Heatwave – hot weather conditions

Emergency Preparedness and Response Plan

Northwest Syria

June 2024

Contents

Document Review

Timeframe for review:	**Every two years, or earlier if required**
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Revision History

Version	Date	Pages revised / Brief Explanation of Revision
DV	June 2024	First full draft version for revision and validation by WHO Technical Officer
V1	June 2024	Final Version reviewed & validated by WHE Team Lead & Health Cluster Coordinator
V2		
V3		
V4		

1. Purpose & Scope

This Heatwave Emergency Preparedness & Response Plan aims to establish an effective, efficient, coordinated public health preparedness and response plan to prevent mortality, morbidity & disability because of heat. It relates to the preparation, readiness and responsiveness of the health care system in Northwest Syria, specifically of emergency departments and emergency medicine systems, to environmental heatwaves and extreme heat events.

The specific objectives of this guiding document are:

- To guide health sector's response coordination to heatwaves

- To elaborate procedures for alert, detection, rapid risk assessment and grading for heatwaves

- To elaborate structures for decision making, command & control through incident management systems on responding to heatwaves at different levels.

- To describe response procedures including decision making, command & control and concepts of operations at different levels during a heatwave emergency response.

- To provide guidance to non-health stakeholders as well as non-state actors on their role and responsibilities during a heatwave.

This Heatwave Emergency Preparedness & Response Plan provides a public health multi-sectoral emergency management model for Northwest Syria. The specific scope of the Heatwave Emergency Preparedness & Response Plan is to provide a clear framework for the coordination of operations and management during emergencies and disasters for all actors within the health care system in NWS.

The targeted audience for this document includes all public health emergency preparedness and response stakeholders within Northwest Syria.

2. Background & Rationale

A heatwave can be defined as hot outdoor temperature or hot weather lasting for at least two to three days that is outside the normal range of ambient temperatures[1]. Recent scientific assessments indicate that, as global temperatures continue to increase because of climate change, the number and intensity of extreme events are likely to increase (World Meteorological Organization, 2003). New record extreme events occur every year somewhere around the globe, but in recent years the numbers of such extremes have been increasing. The impact of extreme summer heat on human health may be exacerbated by increases in humidity. Heatwaves

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[1] There is no universally accepted definition of heatwave as it is geographically specific, and jurisdictions use different thresholds to trigger the release of heat health alerts. Local circumstances such as overnight temperatures, humidity, pollution, demographics, urban heat island effects, specific difficulties faced by rural communities, and acclimatization are some of the factors which contribute to the defined severity and impact of a heatwave event. The World Meteorological Organization (WMO) defines a heatwave as "a marked unusual hot weather (max, min and daily average) over a region persisting at least two consecutive days during the hot period of the year based on local climatological conditions, with thermal conditions recorded above given thresholds".

usually occur in synoptic situations with pronounced slow air mass development and movement, leading to intensive and prolonged heat stress. However, even short or moderate heat episodes adversely affect human health. Exposure to hot temperatures is associated with heatstroke, acute kidney injury, impacts on mental health, and worsening underlying cardiovascular and respiratory disease.

Hence heatwaves are a serious threat to public health specifically in the Mediterranean and Middle East Regions, because they cause suffering and death; aggravate comorbid conditions; and exacerbate social inequalities. Extended periods of hot weather also contribute to other public health emergencies such as climate-related infectious diseases, droughts and bushfires, all of which can severely impact health systems by increasing demands for service, threatening infrastructure and supply chains, and straining the health workforce.

During heat waves, emergency departments see a higher volume of patients, high patient acuity, increased length of hospital stay, and even resulting in mass casualties in some parts of the Mediterranean Region. Heat waves are also associated with higher rates of mental health-related emergency department visits.

People experience adverse health outcomes even in relatively cooler areas of a specific country or region because the effects of heat are associated with relative rather than absolute temperatures. Even modest temperature rises can increase emergency department usage for a broad range of heat sensitive. The risk for heat-related injuries and other conditions is elevated for all population groups, but especially among older people, people living with chronic illness and disability and on certain medications, culturally and linguistically diverse communities, infants, pregnant people, and outdoor workers. Heat health risk is also influenced by deprivation and the built environment, mental illness, use of alcohol and other drugs, social isolation, and displacement.

Against the backdrop of armed conflict, repeated endemic outbreaks, unprecedented poverty levels, and multiple simultaneously ongoing environmental shocks, coping mechanisms are exhausted, leaving the population in Northwest Syria extremely vulnerable. With extreme heat events projected to worsen, it is crucial to prepare the healthcare systems to meet the growing burden of heat-related conditions.

3. Emergency Preparedness

3.1.   Public Health Preparedness

Health system preparedness and resilience to the growing threat of heatwaves and extreme weather events require an all of society response, encompassing:

- Heat warning alerts and prevention/adaptation heat communication to the public.

- Community-specific vulnerability and adaptation analyses and heat visualization tools.

- Health surveillance systems that monitor injuries and diseases from climate related events.

- Investment in energy efficient equipment and encouraging staff energy-saving practices.

- Updated system-wide emergency plans to include planning for heatwaves/extreme weather events.

- Planning for impacts to major utilities (e.g., electricity, water, Internet) and the supply chain.

- Healthcare infrastructure resilience to heatwaves and other extreme weather events.

- Continuous building commissioning and energy conservation strategies to reduce overheating in health facilities and undertaking regular energy audits to identify improvements in energy efficiency.

- Safeguarding energy security through investment in health facility backup capabilities (e.g., generators) that ensure multiple energy supplies.

- Long-term actions to reduce heat impacts such as green spaces and decarbonizing.

3.2.   Emergency Department preparedness for heatwaves

Emergency department health providers play an important role in heatwaves by identifying and caring for patients with heat illness and responding to heatwave disasters and heat surge demand.

3.2.1. Preparing for patient care

- Use/implement evidence-based triage and treatment protocols, including (a) protocols for identifying and treating high risk patients during or following heatwaves, (b) rapid triage and treatment of heat stroke sufferers, and (c) safe discharge of vulnerable patients from the emergency department during a heatwave

- Raise awareness among patients, caretakers, and visitors about mitigation of adverse health effects from heatwaves, including advice about medication alteration and storage, medications with increased risk of side-effects during heatwaves, fluid intake, modifying activity, avoiding alcohol and other drugs, cool and safe environments, and what to do if feeling unwell (for more details see WHO Public Health Advice on Preventing Health Effects on Heat[2]

- Individuals with **non-communicable diseases** (NCDs) such as cardiovascular diseases, chronic respiratory diseases, and diabetes are particularly vulnerable during heat waves. Extreme temperatures exacerbate chronic health conditions, posing a significant health risk. Heat waves can lead to dehydration, heat exhaustion, and heatstroke, which are especially dangerous for NCD patients due to impaired thermoregulation and medication effects. Elevated temperatures strain the cardiovascular system, increasing heart rate and decreasing blood pressure, which can result in insufficient cardiac output and

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[2] Available under https://iris.who.int/bitstream/handle/10665/341580/WHO-EURO-2011-2510-42266-58691-eng.pdf?sequence=1

subsequent heat-related illnesses. Additionally, heat exposure adversely affects the respiratory system and can exacerbate diabetes symptoms. The healthcare system's strain during heat waves further compounds these risks, making it harder for NCD patients to access necessary medical care.

- Plan for how the facility will provide clear, consistent, and culturally appropriate heat communication for patients, caregivers and staff following the WHO Public Health Advice on Preventing Health Effects on Heat[3]

3.2.2. Emergency department staff preparedness

- Actively involve staff in the development, dissemination and update of a facility heat response plan

- Assign heatwave planning and co-ordination responsibility to a specific manager / focal point at each health facility, either as a specific portfolio duty, or as part of responsibility for overall disaster management

- Plan for how all staff will be alerted if a heatwave is forecast (early warning).

- Ensure staff and responders are appropriately prepared, trained and resourced for heat emergencies, contingency plans, high-risk patients, and signs and symptoms of heat illnesses.

- Plan for how staff impacted by heatwave events will be supported e.g., flexible staff scheduling, transport, short-term needs, psychosocial support.

- Ensure staff are prepared to expand risk communication & community engagement services at short notice

3.2.3. Facility preparedness and systemic planning

- Understand how heatwaves and other extreme weather events will impact facility-level healthcare operations and vulnerable populations served by the healthcare facility

- Develop or update a heat response plan and integrate it into the existing disaster management plan to ensure resilience and proper planning for future heatwaves. Include facility-level surge planning to ensure preparedness for sudden increases in patients and establish triggers for when to activate surge heatwave plans

- Plan for shortages of available healthcare workers that are personally affected by extreme heatwave events e.g., through cross training, alternate care sites, load balancing across facilities, disaster assistance teams

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[3] https://iris.who.int/bitstream/handle/10665/341580/WHO-EURO-2011-2510-42266-58691-eng.pdf?sequence=1

- Prepare for impacts that may accompany heat waves such as power outages, water shortages, supply chain issues and impacts to temperature-sensitive medicines and equipment. Ensure staff are prepared to implement safe practices e.g. water and waste management, alternative water and energy sources

- Establish collaborative relationships with partner health care services and the Health Cluster to co-ordinate support and sharing of resources during a climate disaster, and with relevant external agencies (e.g. emergency management, social services)

- Involve emergency physicians in public health planning for heatwaves

- Ensure sufficient levels of supplies are available to sustain operations during prolonged heatwaves and determine core services that will be provided during extreme heat wave events and those that will be suspended

- Timely inform WHO and the Health Cluster about any additional medical supply needs in preparedness and/or response to a heatwave

4. Emergency Activation

4.1. Surveillance and Early Warning Systems

The existing integrated disease surveillance and response strategy incorporates Indicator and Event Based Surveillance (IBS/EBS) systems as integral components of an Early Warning Alert and Response (EWARN) network.

4.1.1. Existing epidemiological surveillance system

The Early Warning, Alert, and Response Network (EWARN) is designed to provide early warnings for acute public health events and connect this function to an immediate public health response. It encompasses the following components and processes:

- **Early Warning:** Rapid detection of signals indicating potential acute public health events from notifications received from health facilities, community members, and other entities, feeding into IBS and EBS systems.
- **Alert Management:** Systematic processing of all incoming information, from signal verification to risk assessment and characterization, to determine if a response is required to mitigate the public health risk. All signals should be channeled into a standard systematic investigation and management system.
- **Initial Response:** Implementation of public health response actions triggered by the detection of an alert.

However, no existing heat-health surveillance data exists. Therefore, this preparedness and response plan is built on an integrated heat-heat surveillance system, as seen below.

4.1.2. Heat-health surveillance & warning systems

In response to an aggravated heat wave, this plan advocates for a multi-sectoral approach to develop a heat-health warning system for NWS. This will be a directional pivot in the response to the heat wave emergency. This newly developed system will combine climate/weather forecasts and heat-illness indicators to mitigate the impact on human health during hot weather. This plan identifies heat-related illnesses range from a mild form, like edema, cramps, or syncope, to severe conditions, such as heat exhaustion, syncope, and strokes with or without multi-organ failure, as well as heat-related proportional mortality[4]

Further, this will lead to an established threshold of human health tolerance to extreme weather. Identified alerts should be classified based on the ratio of homogeneity of the heat magnitude, severity of illness, and population vulnerability. This plan strongly recommends a 1-3 days lead time from the first warning to the last alert. Alerts should be notified at most 12 hours before the expected event.

While the EIOS is now adopted in NWS to respond to the need for early detection of public health events, this plan recommends its adoption as an event-based heat-health surveillance/warning in NWS. Further, it is necessary to have an evaluation plan based on the evidence showing the association between the observed heat-health illnesses by the heat health warning system and the observed weather data. The evaluation exercise should be conducted to estimate the below-mentioned indicators:

- sensitivity (ability of warning system to detect true warning/alert): number of days with true alarms/number of days with excess deaths
- specificity (ability to detect true non-alarms): number of days with true non-waring divided by number of days without excess deaths; and
- positive predictive value: total days with true alerts/total days with (true and false) alerts.

4.2.   Initial Response Mechanism

4.2.1. Alert verification & investigation

Following the detection of a surpassed threshold or a notification of an alert, a verification process is initiated along with subsequent investigation to confirm the validity of detected alerts and eliminate false information. In this context, district/sub-district health teams play a crucial role. Upon receiving reported alerts, triage and verification of all alerts are conducted within 24 hours using the WHO verification tool. Verified alerts are then notified to the health cluster and WHO, with higher-level healthcare workers providing feedback to EWARN field-level officers and the broader community regarding the outcomes of reported alerts to encourage ongoing reporting.

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[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6969637/

4.2.2. Rapid Risk Assessment

Following a report of an actual event or potential heat wave emergency, a rapid risk assessment exercise will follow WHO ERF guidelines. Key components of the exercise will include hazard or threat identification, exposure, vulnerability, and capacity analysis (see Annex 1).

5. Risk Communication & Community Engagement

5.1. Risk Communication & Community Engagement Plans

Risk communication and community engagement (RCCE) is a critical aspect of public health interventions, which is required to raise awareness and avoid the spread of misinformation in the community. For public health emergencies such as heatwaves, risk communication includes the range of communication actions required through the preparedness, response, and recovery phases, to encourage informed decision making, positive behavior change, and the maintenance of trust.

5.2. RCCE Plan for Heatwaves in NWS - Core Components

5.2.1. Timelines for Communication Activities and Communication Products

Pre-Heatwave Season (April-May):
- Plan with stakeholders.
- Develop key messages and train Community Health Workers (CHWs).

Early Heatwave Season (June):
- Launch awareness campaign (radio, social media, community meetings).
- Distribute materials through CHWs.

During Heatwave Peaks (July-August):
- Daily radio updates and social media posts.
- Increased home visits by CHWs.

Post-Heatwave Season (September):
- Evaluate communication activities.
- Compile report and plan adjustments.

Communication Products:
- Printed leaflets and posters.
- Radio announcements and social media content.
- Community workshops and meetings.

5.2.2. Decision-Making Level and Spokespeople for Health Emergencies

Strategic Level:
- WHE Lead or health cluster coordinator:

- Oversees strategy and coordination.
- Approves communication plans.

Operational Level:
- Field Operations Manager and RCCE Coordinator:
- Manage daily activities and communication efforts.

Example of Spokespeople for Health Emergencies:

Primary Spokesperson:
- WHO Spokesperson for NWS:
- Provides official updates and statements.

Secondary Spokesperson:
- Lead CHW Representative:
- Delivers localized information.

Integration with CHWs:
- CHWs as frontline communicators, delivering key messages and reporting community feedback.
- Regular training for CHWs on heatwave risks and response strategies.

5.2.3. Main Points for RCCE Plan on Heatwaves

Target Audience and Communication Channels:
- Identify specific target audiences including the general public, vulnerable groups (e.g., the elderly, children, and people with pre-existing health conditions), healthcare professionals, and community leaders.
- Utilize multiple communication channels to reach different audiences: leaflets, websites, media spots (radio, television), social media, SMS, and local community networks.

Service Mapping and Gap Analysis:
- Conduct a comprehensive service mapping to identify CHWs in NWS, their coverage areas, and existing gaps.
- Ensure an updated database of CHWs is maintained for effective coordination.

Role of CHWs:
- Participate in mapping exercises to provide accurate data on their areas of operation.
- Help identify underserved areas needing additional support and resources.

Key Messages:
- Keeping the Home Cool: Use fans, shades, and cool baths.
- Keeping Out of the Heat: Avoid going out during peak heat hours, stay in shaded areas.
- Keeping the Body Cool and Hydrated: Drink plenty of water, avoid alcohol and caffeine.
- Helping Others: Check on family, friends, and neighbors, especially those who are more vulnerable.
- What to Do If You Have a Health Problem: Recognize symptoms of heat-related illnesses and seek medical help promptly.
- What to Do When Others Feel Unwell: Provide immediate first aid and call for medical assistance if necessary.

Dissemination of Information:
- Develop and distribute educational materials at the start and during the heatwave season.
- Collaborate with local media to broadcast heatwave warnings and health advice.

- Work with healthcare providers, community organizations, and NGOs to distribute information and resources.

Community Engagement:
- Implement community outreach programs to educate and raise awareness.
- Establish a buddy system where community members can check on each other.
- Conduct home visits and daily phone calls to the elderly and socially isolated individuals.

Heatwave Response:
- Establish a communication strategy before the heatwave season.
- Ensure that the strategy includes raising public awareness about heatwave risks and promoting preventive measures.
- Develop cooling areas within the community and inform the public about their locations.

Coordination and Training:
- Coordinate with local and international NGOs, community leaders, and healthcare providers.
- Train community volunteers to assist in the dissemination of information and in providing support during heatwaves.

Monitoring and Evaluation:
- Monitor the effectiveness of communication strategies through surveys and feedback.
- Evaluate the impact of the RCCE plan and adjust as needed.
- These points should guide the development of a comprehensive RCCE plan tailored to the specific needs and context of NWS, ensuring that the community is well-prepared to handle heatwaves effectively.

5.3.   Protocol for early emergency communication

Overall Responsibility -> WHE Lead or Health cluster coordinator Responsible for early announcements and coordinated communication.

Trigger Event:
- Significant heatwave detected through meteorological data or health surveillance.
- Reports from CHWs or health facilities indicating a rise in heat-related illnesses.

Procedure:
- Initial Assessment: WHO verifies reports and convenes an emergency meeting.
- Decision to Announce: Based on severity, potential impact, and readiness.
- Issuing Messages:
- Drafting: RCCE Coordinator drafts messages.
- Approval: Health Cluster Lead approves.
- Dissemination: Through CHWs, media, and health facilities.
- Monitoring: CHWs gather feedback for adjustments.

Example Message:

"Severe heatwave expected. Stay hydrated, avoid direct sunlight, seek cool shelters. If symptomatic, visit the nearest health facility. Contact your CHW for more info."

5.4. Coordinating public communications and stakeholder lists

Public Communication Coordination in NWS:
- Lead Agency: WHO Gaziantep Office provides guidance and resources.
- Linking Operations: Health Cluster coordinates regional and local efforts.
- Partner Selection: CHWs, IPs, NGOs, local health facilities, and community leaders.
- Responsibilities: WHO RCCE Coordinator handles internal updates, Health cluster coordinator handle external communication.
- Message Coordination: Drafted by RCCE team, reviewed for consistency, disseminated through various channels.
- Stakeholder List: WHE lead, Health cluster, RCCE Coordinator, CHWs, IPs, local health facilities, community leaders, media outlets, NGOs, donors.

5.5. Two-way communications mechanisms

The Two-way Communications Mechanisms ensures effective communication despite the absence of a formal governing authority in NWS. The below outlined processes is applicable accordingly.

Community Rumor Management:
- Establish channels for community feedback and rumor monitoring.
- Rapid response to address misinformation with accurate information.
- Collaborate with community leaders and CHWs for effective rumor control.

Key Communication Audiences:
- Identify and prioritize audiences such as communities, healthcare workers, religious leaders, educators, etc.
- Tailor communication strategies to address specific needs and concerns of each audience.
- Utilize various platforms and channels to reach diverse groups effectively.

Translation and Adaptation:
- Translate communication materials into relevant languages spoken in the region.
- Adapt materials to accommodate varying literacy levels and cultural nuances.
- Ensure accessibility and comprehension for all target audiences.

Link to Relevant Standard Operating Procedures:
- Refer to established SOPs for community engagement and feedback mechanisms.
- Utilize existing protocols for translation and adaptation of communication materials.
- Coordinate with stakeholders to implement effective two-way communication strategies.

6. Emergency Response

6.1. Governance

- In case of a heatwave emergency the WHE team lead in coordination with the Health Cluster Coordinator will form a Task Force and will appoint an incident manager to lead the Task Force

- The Task Force will include representatives from Implementing Partners, NWS Health Directorates, the health cluster, UNICEF and WHO.

- The Health Cluster will support the Task Force with a mapping of availably resources and operational health care providers in NWS

- The Task Force will allocate resources to the respective health service providers in NWS based on needs, case load and stock availability

- The Task Force will direct all activities related to the heat wave emergency response incl. Risk Communication & Community Awareness upon delegation by the WHE Team Lead & the Health Cluster Coordinator

- The Task Force will serve as a platform for inter-agency and inter-cluster coordination

6.2. Coordination

- Multisectoral and multi-agency coordination is vital for the optimal success of incident control to facilitate alert detection and response to public health emergencies incl the response to a heatwave.

- Various sectors and agencies involved in responses at multiple levels (HC, WHO, Governorate, District) will be coordinated at the respective strategic levels, likewise its asset relocation.

- An increase in morbidity and mortality caused by a heatwave will be communicated through the existing effective channels, including regular meetings, information-sharing platforms, alert systems, collaborative reporting, and liaison officers.

- Regular Task Force meetings bring together representatives from various organizations and authorities involved in public health management, fostering discussions and strategizing response plans.

- Existing Information-sharing platforms will facilitate the exchange of crucial data, reports, and situational updates among health cluster members, ensuring seamless coordination and collaboration.

Annex 1 - Rapid Risk Assessment, acute event of potential public health concern

EMS Event ID

Northwest Syria

Date and version of current assessment:	Led by: ……. ☐x WHO ☐ **x**Governorate……………. &District:………..☐
Date(s) and version(s)of previous assessment(s):	

Overall risk and confidence

Overall risk			Confidence in available information	
Governorate	**Subdistrict**		**Governorate**	**Subdistrict**
			High	High

Risk statement

Risk questions

Risk question		Assessment		Risk	Rationale
		Likelihood	Consequences		
Risk for human health?	Regional	Highly likely	Major	High	
	National	Likely	Minor	Moderate	
Risk of event spreading?	Region	Highly likely	Major	High	
	National	Likely	Moderate	Moderate	
Risk of insufficient control capacities with available resources?	Region	Highly likely	Major	High	
	National	Likely	Major	High	