capacities for direct response.**

A type A PHEOC should have the capacity to manage a subnational or national public health event or emergency but may require outside assistance or augmentation to manage a larger-scale event or multiple events. A type B PHEOC can manage all but the most complex national public health emergencies and may be positioned to assist in a regional response. A type C PHEOC is capable of supporting multiple, complex, multisectoral, national or regional incidents and international public health emergencies.

Type A

A Type A PHEOC is the simplest, smallest and least costly PHEOC, able to respond to a single national public health event or emergency in accordance with all the response requirements established in the IHR (2005). Its features include the following.

- a national public health emergency preparedness and response plan, based on a risk assessment, that has been validated through exercises;
- mapping of national public health resources, including stockpiles of consumables;
- personnel trained in PHEOC operations who are available on demand for all response management functions of the incident management system (IMS);
- 24/7 readiness for activation within 120 minutes.

In addition, a type A PHEOC displays the following attributes:

- It has the ability to conduct responses to public health emergencies that require coordination with other sectors of government and to support a multisectoral response led by the national disaster management authority (NDMA).
- There is a manager responsible for the PHEOC, and trained surge staff are present.

5 Initial risk = hazard x vulnerability. Final risk = (hazard x vulnerability)/mitigation.

- For sustained operations there are arrangements for augmentation of staffing and resources from other public-health work centres, and a limited continuity plan of operations to address the potential loss of mission-critical personnel and disruption to supply chains.
- PHEOC plans (as outlined in this handbook Part A) will have been validated through a minimum table-top exercise, and activation and response functions will have been validated with small-scale functional exercises.[6]
- The facility, its infrastructure and its information systems will be capable of supporting the full range of PHEOC operations, including capturing and tracking basic descriptive data about the event, its context and management initiatives. They may not, however, be capable of providing a higher level of situational awareness through extensive analysis of complex and/or geospatially-derived data.

> A type A PHEOC is sufficient to provide an acceptable level of capability and capacity for most countries. The additional resources required to operate and maintain types B or C may detract from the field resources required for the response.

Type B

The type B PHEOC builds on the characteristics of a type A and is able to coordinate responses to multiple subnational public health emergencies, or to a single large-scale complex national public health emergency, with expanded capabilities beyond those of type A. The type B PHEOC can independently manage the public health components of a complex multisectoral response within the objectives set by the NDMA. It can also support other sectors of government in addressing the public health components of a multisectoral incident. Its features include the following:

- the ability to support regional coordination;
- an annual process for review of national risks and resources;
- a comprehensive concept of operations (CONOPS) that frames the mission of the PHEOC;
- a group of dedicated personnel, including a facility manager, operations watch staff, planners, logisticians, and communications and information technology support staff;
- surge personnel from other work centres who are trained to support and sustain operations;
- initial and ongoing advanced training, plus participation in at least one functional exercise, for all personnel.

The PHEOC's facility, infrastructure and information systems must support the expanded mission of a type B PHEOC; this includes telecommunications systems such as videoconferencing, and information technology systems capable of capturing and analysing complex and geospatially-derived data. Provisions should be in place for continuity of operations for PHEOC functions through redundancy of personnel, technology infrastructure and, where necessary, facilities.

Type C

The type C PHEOC builds on the characteristics of types A and B and is able to support multiple national, regional or international responses simultaneously. It can coordinate a whole-of-government response to

6 See *Handbook for developing a public health emergency operations centre Part C: Training and exercises* for a discussion of different types of exercises.

a public health event and can manage the public health component of a whole-of-government response to any incident with public health consequences. The type C PHEOC is intended for, and is likely to have experience in managing highly complex, multisectoral incidents. Key capabilities and capacities are validated through progressive exercise programmes or real-world experiences, and there is a routine for assessing evolving threats and resources.

Its features include the following:

- procedures for accessing extra-jurisdictional resources;
- a robust and ongoing training programme, ensuring that all core staff members function at an expert level;
- redundancy in personnel for all IMS positions, permitting sustained and continuous operations (24/7).

The PHEOC's facility, infrastructure and information systems are all capable of supporting the extensive mission of a type C PHEOC: this includes advanced and redundant telecommunication systems; extensive analytic and geospatial information system (GIS) capabilities; and back-up power with tested continuity of operational arrangements capable of supporting all EOC functions.

The three types of PHEOC are not necessarily distinct. Each may incorporate some characteristics of another type. For instance, a type A may have some of the characteristics of a type B or C, and a type C would have all of the characteristics of types A and B.

The handbook is chiefly concerned with the characteristics of a Type A PHEOC, with some consideration of the capacities that would apply to types B and C.

1.4 Standards and best practices

The Framework refers to a number of standards and guidelines developed by international bodies such as the International Organization for Standardization (ISO), the US National Fire Protection Association (NFPA), and WHO. Except where mandated by government, adherence to these standards is voluntary. Section 13 of this handbook Part A contains a short list of publications on standards as a resource for PHEOC planners and managers.

1.5 Guiding concepts

The Framework advocates an all-hazards approach to managing public health emergencies and their consequences, augmented by hazard-specific planning and management that recognizes the specialized response resources and strategies required by particular risks. A risk in this context refers to the vulnerability of a population to a particular hazard and the probability of an event occurring with consequent harm and relatively significant impact, based on national-level perception and evaluation of risk. Implicit in this concept of risk is the element of uncertainty and its effect on organizations' abilities to meet objectives and accomplish their missions.

Hazard-specific planning focuses on the unique response requirements to particular risks. These might include special notification and alerting, the need for protective equipment and actions, public risk communications, and/or exceptional regulatory requirements.

Risk-based, all-hazard planning for public health emergency management through a dedicated PHEOC involves considering the opportunities and constraints of the governance, legal and policy contexts of

the responsible jurisdiction. Planning is about more than responses to risks, particularly for an advanced-level facility. Planning also includes:

- risk prevention and mitigation;
- preparedness and training;
- continuity of operations;
- recovery from risk events.

In developing plans and procedures for a PHEOC, it is assumed that users of this document are familiar with the principles of modern emergency management articulated the Framework as follows:

- An **all-hazards approach**: generic incident management processes and structures, applied to all responses, built around clear decision-making processes and supported by hazard-specific response plans developed according to comprehensive risk assessments.
- **Modular[7], scalable or adaptable management structures** that can be expanded or contracted (scaled) to deal with changes in the scope and context of an emergency.
- Support for **joint involvement** of multiple jurisdictions, sectors and organizations in making and implementing joint management decisions (**unified management**).
- **Clear lines of accountability**, with all personnel in work units of no more than seven persons reporting to one supervisor, even if working within a matrix of teams in the PHEOC.
- **Clearly defined roles and responsibilities** for staff, consistent with their established competencies and supported by specific training in EOC functions and operations.
- **Clearly identified** decision-making authorities, threat thresholds for decisions, and procedures for activation, escalation and deactivation of emergency operations.
- **Clearly articulated policies and procedures for communication** between international, national, subnational and local EOCs or event management entities.
- **Common terminology, functions and technology** at all levels of the response structure to support interoperability.
- **Capacity for involvement or integration** with partner and stakeholder agencies, including international partners, through joint (unified) management or active liaison.
- **Sufficient capacity to manage public communications** in culturally suitable ways through all available traditional and social media, to support effective risk communication, social mobilization and community engagement.

7 Modular: i.e. composed of functional management units that can be selectively activated.

2. The policy and planning context

Key information:

- The PHEOC's mission derives from the principles and policies of government
- Public health emergency management should link with the NDMA and humanitarian agencies
- A concept of operations (CONOPS) describes how the emergency response system is expected to function

2.1 Principles, policy and standards, plans, processes and procedures

In general, a plan describes how a goal will be achieved.

Planning is imperative because it is not possible to reach a target that cannot be identified, or to accomplish something specific if the objective is unknown.

Plans and planning processes occupy the middle ground of a continuum between authoritative direction and implementation action. Authoritative direction takes many forms but originates in the beliefs of a government or designated agency – i.e. a statement of principle or doctrine. An example might be:

> *We will commit all necessary government resources in responding to any emergency that threatens the health and welfare of our citizens.*

Policy and standards derive from overarching principles and describe courses of action that frame the planning process. Based on the preceding statement of principle, examples of policy statements might be:

> *In responding to a public health emergency, the Department of Health shall be the lead agency, and the national disaster management organization is mandated to make all national resources available as needed.*

and:

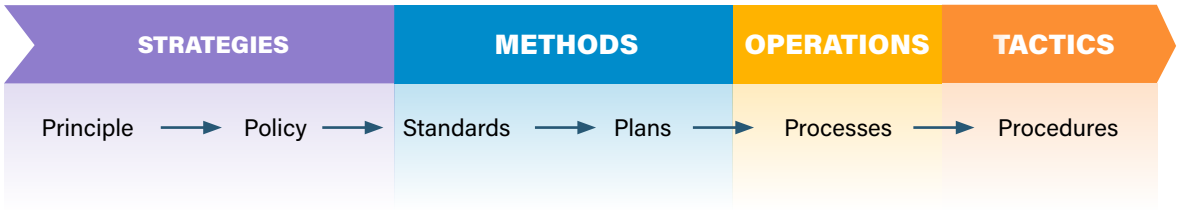
> *In responding to a natural disaster with health-related consequences, the national disaster management organization shall be the lead agency and the Department of Health is mandated to provide such medical assistance as may be required.*

Similarly, the development or adoption of performance standards is part of the policy process. An example of a performance standard might be:

> *Upon declaration of a public health emergency with an impact greater than [x] people, the Department of Health will activate a PHEOC within [a target time frame].*

The effect of such statements is to create strategic direction and lay the groundwork for what must be done. However, the statements do not state with specificity how things will be done at a tactical level (i.e. by addressing the allocation and application of resources). This is the purpose of a plan: to link strategies with tactics by describing the methods, operations and actions for achieving goals and objectives (Figure 1)[8].

Figure 1. From strategy to tactics: the importance of planning



Note that the relationship of a strategy to its associated tactics is the same regardless of the level of strategic planning and applies essentially to all types and levels of plans.

Plans contain descriptions of processes, or series of related operations, that can be further analysed into specific procedures – i.e. actions, tasks, steps and routines – for accomplishing objectives. The processes and procedures aspect of planning answers questions about who does what, when and where.

The working reference for procedures is a document on standard operating procedures (SOPs) that describe methods and activities to be followed routinely for the performance of specified operations, or in designated situations. Procedures are both event-specific and agency-specific and are related to the usual procedures in use by the agency at the time. In an emergency, it is expected that usual procedures will be expedited or shortened to make them more efficient in a time-constrained environment. Examples of SOPs include those on:

- monitoring key indicators when the PHEOC is not activated;
- activation of the PHEOC;
- notification of staff;
- establishment of public hotlines and a message/call centre;
- payment of accounts;
- procurement;
- processing of contracts;
- preparation and processing of reports.

A PHEOC is a vital component of a public health authority's comprehensive risk management programme. Such a programme should have four essential elements:

1. Prevention and mitigation of risk
2. Planning and preparedness
3. Response
4. Recovery (including provisions for continuity of PHEOC operations).

8 For an explanation of the levels of response, see the Framework for a Public Health Emergency Operations Centre, Annex 2: Sample concept of operations (CONOPS).

2.2 Creating legal authority for a PHEOC

A PHEOC without a defining legal authority lacks a mandate to operate. A mandate provides a basis for:

- the centre's existence;
- its roles in a range of emergencies;
- its responsibilities and accountabilities;
- the requirement to create and manage operational plans and coordination mechanisms with local, national and international resources for disaster and humanitarian crisis management;
- a platform for budgeting and allocating funds.

There are four primary options for creating a legal authority:

1. Internally, by an executive directive (from a chief executive or minister) within the responsible agency.
2. Externally, by a directive from the government or from the head of state.
3. By legislation.
4. By fiscal appropriation.

The first option is the weakest but, depending on circumstances, it may be satisfactory for a type A PHEOC, and may be effective when other government agencies are reluctant to participate. The fourth option is quite common, with much of the needed mandate implicit in the allocation of funds for a purpose. The second and third options have much the same effect, but the legislative option can be more complex to arrange.

Whichever path is selected, the objective is to create an emergency management directive that identifies public health emergencies as being of the same importance as other emergencies that a national or subnational disaster management organization might have to address. The objective includes the identification of the public health authority as the lead agency for public health response, and as a support agency for other emergencies with public health consequences. This positions the public health authority and its PHEOC as part of the overall infrastructure for disaster and humanitarian crisis management, with appropriate leadership and support roles.

In addition, in cases where the PHEOC's mandate overlaps with those of existing institutions, such a directive helps give the PHEOC a clear scope for its work and operational engagement. For instance, many countries have existing NDMA or National Red Cross/Red Crescent organizations; the boundaries between their work and that of the PHEOC should be outlined, and arrangements should be established for organizational cooperation.

One of the ancillary benefits of working with senior government and disaster management officials is the opportunity to orient them to the developing area of public health security and emergency management.

2.3 Establishing a policy group

A PHEOC serves a variety of interests and requirements. The executive and policy leadership of the responsible jurisdiction are interested in the accountability, risk management and efficiency the centre provides. Personnel assigned to work within the centre are interested in ease of access, usefulness of the tools and resources, helpful technical guidance, and the quality and quantity of workspace available to them. Partner agencies – such as the national or subnational disaster management organizations, some NGOs and humanitarian response agencies – have the same interests, plus concerns about interface and

interoperability issues. The media are interested in access and transparency. Downstream emergency response units (tactical response units) are concerned about connectivity and communications.

The first step to serving all these requirements in a coherent fashion is to form a policy group of senior representatives. These might include:

- heads of the major stakeholder agencies;
- key subject matter experts, including legal and ethical advisers;
- government officials;
- other professionals responsible for strategic leadership.

The policy group is part of the governance structure that legitimizes the PHEOC. Its role is to provide oversight and policy guidance and to secure funding for PHEOC development. If mandated to do so, the policy group may provide oversight for PHEOC operations and, in the absence of pre-established mutual aid arrangements with other jurisdictions, it may also be the authority that handles requests for external material or financial assistance, particularly in complex, multisectoral or multijurisdictional emergencies.

A type A PHEOC would typically have a policy group consisting of representatives from the executive group of the responsible jurisdiction, including a chief public health medical officer and a governance representative (a minister, secretary, deputy, etc.).

To ensure appropriate, broad-based ownership of the PHEOC, the designated planner should create a structure and process to ensure that all the necessary voices and interests are heard and accommodated – recognizing from the start that the process of planning is as important as the resulting documents.

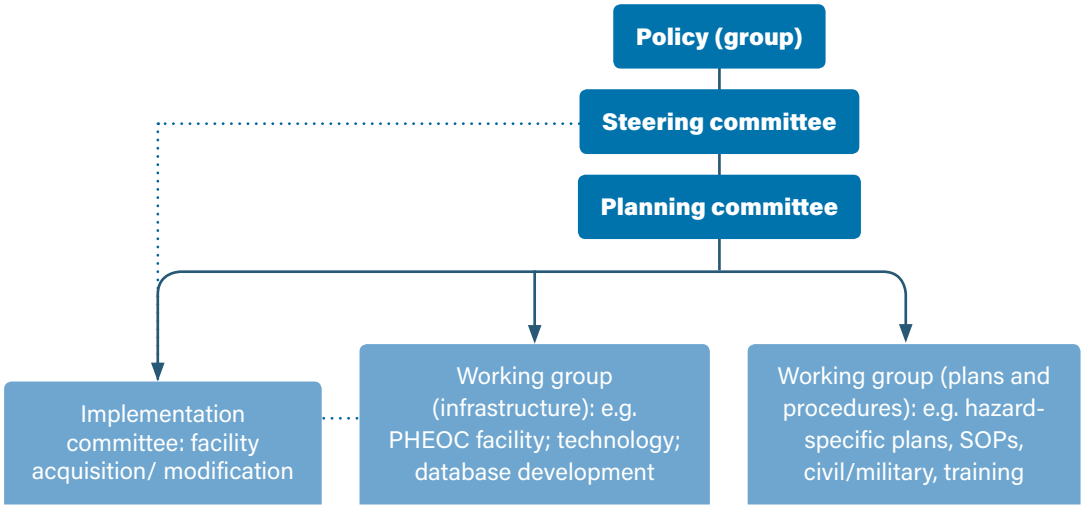
In order to ensure a multisectoral planning perspective, it is important to involve representatives from the NDMA.

2.4 Working groups, steering and planning committees

One recommended mechanism for developing organizational infrastructure and processes is to involve stakeholders and partners in a committee-based guidance process that uses a steering committee and planning committee or working group.

The role of such groups is to advise, recommend and promote, and not to implement. The authority to implement resides at the executive level of the responsible jurisdiction – though in complex planning environments it may be delegated to an implementation committee, and this may be the case for the acquisition and modification of a new PHEOC. Complex, well-resourced environments may contain committees of each type, organized hierarchically.

Figure 2. The committee-based guidance process



Planning and steering committees operate in a similar manner, except that a planning committee is focused on recommending courses of action while a steering committee provides overall management guidance for the entire development process. The steering committee may exist as a standing resource for the PHEOC beyond the development phase. A standing steering committee (which in very small jurisdictions may be the same group as the policy group or the planning committee) is a recommended basic mechanism for ensuring that the PHEOC's many different needs are met. Initially, the steering committee will be responsible for risk and capacity assessments and for ensuring that planning goes ahead in an orderly manner. Over time, the steering committee should also consider the broader elements of the emergency/risk management programme. These elements will include prevention and mitigation strategies, preparedness and readiness activities, and plans for continuity of operations.

Working groups take on specific projects and develop products to advance the development process. For example, working groups might be responsible for:

- development/implementation of the PHEOC facility;
- PHEOC operations and administration plans;
- acquisition of infrastructure and technology;
- manuals on policy and procedures;
- training programmes;
- arrangements for coordination with other government agencies and working groups to ensure consistency with other government structures.

2.5 Integration and linkage with humanitarian emergency response

The *Common framework for preparedness* of the United Nations Inter-Agency Standing Committee (IASC) supports the development of capacity for emergency response preparedness using a systematic, country-level approach. This approach assesses capacity and need collectively with response partners and uses the resulting assessment for the joint development of programmes and plans. The result is a set of plans that

provide for multisectoral coordination and linkages to humanitarian response agencies, with considerations across the humanitarian programme cycle[9], and – where they are a feature of local emergency management infrastructure – arrangements for cooperation between military and civilian entities.

Emergency response planning is part of a comprehensive disaster risk management programme that addresses questions about who or which agency does what during an emergency, and when. This creates a framework for responsible agencies to develop and test plans for engagement.

A PHEOC is the response management component of an evolving comprehensive emergency (risk) management programme within the responsible jurisdiction. PHEOC planning should recognize both alignments with the NDMA and linkages with national-level humanitarian response agencies.

An in-country humanitarian crisis will draw responses from a number of governmental and nongovernmental agencies. The NDMA is likely to be responsible for coordinating the response, with public health authorities assigned to assist, unless the dominant impact of the crisis is the public health domain.

Because of the nature of humanitarian crises, additional in-country and international actors must be factored into the response coordination process. The national-level CONOPS should anticipate this kind of event and should assign key liaison functions to responsible ministries in advance. In many cases this will already have occurred, as there will be a United Nations country team that includes a humanitarian coordinator and a team that has the necessary relationships with:

- response cluster lead agencies, their coordinators and member organizations;
- the UN Office for the Coordination of Humanitarian Affairs (UNOCHA);
- the UN High Commission for Refugees (UNHCR);
- national and local authorities;
- local and international NGOs.

It is expected that needs assessment will be led by national governments, but the PHEOC may assist, particularly with respect to public health concerns.

PHEOC planning is more narrowly limited to the development and operation of the PHEOC as the locus for managing and coordinating responses to public health emergencies. In the wider context of a comprehensive risk management programme, other pre-emergency activities are also concerned with enhancing preparedness and readiness independently of the operations and response planning that is central to the PHEOC. Typically, these entail such activities as prevention and mitigation programmes, training and exercises, deployment of stockpiles of resources, and identification of back-up supply chains for critical resources.

While it is expected that States Parties to the IHR (2005) will ultimately have well-functioning capacity to deal with public health risks and manage public health emergencies, it is understood that some jurisdictions are very small and have limited capacity for the type of planning and infrastructure development outlined in this document.

In small, isolated jurisdictions, emergency responses of all types may be led by an official at cabinet level – even the head of state – issuing directions to departmental officials. In the case of health, this minister would charge departmental staff with the response to a health emergency, and the department would

9 In addition to emergency preparedness, the humanitarian programme cycle consists of: 1) needs assessment and analysis, 2) strategic response planning, 3) resource mobilization, 4) implementation and monitoring, and 5) operational review and evaluation. See: IASC reference module for the implementation of the Humanitarian Programme Cycle. Geneva: Interagency Standing Committee; July 2015.

assemble a team from available personnel and would carry out the assignment. This is an implicit concept of operations – i.e. "senior government officials task departmental officials with leading or assisting an emergency response". Also implicit is the requirement for departments to have plans for dealing with emergencies, including plans for working together, that can be implemented when required.

2.6 Cross-cutting issues[10]

PHEOC planners should ensure that plans take into account a range of cross-cutting issues of varying potential impacts. These may require customized consideration. Examples include:

Ethics

Emergency responses often create situations with legal and/or ethical implications, such as:

- the possible use of unlicensed treatments;
- rationing of scarce resources between competing vulnerable groups;
- alternative standards of care;
- issues of information-sharing and privacy.

Consequently, a PHEOC should have access to appropriate ethical and legal consultation, either within the policy group or embedded in the IMS management team.

Human rights

Issues to consider include:

- protection from exclusion and discrimination;
- security of individuals and groups;
- timely access to accurate, comprehensible information.

Gender mainstreaming and diversity

PHEOC planning should recognize that women and minority groups are often victims of inequality. PHEOC staffing should encourage gender equality and diversity, taking account of local cultures.

Sustainability

As a component of a comprehensive risk management programme, the PHEOC should emphasize primary and secondary prevention and mitigation as a basic sustainability strategy, recognizing that prevention and mitigation actions produce a positive return on investment[11] compared with the high costs of emergency response.

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10 *Adapted from Health cluster guide* – provisional version, June 2009. See: http://www.who.int/health-cluster/resources/publications/hc-guide/en/ (accessed 20 February 2018).

11 Estimating actual return on investment for prevention is complex, with significant variation. For some public health interventions, the return is 1:1 (break-even); for others, such as vaccination, it can be as high as 1:18 or more. See: Masters R, Anwar E, Collins B, Cookson R, Capewell S. Return on investment for emergency preparedness study. BMJ. 2017;71(8) (http://jech.bmj.com/content/early/2017/03/07/jech-2016-208141 , accessed 20 February 2018). Also see: UNICEF and WFP 2015.

Environment

Emergency events often have environmental consequences. These should be acknowledged and mitigated.

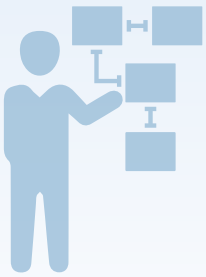
2.7 Cooperation with partner ministries and departments

The CONOPS should identify which other government departments/ministries are primary and secondary partners in public health emergencies, depending on whether their assigned roles are as lead agency or support agency. Working relationships with partners take one of two main forms: assistance (the partner directly provides response resources of its own) or cooperation (the partner's engagement is indirect).

2.8 Integration and linkages with humanitarian agency responses

An in-country humanitarian crisis will draw responses from a number of governmental and nongovernmental agencies. The NDMA is likely to be responsible for coordinating the response and public health authorities would be assigned to assist unless the dominant impact of the crisis is in the domain of public health. Because of the nature of humanitarian crises, a number of additional in-country and international actors need to be factored into the response coordination process. The national-level CONOPS should anticipate this kind of event and should assign key liaison functions to responsible ministries in advance. In many cases this will already have occurred, as there will be a United Nations country team that includes a humanitarian coordinator, and a team that has relationships with:

- response cluster lead agencies, their coordinators and member organizations;
- UNICEF;
- WFP;
- UNOCHA;
- UNHCR;
- national and local authorities;
- local and international NGOs.



3. Assessing needs, requirements and constraints for the PHEOC

Key information:

Risk assessments, gap analyses and needs assessments underpin the PHEOC planning processes

3.1 Risk assessment: determining which emergencies the PHEOC will be required to support

As a component of a comprehensive risk management programme, public health risk assessment can be complex or relatively straightforward, depending on the methods employed and the inherent complexity of the planning environment. While most public health professionals have training in quantitative and qualitative risk assessment methods, it is often helpful to employ subject matter experts in risk assessment. A public health risk assessment should be undertaken by a lead agency – probably the Ministry of Health – or be undertaken jointly with another relevant ministry.

From a broad perspective, risk assessment involves five steps:

1. Understanding the risk context by evaluating the vulnerability of populations with respect to resilience, resources and health systems' capacities, noting that the absence of capacity is a quantifiable risk.
2. Identifying hazards and risks (latent and potential harms).
3. Analysing the risks with respect to morbidity and mortality consequences of exposures.
4. Evaluating and prioritizing the risks with respect to probability, vulnerability and impact, to determine the level of threat.
5. Evaluating options for prevention and mitigation initiatives to treat the risks and minimize potential harm.

It is common practice in all-hazards emergency planning to plan for the worst threat or risk (or that with the highest potential impact), taking into account communities' capacity for coping and recovery. This approach uses scenario-based planning to identify and rank different types of emergency events, and their consequences, to determine which has the greatest probability of a harmful impact. Then, the likely presentation and development of each event are estimated, and the necessary response resources are identified. It is important to note that understanding specific risks and planning to address them is only one part of emergency preparedness; the other significant part is the infrastructure for managing an all-hazards response. Full emergency preparedness consists of undertaking all commitments and procedures necessary to expedite an effective response to an emergency event.

There are many hazards to be considered and a variety of taxonomies to describe them. A common approach is to divide them into two major types: 1) natural, and 2) man-made or human-induced.[12]

- Natural risks include:
  - Hydro-meteorological
    - Hydrological: floods, landslides
    - Meteorological: extreme weather, storms, temperatures
    - Climatological: drought, wildfire
  - Geological: earthquake, volcanic activity
  - Biological: zoonoses, epidemics, vector-borne disease, foodborne disease.
- Human-induced risks include:
  - Technological: industrial hazards, structural failures, transportation accidents, fire and explosions, hazardous materials (chemical, biological, radionuclear), food/water contamination, extreme air pollution
  - Societal: armed conflict (national, international), terrorism (chemical, biological, radionuclear, explosives), refugees and displaced persons.

3.2 Capacity and capability assessment

A needs assessment is produced by conducting a gap analysis that evaluates existing capacities (resources and infrastructure) and capabilities (knowledge, skills and abilities), and then compares them with anticipated response and management requirements derived from a risk assessment. The risk assessment identifies what could damage a community and what would challenge the resources and capabilities of a public health authority, focusing on the need for a risk management programme to control and minimize various threats.

The capacity and capability assessment identifies the current state of response resources – human, infrastructure, and both general and specific. The absence of capacities and capabilities amplifies vulnerability, and therefore risk.

Where the risk assessment distils a wide range of hazards down to specific risks or threats, the capacity and capability assessment is a more expansive process that seeks to identify opportunities to address risks with existing resources. It uses the capabilities of a PHEOC that works with institutional and community resources, including:

- parties and agencies with relevant roles and responsibilities (e.g. hospitals, clinics, existing PHEOCs);
- competent human resources (e.g. health service staff of all types);
- specialized physical resources (e.g. microbiological and toxicology laboratories);
- mutual aid agreements with other jurisdictions (e.g. access to specialized resources not available locally).

12 Adapted from: Western Pacific Regional Framework for Disaster Risk Management for Health. Manila: World Health Organization Regional Office for the Western Pacific; 2015 (http://iris.wpro.who.int/bitstream/handle/10665.1/10927/9789290617082_eng.pdf;jsessionid=63FF97AADEA8809792A2B1B95094FE1C?sequence=1, accessed 20 February 2018).

Risk and capacity assessment is a perpetual process in a risk management programme. It should drive a wider process for determining standardized datasets which clearly indicate the status of priority risks and which identify patterns of vulnerability in the population.

3.3 Determining planning goals for the PHEOC

The combined risk and capacities assessments will create lists of gaps or shortfalls in planning, management and resources. Together these constitute a **needs assessment**.

The steering committee should prioritize these needs, with the needs of the PHEOC itself usually being given higher priority, and those of broader community resource development having secondary priority (except where enhancing a particular community resource enables significant mitigation of a hazard).

A needs assessment will identify some needs and opportunities that cannot realistically be addressed through the PHEOC. An example might be the need to implement programmes that reduce the impact of some hazards or threats. This is consistent with the first functions of comprehensive emergency management – prevention/mitigation and preparedness. While risk assessments commonly focus on the negative aspects or downside of risk, impact reduction programmes represent the upside of risk assessments – i.e. the positive opportunities.

3.4 Reviewing results and recommendations of past events and exercises

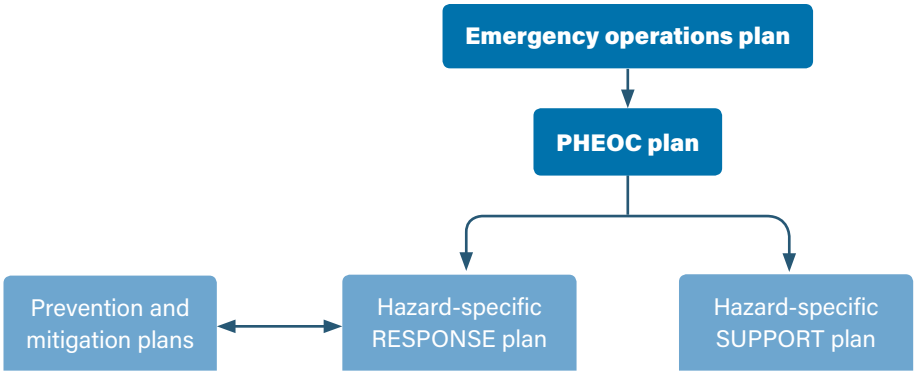
Where there are existing processes for managing public health emergencies or evaluating plans through exercises, it is important to examine the conclusions and recommendations from after-action reviews and/or evaluations in order to identify strengths and weaknesses in existing response and management plans. This is a key preparedness process and determines the nature and extent of existing and required investment in building effective response capability and capacity.

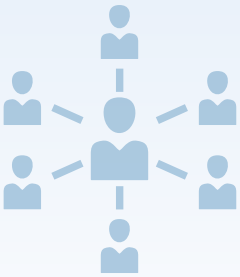
3.5 Developing overarching PHEOC plans

Four general types of plans are required:

1. An **emergency operation plan (EOP)** builds on what already exists and describes how the various components of the emergency response system will work together to achieve coherent responses to public health emergencies.
2. A technical, all-hazards **PHEOC plan, manual or handbook** assists assigned personnel to perform their roles and functions in the centre.
3. A series of **hazard-specific response and support plans** describe in detail special response requirements for particular types of incidents or events. Support plans describe processes and activities undertaken in response to an event where an agency other than the public health authority takes the lead but for which there are secondary public health consequences (e.g. a release of hazardous material).
4. A plan outlines the prevention and mitigation measures taken to reduce the impact of priority risks before and during a risk event. These measures are undertaken **on the basis of the precautionary principle** – i.e. if a risk is known and has high potential impact, then action should be taken to reduce it.

Figure 3. Hazard-specific and incident-specific STRATEGIC plans





4. PHEOC planning and stakeholder coordination

Key information:

A type A PHEOC requires the same plans, scaled to meet requirements, as types B and C. The differences lie in the scope, depth and detail of the other types.

4.1 Emergency operations plan

An emergency operations plan (EOP) is strategic in its intent, concerned with the big picture of who will do what and when. Although the term "emergency response plan" (ERP) is sometimes used to refer to an EOP, in practice the term ERP correctly refers to a specific component of a fully developed EOP.

Developing an EOP should involve the participation of the partners and other contributing stakeholders. Public health emergencies – particularly large-scale, complex emergencies – involve partners whose knowledge of such events may be limited but who have the resources necessary to assist the response. The EOP describes how and when such partners are to be involved. It should identify the sources of core and surge personnel and the sources of funding to address response costs, and it should indicate which government entity is responsible for the PHEOC. This is usually the Ministry of Health or the national public health agency, but the Ministry of the Interior and the NDMA are also possibilities.

In a type A PHEOC the EOP will be broadly focused on response activities, whereas a type B PHEOC will address response and recovery, and a type C will address all of prevention, preparedness, response and recovery.

It is useful to have a very brief summary of the physical and technological aspects of the PHEOC that describes the following:

- the number of persons it can accommodate;
- the number of workstations and meeting areas it has;
- the location of the media briefing centre;
- security arrangements;
- software and data processing capabilities;
- provisions for business continuity in the event that operations are disrupted or the facility becomes untenable.

All these elements are explained in greater detail in a PHEOC plan that is specific to the facility and which also describes functional roles and hazard-specific considerations.

The EOP should identify relevant key partners (e.g. acute care hospitals), stakeholders (e.g. national disaster management organizations) and sectors (e.g. private-sector transportation and logistics companies). It outlines high-level policy and instructions on when and how these partners' capacities and capabilities may be accessed during a public health emergency.

4.2 Concept of operations

A concept of operations, or CONOPS, is a core element of emergency operations plans. The CONOPS explains how the system is intended to function. A fully conceived national CONOPS has three key elements:

1. Identification of all intended levels and players involved in response and response management, and where each responsible organization fits into the response system

The outcome of this usually constitutes three groupings, namely:

- strategic level;
- operational level;
- tactical level.

The Framework contains a sample national-level CONOPS which is applicable to a public health emergency response infrastructure that is integrated into a national disaster management framework. The national or subnational PHEOC is part of the middle – or operational – level, where most interagency and intersectoral coordination needs to occur.

There is a different, more tactical form of CONOPS which is used to identify roles, responsibilities, rationale, goals and objectives for SOPs, and which is discussed in section 5.4 and Annex 3.

2. Identification of an authority structure or matrix for decision-making

The three-level model described in the Framework's CONOPS annex[13] is a decision-making structure. It requires an identification of the types of decisions that will be taken at each level.

3. Instructions about when, at what level and by whose authority the PHEOC will be activated

This entails developing a policy about incident-specific risk assessment with respect to the scale, complexity, severity and duration of an emergency, followed by an estimation of the extent of the resources needed to address it. The CONOPS should describe the process and considerations by which an event is assessed and graded, who is responsible for the process, the thresholds that drive a scaled activation of the PHEOC, and which organizational positions have the authority to activate it.

A significant feature of the CONOPS is a description of provisions for multi-agency and multisectoral cooperation and coordination. A national CONOPS should identify which other government departments/ministries are primary and secondary partners in public health emergencies, depending on whether their assigned roles are as a lead or support agencies.

Working relationships with partners take one of two dominant forms: 1) assistance, where the partner directly provides response resources of their own, or 2) cooperation, where the engagement is indirect. The effect of direct assistance is that the partner could be considered for inclusion in unified management in the PHEOC, whereas partners in a cooperative relationship would not.

13 See Annex 2 of the Framework for a public health emergency operations centre at http://www.who.int/ihr publications/9789241565134_eng/en/ (accessed 5 August 2018).

4.3 Strategic plan/Humanitarian response plan[14]

This is a high-level, multisectoral strategic plan that outlines the overall impact and needs arising from an emergency, including within the health sector, and the priorities for addressing the needs. Wherever possible, it is a sub-element of the national plan, or is closely linked to it. For disease outbreaks, WHO will often lead the planning process, while for humanitarian emergencies, OCHA leads with contributions from clusters/sectors. The best examples for humanitarian emergencies are Flash Appeals, issued 3–5 days after a sudden-onset emergency by the Humanitarian Country Team, and Humanitarian Response Plans (HRPs), which are multisectoral plans that are issued 30 days after sudden-onset disasters and annually during protracted emergencies.[15]

4.4 Civil/military cooperation plan

Military organizations are often key resources in a national disaster management plan because of their human resources, logistical capacities and, often, their technical response abilities.

Public health emergencies increasingly coincide with, or are consequences of, humanitarian crises that require a significant military presence in the response. Typical public health support activities would include assistance with surveillance and early identification of, and response to, emerging diseases and other public health emergencies. Consequently, a public health CONOPS and response plan should describe when and how military resources may be engaged and coordinated through the PHEOC.

Commonly, military engagement is arranged through the NDMA, and for public health purposes may involve a separate "coordination cell" that works with the PHEOC. Military officials are often reluctant to take direction from civilians, if not legally constrained from doing so, but many jurisdictions have designed joint management arrangements that build on a mutual understanding of each other's organizations, decision processes and limitations in order to create clear decision-making authority.

While rare, there are some jurisdictions where the military has no role in disaster response. In these instances, there may be little need for a civil/military cooperation plan.

A variation on the civil/military cooperation plan that should be considered is the potential need for cooperation with paramilitary bodies such as law enforcement, detaining authorities that deprive people of their freedom for security reasons, and border security agencies. The latter group is important for monitoring points of entry and for implementing control measures during large-scale disease outbreaks.

4.5 Incident management system

This section describes the main features of an incident management system (IMS). More detail about the specific roles of IMS functional positions is provided in section 6.

A PHEOC needs both an EOP and an IMS. The former positions the centre in relation to the broader response effort, while the latter guides the centre's personnel in their management activities and provides structure to those activities.

14 See: http://www.who.int/hac/about/erf/en/ (accessed 4 August 2018).

15 See: https://reliefweb.int/report/world/iasc-reference-module-implementation-humanitarian-programme-cycle-version-20-july-2015 (accessed 4 August 2018).

Emergency operations plans have a broad scope, covering the CONOPS and all the structures and activities of a PHEOC. They take into account the contextual variables that make one jurisdiction different from another, such as legal, operational and infrastructural mandates.

An incident management system is concerned specifically with the operational aspects of the PHEOC and the overall response system. It describes:

- the system's functional structure, control and coordination processes;
- the internal vertical and horizontal communications processes;
- external relationships with the emergency management infrastructure.

The Framework advocates adoption of an IMS, preferably the international IMS, as a basic requirement. This recommendation is based on systematic literature reviews that identify it as a best practice. The form and processes of the IMS may be adapted as necessary to accommodate unique jurisdictional or operational requirements. It is also useful as a conceptual tool to support planning processes, recognizing that there may be challenges to adoption for some jurisdictions, depending on the nature of their emergency management context.

Large-scale national or subnational public health emergency operations involving more than one jurisdiction, multiple agencies and multiple tactical implementation sites can be effectively managed using the **IMS functional model**, with specific adaptations where necessary to accommodate the heightened complexity of circumstances. Part of the utility of the IMS is its adaptability to the decision processing requirements of complex events. The IMS can adjust its functions, starting with the management (command) level, to accommodate the interests and mandates of a number of entities with potentially overlapping roles and responsibilities. It can also adapt to events that involve allocating scarce resources among multiple locations and/or events that require extraordinary logistical, planning and policy support.

The model's first adaptation is that of **unified management or command**, which adjusts the primary leadership role by creating and involving decision-makers from responsible agencies. These decision-makers commit to working together in a common response organization, with a common or joint operations section, and agree to have only one management spokesperson during any operational period.

The model's second adaptation is the provision of a **site support organization** focused on logistics, planning and policy support. Site/implementation-level or on-scene response activities and organizations are almost exclusively tactically focused. Their activities direct the application of human and material resources to address problems such as:

- investigating outbreaks;
- tracing contacts;
- treating patients;
- distributing prophylactic medication;
- moving personal protective equipment (PPE) to key locations;
- creating and managing clinical and administrative records.

Eventually the "front end" capacity of the responding organization(s) will require logistical, planning and policy-level support. A site support organization, typically a public health emergency operations or coordination centre, incorporates the same functions but has a different emphasis. It carries out few, if any, operational activities, replacing these with strong emphasis on:

- ensuring sufficient resources to support sustained response activities;

- coordination of assisting, cooperating and supporting organizations;
- preparation of public communications materials and activities;
- planning for expansion, contraction or extension of operations if required;
- ensuring that policies do not unreasonably inhibit operations.

A third adaptation of the basic model is the **area management organization**. This accommodates situations where there are two or more similar incidents in an area, resulting in competition for the same resources and producing a need for area management (e.g. one or more tactical response operations at some distance from each other). While a site support organization focuses on remote coordination of key support functions, an area management organization is largely operational in nature and directs the allocation of scarce resources between competing events.

Site-level event managers report to an area manager who is responsible for prioritized allocation of critical resources and ensuring that objectives do not conflict with each other. An area manager takes direction from the executive of the responsible agency.

An area management site is best located as close to all the on-scene response units as possible, without being co-located with any of them. If the events covered by the area management organization are multijurisdictional, unified area management may be established in order to ensure that each jurisdiction can be represented and can participate in decision-making.

One characteristic of the IMS is its adaptability around the core functions of control and coordination, operations, planning, logistics, and administration and finance. In public health there are continuing discussions about how best to integrate scientific and technical input into management structures, and about how to tailor control and coordination processes to reflect the more consensus-based approach to decision-making that is characteristic of public health organizations. In developing a public health EOP, these issues should be addressed when describing the IMS functional roles and responsibilities, which will require the steering committee to have a general understanding of the IMS system, its components and how they work together.

With the adoption or adaptation of an IMS, staff functions and roles should be outlined with a basic description of SOPs. Details of these will be expanded in a PHEOC plan that will be the primary reference manual for PHEOC staff.

5. PHEOC plan (manual)

Key information:

Section 4 described the features of the IMS. This section describes the roles of the functional positions as they would appear in a PHEOC plan, or manual , or handbook.

One of the first duties of persons who are newly assigned to a PHEOC is to become familiar with the PHEOC plan, a document also known as the PHEOC manual or PHEOC handbook. The terms "PHEOC plan", "PHEOC manual" and "PHEOC handbook" are used interchangeably to refer to a document that contains all the information and instructions that personnel will need in order to function in the PHEOC. Incoming staff members should start with:

1. The job description or terms of reference (TOR) for their function.
2. The job assistance sheet(s) relevant to their job; this consists of one or more checklists to ensure that certain activities are completed routinely.

The most useful plans are those that are most accessible for users. They may be in hard copy or electronic format, or both.

An effective PHEOC plan (manual) is one that:

- is organized;
- presents stripped-down information;
- contains step-by-step instructions.

Contents of the plan(manual) typically include the material outlined in sections 5.1 to 10.4 below.[16]

5.1 Purpose, scope and mission

This is a statement of intention. Why does the PHEOC exist? What is the PHEOC expected to accomplish? What are the associated responsibilities?

5.2 Laws and regulations

What are the laws, regulations and decrees that legitimize the PHEOC and govern its activities?

It is not necessary to include complete documents if these are lengthy. Extracts may be sufficient so long as the complete document is available in the PHEOC.

16 Note: Many PHEOC handbooks or manuals also contain (or reference) the resources and documents described in the text.

5.3 Strategic risk assessment

This is a prioritized "big picture" of the risk assessment and does not include all the granular details.

5.4 Concept of operations

It is not necessary to include the full national-level CONOPS; a summary is sufficient, provided the full document is available in the PHEOC. What is important is the concept of operations for the PHEOC itself, which should summarize how the centre is expected to operate. The details will be elsewhere in this document.

5.5 Facility detail[17]

This section should include:

- floor plan of the facility, identifying work stations by function and showing the location of:
  - meeting rooms
  - equipment
  - storage areas
  - rest, sanitary and food service areas
  - emergency exits
  - external muster stations;
- facility security arrangements and instructions.

5.6 Operational plans and instructions

This section should include:

- functional roles/positions at each level of PHEOC activation (activation, escalation, de-escalation and deactivation);
- decision processes and interagency communications at each level of activation;
- reporting procedures and planning cycles;
- instructions for using PHEOC management and data processing software;
- standard operating procedures for the PHEOC;
- samples of working documents and instructions for their use;
- functional plans for public communications and continuity of operations;
- a functional annex containing job descriptions (terms of reference) for PHEOC IMS positions;
- annexes containing hazard-specific response plans.

17 *See: Handbook for developing a public health emergency operations centre Part B: Physical structures, technology, and information systems* for detailed descriptions of the facility.

5.7 References

The PHEOC plan/manual/handbook should identify reference materials pertaining to:

- the legal authorities that legitimize the facility;
- the all-hazard and hazard-specific response and management strategies;
- documents supporting the risk and capacity assessments.

Only references are required in this section so long as the full documents are available electronically or in the facility.

6. Incident management system

Key information:

Section 4 described the features of the IMS. This section describes the roles of the functional positions as they would appear in a PHEOC plan, or manual , or handbook.

6.1 Functional positions

The PHEOC plan should provide sufficient information to allow newly assigned personnel to ascertain the roles of all the functional positions in the IMS quickly and easily. This is accomplished by outlining the terms of reference (job descriptions) in either the body of the plan or its annexes (known as "functional annexes").

Functional annexes focus on PHEOC operations and provide specific information and direction on the purpose of each functional area (management, operations, planning, logistics, finance/administration). Each of the PHEOC functional areas can have its own annex, or they can all be incorporated into a single annex on operations.

Functional annexes describe key elements of the management system, providing a level of detail that would be impractical in the main body of a planning document. Annexes are considered part of the plan but are largely explanatory.

Functional annexes provide the basis for generic (all-hazards) job descriptions for personnel in the PHEOC. They may also provide overall direction for hazard-specific responses, the details of which will be in separate appendices.

Possible functional annexes include:

- **Management** – a strategy development, direction, control and coordination annex covering management roles including:
  - risk management;
  - liaison;
  - public communications/information (emergency information, alert and risk communication).
- **Operations** – operations annex focused on how to support field-level operations. It includes job descriptions for the section, unit, team and task force heads.
- **Planning** – planning annex including job descriptions of roles for information collection and analysis, for document creation and management, and for section, unit, team and task force heads.
- **Logistics** – resource management annex including roles for section, unit, team and task force heads.

- **Administration and finance**[18] – administration annex including roles for section, unit, team and task force heads.
- **Engagement** of **subject matter experts**, scientists and other single resources directly employed in the PHEOC.
- **Management of external relations** – including with supply chain partners and assisting and cooperating agencies.

6.2 Terms of reference for IMS functions

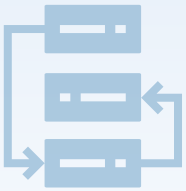
The basic job descriptions or terms of reference for each of the IMS functional positions should be included in the PHEOC plan. While basic requirements can be outlined in the body of the plan, functional annexes can provide greater detail and a broader explanation of expectations.

- **Command/management/control** (note that all lower-level functions are delegated from the command level; therefore any that are not assigned remain within the command function).
  - Responsible for overall management of an emergency:
    - **Public information officer**: handles the development of public information messages and manages the public interface
    - **Risk management**: ensures that response operations are safe – initially for responders, but broadly for all response activities
    - **Liaison officer(s)**: the point of contact for designated external agencies.
- **Operations section chief**
  - Supervises response activities in accordance with the operations section of the incident action plan, releasing or requesting resources as needed:
    - **Branch directors**: conduct response operations, using assigned human and material resources and resolving problems as they arise.
- **Planning section chief**
  - Supervises collection, evaluation, dissemination and use of information to support the production of plans and reports, maintenance of situational awareness, and prediction of the emergency's probable course:
    - **Situation unit**: compiles and presents information to support situational awareness
    - **Resource unit**: tracks the status of all resources assigned to the emergency response
    - **Documentation unit**: maintains records of response activities to support accountability
    - **Demobilization unit**: prepares the demobilization plan and monitors implementation
    - **Technical specialists**: provide specialized skills and knowledge to assist with specific response challenges and to support planning and operations.

18 In the interest of efficiency when resources are very limited, the logistics function may be combined with the finance and administration section because there are similarities between many activities in these sections.

- **Logistics section chief**[19]
  - Supervises provision of all emergency response facilities, supplies, services and resources:
    - **Services branch**: provides services to support emergency operations
    - **Communications unit**: establishes and maintains a communications and message centre and is responsible for communications hardware (e.g. radios, telephones)
    - **Medical unit**: monitors health aspects and provides medical services for response personnel
    - **Food unit**: ensures that response personnel have sufficient food and potable water
    - **Supply unit**: orders, receives, stores and distributes supplies and equipment, and coordinates procurement contracts with the finance section.
- **Finance and administration section chief**
  - Supervises cash flow by estimating, tracking and approving response-related expenditure; monitors and coordinates funding from all sources:
    - **Compensation unit**: manages compensation for injury claims by response personnel
    - **Cost unit**: creates and maintains cumulative response cost records, provides reports, and advises on potential cost savings
    - **Procurement unit**: prepares procurement instruments and ensures accounts for all properties utilized in the response
    - **Time unit**: ensures that personnel are compensated for time worked, and that documentation meets agency standards.

19 In the interest of efficiency when resources are very limited, the logistics function may be combined with the finance and administration section, due to similarities with many activities in these sections.



7. Operational plans

Key information:

- Operational plans provide guidance about what actions should be taken to address priority hazards/risks
- Not every hazard is unique, and operational plans focus on management of common consequences

7.1 All-hazards response plan

The IMS inherently takes an all-hazards approach but requires a response plan that recognizes the capabilities, capabilities, organizational structures and roles of the relevant jurisdiction's public health and partner agencies, as identified in the CONOPS.

Because of the varied contexts, a list of prescribed all-hazard response strategies is impractical, but some generic public health strategies include:

- sheltering in place;
- personal hygiene instructions;
- evacuation;
- infection control;
- isolation and quarantine;
- mass vaccination and medication programmes;
- establishing treatment centres and mass care facilities;
- creating public health services for mass gatherings and mass casualty events.

7.2 Hazard- or threat-specific contingency plans

One of the defining features of a hazard-specific response plan is that, after the hazard has been mitigated or reduced to the greatest possible extent, the response plan focuses on dealing with the consequences or impact of the emergency event.

Hazard-specific plans rely on the basic all-hazards EOP for routine activities of response and management, but plans differ from each other because they identify resources, responses, management, linkages and communications that are unique to the specific hazard or event and its context.

The Framework lists 10 dimensions that differentiate hazard-specific plans from the generic EOP:

1. Threat or occurrence thresholds that trigger alerts and escalating levels of emergency response. These are linked to:
   a. The level of threat (anticipated extent and impact) identified in the event
   b. The PHEOC response grading (anticipated level of response, or extent of resources required to respond).
2. Technical and scientific capacities that must be engaged, such as reference laboratories, subject matter experts, rapid response teams, environmental health teams, and/or specialized equipment.
3. Data collection, processing and reporting requirements, such as those under the IHR (2005).
4. Specific public alerts, warnings, risk messaging and particular types of community engagement and interagency communication processes.
5. Extraordinary notification and decision-approval processes.
6. Legal and ethical issues, such as those related to unapproved or contentious treatment, containment or rationing processes.
7. Cultural sensitivities, such as distrust of treatments, social and religious conventions, and management of the deceased.
8. Material acquisition and deployment processes, such as accessing global stockpiles managed by international or private-sector agencies.
9. The need to engage key partners who provide extra-jurisdictional resources, such as NGOs and international health agencies.
10. Special, as opposed to standard, operating procedures.

The list of potential hazard-specific plans for public health can be long but, since many hazards/threats requiring specific plans have sufficiently similar or common consequences, they can be grouped together to some extent. The all-hazards/common consequences approach encourages the management of common consequences as an efficiency strategy that helps reduce the need for improvisation in the response.

There will still be a need for the plan to have hazard-specific appendices to capture the residual differences between types of threats.

Consequences may be classified in four general categories linked to specific hazards:

- Biological effects, producing disease
  - communicable disease outbreaks
  - vector-borne diseases
  - zoonotic diseases
  - food- and water-borne diseases
  - bio-terrorism.
- Toxicological effects, producing illness or death
  - chemical releases (liquid or gaseous)
  - ionizing radiation exposures
  - contamination of food and water
  - terrorism.

- Physical trauma, producing injury
  - structural collapse
  - fire and explosion
  - terrorism: attacks at single or multiple sites
  - hydro-meteorological events.
- Psychosocial trauma, producing decompensation[20]
  - all hazards
  - armed conflict
  - flight from hostile environments.

7.2.1 Infectious disease outbreaks, epidemics and pandemics

Disease outbreaks tend to require similar types of response activities and resources, with the differences being related to scale, severity, location and rate of spread. All outbreaks require:

- detection;
- surveillance;
- contact tracing;
- epidemiological and laboratory analysis;
- usually, pharmacological treatment;
- convalescent care;
- some form of social distancing;
- protective equipment for responders and care providers;
- mass pharmaceutical prophylaxis or vaccination, if appropriate and available;
- supply chains and logistics arrangements;
- point-of-entry monitoring.

In the case of vector-borne diseases, there is the added consideration of supplies for vector management. Food- and water-borne diseases tend to require more intensive front-end detection, surveillance and analytical work, as well as attention to eliminating the sources of infection.

It is possible to aggregate all of these activities under one hazard-specific disease outbreak management plan with appendices addressing individual response differences. One notable exception might be complex plans for diseases with high levels of morbidity and mortality, which may require the creation of extraordinary capacities for treatment, community infection control, mortuary management and disposal of remains.

20 Decompensation: the failure of social and psychological coping mechanisms in response to stress, resulting in maladaptive (incomplete, inadequate or faulty) responses.

7.2.2 Hazardous materials: release of chemical, biological or ionizing radiation agents

Releases of hazardous materials may be accidental (resulting from error, natural disaster or transportation accidents) or deliberate (which constitutes terrorism regardless of the context). In both cases the effects are much the same: varying numbers of people are injured or rendered ill for the short or long term. The site of the release may be unapproachable for a period ranging from hours to a generation or more. Once a release is detected, the appropriate agency has secured the scene and the immediate victims have been dealt with by the health services, the role of public health is twofold:

- to facilitate and support recovery to a normal state;
- to help protect the public from any exacerbation of the event, such as contamination of water and food supplies or the spread of a communicable disease.

The management actions are similar to those taken in a disease outbreak and are inherently all-hazard in nature. What may be significantly different are the partners and stakeholders that may need to be engaged – such as biological, toxicological or radiological laboratories and experts, hazardous materials response and disposal organizations, and environmental health experts.

A national or subnational PHEOC would have a significant coordinating role in securing the resources required to implement a response. A hazard-specific plan would cover generic all-hazards notification, alerting, communication and mobilization of existing resources, but the plan's hazard-specific components would be any special subnational, national and international notifications required by policies, legislation or treaties.

7.2.3 Consequences of natural disasters

Natural disasters – such as earthquakes, tsunamis, floods, urban interface wildfires and severe weather events – have common effects in terms of:

- potential displacement of people in numbers exceeding the capacity of social services systems to provide critical housing and feeding resources;
- potential creation of mass casualties exceeding the capacity of medical services systems to provide care;
- infrastructure damage that will often entail the virtual destruction of key public health resources such as potable water, uncontaminated food, sanitary management facilities and public health clinics.

The role of public health in dealing with large numbers of people without shelter, clean water or sanitary facilities is to work with partner agencies (such as public works and other government departments, private sector organizations and humanitarian aid agencies) through the designated NDMA, to:

- safeguard life and safety;
- reduce suffering;
- prevent disease outbreaks in high-risk environments.

A hazard-specific public health response plan for natural disasters describes how public health contributes to and supports systemic operational continuity. The plan should identify:

- available public health agency resources, such as stockpiles of emergency medical supplies, field clinics and hospitals;
- partner agencies;

- key liaison roles and relationships within the national disaster management infrastructure.

In jurisdictions where, due to resource constraints, medical service systems and public health function as a single organization during an emergency, the response plan must identify how this is to be implemented. It should pay particular attention to authorities, credentialing and legal implications.

7.2.4 Mass care

Mass care situations arise when there is unexpected movement and/or aggregation of large numbers of people who have been displaced for a variety of reasons. The reasons might include natural disasters, flight from armed conflict, starvation and/or persecution.

The role of public health in providing humanitarian care to such populations is to support the creation and management of basic public health infrastructure – providing clean water, sanitation, disease detection and immunization where needed. In some instances, public health authorities may also provide elements of medical diagnostic and treatment services.

The hazard-specific public health response plan will have much in common with that for natural disasters but, instead of focusing only on systemic operational continuity, it will need to focus on creation and maintenance of field-level public health infrastructure for the duration of the crisis.

There may also be a need to develop or augment treatment resources where access to care is inhibited by internal and/or external factors.

7.2.4.1 Population movement

An understanding of the characteristics and patterns of population movement facilitates better targeting of emergency response efforts and more effective allocation of operational resources. Population movement may be the consequence of an emergency (as in the case of displacement), or it may be a driver of risk (as in the case of disease transmission through international travel). In terms of numbers, population movement may be large (as in the case of mass displacement) or small but longer and more complex in terms of duration, routes and interactions.

Regardless of the hazard(s), operational response plans must take into account, and adapt to, the changing dynamics of population movement. These include:

- where individuals and populations move to and from;
- their sociodemographic characteristics;
- the routes and modes of travel used;
- points of congregation.

This knowledge supports the identification of strategic locations for emergency response.

Additionally, in the context of infectious disease hazards, "congregation points" are important locations at which travellers interact among themselves and with host communities, and where the risk of pathogen transmission is therefore higher. Such congregation points must be strengthened with the necessary public health measures.

7.2.5 Mass gatherings

Mass gatherings are planned events that involve exceptional numbers and diversity of people. They include sports events (e.g. the Olympic Games, World Cup Football), religious pilgrimages (e.g. the Hajj,

Catholic World Youth Day), political inaugurations, and tours by persons with an exceptionally large following (e.g. the Pope). These types of events produce assemblies of such magnitude that existing public services could be quickly overwhelmed if something were to go wrong.

There is minimal inherent public health threat in a mass gathering, but there are potential hazards, with the possibility of an outbreak of infectious disease being the primary public health concern. There are also significant potential issues for public health partners. These include crowd control, provision of adequate sanitary facilities, overseeing the provision of food services, and the possibility of mass casualty incidents and terrorist attacks.

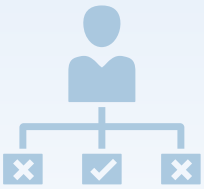
The role of a public health agency is to have plans in place for disease detection and response, as well as a support plan to make resources available – such as public health unit clinics, stockpiled field emergency medical facilities and, in jurisdictions where this responsibility is assigned to a public health authority, other essential supplies.

7.3 Prevention and mitigation plans

As part of a comprehensive risk management programme, 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.

1. **Pre-event prevention** of natural hydro-meteorological and geological hazards is rarely possible, but their impact can be significantly mitigated by preparedness measures such as situating vulnerable populations out of harm's way. Biological hazards can to some extent be prevented by diligent monitoring and early intervention, or significantly mitigated by combining these with rapid deployment of containment and treatment resources when an event occurs. Human-induced hazards are the most preventable but usually require complex policy interventions and economic investments. Even partially successful interventions and investments can have significant mitigating effects.
2. **During the response to an event** there are two significant opportunities to manage risk and prevent the situation from getting worse. The first is protection of response personnel, which is a required practice. The second is to target interventions to the most vulnerable populations first (e.g. through selective prophylactic vaccination or medication during disease outbreaks). This requires the PHEOC to have data management resources that support the necessary analysis.
3. **During post-response recovery planning** there is an opportunity to prevent or reduce the impact of future events by reducing the vulnerability of affected populations through policy and economic interventions and social mobilization. An example might be to enable communities affected by vector-borne disease to clean up conditions that support the vectors, and to teach them to work together to eliminate or minimize future outbreaks (e.g. malaria control initiatives).



8. Functional plans

Key information:

- Operational plans describe WHAT to do; functional plans describe HOW to do it
- A type A PHEOC will have basic instructions. Types B and C will be more complex, reflecting their expanded missions and accountabilities

8.1 PHEOC internal communications plan

An incident management system should consist of organizational units with no more than seven direct reports (seven being the maximum number of persons that a supervisor can work with effectively in a high-pressure, emergency situation).

All supervisors, at each level and across all functions within the response organization, are responsible for maintaining a high level of situational awareness in their work 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 mechanism for these communications is a mandatory process of systematic briefings, vertically from the incident manager to all teams, task forces or single resources, and horizontally across all activated IMS functions.

Vertical briefings commonly occur as staff meetings/briefings of staff by supervisors. The vertical communication process is the primary management control mechanism.

The **horizontal process** aims to achieve coordination and unity of effort.

These vital communications activities should occur at least once during each operational period.

The standard mechanism for horizontal communication is a planning meeting that engages supervisors and staff from all functions and agencies that are contributing to the response. The planning meeting provides attendees with a situation update and engages them in identifying and resolving issues of responsibility and coordination. In large-scale events with a complex response structure, usually only the supervisors attend planning meetings. In less complex situations, all available staff will often attend. Planning meetings start with a situation update and then proceed to a consideration of new information, options and objectives.

The other avenue for achieving horizontal coordination, particularly among cooperating and supporting agencies, is through liaison officers who represent those agencies and provide formal links with event management.

An additional mandatory briefing is the **transition briefing**, in which each person finishing a period of duty must brief their replacement. The briefing may be verbal or written but it must be done. At a minimum,

this briefing provides a status update since the incoming person's last exposure to the event. Persons new to the role should be briefed by both the outgoing staff person and the supervisor.

Supporting the required interpersonal briefing processes are two standard products of any emergency operation: **situation reports (SITREPS)** and **status boards**.

Situation reports are written status updates, prepared for each operational period, which provide:

- a record of the event;
- evolving analysis;
- updates on progress toward major goals and objectives;
- the status of resources;
- public risk management messages.

SITREPS are prepared by planning function staff, approved by the incident/event manager and provided to all PHEOC personnel. They are disseminated primarily in electronic form, with the redundant option of paper.

Status boards provide real-time updates on much of the same material as a SITREP, and are posted prominently in the PHEOC for all to observe, creating a common operating picture and uniform awareness of the situation.

8.2 Public communications plan

The PHEOC plan should outline two approaches to public communications:

1. The all-hazards or generic approach.
- The hazard- or impact-specific approach.

Frequent, high-quality, public risk messaging is a primary product of a PHEOC. It tends to be event- and context-specific, although some of the messages can be standardized and can be included in the outlines of the two approaches.

Features of the public communications plan to include in the PHEOC plan include processes for:

- identifying key audiences;
- identifying spokespersons;
- securing approvals for messages when the event manager has delegated the necessary authority.

The purpose of public risk communications 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. The precise information to be conveyed usually depends on the incident and the context, but the process of identifying the information needs of different audiences and the most effective communication methods is largely generic.

Recognizing this, many messages can be pre-scripted to present incident-specific information in a manner that meets the identified needs of each audience. Such messages would include standardized instructions for typical public health interventions.

A communications plan should identify the audiences (those that are vulnerable or disadvantaged, health service providers, and different language and cultural groups), differentiate their information needs, and identify the most appropriate media through which to reach them. Media to be considered might include

print, broadcast or electronic channels (including social media), or face-to-face interaction through press conferences, briefings etc.

In situations where communicating effectively with communities is challenging, it may be necessary to pre-identify community leaders on whom residents rely for their information.

The public communications plan should also identify credible spokespersons and subject-matter experts. If a senior government official is to be the visible spokesperson, the plan needs to give details of the approval process for briefing and speaking notes.

8.3 Continuity of operations plan

The continuity of operations plan, otherwise known as the business continuity plan, tells personnel what to do when the functioning of the PHEOC is interrupted or damaged. There will be two elements to the plan:

1. What to do if the PHEOC is damaged sufficiently that it needs to be vacated.
2. A delegation and succession document that details how losses of key personnel will be dealt with by delegation or replacement.

The plan does not deal with the reasons for the disruption but only with the consequences. These consequences fall into three categories:

1. Damage to the physical and operational infrastructure due to fire, flood or structural failure; external attack due to security breakdown; and failures of hydroelectricity, telecommunications, or information technology that render the site untenable, or its electronic tools nonfunctional. Such damage may require relocation of the centre to an alternative site. Such a site could be a "hot site" that is fully resourced and waiting for activation, a less well-resourced "warm" or "cool" site that requires a planned, tolerable degradation of functionality, or a "virtual PHEOC" which entails conducting operations remotely in an electronic environment.
2. Disruption that includes loss of personnel, particularly key decision-makers, for any reason other than routine staff rotation. The standard approach to this is to plan to have sufficient personnel to ensure that there are three trained people available for all PHEOC positions, so there is always someone spare and there is a succession or substitution and delegation plan for decision-makers.
3. The third category relates to the failure of critical elements of the supply chain that provide response resources. Typically, this will not require relocation of the facility or changes in responsibilities of personnel but will require prior identification of alternative resource suppliers and procedures for their engagement.

A business continuity plan requires its own risk assessment that analyses potential threats to the centre, mitigates these to the greatest extent possible, and then develops a continuity plan based on dealing with the most damaging threat or threats.

9. Incident action plans

Key information:

- Incident action planning is a process for converting stated objectives into results
- Planning starts with the activation of the PHEOC and continues until final stages of deactivation

Incident action planning sets and communicates priorities, strategies and objectives for operational and support activities. Incident action plans (IAPs) are a basic PHEOC product that may be oral or written, but for any incident lasting more than one operational period (commonly a single day) they should be written (although this requirement is at the discretion of the incident manager or the unified management team). A written action plan helps ensure continuity of action and management that may otherwise be broken due to personnel changes. Incident action planning starts at the onset of the incident and continues until the situation is resolved and a response evaluation is completed.

As emergencies become more complex, or involve multiple agencies or jurisdictions, written and well-communicated IAPs are increasingly becoming vital management tools to support safety, situational awareness, unity of effort and efficiency. Action plans are specific to each emergency incident/event, each operational period and each site. Multiple incident sites require individual action plans, and each section of the PHEOC will have a subplan that comprises a piece of the overall IAP. Annex 5 contains a sample format for an incident action plan.

IAPs focus resource acquisition and allocation and identify actions and responsibilities within a short, defined period of time; this varies from 12–24 hours in the early stages of a response to days or weeks later when the response is under way. The relationships between objectives and the time needed to accomplish them provide the basis for determining operational periods that become part of the rhythm of PHEOC processes. IAPs break complex response activities into manageable, bite-sized pieces and document them in a manner that supports PHEOC and agency accountability.

Incident action planning, which is the responsibility of the IMS planning section (function) in the PHEOC, aims to support a transition in PHEOC activities from reactive response to proactive situation management. Action plans are authorized by the event/incident managers under their delegated authority to manage the response.

9.1 Steps to develop incident action plans

9.1.1 Initial action plan

Immediately following the activation of a PHEOC, initial planning activities differ from those that will follow. Initial planning activities include:

- developing initial situational awareness by collecting and analysing information to gain an understanding of the nature, magnitude and impact of the emergency;
- identifying response partners and stakeholders, and potential participants in a unified management group;
- identifying resources available to deal with the emergency;
- identifying response and management priorities on the basis of available capacities and capabilities;
- assembling a planning team within the planning section, involving representatives of agencies that may participate in a unified management group;
- addressing the resource requirements of staffing and supporting the PHEOC;
- identifying incident management priorities;
- issuing statements of intent by leadership, often at the policy level, about the most important things to be accomplished;
- communicating initial findings and activities to the IMS team;
- initiating action planning for the first operational period.

An initial IAP for a relatively large-scale emergency may need to focus on the organization of the response, taking into account issues such as the number of field implementation units (command posts) and the extent of their geographical dispersion. A national or subnational PHEOC may have to support field operations in geographical areas that compete for scarce resources, in which case the IMS structure may need to be adjusted to take account of geographical realities. Where this is not an issue, the basic IMS functional organization should be satisfactory.

The initial action plan should also address the reporting relationships between any subject matter experts and advisors in the PHEOC within the IMS.

9.1.2 Ongoing action planning

Once the organization and priorities are established, incident objectives are developed on the basis of:

- agency mandate and policy;
- incident priorities;
- direction from the policy group;
- the realities of the situation;
- the experience and judgement of IMS team members.

Incident objectives should be:

- specific, observable or measurable;
- achievable with available resources;

- realistically achievable within the stated time;
- time-limited (this last factor defines the operational period).

The incident objectives should include sufficient information to ensure understanding and should be sufficiently flexible to allow innovation in achieving them.

Objective statements typically start with an observable, action-oriented verb such as "evacuate", "vaccinate", "produce", "install", "build", "provide", "revise", "investigate" or "evaluate". It is best to avoid soft, non-actionable verbs such as "support", "maintain" or "continue." Statements of objectives require the approval of the incident manager.

After developing the objectives, the next step is to formulate how they will be achieved, by identifying and evaluating strategies or implementation options for each objective. The evaluation must take account of the dynamics of the situation, including limitations of the participating organizations. Sound strategies are safe, feasible, cost-effective and legally, ethically and politically acceptable.

When PHEOC management has endorsed the preferred options or strategies, resources sufficient to implement them need to be assigned and coordinated. Attention should be paid to the time required to position and utilize the resources where they are needed, and to acquire additional resources if the available ones are depleted.

A national or subnational PHEOC will not generally utilize assigned resources directly, but rather will allocate them to one or more tactical implementation units. This makes the operational work of the PHEOC largely logistical in nature. Each resource assignment to an implementation team or individual IMS function should have sufficient written information to guide its use, including:

- the tasks to be accomplished;
- the organizational position that is responsible for these tasks, including the reporting requirements;
- special knowledge, skills and abilities required;
- limitations on the capabilities of the resources;
- special equipment required
- logistical support needs;
- special contact information.

As the response develops and evolves, the PHEOC monitors and evaluates the outcomes of interventions and activities, establishing new objectives, implementation strategies and revised resource allocations based on those outcomes until the situation is resolved. This cyclical, management-by-objectives process operationalizes the core mission of a PHEOC – to identify and solve problems, make decisions and manage resources.

9.2 Deactivation, demobilization and recovery planning

Eventually, event- or incident-related morbidity and mortality will return to a pre-event or background level, signalling that the emergency situation is in the final stages of resolution, that PHEOC activities can be progressively deactivated and that an orderly return to normal can commence.

Deactivation and demobilization planning are commonly seen as one set of activities; in reality, while they are closely linked, they are different processes.

Deactivation planning relates to the orderly, progressive cessation of activities and functions as the emergency is brought under control. Full deactivation of the PHEOC triggers a post-event evaluation (a "hot wash") and/or exit interviews of personnel. It also triggers the demobilization plan that is developed to deal with the collection and return of resources (including personnel who were employed in the response) and winding down event-related operations.

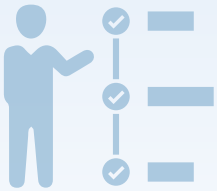
Dealing with the cessation of PHEOC activities requires a **deactivation plan** that **scales back functions** on an orderly basis, with the agreement of the incident management team and higher authorities in the policy group. As this is occurring, a number of issues remain that must be addressed in a **demobilization plan** that deals with **dismantling the incident-specific response infrastructure**, as noted below.

- Response resources and equipment, including personnel, must be accounted for and returned.
- Unused resources and donations must be returned or allocated.
- Incident-specific financial accounts must be finalized and closed.
- Public health treatment, prevention and mitigation initiatives undertaken as part of the response should be shifted to sustained mitigation and prevention programmes, along with any uncommitted funding. This is part of the recovery planning.

The recovery aspects of a comprehensive emergency are often long-term and can potentially last for a generation. Because of their experience with the emergency event, key PHEOC officials have leadership roles in starting community recovery processes.

Community post-incident recovery planning can reveal a dynamic conflict between those whose concept of recovery is a straightforward restoration or return to the situation as it was previously, and those whose concept is more visionary, with a desire to make things better than they were. If the incident was exacerbated by the way things were, and if the more visionary concept includes increased prevention and mitigation, there is a clear corresponding opportunity for public health education and advocacy by those who were part of the response.

There is a form of recovery planning that may occur when the emergency is ongoing, without any apparent near-term resolution. This is characteristic of the situation in most refugee camps, where public health is engaged in trying to ensure rudimentary public health infrastructure and services. In these situations it is difficult, and to some extent unnecessary, to continue to operate a PHEOC in full emergency mode. A more realistic approach is programmatic, with a focus on providing longer-term solutions to the needs of displaced people living in suboptimal conditions. Such a programme may be structured and operated much like PHEOC, but the planning horizon will be longer and the pace of activity will be reduced to a more sustainable level. Another situation where a shift to a programmatic approach might be in order is that of an outbreak of a high mortality disease that becomes endemic but which is manageable with appropriate sustained public health interventions (such as HIV/AIDS).



10. Standard operating procedures

Key information:

Operating procedures entail specific instructions, related to the level of activation of the centre, that sustain the incident management process

A plan describes what actions should be taken and when. **Standard operating procedures** (**SOPs**) describe how actions should be taken and which organizational positions are responsible for taking them. They guide the implementation of established capabilities.

SOPs are the prescribed procedural instructions and steps for **routines** that sustain the incident/event management process. They depend of the jurisdiction and the context, are built on or adapted from the operating processes and policies of the responsible jurisdiction, and are modified as needed to address the requirements of partners and stakeholders. Annex 4 contains a sample format for standard operating procedures.

When a particular operational objective may be met in different ways, depending on circumstances, the SOP may take the form of a **standard operating guideline (SOG)**.

It is common for SOPs to describe an escalation process, depending on the PHEOC's level of activation.

10.1 Watch level

A risk management programme entails constant monitoring of hazards and threats between PHEOC activations. This monitoring may be conducted within or through the PHEOC, such that the facility is constantly in "watch" mode. A SOP for this would address:

- the hazards to be monitored;
- how the monitoring should occur;
- which organizational positions are responsible for it;
- what they should do when certain threat thresholds are exceeded;
- what they should do when new threats are detected and evaluated.

10.2 Alert level

The alert level is the early "stand up" or standby phase of activation when an emergency event has occurred or is imminent. The potential need for a response will have been identified, and each IMS function will have a list of preparatory procedures (although not all functions will necessarily be activated).

In a jurisdiction where full IMS implementation is not practical (or feasible), a designated event manager, probably with the assistance of others, will work through the process of preparing to respond by identifying resources and establishing linkages, based on established procedures. This may involve certain thresholds or triggers for escalating the level of activation.

10.3 Response level

During response mode the centre is partially or fully activated, with assigned personnel functioning according to the terms of reference for their positions. The SOPs will provide specific direction or guidelines on **how** and **when** the procedures are to be done, including:

- **whom** to engage;
- **what** steps are essential; and
- **why.**

These guidelines will relate to laws, policies and best practices.

Where aspects of the emergency require responses that are not envisioned in the response plan, PHEOC personnel are required to work together as a team to improvise the appropriate responses. Since different grades or scales of emergencies require different levels of response, it is common to define different response levels in the response mode. The highest level of response will deal with the events of greatest magnitude, scope and impact; these require the greatest resources and coordination, and often involve international partners. The lowest level of response addresses relatively minor events for which all response activities are largely within the capabilities and resources of the national PHEOC.

10.4 Deactivation level

SOPs for deactivation are focused on achieving an orderly return to normal by progressively scaling back response activities. Procedural instructions will be of two kinds:

1. Those instructing how and when to disengage from response activities.
2. Those providing direction related to:
   - demobilizing
   - accounting for response resources, including personnel
   - initiating an evaluation process.

11. Monitoring, evaluation and performance improvement

Key information:

Monitoring and evaluation are focused on the effectiveness of the plans, procedures and infrastructure employed by the PHEOC

Identifying and correcting deficiencies in effectiveness provide the basis for continuous improvement

The IMS incorporates a process for capturing information about how well or how badly an event was managed, based on the plans for that event and from the perspectives of those involved.

This process takes the form of two debriefing sessions that are central to evaluating the overall management of the situation: the after-action review and the event response evaluation. These sessions customarily result in a report containing recommendations for improvement.

During protracted events there is also the option of an in-process review.

11.1 Post-event and exercise evaluations and recommendations

The **after-action review** process involves all persons assigned to the PHEOC and focuses on the PHEOC's functioning during the emergency. It is often referred to as a "hot wash". It is commonly handled by the head of the planning function section, is usually oral, and it occurs immediately after the event is concluded and the decision to deactivate is made, while information and impressions are still fresh in peoples' minds.

The larger **event response evaluation** involves all significant partners. This evaluation is more structured, occurs a few days or weeks later, and involves a meeting of all participants at which actions, outcomes and issues are reviewed and formal recommendations noted for future action. This is the role of the most responsible jurisdiction and is best accomplished by using an independent evaluator.

The purpose of the post-event and exercise debriefings and evaluations is to:

- capture ways to improve the functioning of the centre and its various plans and procedures;
- provide evidence for necessary improvements;
- identify additional staff training needs.

The focus should always be on the validity of the plans and utility of the PHEOC infrastructure that supported the response, or which was being tested with an exercise.[21]

There are two broad methods for evaluating the functioning of a PHEOC: standards-based evaluation and capabilities-based evaluation. A standards-based approach requires prior articulation of standards and asks questions of each PHEOC management element:

- What met or exceeded standards?
- What partially met standards?
- What failed to meet a standard?
- Were the failures due to the standard being unachievable, or were they indicative of a need for more training and/or resources?

A capabilities-based approach requires a detailed understanding of the specific abilities that the PHEOC is expected to demonstrate at the level of observable activity and which, if not observed, indicate a probable deficiency in plans, procedures, resources or technologies.

A post-event or post-exercise evaluation should contain a section for recommendations and, in formal evaluations, an "improvement plan" that prioritizes the recommendations and describes the process, timetable and persons responsible for implementing it.

11.2 In-process review

The **in-process review** is a review of PHEOC functioning during an emergency response and is aimed at ascertaining the effectiveness of the operation. The two primary ways to conduct an in-process review are as follows:

1. The first method is similar to an after-action review (see 11.1) and provides an opportunity for PHEOC personnel and members of the policy group to examine and critique processes and outcomes up to the moment.
2. The second method is to have the review conducted by an independent observer who is not part of the response effort. This approach may be mandated by the event manager, policy group or steering committee.

11.3 Continuous improvement programme

A post-emergency or post-exercise PHEOC improvement plan **closes the loop** in the cycle between preparedness planning, response and recovery in comprehensive emergency and risk management.

It generates a new cycle of preparedness planning and testing (evaluation) that is the foundation of a **continuous improvement programme** which is focused on building systemic capabilities, capacities, plans and procedures.

21 *See: Handbook for developing a public health emergency operations centre Part C: Training and exercises* for a detailed discussion of exercises.

12. Glossary

This document utilizes the same terms as the glossary in the Framework document, with five new additions.

The following new terms have been added: doctrine; One Health; policy, policy level, policy group; and threat.

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 and 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.
Administration	The response management function that attends to accounting, budgeting, time- and record-keeping, payments and disbursements and procurement contracting. Commonly also identified as **finance and administration.**
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.
All-hazards	An approach to the management of the entire spectrum of emergency risks and events based on the recognition that there are common elements in the management of these risks, including in the responses to virtually all emergencies, and that by standardizing a management system to address the common elements, greater capacity is generated along with specific measures to address the unique characteristics of each event.
Assisting agency	An agency or organization providing personnel, services, or other resources to the agency with lead responsibility for incident management.
Business continuity plan	A document that describes how an organization will maintain and restore critical operational functions and services to a predetermined acceptable level in the event of an occurrence that disrupts its operational capabilities. The focus is not on the nature of the occurrence but on recovering from the damage to the organization. Often called a **continuity of operations plan**, particularly for government agencies.
Capacity	A combination of all the strengths, attributes and resources available within an organization, jurisdiction, society or community that can contribute to managing and reducing the level of risk and strengthening resilience. Capacity can include infrastructure and physical means, institutions, social coping abilities, or economic assets as well as human knowledge, skills and collective attributes such as social relationships, leadership and management capability.
Capability	Possessing the demonstrable ability to perform a particular task.
Chain of command	A series of command, control, executive, or management positions in hierarchical order of authority.
Cold debrief, cold wash	A debriefing session held after a period of time has passed following an exercise or incident, in order to discuss, with the benefit of hindsight, any observations and issues that may have been overlooked during a hot wash. See **hot wash**.

Command	The act of managing, directing, ordering or controlling by virtue of explicit statutory, regulatory or delegated authority. The common short name for "incident command", involving making decisions, implementing plans to manage an incident, and controlling their effects.
Command post	A form of site-level emergency operations centre, which may be mobile and assembled as needed by the agency or agencies responding to an incident.
Command and control	Aspects of a management system that provide for vertical authority and accountability (a "chain of command") and control of resources such as staff and assets.
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.
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 multisectoral, international response that goes beyond the mandate or capacity of any single agency.
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 to evaluate different emergency management capabilities. A comprehensive programme comprises five general types of exercise, namely: 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 describes how the structural or functional elements of the organization will work together to produce a coherent management response.
Consequence management	The coordination and implementation of measures and activities to alleviate the damage, loss, hardship and suffering caused by an emergency. The term intends to be distinct from crisis management – i.e. it distinguishes between dealing with the immediate emergency event (e.g. putting out the fire) and dealing with the consequential effects or aftermath of the event (e.g. treating burn victims). Some examples of consequence management in the health sector include mass casualty management, psychosocial services, communicable disease control, and environmental health measures. Consequence management also includes measures to restore essential government services, protect public health and provide emergency relief to affected governments, businesses and populations.
Context	As applied to emergency (risk) management, context is described by a number of factors related to the setting, circumstances and environment of risks and events. These include the cultural, social, political, legal, regulatory, financial, technological, economic, natural and competitive environment – whether local, national, regional or international – and those factors related to the governance, organizational structure, roles, accountabilities, policies, objectives and strategies that are in place to achieve those objectives. They also include the capabilities of and relationships between the internal and external actors and stakeholders.

Contingency plan	A plan to deal with particular aspects of a specific threat that is different from other threats. For example, while general management is similar for most emergencies and is 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**).
Control	The application of authority, combined with the capability to manage resources, in order to achieve defined objectives. Refers to the overall direction of the activities, agencies or individuals concerned and operates horizontally across all agencies/organizations, functions and individuals.
Cooperating agency	An agency supplying assistance other than direct operational or support functions or resources to the incident management effort.
Coordination	Management processes to ensure integration (unity) of effort. Coordination relates primarily to resources. It operates vertically (within an organization) as a function of the authority to command, and horizontally (across organizations) as a function of the authority to control.
Credentialing	A process that results in authentication and verification of the certificates, licences, identity and competence of personnel, including designated incident managers, emergency responders, and professional, technical or managerial personnel.
Debrief/debriefing	A critical examination of a completed operation or exercise in order to evaluate actions.
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 well-being, together with damage to property, loss of services and environmental degradation.
Discussion-based exercise	An exercise that consists of a facilitated discussion that allows participants to familiarize themselves with response plans, policies and procedures, and to explore their application in specific emergency scenarios. Discussion-based exercises include seminars, workshops, table-top exercises and games.
Doctrine	A statement of philosophy and intention related to the principles of a government.
Drill	A limited form of operational training exercise, the purpose of which is to establish and maintain specific response behaviours and procedural skills and to evaluate how the EOC facility supports the procedures.
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 non-routine. Emergencies may be considered on a continuum from local emergencies with limited consequences to wide-area disasters with catastrophic consequences. Incidents or events are often referred to as emergencies, with the terms used interchangeably, but not all incidents or events are emergencies.
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 the 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 risk, reduce existing risk 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 multisectoral 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, as well as the structure, authorities and responsibilities for a systematic, coordinated 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**). 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 SOPs for an EOC. It is the primary resource manual for EOC staff, containing samples of all necessary forms, role descriptions, concepts of operations and SOPs.
Event	An emergency incident or occurrence. "Event" and "incident" are often used interchangeably. An event may be insignificant or it could be a significant occurrence, planned or unplanned (e.g. extreme weather event or mass gathering), that may have an impact on 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 a public health event of international concern, or PHEIC).
Exercise	A form of practice, training and evaluation of capabilities involving the description or simulation of an emergency, to which a described or simulated response is made on the basis of agency emergency plans or contingency plans, and an EOC plan. Exercises can be used for validating policies, plans, procedures, training, equipment and inter-organizational agreements; clarifying and training personnel in roles and responsibilities; improving inter-organizational coordination and communications; identifying gaps in resources; improving individual performance and identifying opportunities for improvement; and as a controlled opportunity to practise improvisation.
Full-scale exercise	An operational exercise that focuses on operational capabilities by deploying agency resources in real time, in a simulated setting that is as realistic as possible, without putting public and staff safety at risk. Full-scale exercises are the most complex and costly form of training and evaluation.
Function	One of the five major activities in the incident command system (which are, respectively, command, operations, planning, logistics and finance/administration). The term "function" is also used when describing the activity involved (e.g. "the planning function"). Other functions, such as intelligence/investigations, may be established if required in order to meet incident management needs.

Functional exercise	A fully simulated complex operational exercise (involving no deployment of resources) for evaluation and training, which focuses on policies, roles, responsibilities and management capabilities within an emergency response management system. A functional exercise will usually involve challenging time constraints and will occur within the EOC or coordination centre so that the available tools and technologies can be used and evaluated.
Geographic Information Systems (GIS)	A computerized database for the capture, storage, analysis and display of locationally defined information. An organized collection of computer hardware, software, geographical data and personnel designed efficiently to capture, store, update, manipulate, analyse and display all forms of geographically referenced information. It is first and foremost an information system with a geographical variable, which enables users easily to process, visualize and analyse data or information spatially. Also **geospatial information mapping**.
Hazard	A potentially damaging physical event, phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental degradation.
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 alternative 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 command (function)	The lead managerial position in an EOC with responsibility for setting the incident objectives, strategies and priorities, and which has overall responsibility for incident management.
Incident management system (IMS)	An emergency management structure and set of protocols that provide an approach to guiding government agencies, the private sector, nongovernmental 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 utilized to support other aspects of emergency management, including preparedness and recovery. Also **incident command system.**
Information and communications technology (ICT)	A system of hardware, software and networks that move information, and the personnel required to design, implement and support the system.
Information management	A set of processes and procedures to collect, store, analyse and distribute data and information to enable EOC functions.

Information system	An integral set of computational components to ensure availability, accessibility, quality, timeliness and usefulness of data and information for EOC functions. The components include: resources (coordination and leadership, policies, financial and human resources, infrastructure); data requirement and information needs; data sources; data management (data storage, data quality, data processing and compilation); information products; and information use.
Interoperability	The ability of two or more systems or components to exchange data using common standards.
Joint management	Commonly referred to as **unified management** or **unified command**, this is a form of EOC management whereby agencies with complementary jurisdictions, or mandates in an emergency, work together to share the control and direction of the EOC, with agreement that one manager will take the lead for the duration of the emergency event or for an agreed operational period.
Jurisdiction	An organization (level of government or designated agency) with the authority and responsibility to provide particular functions and services within a defined area**.**
Lead agency	Agency or sector responsible for managing specific types of emergencies.
Leadership	The process of engaging others and fostering constructive processes for working together and sustaining collaborative interaction to guide activities and achieve objectives.
Lessons learned	Identified issues for which remedial actions may be implemented in order to improve performance.
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.
Location	A field-level or site-level EOC (command post) normally located near to where tactical operations (direct application of resources) need to occur. The facility will often be the responders' normal office or field workspace, or it may be a mobile unit that moves to new sites as needed. For many public health emergencies, it is best located near the geographical perimeter of the event, with good transportation access, rather than in the centre.
Logistics	The aspect of emergency (risk) management that deals with the procurement, distribution, maintenance, replacement and repatriation of material and human resources, including the provision of support infrastructure and services to response staff.
Management by objectives	A management approach that entails: establishing overall incident objectives; developing strategies based on the objectives; developing and assigning appropriate resources; establishing specific, measurable results or tasks for various incident response activities; directing efforts to achieve the results; and evaluating results to measure achievement and facilitate corrective action.
Minimum dataset	A set of data elements developed and used for essential EOC functions. The EOC minimum dataset consists of: domains, associated indicators (data and information needs), definitions for each indicator to provide standardization, possible sources of data for each indicator, a rationale for why each indicator is important, and additional supporting information.

Mitigation	Activities designed to reduce or limit risks to persons or property or to lessen the actual or potential effects or consequences of an incident. Mitigation measures may be implemented prior to, during or after an incident. Mitigation involves ongoing actions to reduce hazards and vulnerability and exposure to hazards, and to increase capacities.
Mobile command post	A vehicle, employed by response agencies, designed and equipped to support tactical-level coordination and control of personnel and agencies involved in responding to an emergency at field or site level.
Modularity	An organizational characteristic where components are standardized to support flexibility in building or adjusting the organization to address changing requirements.
Objectives	Results or outcomes of specific activities to be achieved over a stated time. Objectives are specific, measurable and realistic statements of intention.
Off-site EOC	Established to support responses to larger, often multisite, emergencies that entail a more complex set of considerations. Proximity to decision-makers, partners, stakeholders, donors and humanitarian agencies is a significant consideration for the establishment of such an EOC. Typically, it will be placed within the normal office infrastructure of a responsible agency. To the greatest extent possible, if the EOC is providing multisite area coordination, it is best located separately from the incident.
One Health	A policy concept that links the triad of human, animal and environmental health.
Operational period	The time required to achieve a particular set of objectives.
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 the 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.
Policy	The rules, guidelines and principles of action of an organization or government.
Policy level, policy group	A policy group consists of representatives drawn from the policy level of one or more organizations. The policy level is responsible for articulating the overall rules and principal actions of an organization and is typically at either the governance or executive level.
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.
Plans	Generic reference to documents designed to identify, at various levels, responsibility for a range of activities and intended objectives, strategies and tactics. The purpose of plans is to maximize effectiveness and minimize response time to events, and to standardize routine activities associated with response and management so that additional capacities can be focused on addressing the unique characteristics of each event. Plans are specific to their intended users. See also **contingency plan**, **EOC plan** and **support plan**.

Planning (EOC function)	In an EOC, the planning function is responsible for collecting, processing, analysing and evaluating information to predict the evolution of the emergency, and for identifying strategies and objectives to address it. This function is also responsible for the preparation and dissemination of status reports and documentation about the incident response. In general, planning comprises the intellectual and interpersonal processes of designing, developing, testing and evolving activities necessary to achieve objectives. An inclusive, comprehensive planning process usually results in the value of the product (the plan) being less important than the value of the planning process, which builds on the synergy of bringing together people and agencies with common interests to analyse and solve problems cooperatively.
Preparedness	The knowledge and capacities of governments, response and recovery agencies, communities and individuals that allow them effectively to anticipate, respond to, and recover from the impacts of a wide range of likely, imminent or current events. A state of preparedness is the product of a combination of planning, allocation of resources, training, exercising and organizing to build, sustain and improve operational capabilities on the basis of risk assessments.
Prevention	Activities and measures taken, on the basis of risk assessments, to avoid existing and new risks. **Prevention** and **mitigation** are often used interchangeably, as they aim to reduce the probability or consequences of disasters, and communities' vulnerability to them. Prevention measures can also be implemented in response and recovery to stop specific consequences from occurring.
Public health emergency	An occurrence or imminent threat of an illness or health condition – caused by bioterrorism, epidemic or pandemic disease, or a novel and highly fatal infectious agent or biological toxin – that poses a substantial risk of a significant number of human fatalities or incidents of permanent or long-term disability.
Public health emergency of international concern (PHEIC) (IHR definition)	An extraordinary event which is determined, as provided in the International Health Regulations: 1) to constitute a public health risk to other States through the international spread of disease and 2) to potentially require a coordinated international response.
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.
Redundancy	Having secondary or back-up human and physical resource capacity in case primary resource capacity is impaired or becomes unavailable for any reason.
Risk	The combination of the probability of an event and its consequences, which results from interactions between natural and human-induced hazards, vulnerability, exposure and capacity.
Risk assessment	The process of determining those risks to be prioritized 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 effects. 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.
Sector	A division or collective aspect of a geographical area, economy or society.
Seminar	A guided informal discussion led by a presenter/seminar leader, without time constraints, with the aim of orienting personnel and partners to plans and procedures and enlisting their participation in refining a product.
Site-level	The actual location of the hands-on, tactical-level response to an emergency. When site-level emergency response capacities are overwhelmed, the role of a site-support (operational level) EOC is to provide assistance with logistics (resources) and strategy (direction and coordination).
Situation report (SITREP or **SitRep)**	A routinely produced report that provides current information about an emergency response and immediate and future response actions, with analysis of the impact of the emergency and identification of related management issues.
Situational awareness	Being aware of and attentive to what is happening in a given environment at a given time, with particular emphasis on the effect of changes in the environment; in effect, knowing how an incident or event is evolving.
Standard operating procedure/s (SOP/s)	A set of instructions or directions detailing what actions should be taken by EOC personnel – as well as how, when, by whom and why – for specific events or tasks.
Steering committee	An oversight or user committee responsible for providing sponsorship, leadership, policy and funding support to a working group assigned to develop an emergency operations centre.
Strategic	The defining characteristic of something "strategic" is that it deals with relatively long-term, high-level, big-picture concepts in order to integrate an organization's major goals, policies and action sequences into a cohesive whole. It may also have a normative or standard-setting component.
Strategic/Humanitarian Response Plan	This is a high-level, multisectoral strategic plan that outlines the overall impact and needs arising from an emergency – including within the health sector – and the priorities for addressing these needs. Wherever possible, it is a sub-element of the national plan, or closely linked to that plan. For outbreaks, WHO will often lead the planning process, while for humanitarian emergencies, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) leads, with contributions from clusters/sectors
Supporting agency	An agency that provides essential services, personnel or material to support or assist a lead agency (the **supported** agency). **Supporting** agencies may support either by **assisting** (i.e. contributing their own operational resources) or **cooperating** (i.e. providing indirect assistance).
Surge capacity	The ability to draw on additional resources to sustain operations and increase capacity, usually for emergency response, as required.
Table-top (exercise) **(TTX)**	A discussion-based form of training or evaluation exercise where all the personnel assigned to an EOC gather informally, without the pressure of tight time constraints, to examine hypothetical emergency situations. They discuss intended responses and identify and solve problems based on the EOC operational plan and the agencies' emergency plans.
Tactical	The term applies to activities, resources and manoeuvres that are directly applied at a task level to achieve goals. Compare with **strategic**. The tactical level (below strategic level and above operational level) is the level at which the response to an emergency is managed.

Technical communications	Communications related to the protocols, procedures and methods used to pass critical information between key participants during the management of an emergency.
Threat	A high-probability risk with potential for significant impact.
Unified management/ command	A team approach to the management of complex, multi-agency or multi-jurisdictional emergencies that allows all agencies with complementary geographical or functional responsibilities in the response to establish a common set of objectives, strategies and operations. A lead agency is established on the basis of agreement on the primary problem being addressed; other agencies share responsibility and participate fully in decision-making. See also **joint management**.

13. Key resources

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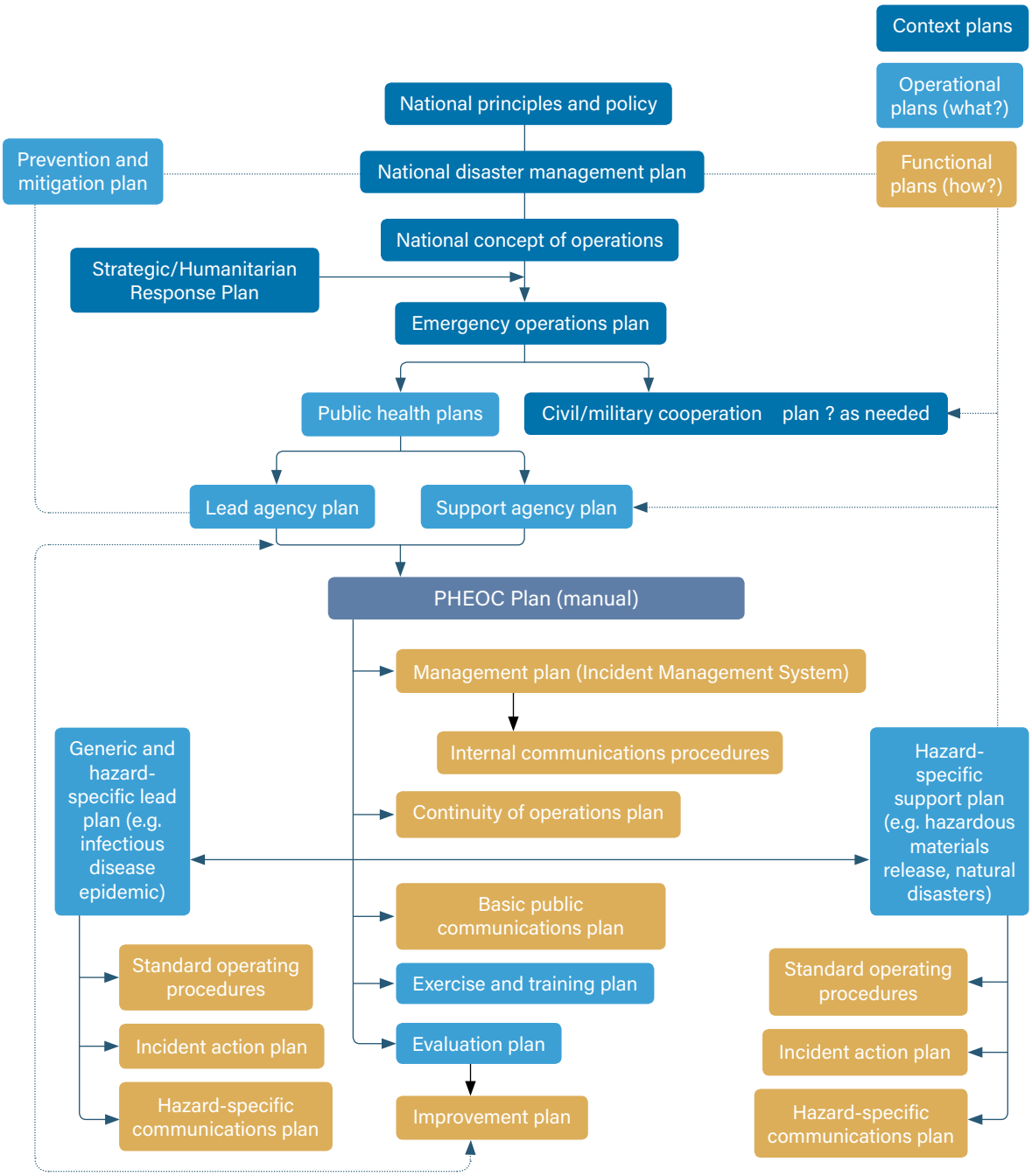
Annexes

Annex 1: Sample hierarchy of plans for a public health emergency management programme



Note: All plans should exist for all PHEOC types. The difference between plans for type A and plans for types B and C is in the amount of detail required.

Annex 2: PHEOC characteristics by type

PHEOC characteristic	Type A	Type B	Type C
Context	Multi-hazard national public health emergency preparedness and response plan developed. The plan is implemented/ tested in actual emergencies or exercises and is updated as needed.	Plans and procedures are in place to reallocate or mobilize resources from national and subnational levels to support local responses.	The national public health emergency operations plan is implemented/ tested in actual emergencies or exercises and is updated as needed.
Concept of operations (CONOPS)	PHEOC operations support direct response, coordinated with other government sectors, which provides support to a multisectoral response led by NDMA.	Able to conduct simultaneous response operations and independently manage public health components of a complex multisectoral response within objectives set by the NDMA.	Able to support simultaneous, complex operations in a regional or international environment, and/or manage the public health component of a whole-of-government response to any incident with public health consequences.
Emergency operations/ response plan	Response operations only.	Response and recovery operations. Limited preparedness and prevention.	Prevention, preparedness, response and recovery operations.
Risk assessment	A basic public health or national identification of threats and hazards has been performed by the Ministry of Health. Public health risks have been mapped based on the IHR (2005). Vulnerable populations are identified and mapped.	Extensive all-hazards public health risk and threat identification is done annually, including those in which public health provides only a supporting role . There is a risk management programme in place with priority risks mitigated where practical. Patterns of domestic population vulnerabilities are included in a baseline database.	All in-country and external current and emerging hazards and threats have been identified and are included in a comprehensive prevention and mitigation programme. International vulnerabilities are mapped.
Resources	Capacities and capabilities have been assessed and response resources identified on the basis of essential resource needs identified in the base EOP. Plans are in place for access to and distribution of resources from external stockpiles and donations.	Type A characteristics plus dedicated domestic CBRN emergency response resources are available for immediate use (based on capability requirements identified in the risk assessment process). Plans for distribution of resources are managed at national and subnational levels. Procurement processes are established for pre-identified vendor-managed resources.	Dedicated domestic response resources are available 24/7 for local and international deployment, with access at short notice to multiple extra-jurisdictional and sectoral resources. Jurisdiction has established the necessary access agreements (e.g. mutual aid compacts, regional stockpiles, etc.).

PHEOC characteristic	Type A	Type B	Type C
Incident Management System	IMS is described to the section level for the five core functions in the Framework, with associated terms of reference.	IMS core functions are described to unit level, including management/ command staff positions and common public health task force positions in operations, with terms of reference, internal communications requirements, and supporting SOPs.	IMS is described to identify all possible public health functions in the full family of plans.
Facility	As needed, convertible space or mobile.	Dedicated facility. Core hours of operation 08:00–17:00.	Dedicated facility. 24/7/365 operation.
Staffing	On call with dedicated facility manager and assigned[22] IT support. Staffed on activation.	Dedicated[23] PHEOC facility manager, core staff for IMS functions (operations watch staff planners and logistics with IT support), plus surge staff.	All IMS functions fully implemented with three-person redundancy. Full-time facility manager and IT support.
Activation SOP	Procedures in place for activation, with point of contact available 24/7 to guide the process.	Dedicated staff have been trained and have practised activating a response within two hours.	Facility is operational 24/7 and escalation from watch to alert level is exercised at least twice annually.

22 Assigned" means the activity is part of a job, but not the entire job.

23 "Dedicated" means the activity is the purpose of the job.

Annex 3: Sample format for plans, annexes and procedures

As far as is practical, all emergency plans within a jurisdiction should follow the same format, making it easier to find information of a particular type. Consequently, the format of an annex should at least approximate to the structure of the emergency operations plan.

A suggested generic format, which could be adapted, would include:

- **Purpose**: What is this plan/annex/procedure intended to address? Is there legislation, policy or a directive that necessitates it? What is the authority for implementing this plan?
- **Situational assessment**: A description of priority threats and response capabilities.
- **Scope**: What is included in and/or excluded from this plan, annex or procedure? To whom or what is it directed?
- **Assumptions**: What are the assumed facts supporting the planning, the absence of which would alter the plan, annex or procedure?
- **Concept of operations**: In the same way that the CONOPS for the EOP describes the intentions of the responsible agency and its intended activities in a larger, external context, the CONOPS for a plan describes the general sequence of the planned response, how things are intended to work, and the relevant internal management processes.
- **Organization and responsibilities**:
  - management, direction control and coordination, including provision for multi-agency/jurisdiction, engagement and leadership;
  - plan development, documentation and maintenance;
  - logistics and administration.
- **Annexes and/or appendices**: These contain supplementary, explanatory material.

Annex 4: Sample format for standard operating procedures

There are many possible formats for SOPs. The most **basic** form for a type A PHEOC would address:

- **Introduction, background and purpose**: a short description of what the procedure is about, its purpose, and what part of the emergency response it relates to.
- **Procedure**: which organizational position is responsible; what the purpose is; the outcome or product of the procedure; and the step-by-step processes required to accomplish it.
- **Safety**: any necessary instructions.
- **Addenda**: any additional explanatory or supporting material, such as contact lists, locations of resources, special instructions for operation of communications equipment, etc.

A PHEOC with type B capacity would include the material in its basic form plus:

- identification of the agency policy that supports the SOP;
- approval levels for adjustment to the SOP, or description of the range of discretion of adjustment that is within the responsibility of the designated staff member(s);
- identification of who owns the document and who is responsible for necessary revisions;
- graphic or visual representations of complex or multistep procedures;
- instructions for record-keeping.

A PHEOC with type C capability, capacity, mission and accountabilities will require relatively complex SOPs, particularly when the centre is operating in conjunction with other emergency response platforms. At this level, SOPs would include the material for types A and B plus:

- details about who prepared the SOP, who approved it and when, and when was it issued;
- version control instructions and a review date;
- identification of all affected parties and any notification requirements.

Tips for preparing SOPs

- Use clear, unambiguous language.
- Procedures entail actions. Use action words, such as: "prepare", "draft", "contact", "place", "assign" etc.
- Flowcharts may communicate better than text.
- SOPs should be complete and logical, with any extra explanatory material in an annex or appendix.[24]

24 In this context, an annex is generally considered as part of an approved plan and any change to the annex must go through the "plan re-approval" process. Although an appendix contains information that is important to the implementation of the plan, it can be altered without reference to the plan approval process.

Annex 5: Sample format for an incident action plan

An IAP can have many possible formats, which may be both event/incident-specific and agency-specific. However, these formats have several plan elements in common. These are outlined below:

- Situation assessment
  - Current
  - Predicted
- Objectives
  - Strategic
  - Tactical, current and alternative
- Execution
  - Tasking
  - Coordination
  - Safety
- Logistics
  - Supply
  - Support communications
  - Responder medical care
  - Facilities
  - Catering
- Administration
  - Finance
  - Responder accommodation
- Control, coordination and communication
  - Which IMS functions are activated?
  - Which other agencies are involved through unified management or liaison?
  - What are the communications plans, and which audiences do they address?

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