

Proposed generic open curriculum for Public Health Emergency Management

Evidence-informed specification aligned with the content, assessment and delivery companion packages

Companion to: A proposed generic open curriculum for Public Health Emergency Management: an evidence-informed synthesis for country adaptation

5 October 2026

Status note. This document presents an evidence-informed generic curriculum specification aligned with the completed content, assessment and delivery companion packages. It does not claim formal global consensus, accreditation, external content validity, learner effectiveness or inter-rater reliability. Countries and programs should complete stakeholder review, legal and institutional adaptation, resource assessment, assessor preparation and field testing before adoption.

Core structure

4 curriculum layers • 5 proficiency levels • 16 role pathways • 22 domains • 12 required products

Executive summary

Purpose. This curriculum provides a common, publicly usable starting point for ministries of health, national public health agencies, emergency-management authorities, universities, public health emergency operations centers and partners that establish or modernise advanced Public Health Emergency Management training.

Scope. The curriculum covers prevention and mitigation, preparedness and operational readiness, response, recovery and transition, and continuous institutional learning. It treats a public health emergency operations center as an operational component of a wider Public Health Emergency Management system.

Design. The curriculum combines a universal core, a context-adaptable core, role pathways and optional specializations. Competence means observable performance in a workplace or simulation context. Completion depends on assessed products and role performance rather than attendance alone.

Mitigation. Prevention and mitigation form a standalone domain and required product. Learners must show how proposed measures reduce hazards, exposure, vulnerability, service disruption or adverse consequences and how residual risk is monitored.

Use. Programs may implement the curriculum as a full fellowship, a part-time professional program, role-pathway certification or continuing professional development. A shorter program should not claim advanced operational competence unless it includes supervised practice, simulation, assessed workplace products and role-based performance decisions.

Series position. Paper 1 defines the curriculum. The companion content and assessment paper translates the curriculum into module specifications, 88 session plans, 44 exercises, ten synthetic datasets, facilitator and mentor guides, 12 product templates and calibration-ready assessment. The companion delivery paper specifies district-to-national blended routes, case telementoring, simulations, placements, mentorship and implementation measurement.

Review status

This specification is ready for structured external content review and country adaptation. It names mental health and psychosocial support as a required competence in D08, D18 and D20 and among the cross-cutting requirements, following the expanded source audit. It retains the 132 outcomes derived from the 69 sources of the frozen synthesis. A third search round added 12 sources to the analytic library, now 81, and its coverage test added no outcome. Additional sources in the framework crosswalk support implementation alignment and specialist adaptation; they did not add, remove or renumber curriculum outcomes.

Global normative framework and program-source crosswalk

The crosswalk makes the curriculum lineage explicit across global legal, disaster-risk, health-emergency, operational, workforce and cross-cutting source families. Source keys in this crosswalk are internal to the curriculum record. Keys prefixed I identify sources in the analytic library reported in the article. Keys prefixed A identify later implementation-alignment sources, which are not counted in that library. The source register in Supplementary File 3 gives the full citation for every key. The domain specifications retain their own 44-source anchor list, which is the reference list in section 22 of this file.

Framework or source family	Curriculum contribution	Mapped domains and products	Adaptation boundary
Sendai Framework for Disaster Risk Reduction [I02]	Risk understanding; governance; resilience investment; preparedness; recovery and building back better.	D01, D03-D06, D20-D21; PP01-PP03, PP11-PP12.	Retain disaster-risk reduction and full-cycle logic; map national disaster-management institutions, law, indicators and financing.
2030 Agenda for Sustainable Development [A20]	Policy coherence across health security, resilient settlements, climate adaptation, institutions and partnerships.	D01, D03-D05, D20-D21; PP01-PP02, PP11-PP12.	Map relevant national Sustainable Development Goal indicators and plans; do not substitute broad development targets for hazard-specific technical standards.
Paris Agreement [A21]	Climate adaptation, resilience, risk reduction and nationally determined action relevant to climate-sensitive health emergencies.	D03-D04, D06-D07, D17-D20; PP01-PP03, PP07, PP11.	Use current national adaptation plans, nationally determined contributions, meteorological services and health-sector climate policy.

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Framework or source family	Curriculum contribution	Mapped domains and products	Adaptation boundary
UNDRR-ISC Hazard Information Profiles [A25]	Standardized definitions for 281 hazards in eight types; multi-hazard and cascading-risk language.	D01, D03-D04, D06, D18-D20; PP01-PP03, PP11.	Use current local hazard data and competent-authority thresholds; a generic definition is not a local risk estimate.
WHO Health Emergency and Disaster Risk Management Framework [I01]	Whole-health-system and multisectoral prevention, preparedness, readiness, response and recovery.	D01, D03-D06, D17-D20; PP01-PP03, PP09, PP11.	Preserve the full cycle and health-system scope when programs select routes or modules.
WHO Strategic Toolkit for Assessing Risks [A26]	Participatory national and subnational all-hazards strategic risk assessment and prioritization.	D03-D04, D06-D07; PP01-PP03.	Use STAR or an approved national method; document likelihood, impact, uncertainty, confidence and review triggers.
International Health Regulations [I06]	International legal obligations for prevention, surveillance, assessment, notification, response, points of entry and public-health measures.	D02, D06-D07, D10, D17-D19; PP03, PP06, PP09.	Verify the IHR text in force for the relevant State Party, national implementing law and competent authority.
IHR monitoring, SPAR, JEE, after-action review and simulation [I07,I31, I32,A1,A18]	Capacity measurement, external evaluation, annual reporting, operational learning and testing.	D06, D09, D21; PP03, PP05, PP12.	Do not equate country-capacity scores with individual learner competence; use them to identify system priorities.
WHO Benchmarks and national action planning [I08,A2]	Priority actions to convert capacity findings into funded improvement plans.	D03, D05-D06, D21; PP01-PP03, PP12.	Align with current national plans, budgets, owners and implementation timelines.
WHO HEPR architecture [A3]	Collaborative surveillance, community protection, safe and scalable care, countermeasure access and emergency coordination.	D01, D05-D07, D10-D19; PP03, PP06, PP08-PP10.	Use as a systems architecture; retain national institutional ownership and avoid parallel structures.
WHO-International Association of National Public Health Institutes capability framework [I11]	Capabilities that national public health agencies may lead or support.	D01, D05-D07, D10, D12, D14, D16, D21-D22.	Map the agency mandate and interfaces with ministries, emergency-management authorities and subnational systems.
WHO Emergency Response Framework and national alert-response framework [I09,I10]	Grading, alert, escalation, activation, response management, transition and deactivation.	D10, D13-D14, D20; PP04, PP06, PP11.	Replace WHO organizational roles with authorised national arrangements while retaining decision criteria and documentation.
WHO PHEOC guidance [I03-I05,I45]	Policies, plans, procedures, infrastructure, information systems, staffing, training and exercises.	D10-D15; PP03-PP06.	Treat the PHEOC as one operational component of a wider PHEM system; adapt facility, virtual and continuity arrangements.
WHO simulation and after-action guidance [I31,I32]	Exercise governance, objectives, safety, evaluation, learning and corrective action.	D09, D21; PP05, PP12.	Use national exercise doctrine where approved; preserve safety, evaluation and corrective-action requirements.
Africa CDC PHEM curriculum and fellowship evidence [I20,I21]	Advanced competency-based learning, field deployment, institutional exposure, mentorship and workplace projects.	D08-D13, D22; PP05, PP09, PP12.	Map regional competencies and field opportunities without assuming one credential or calendar.
European Centre for Disease Prevention and Control competencies and HEPSA [I25,I26]	Preparedness competencies and organizational self-assessment.	Role pathways across D01-D22.	Use for comparative role and competency review; adapt to national mandates and non-European systems.
United States CDC preparedness capabilities [I27]	Fifteen jurisdictional preparedness and response capabilities.	D03-D18; PP01-PP10.	Use as a national standards comparator, not a global legal requirement.
United States CDC PHEM Fellowship [I16,I18,I19]	Competency-based study in operations, planning, risk communication and logistics; PHEOC exposure, mentorship and ministry products.	D08-D16, D22; PP04-PP09, PP12.	Use as a close program comparator. Distinguish fellowship evidence from jurisdictional capability standards.
FEMA National Incident Management System and exercise doctrine [I29,I30]	Incident-command principles, scalable structures, common terminology, resource coordination and exercise design.	D09-D15; PP04-PP06.	Adapt to national incident-management doctrine; do not import United States legal authority or job titles without review.
WHO public health intelligence framework and curriculum [I36,I37]	Signal detection, verification, analysis, risk assessment, interpretation and decision support.	D07, D14, D19; PP06, PP10.	Map surveillance architecture, data access, laboratory networks and information-governance requirements.
WHO risk communication, community engagement and infodemic frameworks [I34,I35]	Audience analysis, participation, uncertainty communication, feedback, trust and infodemic management.	D16 and cross-cutting elements; PP08.	Adapt language, channels and participation methods with affected communities; protect equity and accessibility.
One Health guidance [I43,A11]	Human, animal, plant and environmental coordination, joint intelligence, risk assessment and response.	D01, D07, D17-D18; PP01, PP09, PP11.	Define sectoral authority, data sharing, joint decision processes and environmental scope.
WHO laboratory biosafety and infection-prevention guidance [I38,I39]	Risk-based biosafety, specimen systems, infection prevention and worker protection.	D08, D17-D18; PP09.	Use current national laboratory, biosafety, biosecurity and facility-specific risk standards.
WHO digital and artificial-intelligence guidance [I40-I42]	Data governance, validation, bias, human oversight, privacy, security, continuity and incident response.	D14, D19; PP10.	Apply current national data-protection, procurement and cybersecurity law; require accountable human review.

Eric Nzirakaindi Ikoona et al., A proposed generic open curriculum for public health emergency management: An evidence-informed synthesis for country adaptation. *Journal of Interventional Epidemiology and Public Health*. 2026; 9(4):167. <https://doi.org/10.37432/jieph-d-26-00297>

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Framework or source family	Curriculum contribution	Mapped domains and products	Adaptation boundary
Biological and Chemical Weapons Conventions [A22,A23]	International prohibitions, national implementation, assistance and coordination interfaces for deliberate events.	D02, D05, D17-D18; PP03, PP06, PP09.	Verify treaty status, national law, security authority, evidence preservation and assistance procedures.
WHO PRET respiratory-pathogen pandemic planning [A24]	Pathogen-agnostic and pathogen-specific planning and operational stages.	D06-D07, D10, D17, D20; PP03, PP06, PP11.	Align with current national pandemic plans and disease-specific guidance; retain all-hazards capacity and continuity.
WHO Pandemic Agreement [I12]	Emerging governance for pandemic prevention, preparedness, response, equity, supply and international cooperation.	D02, D05, D17, D19-D20; PP03, PP09-PP11.	Use for forward planning; do not present it as an in-force universal national obligation.
WHO Global Health Emergency Corps framework [A13]	National emergency-workforce structures, deployable capacity and cross-border surge collaboration.	D08, D10-D12, D22; PP04, PP09, PP12.	Map existing workforce and surge systems; do not create parallel rosters without governance, financing and duty of care.

Alignment with the WHO public health emergency management capability. Capability 5 of the capability framework for national public health agencies [I11] has four subcapabilities. The table maps each subcapability and its illustrative key actions to the curriculum outcomes that carry it. Every key action maps to at least one outcome. Domains D10 to D13 carry activation and incident management, D03 and D07 carry risk assessment, D06 carries response planning, and D17.6 carries essential service monitoring.

Subcapability	Illustrative key action	Curriculum outcomes	Note
C5.1 Identify, assess and prioritize risk to drive anticipatory action	Strategic country risk assessment of priority hazards and populations at risk	D03.1, D03.2, D03.3, D03.4, D03.6	
	Event-based rapid risk assessment during emergencies	D03.5, D07.4	
	Assessment findings disseminated to partners and decision-makers in usable formats	D07.6, D03.6	
	Monitoring of the health and socioeconomic effects of interventions on different populations	D04.6, D21.1	
	Grading criteria applied to set the level of operational response	D10.2, D10.3	
	Grading protocols with triggers for escalation and deactivation	D10.1, D10.5, D10.6	
C5.2 Develop, test and continuously improve national public health emergency response plans	A named authority maintains and updates all response plans	D06.5, D06.6	
	Risk assessments, capacity assessments and resource mapping inform plan objectives	D06.1, D03.4	
	Partner responsibilities and the transfer of response leadership are defined	D06.2, D06.3, D05.2, D05.3, D11.4	
	A monitoring and evaluation framework with measurable performance targets	D21.1, D21.2	
	Evaluation findings shared with partners for improvement	D06.6, D21.5	
	Emergency medical rescue and mass casualty protocols for mass gatherings	D18.3, D17.2	Mass casualty response has no named outcome and falls under optional specializations.
C5.3 Activate, operate and deactivate the incident management system and public health emergency operations centre	A policy group sets strategic leadership, scope, structure and functions	D05.2, D12.1	
	Standard operating procedures for activation, scaling, deactivation and transition to recovery	D10.1 to D10.6, D12.4, D20.2	
	Infrastructure, secure information systems and communication tools for the centre	D12.2, D12.3	
	A network of national and subnational centres	D12.1, D12.4, D06.5	
	Functional and full-scale exercises for activation and coordination	D09.2 to D09.6	
	Logistics and operations support	D15.2, D15.3, D15.4	Operation of the incident management system is carried by D11.1 to D11.6 and D13.1 to D13.6.

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Subcapability	Illustrative key action	Curriculum outcomes	Note
C5.4 Analyse health system utilization and essential service delivery for emergencies	Real-time metrics on facility capacity, workforce availability and service use	D17.6, D14.1, D14.3	D17.6 is the principal outcome for this subcapability.
	Mapping of essential health services, infrastructure and human resources	D17.6, D03.4	
	Mapping of vulnerable populations, facilities and alternative treatment sites	D03.2, D06.4	
	Analyses and recommendations to the ministry of health on service disruption	D17.6, D07.6	
	Service use and capacity data integrated into recovery planning	D20.1, D20.3	
	Routine-period monitoring as a baseline	D17.6, D21.1	

Specialist hazard and context adaptation register

The generic curriculum sets common performance outcomes. Programs must add the current technical standard for every hazard or context selected for delivery and assessment. National law and competent-authority guidance take precedence over generic examples.

Hazard or context	Minimum source family	Mapped curriculum area	Required local action
Humanitarian crisis, conflict and displacement	Sphere Handbook [A4]; IASC Emergency Response Preparedness [A5]; WHO Health Cluster Guide [A16].	D05-D06, D15-D18, D20; PP03, PP07-PP09, PP11.	Add humanitarian coordination, protection, minimum-service and accountability standards. Confirm civil-military and security interfaces.
Nuclear or radiological emergency	IAEA GSR Part 7 [A6]; current national radiation-regulatory and emergency arrangements.	D03-D06, D08-D10, D17-D18; PP01-PP03, PP05, PP09.	Use competent-authority hazard assessment, protective-action criteria, monitoring, public communication and international-notification arrangements.
Chemical incident or chemical-weapons risk	WHO chemical-incidents manual [A8]; OPCW preparedness and assistance resources [A7].	D03-D06, D08-D10, D15-D18; PP01-PP03, PP05, PP07-PP09.	Add toxicology, detection, decontamination, medical management, protective equipment, environmental monitoring and evidence preservation.
Deliberate biological, chemical, radiological, nuclear or cyber event	Biological and Chemical Weapons Conventions [A22,A23]; WHO deliberate-event guidance [A9,A15]; WHO public-health-security interface [A19].	D02-D03, D05-D07, D10-D19; PP01, PP03, PP06, PP09-PP10.	Preserve public-health leadership for health consequences while coordinating security, law-enforcement and forensic requirements.
Mass gathering	WHO mass-gathering exercise and review guide [A10] and approved all-hazards event risk-assessment tools.	D03, D06-D10, D15-D18; PP01, PP03, PP05, PP07-PP09.	Add event governance, crowd, heat, transport, infectious, chemical, security, clinical-surge and communication risks.
Climate, heat, drought, wildfire, flood and hydrometeorological risk	WHO climate-resilient health-system framework [A12]; Hazard Information Profiles [A25]; national meteorological and climate services.	D03-D04, D06-D07, D15, D17-D20; PP01-PP03, PP07, PP11.	Use local climate projections, early-warning systems, vulnerable-population data and health-system resilience standards.
One Health, zoonotic, food-safety and antimicrobial-resistance threats	One Health field epidemiology [I43]; Quadripartite Joint Plan [A11]; veterinary, food-safety and environmental standards.	D01, D03, D07, D17-D18; PP01, PP06, PP09, PP11.	Define joint surveillance, laboratory, sample, data, investigation, control and communication responsibilities.
Urban and critical-infrastructure emergency	WHO urban preparedness guidance [A17]; Hazard Information Profiles [A25]; infrastructure-owner and national continuity standards.	D01, D03-D06, D10-D15, D17, D20; PP01-PP07, PP11.	Map cascading dependencies across power, water, transport, telecommunications, facilities and supply chains.
Cyberattack, digital-system failure or artificial-intelligence incident	WHO artificial-intelligence guidance [I40-I42]; national cyber authority and data-protection standards.	D07, D12-D14, D19; PP06, PP10.	Add incident response, downtime, backup, access control, breach notification, validation, bias and human-override requirements.
Biological outbreak, epidemic or pandemic	IHR [I06]; WHO alert-response and Emergency Response Framework [I09,I10]; public health intelligence [I36,I37]; laboratory biosafety [I38]; PRET [A24].	D02, D06-D10, D13-D19; PP03, PP06, PP08-PP10.	Use disease-specific definitions, clinical and laboratory guidance, countermeasure policy and national authority.
Points of entry, cross-border and travel-related event	IHR [I06]; SPAR/JEE [I07,A18]; national border, customs, migration and transport procedures.	D02, D05-D07, D10, D18; PP03, PP06, PP09.	Define notification, assessment, conveyance, traveller, trade and neighbouring-jurisdiction arrangements.

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Hazard or context	Minimum source family	Mapped curriculum area	Required local action
Emergency workforce and international surge	Africa CDC and CDC fellowship evidence [I16-18,I19]; WHO Global Health Emergency Corps [A13].	D08, D10-D12, D22; PP04, PP09, PP12.	Verify credentialling, deployment authority, occupational health, insurance, security, safeguarding, wellbeing, demobilization and cross-border recognition.

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A full-cycle, role-based curriculum for country adaptation, from common outcomes to observable performance evidence

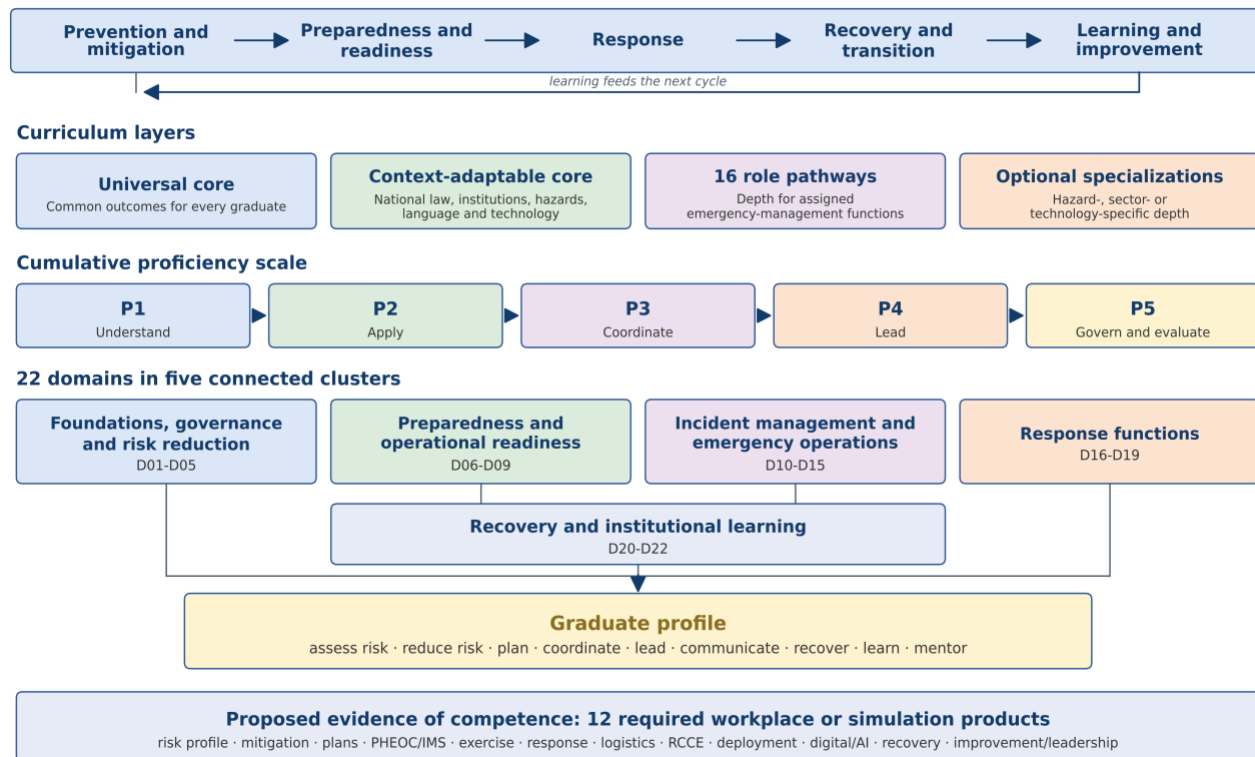


Figure 1. Proposed Public Health Emergency Management curriculum.

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1. Purpose and intended users

This curriculum supports institutions that prepare personnel to prevent, reduce, prepare for, manage and recover from public health emergencies. It is generic rather than uniform. Countries retain authority over law, governance, organizational structures, hazards, languages, credentials, role names, technologies and optional specializations.

Primary institutional users: Ministries of health; national public health agencies; disaster-management and civil-protection authorities; public health emergency operations centers; universities; schools of public health; regional bodies; and implementation partners.

Primary learner audience: Mid-career public health, emergency-management, clinical, laboratory, environmental, veterinary, humanitarian, communication, logistics, information and policy professionals whose duties include emergency risk management or coordination.

Secondary users: Curriculum developers, facilitators, mentors, field supervisors, assessors, program evaluators and accreditation or professional bodies.

2. Normative position and design principles

- Full-cycle emergency risk management organizes the curriculum: prevention and mitigation; preparedness and readiness; response; recovery and transition; and learning.
- A public health emergency operations center supports coordination but does not constitute the whole Public Health Emergency Management system.
- Competence means integrated knowledge, skill, behavior and judgment demonstrated in an operational or simulation context.
- A common core coexists with national adaptation and role-specific depth.
- Every major competency links to practice, a product or observed role performance.
- Simulation supplements but does not replace real workplace responsibility and supervised practice.
- Ethics, equity, human rights, community participation, One Health and responder safety cross all domains.
- Digital tools and artificial intelligence require validation, security, privacy, human oversight and continuity arrangements.
- Every event and exercise should produce tracked corrective action and institutional learning.
- The curriculum should use transparent source attribution, version control, scheduled review and an accessible public repository.

3. Definitions and conceptual boundaries

Public Health Emergency Management	The continuous process through which authorities and partners prevent and reduce health-emergency risks, prepare systems and personnel, establish operational readiness, coordinate response, support recovery and use evidence to improve future performance.
Public health emergency operations center	A physical, virtual or hybrid coordination platform in which designated emergency-management functions integrate information and resources for incident management.
Incident management system	A standard organizational model that defines management or command, operations, planning, logistics and finance/administration functions and their coordination.
Prevention	Measures that avoid a hazard, exposure, harmful event or transmission pathway where feasible.
Mitigation	Measures that reduce hazard intensity, exposure, vulnerability, disruption or consequences. Mitigation may occur before, during or after an incident.
Preparedness	Development of plans, systems, workforce, infrastructure, resources, agreements, procedures and training needed to manage emergencies.

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Public Health Emergency Management	The continuous process through which authorities and partners prevent and reduce health-emergency risks, prepare systems and personnel, establish operational readiness, coordinate response, support recovery and use evidence to improve future performance.
Operational readiness	The verified ability to activate and perform required functions within defined time and quality standards.
Response	Actions taken when an event or imminent threat requires emergency coordination and operations.
Recovery	Actions that restore or improve health, services, systems and communities while reducing future risk.
Resilience	The ability of individuals, communities, institutions and systems to resist, absorb, adapt, recover and improve when exposed to hazards.
Competency	An integrated set of knowledge, skills, behaviors and judgment that supports successful performance in a public-service context. A terminal competency is the end-of-domain performance statement that the learning outcomes of that domain together support; the term carries no other sense in this curriculum.
Domain	A coherent area of professional performance that contains a terminal competency, learning outcomes, content and evidence requirements.

4. Program formats and design standards

No single duration fits every workforce or institutional context. Programs should select a format that allows learners to complete the universal core, an appropriate role pathway, repeated simulation, supervised practice and assessed products.

Advanced fellowship	A practical benchmark is approximately six months or a part-time equivalent. It should combine structured learning, public health emergency operations center or field placement, simulations, mentorship and a workplace improvement project.
Concentrated fellowship	A shorter intensive model may suit experienced personnel but must document entry competence, supervised operational practice, simulation and assessment of role performance.
Professional certificate	A structured sequence of modules with simulation and at least one assessed workplace product. It should not be presented as equivalent to a full advanced fellowship.
Role-pathway certification	Universal core plus specialized learning and observed performance for a defined role such as incident management, planning, logistics, public health intelligence or risk communication.
Continuing professional development	Focused modules for defined gaps, refreshers or new responsibilities without claiming full-program competence.
Organising principle	Workplace service and simulation; structured learning prepares learners for operational performance.
Practice requirement	At least one supervised workplace improvement project, one multiagency simulation and observed role performance.

Advanced fellowship	A practical benchmark is approximately six months or a part-time equivalent. It should combine structured learning, public health emergency operations center or field placement, simulations, mentorship and a workplace improvement project.
Mentorship	A named technical mentor and workplace supervisor with scheduled review, feedback and escalation procedures.
Assessment	A portfolio mapped to common-core and selected role-pathway competencies, standard rubrics and independent review.
Cohort size	Determined by faculty, mentor, simulation and field-placement capacity rather than classroom space alone.
Language and access	Materials should use accessible language, translation where needed, low-bandwidth alternatives and reasonable accommodation.
Safety	Programs need risk assessment, safeguarding, occupational-health, biosafety, security and learner-wellbeing procedures.
Quality cycle	Review after each cohort and after major events, exercises, legal changes or technological changes.

5. Entry profile and readiness

- Relevant qualification or experience in public health, emergency management, health services, laboratory science, veterinary or environmental health, logistics, communication, information, policy, humanitarian practice or a related field.
- Current or planned responsibilities in emergency preparedness, coordination, operations, public health emergency operations centers, rapid response, recovery or risk reduction.
- Baseline ability to read technical guidance, communicate in the program language, use routine digital tools and work in multidisciplinary teams.
- Employer agreement for protected time, simulation participation, workplace products and emergency deployment where appropriate.
- Access to a suitable workplace, public health emergency operations center, mentor, supervisor, data, plans and partner network.
- Diagnostic assessment and bridging support for emergency-management terminology, epidemiology, digital skills, writing, leadership or language.

6. Graduate profile

1. Apply full-cycle and all-hazards Public Health Emergency Management principles across national, subnational, district and institutional systems.
2. Interpret legal authority, policy, ethics, equity and accountability requirements.
3. Lead multi-hazard risk, vulnerability, capacity and rapid risk assessments.
4. Design and evaluate prevention, mitigation, resilience and protective-action programs.
5. Develop and integrate preparedness, contingency, emergency-response and continuity plans.
6. Lead multisource surveillance, public health intelligence and decision support.
7. Establish, mobilise and protect emergency workforces and rapid response teams.
8. Design exercises and convert findings into corrective action.
9. Lead incident-management and public health emergency operations center functions.
10. Produce incident objectives, action plans, common operating pictures, situation reports and accountable decisions.
11. Coordinate logistics, finance, risk communication, community engagement, clinical, laboratory and One Health response functions.

12. Govern digital systems, geographic information, modeling, artificial intelligence, data protection and cybersecurity.
13. Lead recovery, transition, continuity, rehabilitation and building back better.
14. Measure performance, conduct reviews, manage corrective action and use research for improvement.
15. Lead teams, negotiate, teach, mentor and strengthen the emergency-management workforce.

7. Curriculum layers

Universal core	Competencies expected from every graduate irrespective of setting. Programs may add depth but should not remove these outcomes.
Context-adaptable core	Functions required everywhere but taught through national laws, institutions, hazards, languages, alert systems and technologies.
Role pathway	Additional depth and observed performance for the learner's assigned or intended emergency-management role.
Optional specialization	Advanced hazard-specific, sector-specific or technical content selected through a documented needs and feasibility assessment.

8. Proficiency scale

P1 Understand	Explain concepts, structures, terminology, standards and assigned responsibilities.
P2 Apply	Perform standard tasks under guidance using approved tools, plans and procedures.
P3 Coordinate	Coordinate a defined function, team, workstream or operational process.
P4 Lead	Lead complex functions, integrate partners and make accountable decisions under uncertainty.
P5 Govern and evaluate	Govern by setting standards, assigning authority and accepting residual risk. Evaluate by assessing systems, assuring quality and improving institutional performance.

Governing and evaluating at P5. The fifth level joins two competencies under one institutional accountability. Governing sets the standard for a function, assigns authority and accepts residual risk. Evaluating measures system performance against that standard and supplies the evidence on which governance acts. A learner at P5 provides evidence of each: an authored policy or standard for governing, and a system evaluation or after-action review with corrective actions and documented follow-through for evaluating. Each domain specification states which applies. Twelve domains carry both at P5, and four carry governing alone: D11, D14, D15 and D19.

9. Emergency-management cycle and cross-cutting requirements

Prevention and mitigation	Avoid or reduce hazards, exposure, vulnerability, disruption and adverse consequences.
Preparedness and readiness	Build and verify the workforce, plans, infrastructure, systems, supplies, agreements and procedures needed for performance.
Response	Coordinate and deliver operations when an event or imminent threat requires emergency management.
Recovery and transition	Restore and improve services, systems and communities while reducing future risk.

Prevention and mitigation	Avoid or reduce hazards, exposure, vulnerability, disruption and adverse consequences.
Learning and improvement	Use evidence from routine monitoring, events, exercises and research to correct gaps and strengthen the system.

Cross-cutting requirements: Law and ethics; equity and inclusion; community participation; One Health; occupational safety and wellbeing; mental health and psychosocial support; evidence use; information security; leadership; sustainability; and continuous improvement.

10. Role pathways

Code	Role pathway	Primary performance focus
RP01	Strategic Public Health Emergency Management leader	Sets policy, priorities, standards, accountability and investment across the emergency-management cycle.
RP02	National or subnational emergency coordinator	Coordinates agencies, levels of government, plans, readiness activities and emergency operations.
RP03	Public health emergency operations center manager	Establishes, activates, manages, sustains and evaluates a physical, virtual or hybrid coordination center.
RP04	Incident manager or incident commander	Leads an incident-management structure, sets objectives and maintains accountable command and coordination.
RP05	Operations-section personnel	Coordinates tactical public health, clinical, laboratory and multisectoral response activities.
RP06	Planning-section personnel	Maintains situational awareness, develops incident action plans and tracks objectives, resources and forecasts.
RP07	Logistics-section personnel	Sources, stores, transports and tracks personnel, supplies, facilities, communications and services.
RP08	Finance and administration personnel	Maintains cost, time, contracting, claims, reimbursement, procurement and accountability records.
RP09	Information-management and public health intelligence personnel	Integrates multisource information, produces a common operating picture and supports decisions.
RP10	Risk communication, community engagement and infodemic-management personnel	Builds trust, listens to communities, addresses information needs and supports protective action.

Code	Role pathway	Primary performance focus
RP11	Rapid response team leader or member	Deploys safely, investigates, coordinates field operations and produces timely operational evidence.
RP12	Clinical and laboratory response coordinator	Coordinates clinical care pathways, case management, laboratory testing, specimen transport and diagnostic capacity during a response
RP13	Recovery and continuity coordinator	Manages transition, service restoration, continuity, rehabilitation and risk-informed recovery.
RP14	Exercise planner, controller or evaluator	Designs, conducts, evaluates and improves exercises and readiness programs.
RP15	Risk reduction, mitigation and resilience coordinator	Converts risk assessment into prevention, mitigation, resilience and protective-action programs.
RP16	Infection prevention, control and medical-countermeasure coordinator	Coordinates infection prevention and control, medical countermeasures, vaccination and therapeutics operations, and their safety and supply requirements, across the response

11. Indicative program sequence

Pre-entry	Readiness assessment, diagnostic assessment, bridging plan, employer agreement, mentor and field-site confirmation.
Orientation	Program expectations; emergency cycle; ethics; safety; portfolio; simulation conduct; information protection; individual learning plan.
Block 1	Foundations, law, risk assessment, mitigation, governance and financing.
Workplace interval 1	Risk profile, mitigation project and stakeholder consultation.
Block 2	Preparedness planning, intelligence, workforce readiness, exercises, activation and incident management.
Simulation and PHEOC placement	Role orientation, activation, operational-period planning, public health emergency operations center shifts and multiagency exercise.
Block 3	Information, logistics, communication, technical response functions, One Health, digital systems, recovery and learning.
Workplace interval 2	Integrated workplace improvement project, role-pathway evidence, mentorship and implementation follow-up.

Pre-entry	Readiness assessment, diagnostic assessment, bridging plan, employer agreement, mentor and field-site confirmation.
Completion	Portfolio review, independent assessment, oral defense, remediation where needed, program evaluation and continuing-development plan.

Scheduling rule: The sequence is illustrative. Programs may use block, spiral, hybrid or part-time designs, but prerequisites, repeated practice, supervised role performance and product evidence should remain visible.

12. Domain specifications

Each domain states terminal performance. Programs should translate the learning outcomes into locally sequenced modules, exercises, simulations, workplace assignments and assessment plans. The companion content and assessment package supplies detailed sessions and assessment tools; the companion delivery package supplies route and implementation options.

D01 Foundations of Public Health Emergency Management and all-hazards systems

Curriculum cluster	Foundations, governance and risk reduction
Curriculum layer	Universal core
Emergency phases	All phases
Principal role pathways	RP01-RP16
Terminal proficiency	P3 Coordinate; P4 Lead for system functions

Core graduate competency: Apply all-hazards, systems-thinking and full-cycle emergency-management principles to organize and improve public health emergency management functions.

Rationale: A shared conceptual foundation prevents Public Health Emergency Management from being reduced to outbreak response or emergency-operations-center activity alone.

Learning outcomes

D01.1 Distinguish Public Health Emergency Management, Health Emergency and Disaster Risk Management, public health emergency preparedness, an incident management system and a public health emergency operations center.

D01.2 Apply the full cycle of prevention, mitigation, preparedness, readiness, response, recovery and learning to infectious, environmental, technological, humanitarian and deliberate hazards.

D01.3 Map the public health, health-care, emergency-management, One Health, community, private-sector and civil-protection actors involved in an emergency system.

D01.4 Analyse dependencies and cascading effects across health services, laboratories, supply chains, information systems, infrastructure and communities.

D01.5 Describe how routine public health functions scale, adapt or transfer authority during emergencies.

D01.6 Prepare a system map and concise improvement brief for a national, subnational or district Public Health Emergency Management priority.

Indicative content

- History and evolution of Public Health Emergency Management
- All-hazards and whole-of-society approaches
- Emergency-management cycle and mission areas
- Systems thinking, complexity and cascading risk
- Public health, health-care and emergency-management interfaces
- Health security, resilience and essential public health functions
- National, subnational, district and community roles
- One Health and multisectoral practice
- Routine-to-emergency escalation
- Terminology and common operating concepts

Required workplace or simulation evidence

A Public Health Emergency Management system map and evidence-informed problem or improvement brief for a real jurisdiction or institution.

Suggested assessment evidence

Structured scenario analysis; technical review of the system map; oral defense of boundaries, dependencies and proposed improvements.

Principal source anchors: [1-3,9-11,15-17]

D02 Law, policy, ethics, equity and accountability

Curriculum cluster	Foundations, governance and risk reduction
Curriculum layer	Universal core with context-adaptable national law
Emergency phases	All phases
Principal role pathways	RP01-RP04, RP08-RP10, RP13, RP15
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Interpret and apply legal authority, policy, ethics, human rights, equity and accountability requirements to emergency decisions and operations.

Rationale: Emergency powers and urgent action can protect health but can also create disproportionate burdens, rights restrictions and accountability risks.

Learning outcomes

D02.1 Interpret the International Health Regulations and relevant national emergency, public health, disaster-management, data-protection and occupational-safety law.

D02.2 Distinguish strategic, operational and technical authority and document delegations, decisions and accountability.

D02.3 Analyse necessity, proportionality, reasonableness, least-restrictive alternatives and time limits for public health measures.

D02.4 Assess distributional effects on populations at disproportionate risk and incorporate reasonable accommodation and inclusive participation.

D02.5 Apply ethical frameworks to scarce-resource allocation, movement restrictions, surveillance, data sharing and workforce duty of care.

D02.6 Prepare a legal and ethical decision memorandum with options, safeguards, review triggers and accountability arrangements.

Indicative content

- International Health Regulations and national implementation
- Emergency declarations, authorities and delegations
- Public health, disaster and humanitarian law
- Human rights, necessity and proportionality
- Ethics under uncertainty and scarce-resource allocation
- Equity, disability inclusion, gender and vulnerable populations
- Privacy, confidentiality and data sharing
- Occupational duties and responder protection
- Transparency, records, audit and public accountability
- Conflicts of interest and scientific integrity

Required workplace or simulation evidence

A legal, ethical and equity decision memorandum for a proposed emergency measure or operational dilemma.

Suggested assessment evidence

Scenario-based reasoning; legal-source verification; equity-impact review; assessor judgment of safeguards and accountability.

Principal source anchors: [4-9,12,18,23,28-30]

D03 Hazard, vulnerability, capacity and risk assessment

Curriculum cluster	Foundations, governance and risk reduction
Curriculum layer	Universal core with context-adaptable hazards
Emergency phases	Prevention, mitigation, preparedness, response
Principal role pathways	RP01-RP04, RP06, RP09, RP11, RP15
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Develop and maintain evidence-informed risk profiles that integrate hazards, exposure, vulnerability, capacity, uncertainty and equity.

Rationale: Risk assessment provides the evidence base for mitigation, investment, preparedness priorities, activation and protective action.

Learning outcomes

D03.1 Identify biological, chemical, radiological, nuclear, environmental, climate, technological, humanitarian and deliberate hazards relevant to a jurisdiction.

D03.2 Assess exposure, vulnerability, coping capacity, adaptive capacity and populations at disproportionate risk.

D03.3 Use qualitative, semi-quantitative or quantitative methods to estimate likelihood, severity, uncertainty and confidence.

D03.4 Construct and maintain risk registers, hazard profiles, maps and capability-gap assessments.

D03.5 Conduct rapid risk assessment during an evolving event and update conclusions as evidence changes.

D03.6 Prioritize risks transparently and communicate implications for mitigation, preparedness, financing and operations.

Indicative content

- Hazard identification and characterisation
- Exposure, vulnerability and capacity
- Risk matrices and semi-quantitative scoring
- Rapid risk assessment
- Scenario development and assumptions
- Risk registers and multi-hazard profiles
- Geographic and population risk mapping
- Uncertainty, confidence and sensitivity analysis
- Equity and differential vulnerability
- Risk prioritization and decision thresholds

Required workplace or simulation evidence

A national, subnational, district or institutional risk profile and capability-gap assessment.

Suggested assessment evidence

Technical review of data sources, method, uncertainty and priorities; stakeholder presentation; update exercise using new information.

Principal source anchors: [1-3,5-9,11,15,17,32]

D04 Prevention, mitigation, resilience and protective action

Curriculum cluster	Foundations, governance and risk reduction
Curriculum layer	Universal core with context-adaptable interventions
Emergency phases	Prevention, mitigation, response, recovery
Principal role pathways	RP01, RP02, RP05, RP12, RP13, RP15, RP16
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Design, prioritize, implement and evaluate measures that prevent hazards or reduce exposure, vulnerability, disruption and adverse health consequences.

Rationale: Mitigation converts risk analysis into action. It remains distinct from preparedness because it reduces risk itself rather than only building capacity to manage consequences.

Learning outcomes

D04.1 Distinguish prevention, mitigation, preparedness, response, recovery, adaptation and residual risk using operational examples.

D04.2 Identify structural, non-structural, biomedical, environmental, behavioral, social and health-system mitigation options.

D04.3 Compare options according to expected effectiveness, feasibility, cost, legality, ethics, equity, acceptability, sustainability and time to benefit.

D04.4 Design a multisectoral mitigation and resilience plan linked to the documented risk profile.

D04.5 Integrate continuity, redundancy, resilient infrastructure and protection of populations at disproportionate risk.

D04.6 Monitor implementation, evaluate effectiveness and unintended effects, estimate residual risk and revise measures.

Indicative content

- Prevention and the hierarchy of controls
- Structural and non-structural mitigation
- Vaccination, infection prevention and medical countermeasures
- Food, water, sanitation, vector and environmental controls
- Health-facility, laboratory and infrastructure resilience
- Supply-chain, power, water, communication and data redundancy
- Climate adaptation and community resilience
- Protective action during active emergencies
- Equity and community participation in mitigation
- Residual risk, monitoring and adaptive management
- Recovery-based mitigation and building back better

Required workplace or simulation evidence

A mitigation and resilience action plan with options appraisal, implementation arrangements, indicators and residual-risk assessment.

Suggested assessment evidence

Product-specific mitigation rubric; technical and equity review; stakeholder feasibility assessment; oral defense of option selection.

Principal source anchors: [1-3,10,11,15,18,33]

Eric Nzirakaindi Ikoona et al., A proposed generic open curriculum for public health emergency management: An evidence-informed synthesis for country adaptation. *Journal of Interventional Epidemiology and Public Health*. 2026; 9(4):167. <https://doi.org/10.37432/jieph-d-26-00297>

D05 Governance, partnerships and emergency financing

Curriculum cluster	Foundations, governance and risk reduction
Curriculum layer	Universal core with context-adaptable institutions
Emergency phases	All phases
Principal role pathways	RP01-RP04, RP08, RP13, RP15
Terminal proficiency	P5 Govern and evaluate

Core graduate competency: Establish and sustain governance, partnership, financing and accountability arrangements that support coordinated emergency risk management.

Rationale: Technical plans fail when mandates, financing, interagency relationships and accountability remain unclear.

Learning outcomes

D05.1 Map governance, mandates, accountability and coordination across government levels and sectors.

D05.2 Design steering, policy, technical and operational coordination arrangements with clear decision rights.

D05.3 Develop agreements, memoranda of understanding, mutual-aid arrangements and partner protocols before emergencies.

D05.4 Estimate preparedness, mitigation, response and recovery resource requirements and identify flexible financing mechanisms.

D05.5 Manage partner contributions, donor requirements and external assistance while protecting national ownership and avoiding duplication.

D05.6 Establish transparent financial, performance and public-accountability reporting.

Indicative content

- Emergency governance and institutional mandates
- Whole-of-government and whole-of-society coordination
- Policy groups, steering committees and technical advisory structures
- Partner mapping and coordination
- Mutual aid and cross-border agreements
- Emergency financing, contingency funds and surge mechanisms
- Budgeting, costing and resource mobilization
- External assistance and humanitarian coordination
- Anti-fraud, audit and financial accountability
- Sustainability and institutionalisation

Required workplace or simulation evidence

A governance, partnership and financing framework for a Public Health Emergency Management program or priority risk.

Suggested assessment evidence

Governance-map review; simulation of partner negotiation; budget and accountability assessment; stakeholder feedback.

Principal source anchors: [3-9,12,17,18,32,42]

D06 Preparedness, contingency and operational planning

Curriculum cluster	Preparedness and operational readiness
Curriculum layer	Universal core with context-adaptable plans
Emergency phases	Preparedness, readiness, response, recovery
Principal role pathways	RP01-RP04, RP06-RP08, RP13-RP15
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Develop, integrate, maintain and validate preparedness, contingency, emergency-response and continuity plans.

Rationale: Plans convert risk and governance arrangements into coordinated actions, authorities, resources, triggers and procedures.

Learning outcomes

D06.1 Conduct a planning assessment using risks, capabilities, dependencies, legal authority and lessons from events and exercises.

D06.2 Develop a concept of operations that connects strategic, operational and tactical levels and partner organizations.

D06.3 Write objectives, assumptions, activation triggers, roles, procedures, resource arrangements and functional or hazard annexes.

D06.4 Integrate continuity of operations, essential-service continuity, staff succession, redundancy and alternate facilities.

D06.5 Align national, subnational, district, facility, laboratory and community plans and resolve contradictions.

D06.6 Validate plans through review, consultation, exercise and corrective action and maintain a controlled revision cycle.

Indicative content

- Preparedness planning cycle
- Concept of operations
- Emergency response and contingency plans
- Functional and hazard-specific annexes
- Continuity of operations and business continuity
- Activation and escalation thresholds
- Roles, responsibilities and resource assumptions
- Plan integration across levels and sectors
- Plan control, distribution and revision
- Readiness checklists and validation

Required workplace or simulation evidence

A preparedness, contingency or emergency-operations plan with a concept of operations, continuity annex and validation record.

Suggested assessment evidence

Structured plan appraisal; tabletop validation; cross-plan consistency check; revision after evaluator feedback.

Principal source anchors: [1-9,18-22,33]

D07 Surveillance, public health intelligence and rapid risk assessment

Curriculum cluster	Preparedness and operational readiness
Curriculum layer	Universal core
Emergency phases	Preparedness, readiness, response, recovery
Principal role pathways	RP02-RP06, RP09-RP12, RP16
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Integrate multisource surveillance and public health intelligence to detect, verify, assess and communicate threats for action.

Rationale: Timely emergency decisions depend on a disciplined process that converts signals and fragmented data into verified, contextualised and actionable intelligence.

Learning outcomes

D07.1 Define priority intelligence requirements, users, decisions, indicators, sources and reporting rhythms.

D07.2 Integrate indicator-based, event-based, community, laboratory, clinical, genomic, environmental, open-source and partner information.

D07.3 Detect, triage, verify, authenticate and document signals and maintain the signal-alert-event process.

D07.4 Conduct rapid risk assessment and update it as evidence, context and response capacity change.

D07.5 Assess completeness, timeliness, validity, representativeness, bias and uncertainty.

D07.6 Produce alerts, briefings, dashboards and situation analyses that state evidence, confidence, implications and recommended action.

Indicative content

- Priority intelligence requirements
- Indicator- and event-based surveillance
- Community, clinical, laboratory and environmental sources
- Open-source and media monitoring
- Signal detection, triage and verification
- Rapid risk assessment and grading
- Data quality and uncertainty
- Collaborative information exchange
- Actionable intelligence products
- Feedback, escalation and documentation

Required workplace or simulation evidence

A public health intelligence and rapid risk-assessment product used in a real or simulated operational decision.

Suggested assessment evidence

Source and verification audit; analytic review; time-bounded briefing; decision-maker feedback on actionability.

Principal source anchors: [4-9,18,25,26,31]

D08 Emergency workforce, rapid response teams, deployment safety, wellbeing and mental health and psychosocial support

Curriculum cluster	Preparedness and operational readiness
Curriculum layer	Universal core with role-pathway depth
Emergency phases	Preparedness, readiness, response, recovery
Principal role pathways	RP01-RP05, RP07, RP11-RP13, RP16
Terminal proficiency	P3 Coordinate; P4 Lead

Core graduate competency: Establish, mobilise, support, protect and demobilise a competent multidisciplinary emergency workforce and rapid response teams.

Rationale: Plans and centers cannot function without trained personnel, role clarity, safe deployment, duty-of-care arrangements and sustainable rosters.

Learning outcomes

D08.1 Conduct workforce mapping and determine staffing, surge, shift and succession requirements.

D08.2 Define position competencies, credentialling, roster standards and just-in-time orientation.

D08.3 Assemble multidisciplinary rapid response teams with clear leadership, terms of reference and reporting lines.

D08.4 Plan mobilization, transport, equipment, security, infection prevention, medical support and insurance or compensation.

D08.5 Monitor workload, fatigue, psychosocial wellbeing, conduct, safeguarding and team performance.

D08.6 Manage handover, demobilization, post-deployment review, follow-up and workforce retention.

Indicative content

- Workforce capability and staffing models
- Rosters, role cards and credentialling
- Rapid response team composition and leadership
- Mobilization and deployment procedures
- Occupational health, biosafety and security
- Responder wellbeing, fatigue and psychosocial support
- Safeguarding and professional conduct
- Shift systems and continuity
- Demobilization and reintegration
- Alumni and surge workforce networks

Required workplace or simulation evidence

A workforce-readiness and rapid-response-team deployment package, including roster, role cards, safety plan and demobilization process.

Suggested assessment evidence

Roster and deployment simulation; supervisor observation; safety and duty-of-care checklist; after-deployment review.

Principal source anchors: [3,5-9,13-18,27,41-44]

D09 Training, simulation, exercises and readiness evaluation

Curriculum cluster	Preparedness and operational readiness
Curriculum layer	Universal core with specialist role pathway
Emergency phases	Preparedness, readiness, learning
Principal role pathways	RP01-RP04, RP14
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Design, conduct, evaluate and institutionalise training and simulation programs that test capabilities and drive corrective action.

Rationale: Operational readiness requires repeated practice, evidence of performance and closure of gaps, not one-off training events.

Learning outcomes

D09.1 Conduct a training-needs and exercise-needs assessment linked to risks, plans, roles and capability gaps.

D09.2 Select suitable orientations, drills, tabletop, functional or full-scale exercises and define measurable objectives.

D09.3 Develop scenarios, timelines, injects, master scenario events lists, participant materials and controller/evaluator guidance.

D09.4 Conduct exercises safely and realistically while protecting confidentiality, operations and participants.

D09.5 Collect performance evidence, facilitate hotwash and after-action review, and produce an improvement plan.

D09.6 Establish a multi-year exercise program, corrective-action governance and readiness indicators.

Indicative content

- Adult learning and performance-based training
- Training-needs assessment
- Exercise program management
- Drills, tabletop, functional and full-scale exercises
- Objectives, scenarios and injects
- Master scenario events list
- Control, simulation and evaluation
- Safety, security and accessibility
- Hotwash, after-action review and improvement planning
- Corrective-action tracking and retesting

Required workplace or simulation evidence

A complete exercise package and evaluation report with corrective-action tracker.

Suggested assessment evidence

Independent review of objectives and scenario; observed exercise conduct; evaluator agreement; evidence of corrective-action assignment.

Principal source anchors: [3,6,13-22]

D10 Alert, escalation, activation, scaling and deactivation

Curriculum cluster	Incident management and emergency operations
Curriculum layer	Universal core with context-adaptable thresholds
Emergency phases	Readiness, response, recovery
Principal role pathways	RP01-RP04, RP06, RP09
Terminal proficiency	P3 Coordinate; P4 Lead

Core graduate competency: Apply documented alert, escalation, activation, scaling, deactivation and transition processes using timely evidence and accountable authority.

Rationale: Ambiguous thresholds and authority delay response, create parallel structures and prolong emergency arrangements beyond need.

Learning outcomes

D10.1 Define alert levels, notification pathways, decision authority and time standards.

D10.2 Apply event grading, escalation and activation criteria using hazard, impact, uncertainty and capacity information.

D10.3 Choose an activation level and staffing model proportionate to the incident.

D10.4 Document activation decisions, assumptions, objectives, roles and notifications.

D10.5 Reassess scale and adapt activation as the situation, workload and partner arrangements change.

D10.6 Apply deactivation and transition criteria and transfer residual actions into routine programs or recovery structures.

Indicative content

- Alert and notification systems
- Event grading and escalation
- Activation authority and levels
- Scaling and modular organization
- Call-down procedures and rosters
- Initial objectives and operational periods
- Decision and notification logs
- Deactivation criteria
- Transition and handover
- Testing and audit of activation systems

Required workplace or simulation evidence

An alert-to-activation protocol and an activation/deactivation decision record from a simulation or event.

Suggested assessment evidence

Time-bounded activation exercise; documentation audit; review of proportionality, authority and transition arrangements.

Principal source anchors: [3,7-9,18,19]

D11 Incident management systems, command and coordination

Curriculum cluster	Incident management and emergency operations
Curriculum layer	Universal core with role-pathway depth
Emergency phases	Response, recovery
Principal role pathways	RP01-RP08, RP11-RP14, RP16
Terminal proficiency	P3 Coordinate; P4 Lead; P5 Govern for system design

Core graduate competency: Organise and lead incident-management functions using management by objectives, clear authority, manageable span of control and coordinated operational periods.

Rationale: A common incident-management model supports unity of effort across agencies, levels and disciplines during complex events.

Learning outcomes

D11.1 Explain incident-management principles, functions, terminology and relationship to national coordination systems.

D11.2 Build a scalable organization with command or management, operations, planning, logistics and finance/administration functions.

D11.3 Assign authority, deputies, liaisons, safety and public-information roles and maintain span of control.

D11.4 Use unified or coordinated command when multiple mandates, jurisdictions or sectors share responsibility.

D11.5 Manage objectives, operational periods, meeting rhythm, delegation, issue escalation and accountability.

D11.6 Evaluate incident-management performance and correct role confusion, duplication, bottlenecks or unsafe practices.

Indicative content

- Incident management principles
- Command, coordination and policy interfaces
- Functional sections and management staff
- Unity of command and span of control
- Delegation and authority
- Unified command and multiagency coordination
- Operational periods and management rhythm
- Role cards and position checklists
- Liaison, safety and public-information functions
- Performance review and adaptation

Required workplace or simulation evidence

An incident organization, role assignment package and observed performance in a multiagency simulation or real activation.

Suggested assessment evidence

Direct observation using role-specific checklists; organizational-design review; oral defense of authority and coordination choices.

Principal source anchors: [3,7-10,17-20,42,43]

D12 Public health emergency operations center establishment, management and continuity

Curriculum cluster	Incident management and emergency operations
Curriculum layer	Universal core with role-pathway depth
Emergency phases	Preparedness, readiness, response, recovery
Principal role pathways	RP01-RP04, RP06-RP09, RP14
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Establish, activate, manage, sustain and evaluate a functional physical, virtual or hybrid public health emergency operations center.

Rationale: The center integrates information and resources for incident management but must sit inside a wider emergency-management program and remain sustainable.

Learning outcomes

D12.1 Define the center mandate, objectives, governance, concept of operations and relationship to other emergency operations centers.

D12.2 Specify physical or virtual infrastructure, survivability, accessibility, security and alternate-site requirements.

D12.3 Design information and communication technology, information systems, minimum datasets and interoperability arrangements.

D12.4 Develop standard operating procedures, staffing plans, rosters, position aids and activation checklists.

D12.5 Manage operational rhythm, briefings, displays, decisions, records, partner access and round-the-clock continuity.

D12.6 Evaluate performance, cost, sustainability, continuity and corrective-action implementation.

Indicative content

- PHEOC concept and objectives
- Legal authority and governance
- Concept of operations
- Physical, virtual and hybrid models
- Infrastructure, security and survivability
- Information and communication technology
- Information systems and minimum datasets
- Staffing, rosters and job aids
- Standard operating procedures and checklists
- Continuity, alternate sites and cybersecurity
- Costing, sustainability and evaluation

Required workplace or simulation evidence

A public health emergency operations center package with concept of operations, activation levels, structure, procedures, rosters and continuity arrangements.

Suggested assessment evidence

Document review against a PHEOC checklist; activation simulation; facility or virtual-environment walk-through; continuity test.

Principal source anchors: [3,7-9,17,42,43]

Eric Nzirakaindi Ikoona et al., A proposed generic open curriculum for public health emergency management: An evidence-informed synthesis for country adaptation. *Journal of Interventional Epidemiology and Public Health*. 2026; 9(4):167. <https://doi.org/10.37432/jieph-d-26-00297>

D13 Operational planning, objectives and decision-making under uncertainty

Curriculum cluster	Incident management and emergency operations
Curriculum layer	Universal core with role-pathway depth
Emergency phases	Response, recovery
Principal role pathways	RP02-RP06, RP09, RP11
Terminal proficiency	P3 Coordinate; P4 Lead

Core graduate competency: Convert situational evidence and policy direction into measurable incident objectives, strategies, tactics, assignments and accountable decisions.

Rationale: Response structures become active but ineffective when they lack clear objectives, operational periods, priorities and decision records.

Learning outcomes

D13.1 Frame the operational problem using current impacts, risks, response status, resource constraints and uncertainty.

D13.2 Write specific, measurable, achievable, relevant and time-bound incident objectives.

D13.3 Compare strategies and tactics using effectiveness, feasibility, legality, ethics, equity, resources and unintended effects.

D13.4 Develop an incident action plan that assigns tasks, resources, safety measures, communication and reporting.

D13.5 Run planning and coordination meetings and maintain decision, issue and action logs.

D13.6 Monitor objective attainment and adapt plans across operational periods.

Indicative content

- Operational-period planning cycle
- Situation analysis and problem framing
- Incident objectives
- Strategy and tactics
- Option appraisal and decision matrices
- Incident action plans
- Planning meetings and briefings
- Decision, issue and action logs
- Uncertainty and precaution
- Performance monitoring and adaptation

Required workplace or simulation evidence

An incident action plan, decision log and operational-period briefing from a simulation or real response.

Suggested assessment evidence

Scenario-based planning; direct observation of planning meeting; technical review of objectives, assignments and safety provisions.

Principal source anchors: [3,7-10,18-20,42]

D14 Information, knowledge and records management

Curriculum cluster	Incident management and emergency operations
Curriculum layer	Universal core with information role pathway
Emergency phases	Preparedness, response, recovery, learning
Principal role pathways	RP02-RP06, RP08-RP10, RP14
Terminal proficiency	P3 Coordinate; P4 Lead; P5 Govern for information systems

Core graduate competency: Establish information requirements, flows, standards and products that support a shared operating picture, accountability and institutional memory.

Rationale: Emergency information can overwhelm decision-makers unless it is prioritized, verified, protected, synthesized and delivered through agreed channels.

Learning outcomes

D14.1 Define critical information requirements, reporting lines, frequency, formats and responsibilities.

D14.2 Design information flows that connect field teams, laboratories, facilities, communities, partners and decision-makers.

D14.3 Maintain a common operating picture and produce accurate, timely and audience-specific situation reports and briefings.

D14.4 Apply data standards, version control, document control, confidentiality, access and retention requirements.

D14.5 Manage handover, archiving, lessons, contact lists, maps, decisions and supporting evidence.

D14.6 Evaluate information timeliness, quality, burden, use and security and improve the system.

Indicative content

- Critical information requirements
- Information flows and reporting rhythms
- Common operating picture
- Situation reports and executive briefings
- Dashboards, maps and visual management
- Data and metadata standards
- Document and version control
- Privacy, confidentiality and access
- Records, archives and institutional memory
- Handover and knowledge transfer

Required workplace or simulation evidence

A common operating picture, situation report, executive briefing and controlled information-management plan.

Suggested assessment evidence

Accuracy and timeliness audit; decision-maker usability review; records and confidentiality check; oral briefing.

Principal source anchors: [3,7-9,25,26,31]

D15 Logistics, supply chain, finance, administration and resource management

Curriculum cluster	Incident management and emergency operations
Curriculum layer	Universal core with specialist role pathway
Emergency phases	Preparedness, response, recovery
Principal role pathways	RP02-RP08, RP11-RP13, RP16
Terminal proficiency	P3 Coordinate; P4 Lead; P5 Govern for systems

Core graduate competency: Forecast, mobilise, procure, track, sustain and account for personnel, supplies, facilities, services, transport and funds during emergencies.

Rationale: Operational plans fail without timely resources, resilient supply chains, accountable finance and administrative support.

Learning outcomes

D15.1 Forecast resource requirements from objectives, scenarios, consumption rates, lead times and uncertainty.

D15.2 Develop procurement, stockpile, warehousing, cold-chain, transport, distribution and reverse-logistics arrangements.

D15.3 Operate resource-request, allocation, prioritization and tracking systems across partners and levels.

D15.4 Manage facilities, communications, accommodation, feeding, fleet, maintenance and staff support.

D15.5 Maintain time, cost, contract, claims, reimbursement, donation and financial-control records.

D15.6 Plan demobilization, disposal, reconciliation, replenishment and post-event financial review.

Indicative content

- Resource forecasting and prioritization
- Procurement and emergency contracting
- Stockpiles, warehousing and inventory
- Cold chain and medical logistics
- Transport, fleet and distribution
- Facilities and staff support
- Resource request and tracking systems
- Finance, time, claims and reimbursement
- Donations and external assistance
- Demobilization, reconciliation and replenishment

Required workplace or simulation evidence

A logistics and resource-management plan with forecast, request, tracking, finance and demobilization components.

Suggested assessment evidence

Resource-allocation simulation; stock and finance audit; assessment of feasibility, accountability and continuity.

Principal source anchors: [3,5-9,18-20,32,43]

D16 Risk communication, community engagement and infodemic management

Curriculum cluster	Response functions
Curriculum layer	Universal core with specialist role pathway
Emergency phases	All phases
Principal role pathways	RP01-RP05, RP09-RP11, RP13, RP15
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Design and lead inclusive risk communication, community engagement, social-listening and infodemic-management functions that build trust and support protective action.

Rationale: People act on information through relationships, trust, culture and lived experience. One-way messaging cannot replace engagement and feedback.

Learning outcomes

D16.1 Analyse audiences, communities, stakeholders, languages, trust, access barriers and information ecosystems.

D16.2 Develop communication and engagement objectives linked to desired protective actions and operational decisions.

D16.3 Communicate uncertainty, changing evidence, benefits, harms and trade-offs clearly and transparently.

D16.4 Operate community feedback, social-listening, rumour and misinformation monitoring systems.

D16.5 Engage media, community leaders, civil society and affected populations in two-way dialogue and co-design.

D16.6 Evaluate reach, comprehension, trust, participation, behavioral response, equity and unintended effects.

Indicative content

- Risk perception and trust
- Audience and stakeholder analysis
- Message development and pretesting
- Media and spokesperson practice
- Community engagement and co-design
- Social listening and feedback systems
- Rumours, misinformation and disinformation
- Communication under uncertainty
- Accessibility, language and inclusion
- Monitoring and evaluation of RCCE

Required workplace or simulation evidence

A risk communication, community-engagement and infodemic-management package with feedback evidence and revision log.

Suggested assessment evidence

Message and strategy review; simulated press briefing; community-feedback analysis; equity and trust evaluation.

Principal source anchors: [1,8,9,11,18,23,24,33]

D17 Public health, clinical, laboratory, infection-prevention and countermeasure operations

Curriculum cluster	Response functions
Curriculum layer	Universal core with specialist role pathways
Emergency phases	Mitigation, preparedness, response, recovery
Principal role pathways	RP02, RP04, RP05, RP07, RP11-RP13, RP16
Terminal proficiency	P3 Coordinate; P4 Lead

Core graduate competency: Coordinate integrated public health, clinical, laboratory, infection-prevention, countermeasure and essential-service operations during emergencies.

Rationale: Emergency management must connect coordination structures with technical operations that prevent illness, deliver care and sustain services.

Scope: D17 is a coordination domain. Its outcomes require a graduate to plan, coordinate and maintain these operations with the clinicians, laboratory scientists, infection-prevention practitioners, pharmacists and program managers who deliver them. Specialist competence in clinical care, laboratory science, infection prevention and control and medical countermeasures remains with those specialists. Learners bring their own professional qualification under the entry profile in section 5. D17.4 is met by putting infection prevention and control measures in place through the responsible services. RP12 and RP16 add depth in coordinating these services, and technical depth in one area belongs to an optional specialization.

Learning outcomes

D17.1 Coordinate case detection, investigation, contact or exposure management, public health and social measures and targeted prevention.

D17.2 Plan clinical pathways, referral, surge, triage, isolation, treatment, rehabilitation and safe dignified care.

D17.3 Coordinate specimen strategy, diagnostics, laboratory networks, biosafety, biosecurity and result reporting.

D17.4 Implement infection prevention and control across facilities, communities, transport and congregate settings.

D17.5 Plan selection, procurement, allocation, delivery, monitoring and safety of vaccines, medicines and other countermeasures.

D17.6 Maintain essential health services, quality, equity and continuity while monitoring health-system strain.

Indicative content

- Public health measures and control strategies
- Clinical pathways, surge and referral
- Laboratory response and specimen systems
- Infection prevention and control
- Biosafety and biosecurity
- Vaccination and medical countermeasures
- Mass care and emergency medical teams
- Continuity of essential services
- Quality, patient safety and equity
- Operational monitoring and adaptation

Required workplace or simulation evidence

An integrated public health and health-service operations plan or deployment product for a real or simulated emergency.

Suggested assessment evidence

Technical review by relevant specialists; simulation observation; safety and equity audit; evidence of coordination across functions.

Principal source anchors: [1,5-9,18,27,31,35]

D18 One Health, environmental, humanitarian, mass-gathering and cross-border response, including mental health and psychosocial support

Curriculum cluster	Response functions
Curriculum layer	Universal core with context-adaptable hazards
Emergency phases	Prevention, mitigation, preparedness, response, recovery
Principal role pathways	RP01-RP06, RP09-RP13, RP15, RP16
Terminal proficiency	P3 Coordinate; P4 Lead

Core graduate competency: Coordinate multisectoral and cross-border action for threats affecting people, animals, ecosystems, displaced populations and complex operational settings.

Rationale: Many emergencies cross administrative, sectoral and ecological boundaries and require coherent action beyond the health ministry.

Learning outcomes

D18.1 Apply One Health and multisectoral coordination to zoonotic, food-safety, environmental and antimicrobial-resistance threats.

D18.2 Assess water, sanitation, hygiene, shelter, nutrition, protection, vector and environmental-health needs in humanitarian settings.

D18.3 Coordinate health functions for displacement, conflict, mass gatherings and civil-protection operations.

D18.4 Establish cross-border surveillance, information exchange, referral, laboratory and response arrangements.

D18.5 Apply humanitarian principles, do-no-harm, safeguarding, cultural awareness, mental health and psychosocial support, and protection of affected populations.

D18.6 Integrate multisectoral objectives and activities into incident plans, situation reports and recovery arrangements.

Indicative content

- One Health governance and operations
- Zoonotic, food-safety and environmental hazards
- Antimicrobial resistance
- Water, sanitation, hygiene and environmental health
- Humanitarian coordination and principles
- Displacement, shelters and protection
- Mass gatherings
- Cross-border and points-of-entry coordination
- Civil-military and civil-protection coordination
- Multisectoral recovery

Required workplace or simulation evidence

A One Health, humanitarian, mass-gathering or cross-border operational annex and coordination record.

Suggested assessment evidence

Multisectoral tabletop exercise; technical review; partner feedback; assessment of protection, coordination and actionability.

Principal source anchors: [1,2,4-9,15,31,33]

D19 Digital emergency management, geographic information systems, modeling, artificial intelligence and cybersecurity

Curriculum cluster	Response functions
Curriculum layer	Universal digital literacy with optional specialist depth
Emergency phases	All phases
Principal role pathways	RP01-RP06, RP09-RP10, RP13-RP15
Terminal proficiency	P3 Coordinate; P4 Lead; P5 Govern digital systems

Core graduate competency: Select, govern and evaluate digital, geospatial, modeling and artificial-intelligence tools while protecting continuity, security, privacy, equity and human accountability.

Rationale: Digital tools can accelerate intelligence and coordination but can amplify error, bias, exclusion, cyber risk and false confidence.

Learning outcomes

- D19.1** Translate operational needs into digital-system, data, interoperability, dashboard and communication requirements.
- D19.2** Use geographic information systems and modeling to support risk assessment, resource allocation, forecasting and operational planning.
- D19.3** Critically appraise artificial-intelligence use cases, data readiness, performance, calibration, external validity, bias and fairness.
- D19.4** Establish human oversight, documentation, procurement, monitoring, incident reporting and discontinuation criteria for artificial-intelligence tools.
- D19.5** Assess cybersecurity, access control, data protection, communications resilience, backup and degraded-mode operations.
- D19.6** Evaluate whether a digital intervention improves decisions, equity, timeliness and operational outcomes.

Indicative content

- Digital emergency-management systems
- Interoperability, standards and minimum datasets
- Dashboards and common operating pictures
- Geographic information systems and remote sensing
- Forecasting and decision-support models
- Artificial-intelligence and machine-learning use cases
- Generative artificial intelligence and verification
- Bias, fairness, explainability and human oversight
- Cybersecurity, continuity and degraded modes
- Privacy, access, procurement and post-deployment monitoring

Required workplace or simulation evidence

A digital-system, geographic-information, modeling, artificial-intelligence or cybersecurity appraisal linked to an operational problem.

Suggested assessment evidence

Technical and governance review; reproducibility and security check; bias and equity assessment; decision-maker demonstration.

D20 Recovery, transition, rehabilitation, building back better and community mental health and psychosocial support

Curriculum cluster	Recovery and institutional learning
Curriculum layer	Universal core with recovery role pathway
Emergency phases	Response, recovery, mitigation, learning
Principal role pathways	RP01-RP08, RP12-RP15, RP16
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Plan and coordinate transition, service restoration, rehabilitation and risk-informed recovery that reduces future vulnerability.

Rationale: Recovery begins during response and should restore health, continuity and trust while correcting conditions that produced or amplified harm.

Learning outcomes

D20.1 Conduct health and health-system recovery-needs assessment, including long-term physical, mental, social and service impacts.

D20.2 Define transition criteria, governance, responsibilities and handover from emergency to routine or recovery structures.

D20.3 Prioritize restoration of essential services, workforce, supply chains, laboratories, infrastructure and information systems.

D20.4 Integrate rehabilitation, psychosocial support, community recovery and support for populations at disproportionate risk.

D20.5 Apply building-back-better and mitigation principles to infrastructure, policies, systems and community resilience.

D20.6 Establish recovery objectives, financing, indicators, reporting and review arrangements.

Indicative content

- Recovery concepts and phases
- Early recovery and transition
- Recovery-needs assessment
- Restoration of essential services
- Rehabilitation and mental health
- Infrastructure and supply-system recovery
- Community participation and trust
- Build back better and future risk reduction
- Recovery financing and governance
- Recovery monitoring and closure

Required workplace or simulation evidence

A recovery, transition and continuity plan with risk-reduction and monitoring components.

Suggested assessment evidence

Plan review; transition simulation; stakeholder and community feedback; assessment of resilience and equity.

Principal source anchors: [1,2,7-11,15,16,33]

D21 Monitoring, evaluation, after-action review, corrective action, research and institutional learning

Curriculum cluster	Recovery and institutional learning
Curriculum layer	Universal core
Emergency phases	All phases and learning
Principal role pathways	RP01-RP06, RP08-RP10, RP13-RP15
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Measure Public Health Emergency Management structures, processes and outcomes and convert findings from events, exercises and research into sustained improvement.

Rationale: Readiness and response systems stagnate when reviews end with reports instead of assigned, financed, tracked and retested corrective actions.

Learning outcomes

D21.1 Develop a logic model and indicators for structure, process, outputs, outcomes, equity, cost and sustainability.

D21.2 Monitor incident objectives, operational performance, information timeliness, resource use, workforce and community experience.

D21.3 Plan and facilitate debriefs, intra-action reviews, early-action reviews and after-action reviews using inclusive evidence.

D21.4 Conduct root-cause and contributing-factor analysis and distinguish corrective from preventive action.

D21.5 Develop, assign, finance, track, verify and close improvement actions and retest critical capabilities.

D21.6 Formulate operational research and evaluation questions, apply ethical methods and maintain a learning repository and revision cycle.

Indicative content

- Program logic and theory of change
- Structure, process and outcome indicators
- Operational performance monitoring
- Debriefs, hotwashes and reviews
- Root-cause and contributing-factor analysis
- Corrective and preventive action
- Improvement-plan governance and tracking
- Implementation research and evaluation
- Knowledge repositories and institutional memory
- Curriculum and policy revision

Required workplace or simulation evidence

An intra-action or after-action review and a governed corrective-action and institutional-learning plan.

Suggested assessment evidence

Review-process observation; evidence-quality audit; improvement-plan appraisal; verification of assigned ownership and follow-up.

Principal source anchors: [3,6-9,16,21,22,32,40]

D22 Leadership, negotiation, teamwork, teaching, mentorship and workforce development

Curriculum cluster	Recovery and institutional learning
Curriculum layer	Universal core with role-pathway depth
Emergency phases	All phases
Principal role pathways	RP01-RP16
Terminal proficiency	P4 Lead; P5 Govern and evaluate

Core graduate competency: Lead people and partnerships under uncertainty, negotiate priorities, sustain ethical team performance and develop the emergency-management workforce.

Rationale: Emergency-management outcomes depend on leadership, trust, teamwork, learning and succession as much as technical knowledge.

Learning outcomes

D22.1 Apply adaptive, ethical and accountable leadership under time pressure, uncertainty, scrutiny and constrained resources.

D22.2 Build psychologically safe multidisciplinary teams with clear expectations, feedback, delegation and accountability.

D22.3 Negotiate priorities, resources, authority and agreements and manage conflict across institutions and sectors.

D22.4 Communicate strategically with political, technical, operational, media, partner and community audiences.

D22.5 Design and facilitate adult learning, simulation debriefs, just-in-time training and role-specific orientation.

D22.6 Establish mentoring, supervision, remediation, succession and continuing-professional-development systems.

Indicative content

- Leadership under uncertainty
- Decision-making and judgment
- Team formation, delegation and psychological safety
- Negotiation, diplomacy and conflict management
- Political awareness and strategic communication
- Coaching, feedback and performance management
- Adult learning and facilitation
- Mentorship, supervision and remediation
- Succession and workforce development
- Personal resilience, reflection and professional conduct

Required workplace or simulation evidence

A leadership, negotiation, teaching and mentorship portfolio supported by observed practice and reflective improvement.

Suggested assessment evidence

Multisource feedback; direct observation; teaching and mentoring evidence; reflective oral defense; professional-practice review.

Principal source anchors: [10,13-18,23,24,38,41,44]

13. Required workplace or simulation products

Every graduate of a full program, whether an advanced or a concentrated fellowship, should provide evidence across all 12 product categories. The role pathway sets the depth: assessors rate each product against the responsibility assigned to the learner, using the rating scale in section 14. Supplementary File 4 shows the mapping: the outcomes assigned to each of the 16 pathways draw on all 12 products. One integrated project may contribute to several categories when assessors record separate decisions and the evidence meets each standard.

Shorter formats. Shorter formats assess a stated subset, and the full credential requires all 12 products. A professional certificate requires at least one assessed product. A role-pathway certification requires the universal core and observed performance in the defined role. Continuing professional development is exempt from the product requirement (section 4). Each program states its subset in the assessment blueprint before delivery.

Status. The 12 products and their rubrics serve as proposed evidence formats, providing a foundation for consistent assessment once assessors are calibrated. Calibration with assessors drawn from more than one region is a required validation study.

Code	Product	Minimum evidence	Principal domains
PP01	Risk profile and capability-gap assessment	Multi-hazard risk profile; exposure, vulnerability and capacity analysis; uncertainty; populations at disproportionate risk; priority capability gaps.	D01-D03, D05-D07, D19
PP02	Mitigation and resilience action plan	Existing controls; options appraisal; selected structural and non-structural measures; equity, financing, implementation, indicators and residual risk.	D03-D05, D17-D20
PP03	Preparedness, contingency and continuity plan	Concept of operations, assumptions, objectives, roles, triggers, resources, functional or hazard annexes, continuity and validation record.	D05-D10, D12, D15, D20
PP04	PHEOC and incident-management package	Mandate, concept of operations, activation levels, organization, procedures, rosters, role cards, information flows, alternate arrangements and sustainability.	D10-D15, D21-D22
PP05	Exercise and readiness package	Needs assessment, objectives, scenario, timeline, injects, controller/evaluator guides, safety plan, evaluation, improvement plan and retest schedule.	D06, D08-D15, D21-D22
PP06	Response-management portfolio	Incident objectives, incident action plan, situation report, common operating picture, decision log, action tracker, briefing and performance update.	D07, D10-D18, D21-D22

Code	Product	Minimum evidence	Principal domains
PP07	Logistics, finance and resource-management plan	Forecast, procurement, stock and distribution arrangements, resource requests, tracking, financial controls, demobilization and reconciliation.	D05-D08, D11, D13, D15, D20-D21
PP08	Risk communication, community engagement and infodemic package	Audience and stakeholder analysis, objectives, messages, channels, spokesperson plan, social listening, feedback, rumour management and evaluation.	D02, D07, D14, D16, D19, D21-D22
PP09	Deployment or integrated response portfolio	Terms of reference, team structure, safety and wellbeing, field products, handover, deployment report, partner feedback and reflection.	D07-D08, D10-D18, D22
PP10	Digital, geographic-information, artificial-intelligence or cybersecurity appraisal	Operational need, system requirements, data flow, validation, bias, privacy, security, human oversight, continuity and monitoring.	D07, D12-D14, D19, D21
PP11	Recovery, transition and continuity plan	Needs assessment, transition criteria, service restoration, rehabilitation, resilience, governance, financing, indicators and closure arrangements.	D04-D06, D13, D15, D17-D21
PP12	Review, improvement, leadership and mentorship portfolio	Intra-action or after-action review, root-cause analysis, corrective-action tracker, evidence of leadership, teaching, feedback, mentoring and improvement.	D09-D10, D20-D22

14. Assessment blueprint and common rubric

Assessment should triangulate knowledge, practical skill, observed role performance, products, professional behavior and evidence of use. Written examinations may diagnose gaps but should not replace operational-performance decisions.

Assessment source	Examples	Decision use
Knowledge and reasoning	Applied examinations, critical appraisal, interpretation and scenario reasoning.	Formative and selected summative use.
Practical skill	Observed briefings, planning meetings, activation, role performance, exercise control, logistics, communication or analysis.	Direct observation with structured checklist.

Assessment source	Examples	Decision use
Workplace or simulation product	Plans, reports, logs, dashboards, exercise materials, digital appraisals, improvement plans and portfolios.	Product-specific rubric and technical review.
Professional practice	Leadership, ethics, equity, teamwork, reliability, safety, communication, reflective practice and duty of care.	Mentor, supervisor, peer and stakeholder evidence.
Portfolio synthesis	Mapped evidence across universal core and selected role pathway, gaps, reflection and defense.	Independent panel decision; unresolved gaps trigger remediation.

Common product rubric

Risk and public-health relevance	Addresses a defined hazard, vulnerability, operational decision or service need and involves the correct stakeholders.
Technical validity	Uses appropriate evidence, methods, standards, assumptions, analysis and interpretation.
Operational feasibility	Defines authority, people, resources, time, dependencies, safety and implementation constraints.
Law, ethics and equity	Protects rights, confidentiality, inclusion and populations at disproportionate risk and documents safeguards.
Coordination and leadership	Demonstrates role clarity, consultation, teamwork, accountable decisions and conflict management.
Information quality and reproducibility	Maintains sources, methods, data definitions, version control, decision logs and records needed to verify the work.
Actionability and use	Provides prioritized, feasible actions and documents management response, implementation or formal consideration.
Monitoring, reflection and improvement	Defines indicators, residual risk, feedback, limitations, learning and revision requirements.

Recommended rating scale. 0 = absent, unsafe, invalid or fabricated; 1 = partial and requires substantial support; 2 = competent for assigned responsibility; 3 = advanced, independent performance that improves systems or develops others.

Critical-fail conditions. A product cannot pass when it contains fabricated evidence; an unresolved major technical error; unlawful or unsafe action; a serious confidentiality or cybersecurity breach; failure to disclose a material conflict; discriminatory practice; or unverified artificial-intelligence output used as accountable operational evidence.

15. Graduation, remediation and credentialling

- Complete the required structured learning, simulation and workplace-practice requirements for the selected program format.
- Demonstrate every universal-core competency and the competencies assigned to the selected role pathway.
- For a full-program credential, provide evidence across all 12 product categories at the depth set by the selected role pathway; integrated projects may satisfy more than one category only after separate assessment decisions.

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- Pass every designated critical competency and product criterion. Critical failures cannot be offset by high scores elsewhere.
- Complete at least one multiagency simulation, one supervised workplace improvement project and an integrative oral defense.
- Complete remediation and reassessment for any unmet competency before credential award.
- Receive a program-level decision from an assessment panel that includes independent technical review.
- Use a credential title that accurately represents the duration, depth, practice and assessed role competence.

16. Mentorship and workplace supervision

Technical mentor	Supports competency development, technical quality, reflection, product review and career development.
Workplace supervisor	Provides access, authority, operational opportunities, routine feedback, safety oversight and verification of workplace performance.
Program lead	Monitors progress, assigns assessors, coordinates remediation and protects consistency across learners and sites.
Minimum contact	Orientation meeting; written learning plan; scheduled contact at least monthly; product review before submission; pre- and post-simulation or deployment review; documented escalation when progress or safety is at risk.
Boundaries	Mentors should not appropriate learner work, write products for learners, conceal unsafe performance or serve as the sole final assessor for products they closely supervised.
Support	Programs should prepare mentors in feedback, adult learning, assessment, equity, safeguarding, conflict management, authorship and referral for wellbeing support.

17. Faculty and facilitator requirements

- Multidisciplinary faculty spanning emergency management, public health, epidemiology, law, ethics, risk reduction, public health emergency operations centers, incident management, logistics, finance, communication, community engagement, health services, laboratory systems, One Health, information systems, digital health, artificial intelligence, cybersecurity, recovery and adult education.
- Facilitators with recent operational experience and the ability to connect doctrine to real decisions and constraints.
- Instructor orientation covering learning outcomes, exercise safety, answer keys, assessment standards, inclusive facilitation and disclosure of artificial-intelligence use.
- Faculty calibration using common products, performance anchors and discussion of borderline or unsafe evidence.
- A process for declaring and managing conflicts of interest and for updating content after major events, exercises or policy changes.

18. Minimum program resources

Governance	Host institution, program director, advisory or technical group, approved curriculum, policies, budget and quality plan.
Learning environment	Accessible classroom or virtual platform, low-bandwidth alternatives, secure document repository and learner support.
Practice environment	Access to emergency plans, public health emergency operations centers, field sites, partner agencies, simulations and workplace projects.

Governance	Host institution, program director, advisory or technical group, approved curriculum, policies, budget and quality plan.
Faculty and mentorship	Prepared facilitators, technical mentors, workplace supervisors, assessors and administrative support.
Data and technology	Secure devices, connectivity, data, geographic-information tools, analytical software, communication systems and cybersecurity support.
Simulation resources	Scenario library, exercise space or virtual environment, inject system, controller/evaluator materials, safety arrangements and improvement tracker.
Operational support	Travel, deployment, insurance or duty-of-care arrangements, protective equipment, wellbeing support and emergency contact procedures.
Assessment and quality	Templates, common and product-specific rubrics, assessor training, appeal and remediation procedures, monitoring system and archive.

19. Country and program adaptation

1. Convene a national curriculum group representing public health, disaster management, national and subnational authorities, emergency operations centers, health services, laboratories, One Health sectors, communities, universities and learners or alumni.
2. Define the workforce problem, intended credential, target roles and level of responsibility.
3. Map the 22 domains and 12 products against existing curricula, laws, plans, systems and workforce standards.
4. Preserve universal-core outcomes; localise context-adaptable content; select role pathways and optional specializations through a documented needs assessment.
5. Replace examples with national hazards, structures, languages, datasets, forms and operating procedures without weakening the performance standard.
6. Assess faculty, mentor, field-site, simulation, digital, safety, accessibility and financial feasibility.
7. Develop an assessment blueprint and designate critical competencies and independent assessors before delivery.
8. Pilot the curriculum with a limited cohort and collect learner, mentor, assessor, employer and stakeholder evidence.
9. Revise content, workload, sequencing, tools and products using documented decisions.
10. Approve, publish and version the adapted curriculum and set a review date and rapid-update procedure.

20. Program monitoring, evaluation and quality improvement

Reach and equity	Applicants, enrolment, geography, profession, sex or gender where appropriate, disability inclusion, language, employer and subnational representation.
Implementation	Session completion, simulation delivery, mentor contact, field opportunities, protected time, fidelity, adaptations and cost.
Learning and competence	Knowledge gaps, observed skills, product quality, role performance, remediation, assessor agreement and portfolio completion.
Workplace use	Plans adopted, exercises institutionalised, recommendations implemented, corrective actions closed, systems improved and decisions informed.
Emergency-system outcomes	Activation timeliness, reporting timeliness, objective completion, coordination quality, resource availability, community feedback, continuity and recovery indicators.

Reach and equity	Applicants, enrolment, geography, profession, sex or gender where appropriate, disability inclusion, language, employer and subnational representation.
Sustainability	Faculty and mentor retention, program financing, employer support, alumni engagement, curriculum revision and continued delivery.
Safety and integrity	Adverse events, safeguarding, duty of care, confidentiality, cybersecurity, assessment appeals and research or authorship concerns.

Evaluation principle: Program evaluation should distinguish structure, process, outputs, outcomes and longer-term system effects. Completion and satisfaction alone do not establish emergency-management competence or program impact.

21. Governance, version control and open release

- Governance of this specification. Ownership rests with the author group of the companion article until a standing multidisciplinary governance group is constituted with authority to approve revisions. The author group holds the source register, the outcome register and the change log, and issues each version.
- Version and dates. This is version 1.2, released on 5 October 2026. Version 1.0 was released on 19 July 2026 with the first submission of the companion article, and version 1.1 on 31 August 2026. The next scheduled review falls after the first adopting cohort completes, and no later than 31 August 2028. Interim updates are issued when a safety, legal, scientific or operational issue cannot wait for the scheduled review.
- Change log. Version 1.0, 19 July 2026: first complete specification, four layers, five proficiency levels, fifteen role pathways, 22 domains, 132 outcomes and 12 required products. Version 1.1, 31 August 2026: mental health and psychosocial support named as a required competence in D08, D18 and D20 and among the cross-cutting requirements; role pathways extended to sixteen by separating RP12 clinical and laboratory response coordination from RP16 infection prevention, control and medical-countermeasure coordination; source keys aligned to the register in Supplementary File 3; release license stated. No domain, outcome or product was renumbered. Version 1.2, 5 October 2026: D17 stated as a coordination domain; governing and evaluating at P5 defined as two competencies with separate evidence; product requirement stated by program format and role pathway; products and rubrics described as proposed evidence formats; Figure 1 relabeled to match; third search round recorded, with 12 sources added to the analytic library, now 81; alignment table for the WHO public health emergency management capability added. Domain, outcome and product numbers and wording are unchanged.
- The requirements below apply to any institution or country adopting this specification.
- Establish a curriculum owner and multidisciplinary governance group with authority to approve revisions.
- Assign a version number, release date, change log and next scheduled review date.
- Conduct routine review after every cohort and major review after significant emergencies, exercises, legal changes or technological developments.
- Use rapid interim updates when a safety, legal, scientific or operational issue cannot wait for the scheduled review.
- Maintain source provenance and licensing records and avoid reproducing third-party logos, tables or copyrighted teaching materials without permission.
- Publish the curriculum, templates and revision history in an accessible, version-controlled repository.
- Invite structured feedback from programs and users and document how comments influence decisions.
- Publish under the Creative Commons Attribution 4.0 International License that the journal applies to its content. Adapted source materials remain subject to their original licenses.

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End of the proposed generic Public Health Emergency Management curriculum.

Supplementary Table 1. Domain clusters, outcome counts and scope in the proposed curriculum

Cluster	Domains	Outcomes	Scope
Foundations, governance and risk reduction	D01-D05	30	Foundations and systems; law, ethics, equity and accountability; hazard, vulnerability and capacity assessment; prevention, mitigation and resilience; governance, partnerships and financing
Preparedness and operational readiness	D06-D09	24	Preparedness, contingency and continuity planning; surveillance and public health intelligence; emergency workforce, rapid response teams and responder mental health and psychosocial support; training, simulation and readiness evaluation
Incident management and emergency operations	D10-D15	36	Alert, escalation, activation and deactivation; incident management; PHEOC management; operational planning; information and knowledge management; logistics, finance and resources
Response functions	D16-D19	24	Risk communication, community engagement and infodemics; public health, clinical and laboratory operations; One Health, humanitarian coordination and mental health and psychosocial support; digital systems, geographic information, artificial intelligence and cybersecurity
Recovery and institutional learning	D20-D22	18	Recovery, transition and building back better, including community mental health and psychosocial support; monitoring, evaluation and organizational learning; leadership, negotiation, teaching and mentorship

PHEOC, public health emergency operations center. Domain specifications, outcomes and required evidence appear in Supplementary File 1, and the outcome-level register appears in Supplementary File 4.