World Health Organization

European Region

# HEAT–HEALTH ACTION PLANS

## GUIDANCE

Second edition

## EXECUTIVE SUMMARY

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# Executive summary

This second edition of WHO guidance on heat–health action plans (HHAPs) highlights that extreme heat (including heatwaves, unusually hot days and other hazardous heat exposures) is among the most immediate and direct health threats posed by climate change. Rising global temperatures, rapid urbanization and demographic ageing are converging to increase both exposure to heat and vulnerability to its impacts. Urban environments with limited green and blue spaces can also intensify heat through the urban heat island effect. Together, these trends are driving a growing and unevenly distributed burden of heat-related morbidity and mortality and underscore the need for effective prevention and preparedness. Populations at increased risk of threats to health from extreme heat include older adults, people with chronic conditions, pregnant women, newborns and children, workers exposed to heat, and socially disadvantaged populations.

HHAPs are a core public health response to these challenges. When well designed and implemented, they help to anticipate and prepare for heat–health impacts, protect populations at increased risk, strengthen health system resilience, and reduce avoidable illness and deaths.

## Scope and purpose

This second edition of the guidance provides an implementation-oriented framework for HHAP design and delivery across eight core elements, spanning preparedness, activation and response during extreme heat events, and between-seasons learning and improvement. The guidance is tailored to the WHO European Region, while recognizing that many of the challenges and approaches are relevant in other world regions. The guidance does not prescribe a single model but is intended to be adaptable to different national, subnational and local contexts. It does not provide a comprehensive review of the underlying science, which is available separately; instead, it translates accumulated evidence and implementation experience into practical actions and decision points to support consistent, equitable and effective heat–health risk prevention and responses.

The guidance encourages users to adapt its content to their local context, reflecting specific needs, institutional capacities and available resources. It promotes a stepwise implementation approach, whereby users can begin with essential, context-appropriate actions, and can expand, deepen and institutionalize these efforts progressively over time, as capacities and resources develop.

## Objectives

The objectives of this guidance are to support countries to:

- reduce heat-related health risks through the development of HHAPs, or the expansion and improvement of existing HHAPs; and

- enable consistent implementation of HHAPs across sectors and levels of governance by providing practical tools and key decision points for coordinated action, to improve performance over time.

Since the publication of the first edition of guidance on HHAPs in 2008, important progress has been made, and a wealth of scientific evidence and implementation experience has been gained. Many countries have established HHAPs that focus particularly on the development and implementation of early warning systems and/or their integration into HHAPs, improved risk communication, and targeted measures for populations at increased risk. At the same time, gaps remain. Adoption and implementation of HHAPs are uneven, particularly at subnational and local levels. Surveillance and evaluation systems are often weak or subject to delays, and responsibilities can be fragmented across sectors and institutions, leading to diminished accountability. Longer-term preventive measures to reduce heat exposure in urban settings – often requiring sustained collaboration with sectors responsible for the built environment and for urban planning – are less consistently developed or resourced. This updated guidance addresses these persistent gaps by providing more operational, action-oriented direction. It also strengthens and expands the evidence-based actions for the core elements of an HHAP that are already well developed and widely implemented, thereby supporting coordinated action across sectors and levels of governance.

## Methods

The guidance was developed in accordance with the requirements for creating a WHO normative operational product, which includes defined governance arrangements for steering and supervising the production of the guidance, expert oversight, and external peer review.

The development of the updated set of eight core elements is based on evidence resulting from a systematic literature review published by the WHO Regional Office for Europe in 2021, complemented by a scoping review that captured publications released afterwards. The draft content was then refined through an iterative process incorporating expert input, targeted manual literature searches, and insights from policy and implementation experience.

Two additional systematic literature reviews were conducted in 2023 and 2024, to inform the development of the user action briefs and the public health message bank. These reviews identified, appraised and synthesized the best available evidence on effective heat–health protection measures across individual and household actions; health and social care service and facility measures; and policy, planning and measures requiring coordination across sectors.

The development of the guidance involved a core project team, a steering function, an advisory group, a document development group and a multidisciplinary team of technical contributors. This was followed by a structured, broad-based external peer review process.

## Good practice and implementation priorities for HHAPs

Scientific evidence and implementation experience show that effective HHAPs share common features: they are operational (with warnings that trigger predefined actions), equity-focused (reaching populations at increased risk), cross-sectoral and multilevel (coordinated beyond the health sector and delivered locally), communications-ready (containing timely, credible and locally adapted messaging), institutionally integrated (aligned with health policy and planning processes), adequately resourced (supported by sustainable financing and workforce capacity), and learning-oriented (using surveillance and monitoring, evaluation and learning to improve between seasons).

In practical terms, countries strengthen HHAP implementation by establishing clear governance and accountability mechanisms, which are also instrumental in ensuring proper funding for implementation and evaluation; linking heat–health warning systems to locally appropriate, pre-agreed actions; ensuring that protective measures reach populations at increased risk through feasible delivery pathways in priority settings; strengthening health system resilience; reducing indoor and outdoor heat exposure through coordinated measures with relevant sectors; and embedding evaluation and learning to refine thresholds and actions between seasons.

This guidance operationalizes these priorities through eight core elements (Part 1) and provides ready-to-use tools for implementation and communication (Parts 2 and 3).

## What the guidance contains

**Part 1** presents the updated HHAP framework across eight core elements, highlighting key actions and decision points for heat–health action planning, coordination, delivery and improvement (Fig. 1).

**Core element 1 – Governance** sets out arrangements for political commitment, institutional roles and accountability, cross-sector coordination, and multilevel delivery.

**Core element 2 – Heat–health warning system** guides the development of locally appropriate warning systems that use weather and climate information and services, integrate graded thresholds, and trigger actionable alerts – including consideration of relevant co-exposures, such as air pollution and vegetation fires, where applicable.

**Core element 3 – Populations at increased risk** supports identification of populations and settings at higher risk (including older adults, people with chronic conditions, pregnant women and infants, schoolchildren, workers exposed to extreme heat, and socially disadvantaged populations) to facilitate development of targeted measures and monitoring.

**Core element 4 – Communication** strengthens risk communication so that warnings translate into protective action, supported by the public health message bank (Part 3).

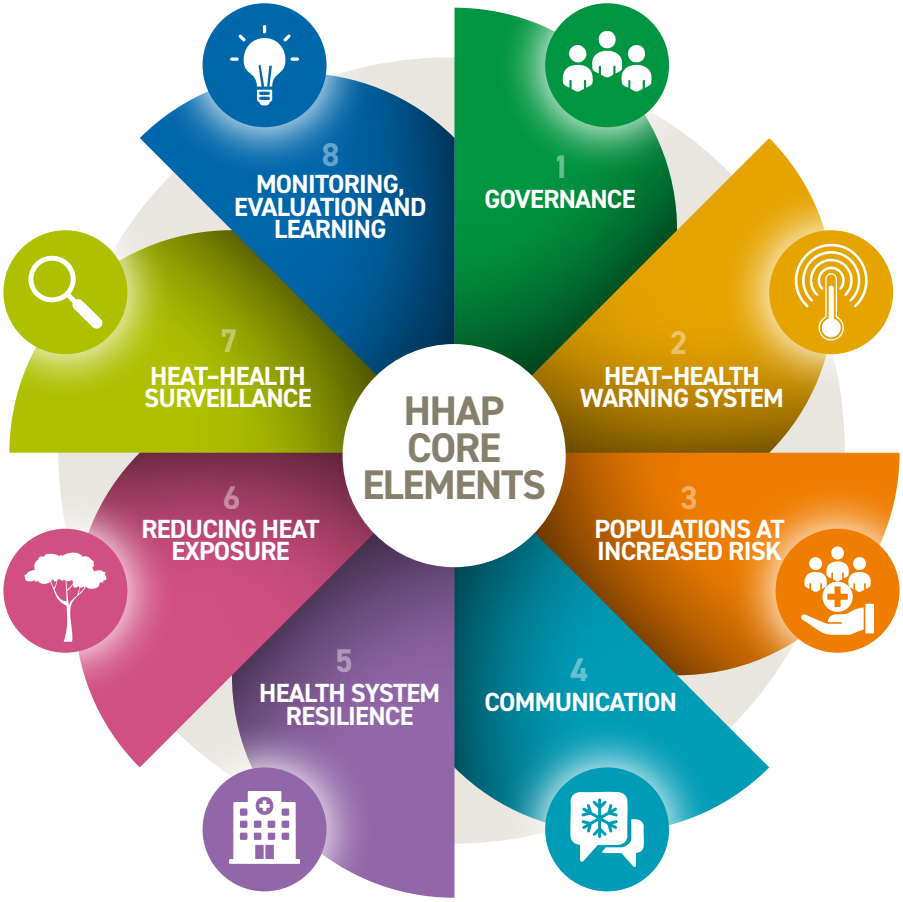
**Core element 5 – Health system resilience** focuses on delivering a strategy and an implementation framework supported by operational plans and business continuity arrangements that protect core health system functions during extreme heat events.

**Core element 6 – Reducing heat exposure** outlines immediate and longer-term prevention measures across household, building and urban scales, implemented with sectors responsible for the built environment and infrastructure.

**Core element 7 – Heat–health surveillance** describes approaches to timely surveillance that can guide responses during events and support learning between seasons, linked to warning-to-action arrangements.

**Core element 8 – Monitoring, evaluation and learning** sets out how to refine triggers, strengthen delivery and improve HHAP performance over time.

Fig 1. The HHAP framework



**Part 2** provides ready-to-use user action briefs for priority sectors (including health and social care, occupational, educational and childcare, and the urban and built environment) to help translate HHAP priorities into operational actions.

**Part 3** provides a public health message bank with short, ready-to-use messages tailored to key audiences and settings to support timely, consistent and locally adapted communications aligned with local warning thresholds and response levels.

Annex 1 gives details on actions to manage combined exposure to extreme heat and vegetation fires; Annex 2 gives additional advice for mass gatherings during periods of extreme heat; Annex 3 outlines the signs and symptoms of heat-related illness, and when to seek medical help; and Annex 4 contains the poster for WHO's annual #KeepCool campaign.

## Building blocks of an HHAP

As a practical resource, this guidance supports the development of specific and defined outputs for each core element. Properly documented, these outputs collectively form a comprehensive HHAP. The outputs are:

- an agreed governance structure with clear roles and responsibilities, including an identified lead body and a coordination mechanism or group to initiate, develop and implement the HHAP;
- an operational heat–health warning system, linking each alert level to predefined measures with assigned responsibilities and implementation timelines;
- an assessment and mapping of relevant populations at increased risk of heat-related harm to be addressed within the scope of the HHAP, together with a specific outreach strategy with recommendations and actions to target those identified at increased risk;
- a documented heat–health communication strategy that outlines the communications objectives, activities, allocated resources and agreed responsibilities;
- a strategy and implementation framework for health system resilience to extreme heat, aligned with existing health system and emergency arrangements; and operational plans and business continuity arrangements at regional and local levels that enable health services to maintain priority functions;

- a roadmap for heat exposure reduction that maps relevant and feasible interventions in the local context for immediate heat exposure reduction and preventive, medium- and longer-term interventions, focusing on priority populations and settings;

- an operational heat–health surveillance system with defined indicators, data sources, reporting timelines and data-sharing arrangements, linked to the heat–health warning system and used to inform HHAP activation and response decisions; and

- a functional monitoring, evaluation and learning framework that supports systematic review, accountability and continuous improvement.

# Core element 1 – Governance

**The aim of this core element is to establish a governance structure for heat–health action.**

## Key messages

- HHAPs may be developed and managed at national, regional or local levels, depending on country-specific governance structures and health competences and responsibilities. HHAP governance models need to be context-appropriate.
- Heat–health action planning is typically led by a designated lead body – often, but not exclusively, a health authority. Its responsibilities include establishing appropriate governance structures and coordinating health and non-health sectors. Early endorsement from overarching political leadership helps to unlock effective cross-sector delivery.
- Alignment of HHAP processes with existing coordination mechanisms, governance structures, legislative arrangements, and national and subnational adaptation frameworks provides a foundation for effective and coherent heat–health governance.
- Political leadership, combined with clearly defined roles, responsibilities and accountability mechanisms, contributes to more effective governance in heat–health action planning.
- Financing mechanisms should be specified as part of HHAP governance, including identified funding sources, to ensure delivery and continuity of agreed actions.

## Core element output

The core element output is an agreed governance structure with clear roles and responsibilities, including an identified lead body and a coordination mechanism or group to initiate, develop and implement the HHAP.

## Steps to implement the core element

The following steps collectively support the development of a comprehensive governance structure. It is important to:

- identify a lead body to take the first steps in heat–health action planning – this includes providing strategic direction, mobilizing political and institutional support across relevant sectors, coordinating the initial steps, and overseeing and leading the HHAP process;
- conduct a situational assessment to understand existing risks, assets, policies, initiatives, knowledge, resources, infrastructure and governance frameworks related to heat and health;
- build strategic direction and political leadership by communicating heat–health risks, using evidence to advocate for commitment and financing, and integrating heat into relevant agendas across sectors;
- identify key actors and stakeholders across sectors and levels of governance, and analyse their roles, interests and capacities;
- establish a multisectoral working group to coordinate HHAP development and implementation under the leadership of the designated lead body;
- establish the appropriate governance mechanism and coordination arrangements for HHAP development and implementation, while defining clear roles and responsibilities based on institutional mandates and expertise;
- identify synergies and leverage existing programmes, partnerships, data systems and funding mechanisms to support and sustain HHAP implementation; and
- establish accountability mechanisms, regular reporting cycles, performance indicators and feedback loops to ensure effective implementation.

# Core element 2 – Heat–health warning system

**The aim of this core element is to implement an accurate and timely warning system.**

## Key messages

- Heat–health warning systems are most effective when they are integrated into the HHAP's governance, activation, communication and response arrangements, rather than functioning as standalone alerts.
- Heat–health warning systems should use locally appropriate indicators and thresholds, ensuring that warning levels reflect the climatic conditions, health risks, and the capacity of relevant health and other services ability to act upon the warnings.
- Warning levels should be clearly linked to predefined actions, responsibilities and decision pathways within the HHAP, so that alerts trigger timely and proportionate response measures.
- Warnings should be disseminated through agreed communication channels with sufficient lead time to allow authorities, services and communities to act.
- Heat–health warning systems should be reviewed regularly through monitoring, evaluation and learning to improve performance over time and to reflect changing climate conditions, demographics, vulnerability patterns and institutional capacities.

## Core element output

The core element output is an operational heat–health warning system integrated within the HHAP. It should link each alert level to predefined measures with assigned responsibilities and implementation timelines.

## Steps to implement the core element

The following steps collectively support the development of an operational heat–health warning system. It is important to:

- co-design the heat–health warning system through the multisectoral coordination arrangements involving meteorological services, public health authorities, civil protection, regional and local authorities, health and social care providers, communication actors, and relevant community representatives;
- define the characteristics of the heat–health warning system within the HHAP, including the indicators used, warning thresholds, warning levels, geographical coverage, lead time and update frequency;
- align warning levels with HHAP activation levels, specifying measures and response actions required at each level, and start and stop criteria for each warning level;
- clarify institutional roles and responsibilities for issuing, receiving, disseminating, interpreting and acting on warnings across national, regional and local levels;
- establish a decision pathway for alerts, including who receives warning information, who confirms or authorizes activation, and how escalation and stand-down decisions are made;
- define targeted protection measures for populations and settings at increased risk of threats to health from extreme heat, including tailored triggers and actions for relevant service providers and community actors;
- brief and train all relevant HHAP actors with coordination, activation and implementation roles on warning levels, required actions, coordination procedures, communication protocols and reporting expectations; and
- review and update the heat–health warning system regularly through seasonal reviews and after-action learning, and use the findings to refine thresholds, procedures, action matrices and dissemination arrangements within the monitoring, evaluation and learning framework.

# Core element 3 – Populations at increased risk

**The aim of this core element is to identify populations at increased risk to ensure appropriate prevention, protection and care.**

## Key messages

- Identifying populations at increased risk of threats to health from extreme heat is essential for effective and equitable heat–health action.
- Populations at increased risk of heat-related harm include older people, infants and young children, pregnant women, people with chronic conditions, people with restricted mobility or cognitive impairment, workers, athletes and people exercising in the extreme heat, tourists and people attending mass gatherings, migrants, refugees, and people facing socioeconomic disadvantage or reduced access to services.
- Extreme heat vulnerability arises from the interaction of exposure, sensitivity and capacity to respond, and may change over time.
- Targeted outreach, tailored communication, and coordinated health and social care responses are required to protect those most at risk.
- Local actors play a critical role in identifying and supporting populations at increased risk, within a framework defined at the national level.
- Continuous monitoring, evaluation and learning are necessary to adapt measures and respond to evolving risks and needs.

## Core element output

The core element output is an assessment and mapping of relevant populations at increased risk of heat-related harm to be addressed within the scope of the HHAP, together with a specific outreach strategy with recommendations and actions to target those identified at increased risk.

## Steps to implement the core element

The following steps collectively support the assessment and mapping of populations at increased risk of threats to health from extreme heat and the development of targeted recommendations and actions. It is important to:

- define institutional roles and responsibilities across governance levels and sectors, for assessing, identifying and supporting populations at increased risk – including coordination between health and social care actors;
- define populations, settings and circumstances associated with increased risk of heat-related harm within the HHAP;
- assess extreme heat vulnerability using available demographic, health, social, environmental and service-related data, taking account of local context and changing patterns of risk;
- identify and, where feasible, map priority populations, locations and settings – including high-risk neighbourhoods, facilities and population groups;
- use available data, service knowledge and community networks to support targeted action – including for groups who may require proactive support before and during extreme heat events;
- establish outreach, referral and follow-up arrangements for populations at increased risk;
- ensure that outreach and support measures are equitable, accessible and adapted to local needs;
- support implementing actors such as health, social care and relevant community actors with guidance and training to recognize heat-related risks, support groups at increased risk, and implement outreach and response actions effectively; and
- review and update identification, mapping and outreach approaches regularly as vulnerabilities, service capacities and local conditions change over time.

# Core element 4 – Communication

**The aim of this core element is to develop a heat–health communication strategy.**

## Key messages

- A heat–health communication strategy serves to inform, educate and empower the public and health professionals to take protective action during periods of heat.
- Effective communication strategies can raise awareness by addressing local risk perception of heat risks and adaptation, while promoting protective and healthy behaviours and encouraging individuals to support the well-being of themselves and others in their communities.
- Tailored and timely messaging helps to build heat literacy and addresses varying risk perceptions. A co-design and user engagement process will generate messaging more likely to resonate with the intended recipients, while improving understanding of any misinformation and disinformation and supporting infodemic management.
- Public health agencies can strengthen their responses to heat and heat extremes by aligning communication efforts with the needs and characteristics of different population groups.
- Identifying and leveraging a diverse network of partners working collaboratively will extend the reach and impact of a heat–health communication strategy.
- Building heat competency and literacy is relevant not only for health professionals but for all partners, sectors and stakeholders involved in HHAPs.

## Core element output

The core element output is a documented heat–health communication strategy within a comprehensive HHAP that outlines the communications objectives, activities, allocated resources and agreed responsibilities.

## Steps to implement the core element

The following steps collectively support the development of a comprehensive communication strategy. It is important to:

- define the objectives of the communication strategy at the start to ensure alignment with the goals of the HHAP;
- identify the target audiences – such as the public, groups at increased risk of threats to health from extreme heat and media – to ensure that the communication is both effective and as far-reaching as possible;
- identify partners to support broad public outreach and timely communication of public health messages;
- select channels for dissemination that are appropriate for messages to reach the intended audiences effectively, taking into account accessibility for populations at increased risk, such as people with lower socioeconomic status or older people;
- develop concise and actionable messages that are relevant to the specific target audience, using community engagement and audience feedback to enhance the impact of the messages;
- allocate human and financial resources to determine capacity to implement a communication strategy;
- define a time frame outlining what information to communicate throughout the year and to whom, integrating heat–health warning dissemination into the communication strategy; and
- establish monitoring, evaluation and learning indicators and tools to measure the effectiveness of the communication strategy.

# Core element 5 – Health system resilience

**The aim of this core element is to strengthen preparedness, readiness, response and continuity in health services.**

## Key messages

- Extreme heat places pressure on all health system functions simultaneously, increasing service demand while constraining workforce capacity, facilities, infrastructure, technologies and supply chains.
- Health systems must be able to continue delivering safe and effective care during heat events – particularly for populations at increased risk of threats to health from extreme heat – to prevent avoidable illness, deaths and service disruption.
- Primary care plays a vital role in heat resilience by supporting early risk identification, providing timely advice, ensuring continuity of care and enabling targeted follow-up for populations at increased risk.
- Resilience to extreme heat cannot be achieved through emergency response alone; it needs to be embedded in routine health system planning, operations and infrastructure decisions.
- The health workforce is both a responder to heat-related health impacts and a population exposed to occupational heat risks that affect capacity, safety and performance.
- Strengthening health system resilience supports broader health objectives by reducing pressure on emergency services, maintaining continuity of care, and improving adaptive capacity over time.

## Core element output

The core element outputs are:

- a strategy and implementation framework for health system resilience to extreme heat, embedded within the HHAP and aligned with existing health system and emergency arrangements; and
- operational plans and business continuity arrangements at regional and local levels that enable health services to maintain priority functions and continuity of care during extreme heat events.

## Steps to implement the core element

The following steps collectively support the development of a strategy for health system resilience and ensure business continuity. It is important to:

- assess how extreme heat affects core health system functions – including workforce availability and safety, service delivery, facilities, information systems, technologies and supply chains – taking into account local patterns of exposure and vulnerability;
- identify priority risks and vulnerabilities that threaten continuity of health services during extreme heat, using available data, staff experience and lessons from past heat events;
- integrate heat-related risks and response actions into existing health system arrangements rather than creating standalone plans;
- define how triggers identified in the HHAP, such as heat–health alerts and surveillance signals, translate into operational actions within the health system, including service adjustments, workforce protection and intensified care for high risk patients;
- strengthen coordination between the health system and meteorological services, civil protection and social care actors to support information exchange, aligned responses and continuity of care during extreme heat;
- support regional and local implementation by providing guidance, tools and flexibility to adapt national priorities into feasible service-level arrangements across different contexts and resource levels; and
- use monitoring, evaluation and learning from extreme heat events, exercises and seasonal reviews to refine health system preparedness measures, operational protocols and training over time.

# Core element 6 – Reducing heat exposure

**The aim of this core element is to protect people from extreme heat exposure across all relevant settings and scales.**

## Key messages

- Reducing people's exposure to extreme heat is essential to protect their health; for populations at increased risk of threats to health from extreme heat, it can be life-saving.
- Effective cooling at the room or dwelling level depends on the space's characteristics and intended use and the local climate; it combines appropriate cooling strategies to improve thermal comfort and reduce health risks.
- Buildings can contribute to overheating, but design improvements, retrofitting and passive cooling interventions can significantly reduce indoor heat exposure.
- Cities can increase residents' heat risks, but planning measures and interventions such as green and blue infrastructure, shading, and cooling strategies can reduce urban heat island effects and improve population health, well-being and resilience.
- The safest and most sustainable population-based approach to reducing extreme heat exposure is to avoid heat gains through measures such as heat-conscious urban planning, building design and nature-based solutions.

## Core element output

The core element output is a roadmap for heat exposure reduction that maps relevant and feasible interventions in the local context for immediate heat exposure reduction and preventive, medium- and longer-term interventions, focusing on priority populations and settings.

## Steps to implement the core element

The following steps collectively support the development of a comprehensive roadmap for heat exposure reduction. It is important to:

- assess the main settings where people are exposed to extreme heat – including homes, workplaces, schools, care settings, public spaces and outdoor environments;
- identify short-term measures at the individual and room levels that can be promoted before and during the heat season – including through public advice and targeted outreach to populations at increased risk of heat-related harm;
- identify medium- and long-term measures for reducing heat exposure at the dwelling, building, urban and metropolitan levels;
- clarify which sectors and actors are responsible for each measure – including health, housing, urban planning, energy, labour, education, social care, transport and civil protection;
- develop a roadmap that links immediate seasonal actions across scales with longer-term planning, investment, regulation and infrastructure measures, and assigns responsibilities, timelines, investment needs and implementation mechanisms across health and non-health sectors;
- promote stakeholder engagement and incentives to support implementation – including partnerships with local authorities, communities, civil society and private sector actors; and
- monitor and evaluate the implementation and effectiveness of heat exposure reduction measures, and update strategies based on lessons learned.

# Core element 7 – Heat–health surveillance

**The aim of this core element is to establish a heat–health surveillance system that informs timely decision-making and action.**

## Key messages

- Heat–health surveillance is essential for detecting, monitoring and responding to health impacts of extreme heat in a timely and evidence-based manner.
- Effective surveillance integrates meteorological, environmental and health data, including near-real-time information on mortality, morbidity and syndromic and health service use indicators to guide HHAP activation and rapid public health action.
- Integration with heat–health warning systems ensures that surveillance data informs thresholds, triggers and response measures.
- Surveillance systems should be scalable, flexible and interoperable, supporting adaptation to local contexts and coordination across governance levels.

## Core element output

The core element output is an operational heat–health surveillance system with defined indicators, data sources, reporting timelines and data-sharing arrangements linked to the heat–health warning system and used to inform HHAP activation and response decisions.

## Steps to implement the core element

The following steps collectively support the development of an operational heat–health surveillance system. It is important to:

- define the scope and design of the heat–health surveillance system, including key indicators (such as mortality, morbidity, syndromic and health service use data), data sources, geographical coverage and reporting frequency;
- define institutional roles and responsibilities for data collection, analysis, reporting and use across relevant sectors and levels of governance;
- establish data-sharing and access arrangements that enable timely, secure and routine exchange of near-real-time or regularly updated data across relevant sectors;
- define how relevant health, meteorological and environmental data will be brought together within the heat–health surveillance system for integrated analysis and interpretation;
- ensure data quality, timeliness and comparability that enables timely interpretation of surveillance findings and their use to guide public health action during extreme heat events;
- link surveillance outputs to heat–health warning systems, as well as HHAP activation and response procedures;
- review and refine the surveillance system regularly through monitoring, evaluation and learning; and
- develop reporting products for HHAP stakeholders to guide decision-makers in adapting and reinforcing prevention and emergency measures.

# Core element 8 – Monitoring, evaluation and learning

**The aim of this core element is to establish a process for review and improvement.**

## Key messages

- Monitoring, evaluation and learning form a cross-cutting function among core elements that supports review, accountability, continuous improvement and adaptive management of each core element, and assesses whether the HHAP works as an integrated system.
- Monitoring tracks whether planned HHAP measures are implemented and functioning as intended. Evaluation assesses effectiveness, equity, efficiency, gaps and unintended effects. Learning ensures that findings are used to improve the HHAP before the next heat season.
- A balanced set of structure, process and outcome indicators helps authorities assess capacities, implementation and results. Clear responsibilities, data flows and reporting arrangements across governance levels are essential for effective use of findings from the monitoring, evaluation and learning process.
- Regular simulation exercises, after-action reviews and feedback loops help to test whether HHAP arrangements work in practice, identify gaps and inform revisions to warning thresholds, response protocols, coordination mechanisms, communication approaches and resource allocation, before the next heat season.
- Monitoring, evaluation and learning should be proportionate to available capacity and feasible in both high- and low-resource settings, while still supporting equity, transparency and continuous improvement.

## Core element output

The core element output is a functional monitoring, evaluation and learning framework that supports systematic review, accountability and continuous improvement of the HHAP.

## Steps to implement the core element

The following steps collectively support the development of an operational monitoring, evaluation and learning framework within the HHAP. It is important to:

- define the purpose, scope and priority questions of the monitoring, evaluation and learning framework, which should be aligned with HHAP objectives and core elements;
- select a limited, balanced and feasible set of structure, process and outcome indicators, including indicators that can assess equity and reach populations at increased risk of threats to health from extreme heat;
- assign responsibilities for data collection, analysis, reporting, review and follow-up across national, regional and local levels;
- establish practical data flows, reporting timelines and review mechanisms across the HHAP cycle;
- integrate monitoring, evaluation and learning activities into pre-season planning, early-season checks, in-season monitoring, mid-season or post-event review, post-season evaluation and learning before the next HHAP cycle;
- organize simulation exercises, operational testing and after-action review to test coordination, decision-making, communication flows, response activation and operational readiness;
- analyse monitoring and evaluation data, and produce regular reports to inform HHAP actors, supporting transparency and accountability.

**The WHO Regional Office for Europe**

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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