

Heatwave, WHO European Region

Date and version of current assessment:	23 July 2026, v1
Date(s) and version(s) of previous assessment(s):	N/A

Overall risk and confidence¹

Overall Public Health Risk	
Regional	Global
Moderate	Low

Confidence in available information	
Regional	Global
High	High

Risk statement

This rapid risk assessment aims to assess the overall public health risk posed by the 2026 heatwaves in the WHO European Region. It considers the potential health impact, particularly among vulnerable population groups, the geographic scope and severity of the event, population vulnerabilities, available prevention and control capacities, and seasonal and environmental factors that may exacerbate heat-related morbidity and mortality.

The 2026 European heatwave is assessed as presenting a moderate public health risk across the WHO European Region, with high confidence. Widespread and prolonged extreme temperatures across Europe, affecting large parts of Western, Central and Southern Europe, have resulted in substantial population exposure and are associated with increased heat-related morbidity and mortality, including reported excess deaths. Several countries have recorded temperatures exceeding 40°C and activated high-level heat-health warnings and emergency response measures. Preliminary European Mortality Monitoring network ([EURO MOMO](#)) data indicate substantial excess mortality associated with the 2026 heatwaves. Approximately 10,650 excess deaths were estimated during 22–28 June 2026, including more than 9,000 among adults aged 65 years and older. Across the two-week period of peak temperatures, European mortality surveillance estimates indicated more than 14,000 excess deaths, highlighting the substantial mortality impact of prolonged and extreme heat exposure.

The public health impacts of the current heatwaves are expected to vary across and within countries. The greatest adverse health impacts are expected in severely affected countries and subnational areas, particularly in densely populated urban settings, where extreme daytime temperatures persist, night-time cooling is limited, population vulnerability is increased, and heat-health response measures are insufficient or not fully implemented. Existing health-system preparedness and response capacity, including early warning, public health measures, outreach to vulnerable groups and continuity arrangements, can reduce impacts; however, healthcare facility capacity alone is insufficient to mitigate heat-related health risks. The likelihood of significant health impacts is high wherever extreme temperatures persist, especially in the absence of comprehensive preparedness and response measures.

Extreme heat may also interact with other environmental and meteorological hazards, creating compound and cascading risks. Heatwaves may contribute to atmospheric instability that can be followed by severe thunderstorms, intense rainfall, flash flooding, landslides and windstorms. Heat events may coincide with drought, water stress, high ultraviolet (UV) radiation, and air pollution, including vegetation fire smoke. These hazards can further increase morbidity and mortality, disrupt essential services, damage infrastructure, and complicate emergency response. Recent observations across Europe, including repeated episodes of vegetation fires and severe convective storms following heat events, underscore the need for integrated multi-hazard preparedness and response.

¹ 1 Confidence refers to the level of confidence in the data/information or the quality of the evidence available at the time the RRA is conducted. Poor quality information may increase the overall perceived risk due to the incertitude in the assessment.

As the event continues, heat-related morbidity, including emergency department visits and hospitalizations, and mortality are expected to increase further in affected areas, particularly among populations at increased risk. Heatwaves may place additional pressure on healthcare delivery through increased demand for emergency and medical services, overheating of healthcare and long-term care facilities, increased energy demand, potential disruption of cooling systems, impacts on medicine and vaccine storage, and heat stress among healthcare workers. Heat-related impacts extend beyond the health sector and may affect energy, water, transport, food systems, workplaces, schools and social services. Power disruptions may compromise cooling, medical equipment and healthcare operations, while water stress may affect hydration, hygiene and cooling access. Transport disruptions may limit access to healthcare, cooling centres and social support.

Despite broad population exposure across Europe, the health impacts of heatwaves are not evenly distributed and are largely determined by individual vulnerability, living conditions, occupational exposure and access to protective measures. Populations at increased risk include older adults, persons with underlying cardiovascular, respiratory, renal, diabetes-related or mental health conditions, infants and young children, pregnant women, migrants, refugees and displaced populations, homeless persons, informal and outdoor workers, people living in poor-quality or overcrowded housing and socially isolated individuals.

Although heatwaves are typically acute events lasting days to weeks, their direct health impacts can be immediate and severe, with short-term increases in heat-related morbidity, emergency medical calls, emergency department visits, hospital admissions and mortality. Heat can also exacerbate chronic diseases, increase dehydration and heatstroke, worsen mental health and sleep disruption, and increase indirect risks such as drowning, occupational injuries, food-safety problems and disruption to essential services. Longer-term public health consequences, such as changes in the transmission dynamics of vector-borne diseases, are less likely to arise from a single heatwave event but warrant continued surveillance, particularly when extreme heat is accompanied by environmental changes, water scarcity, altered human behavior, or shifts in vector distribution and activity. Importantly, the public health significance of heatwaves extends beyond their immediate effects, as these events are increasing in both frequency and intensity across Europe. Consequently, repeated and more severe heatwave episodes may contribute to cumulative health risks and broader environmental and ecological changes.

Heatwaves are predictable hazards, and timely implementation of heat-health action plans can substantially reduce their impact. Weather forecasts and early warning systems should support targeted heat-health alerts, risk communication, outreach to vulnerable groups, workers' protection measures, continuity planning for health and social care services, access to cooling spaces and drinking water, and coordination across relevant sectors. Response planning should also consider co-occurring environmental factors, including high humidity, poor air quality, ozone, wildfire smoke, water stress, elevated night-time temperatures, and storms, which may further increase health risks and complicate public-health messaging.

The public health risk associated with the 2026 heatwaves is heterogeneous across the WHO European Region, reflecting differences in climatic conditions, population vulnerability, exposure patterns, infrastructure, and public health preparedness:

- The highest risk is assessed in areas where prolonged extreme heat coincides with high vulnerability and limited adaptive capacity, particularly densely populated urban areas with persistent high daytime and night-time temperatures, poor housing conditions, limited access to cooling, high levels of social vulnerability, substantial occupational heat exposure, and insufficient heat-health response mechanisms.
- Moderate risk is assessed in areas experiencing less intense heat where preparedness and response measures are stronger. However, northern and traditionally cooler countries may still experience significant increases in heat-related morbidity and mortality during unusually high temperatures because populations, buildings and services are generally less adapted to extreme heat. (e.g., the 2018 Scandinavian heatwave saw notable mortality despite lower absolute temperatures).
- In Central Asia, the risk is moderate but expected to increase as the summer progresses, as extreme heat events typically intensify later in summer season. Early warning systems and timely implementation of heat-health response measures may help mitigate the expected health impact.

Based on the current meteorological, epidemiological and public health information, the overall risk associated with the 2026 heatwave is assessed as **“Moderate” in the WHO European Region**, and as **“Low” at the global level**, with a high level of confidence in both assessments.

The rapid risk assessment will be updated as additional information becomes available.

Risk questions

Risk question		Assessment		Risk	Rationale
		Likelihood	Consequences		
Potential risk (direct and indirect) for human health?	Regional	Likely	Moderate	High	The current heatwaves pose a significant public health threat across the WHO European Region. The higher adverse health impacts are expected in the most severely affected countries and sub-national areas, particularly in densely populated urban settings, where extreme temperatures persist, night-time cooling is limited, vulnerable populations are concentrated, and heat-health response measures are insufficient or not fully implemented. As the event continues, heat-related morbidity, including emergency department visits, hospitalisations and mortality, are expected to increase further, particularly among populations at increased risk. Health impacts may be further amplified by high humidity, poor air quality, wildfire smoke, water stress, power disruption and increasing pressure on health and social-care services.
	Global	Unlikely	Minimal	Low	At the global level, direct health impacts attributable to this event are unlikely. Any indirect effects outside the WHO European Region are expected to be limited and are unlikely to result in measurable increases in morbidity, mortality or disruption of essential health services.
Risk of event spreading?	Regional	Unlikely	Minor	Low	The current heatwaves are acute meteorological events, typically lasting days to weeks, and are currently confined to affected parts of the WHO European Region. The likelihood of substantial spread beyond the Region as the same meteorological event is therefore assessed as unlikely and the risk as low. Climate change is increasing heat-related health risks. Rising average temperatures are making extreme heat events more frequent, more intense and longer lasting. Although the geographic spread of this event is unlikely, its intensity and duration may continue to evolve within affected areas, potentially increasing health impacts and placing additional pressure on health and social care services and other essential sectors (e.g., disruptions to energy, transport, water supply, cold chains and workforce capacity). Heatwaves may also coincide with other environmental hazards, including drought, wildfires, poor air quality, heavy rainfall, flash floods and storms, creating compound risk that may further stretch response capacity. Because heatwaves are predictable, weather forecasts and heat-health early warning systems should trigger timely implementation of Heat-Health Action Plans (HHAPs). These plans support coordinated action across sectors, including health, social care, labour, education, housing, transport, water, energy, civil protection and

					municipalities, and include targeted risk communication, outreach to vulnerable groups, worker protection, access to cool spaces and drinking water, and continuity planning for essential services.
	Global	Unlikely	Minimal	Low	While the current heat wave is unlikely to extend beyond the WHO European Region as the same meteorological event, climate change is increasing the frequency, intensity and duration of extreme heat events globally, underscoring the need for strengthened global preparedness and adaptation across all WHO regions.
Risk of insufficient control capacities with available resources?	Regional	Likely	Moderate	High	The risk of insufficient control capacities with available resources is highest in parts of the WHO European Region where extreme heat affects large populations with differing levels of preparedness and adaptation. Capacity constraints are greatest in densely populated urban areas, locations with persistently high night-time temperatures, poor housing conditions, limited access to cooling, high social vulnerability, substantial occupational heat exposure and where heat-health response mechanisms are suboptimal or not fully implemented. Even where peak temperatures are lower, northern and traditionally cooler countries may experience significant impact because populations, buildings and services are less adapted to extreme heat. Buildings are often designed to retain heat rather than provide cooling, and heat-health action plans, early warning systems and operational response mechanisms may be less developed or less frequently implemented. The risk of insufficient control capacity is higher where Heat-Health Action Plans are absent, incomplete, not updated, insufficiently resourced or not fully activated, particularly where warning thresholds, roles and responsibilities, escalation procedures, outreach to vulnerable groups, cooling access, worker protection and continuity arrangements across health, social care and essential services are not clearly defined or operational.
	Global	Unlikely	Minimal	Low	Although localized capacity gaps may occur within affected countries, these are not expected to place a significant burden on global operational, coordination or resource capacities.

Major actions recommended by the risk assessment team

	Action	Timeframe
☐	Refer the event for review by IHR Emergency Committee for consideration as a PHEIC by DG (Art 12, IHR)	Not applicable
☐	Immediate activation of ERF response mechanism (IMS) as urgent public health response is required	Not applicable
☐	Recommend setting up of grading call	Not applicable
☐	Immediate support to response, but within limit of CFE (no grading recommended at this point in time)	Not applicable
☐	Rapidly seek further information and repeat RRA (including field risk assessment)	Not applicable
☒	Support Member State to undertake preparedness and control measures (short-term and long-term)	Continuous
☒	Continue to closely monitor	Continuous
☐	No further risk assessment required for this event, return to routine activities	Not applicable

Immediate actions

- Issue a media release announcing the new Heat–Health Action Plans Guidance (e.g., Joint press release from the Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety of Germany, WHO/Europe and the State of Berlin, Germany, 11 June 2026)
- Update and disseminate the 2026 Preparedness, Readiness and Response to Heatwaves and Wildfires resource package to Member States and WHO Country Offices (WCOs).
- Maintain coordination throughout the WHO European Region on preparedness, readiness, and response structures, including the WHO European Centre for Environment and Health (ECEH) based in Bonn, Germany.
- Convened an ad-hoc joint meeting of the Working Group on Health in Climate Change (HIC), the European Environment and Health Task Force (EHTF) and National IHR focal points on 6 July 2026.
- Strengthen external communication and social media posts on heat and health.

Long-term actions:

Member States should strengthen climate-informed public health planning through development, implementation, and regular evaluation of Heat Health Action Plans (HHAPs) at national, subnational and local levels. HHAPs should define governance arrangements, warning thresholds, roles and responsibilities, communication pathways, protection measures for populations at increased risk, health-system resilience actions, exposure-reduction measures, heat–health surveillance, and monitoring, evaluation and learning. These plans should be integrated into national adaptation plans, disaster risk reduction strategies, emergency preparedness and response frameworks, and health-sector development planning, and should be coordinated with relevant sectors including meteorology, civil protection, social care, labour, education, housing, urban planning, transport, water and energy. Additionally, Member States should strengthen the resilience of health systems, energy systems and other critical infrastructure to ensure continuity of essential services during periods of extreme heat. Long-term adaptation measures should prioritise heat-resilient and low-carbon infrastructure, including passive cooling, shading, ventilation, insulation, reflective materials, green and blue spaces, and safe indoor temperature management in homes, schools, workplaces, health-care facilities, long-term care facilities and social housing. Member States should also integrate sustainable water resource management, urban heat-island reduction, occupational heat protection and multi-hazard early warning systems into national adaptation plans, disaster risk reduction strategies and health-sector planning. Regional cooperation and cross-border coordination should be strengthened to facilitate information sharing, preparedness and mutual support during large-scale heat events. Given the increasing frequency, intensity and duration of heatwaves associated with climate change, strengthening long-term adaptation and preparedness measures is essential. Measures to reduce greenhouse gas emissions and promote sustainable urban development should also be advanced, recognising their important co-benefits for protecting health and reducing climate-related risks.

Supporting information

Hazard assessment

Extreme heat is an increasing public health threat in the WHO European Region, contributing to excess mortality, exacerbation of chronic conditions, and increased pressure on health systems. Heat is the leading weather- and climate-related cause of death in Europe, with tens of thousands of heat-related mortality observed particularly among older adults and people with pre-existing cardiovascular, respiratory and renal diseases.

The global heat-risk environment is also evolving. Climate variability, including El Niño conditions, has developed in the tropical Pacific and is forecast to strengthen rapidly over the coming months. The World Meteorological Organization (WMO) indicates that this will increase the likelihood of heatwaves on land and marine heatwaves in many regions. The occurrence and severity of individual heatwaves also depend on regional atmospheric conditions, longer-term climate change and local environmental factors.

In addition to direct health impacts such as heat exhaustion and heat stroke, elevated temperatures are associated with increased hospital admissions, reduced labour productivity and heightened risks of food- and waterborne diseases, as well as adverse mental health outcomes. Extreme heat also has broader socioeconomic consequences, including reduced workforce productivity, increased absenteeism, higher energy demand and costs, disruption of transport and essential services, impacts on agriculture and food systems, and increased financial pressures on households and health and social care systems.

The extreme heat is interacting with other environmental hazards, exacerbating overall risks. Severe drought conditions accompany the heat, elevating the wildfire risk. The heatwave has also degraded air quality. Stagnant hot air and strong sunlight have driven up ground-level ozone and exacerbated particulate pollution (especially where wildfire smoke is present).

Additionally, the extreme heat is straining water and energy systems. Transport infrastructure has been impacted too (railway tracks warping, asphalt road surfaces softening). Such damages can hamper emergency response and essential services.

Overall, the combination of persistent heat, drought, fire risk, and air pollution constitutes a multifaceted hazard scenario.

Extreme heat affects entire populations; however, its health impacts are disproportionately experienced by certain age and population groups. Older adults (≥ 65 years) experience the highest heat-related mortality rates, due to reduced thermoregulatory capacity and prevalence of chronic illness. Infants and young children are also particularly susceptible to dehydration and heat illness. People with underlying medical conditions (cardiovascular, respiratory, diabetes, renal disease, mental health disorders) face an increased risk of complications or death during heatwaves, as extreme heat can exacerbate these conditions. Pregnant women are another vulnerable group, as extreme heat may adversely affect both maternal and foetal health. Occupational exposure is an important factor, particularly for outdoor workers including farmers, construction workers, and transport and delivery workers who may endure many hours under direct sun and high heat, increasing the risk of heat-related illness without adequate hydration, rest periods, and protective measures.

Heatwaves can also negatively affect the implementation of core infection prevention and control (IPC) measures by challenging environmental controls and healthcare worker performance and continuity of care. Key IPC components, including appropriate use of personal protective equipment (PPE), ventilation practices, environmental hygiene, and adequate staffing, may be affected by heat-related constraints. Excessive heat can reduce PPE tolerance due to thermal discomfort and physiological strain, increasing fatigue and the likelihood of errors or reduced adherence to standard precautions. Similarly, ventilation and airflow measures may be modified to maintain tolerable indoor temperatures, creating challenges in balancing thermal comfort and infection control requirements. Increased patient demand, workforce fatigue, and pressure on healthcare infrastructure during heat events may further affect staffing capacity and the consistent implementation of IPC practices, including environmental cleaning and aseptic procedures.

Heatwaves and elevated ambient temperatures may increase risks of healthcare-associated infections (HAIs) by simultaneously increasing infection pressure and disrupting care processes. Epidemiological evidence indicates that higher temperatures are associated with increased risks of HAIs, including surgical site infections (with up to 39% higher risk during warmer periods) and bloodstream infections (with 16–17% higher incidence at temperatures ≥ 20 °C), with a stronger association observed for some Gram-negative pathogens. Heatwaves may further amplify these risks through increased patient admissions and system strain, environmental conditions that may support microbial growth, and reduced healthcare worker performance due to heat stress, fatigue, discomfort, and cognitive strain. Importantly, qualitative evidence from hospital settings shows that extreme heat creates operational challenges, including maintaining critical infrastructure in intensive care units and operating theatres, ensuring appropriate cooling and ventilation, and sustaining essential health services. Overall, heatwaves represent a compound risk scenario in which environmental, biological, and operational factors may converge to increase IPC challenges and the risk of healthcare-associated infections.

Beyond physical health effects, extreme heat is associated with adverse mental health outcomes, including anxiety, psychological distress, sleep disruption, worsening of existing psychiatric conditions and increased social

isolation among vulnerable populations. Heat may also affect food safety through accelerated growth of foodborne pathogens, increased food spoilage, and disruption of cold-chain systems, increasing the risk of food contamination.

Exposure assessment

The ongoing heatwaves commencing in June 2026 are notable for their magnitude and unusually early timing. The event developed in late spring, several weeks earlier than the typical peak period for European summer heat, with record or near-record June temperature records across the continent.

France, the United Kingdom, Ireland, Germany, Switzerland and other countries experienced exceptional temperatures, including periods of persistent high night-time temperatures, with some locations recording minimal temperatures above 20 °C. Limited overnight cooling increases health risks by reducing opportunities for physiological recovery from daytime heat exposure.

The Heat and Cold Wave Index (HCWI), implemented within the Copernicus European Drought Observatory (EDO), provides a standardised approach for detecting and monitoring periods of extreme temperature anomalies and assessing their duration and geographic distribution across Europe. The HCWI indicator that is implemented in EDO is updated daily (with a two-day delay) and provides information on heat and cold wave conditions from 1980 onwards.

By 23 June 2026, heatwave alerts had been issued or forecast in 18 EU Member States. In particular, Austria, Italy, Germany, France and Hungary were among the countries expected to experience prolonged heat conditions, with forecasts indicating seven or more heatwave days over the following 10 days in some areas. According to WMO Regional Climate Centre, the heatwave was expected to persist and extend into early July.

This heatwave affected a large part of the WHO European Region, extending from the Atlantic into Western and Central Asia. After intensifying over Western Europe, the heat dome expanded eastward and southward, affecting Central Europe, South-Eastern Europe, the Eastern Mediterranean and parts of Central Asia.

Central European countries, including Germany and Poland, experienced several consecutive days of temperatures in the mid-to-upper 30s °C, resulting in widespread heat warnings. South-Eastern Europe and the Eastern Mediterranean, including the Balkans, Türkiye, and Israel, experienced above-average early summer temperatures and were expected to face further intensification as the heatwave moved eastward.

Central Asia also experienced extreme heat conditions. For example, Kazakhstan's meteorological service (Kazhydromet) forecast temperatures exceeding 40 °C in some areas during June. While very high temperatures are common during Central Asia summer, the early arrival and broad geographic coherence of the event across Europe to Central Asia were notable and associated with a persistent high-pressure system "heat dome" across the Eurasian mid-latitudes.

By 25–26 June, meteorological data indicated that more than 150 million people in Europe had experienced daily maximum temperatures above 35 °C. Tens of millions were exposed to multi-day periods of temperatures exceeding 40 °C, particularly in the Mediterranean region. Major urban centres including London, Paris, Rome, Madrid and Berlin experienced heat alerts and extreme heat conditions. In Northern Europe, such as Scandinavia and Baltic states, temperatures in the upper 20s to low 30s represented substantial anomalies relative to local climate conditions, with some building infrastructure less adapted to prolonged heat. As the heatwave progressed eastward, populations in Eastern Europe, Central Asia and the Eastern Mediterranean (e.g. Israel, Türkiye) experienced increasing thermal stress. Peak conditions shifted towards Central Europe, including Germany,

Poland, and the Czech Republic, during 27–28 June. At the global level, exposure to extreme heat is increasing across all regions. Forecasts indicating above-normal temperatures in several regions, together with ongoing climate variability, including El Niño conditions, raise the possibility of concurrent or successive heat events in different parts of the world during the coming months. Populations at increased risk include older adults, infants, and children, pregnant women, people with underlying chronic conditions, outdoor and manual workers, people experiencing homelessness or social isolation, refugees, migrants and displaced populations, and people with limited access to safe water, adequate housing, cooling and healthcare.

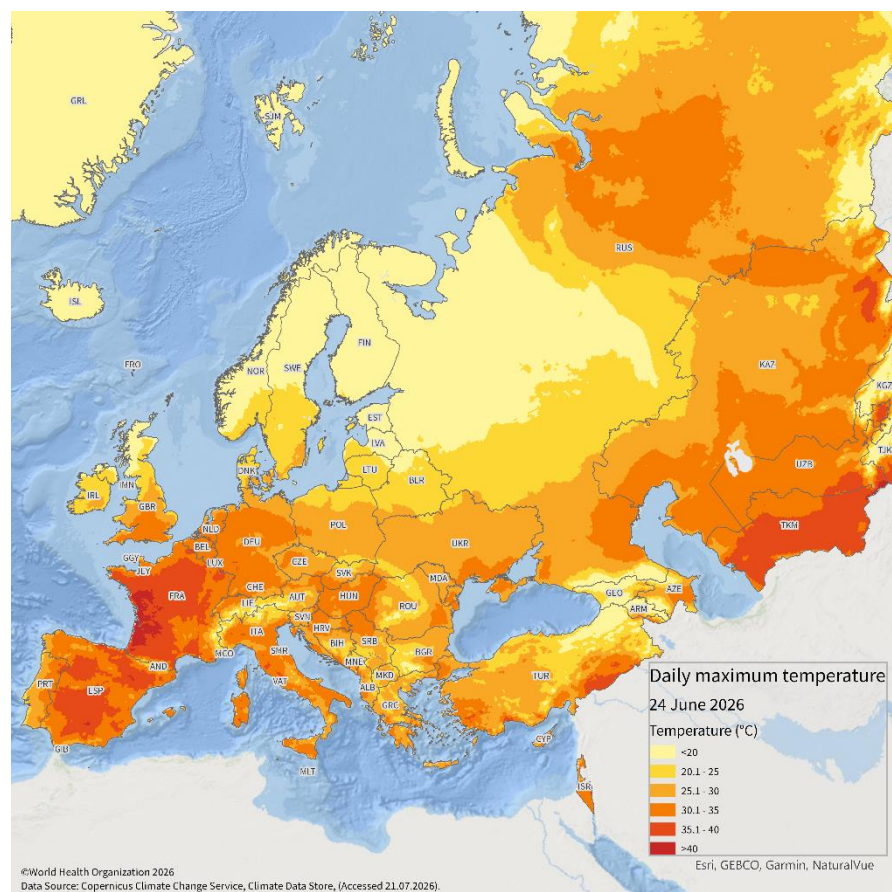


Figure 1: Observed Daily Maximum Temperature of the WHO European Region, 24 June 2026

Context assessment

The heatwave has placed substantial pressure on health systems across the WHO European Region, increasing demand for healthcare services and challenging service continuity. Long-term care facilities and other settings caring for vulnerable populations have faced additional operational pressures associated with prolonged periods of extreme heat.

The event has also affected other critical sectors, with disruptions to electricity supply, cooling systems, transport infrastructure, workplaces and schools. Concurrent environmental hazards, including increased wildfire risk and smoke exposure, have further complicated response efforts and placed additional pressure on health systems and other essential services. These cascading impacts highlight the need for coordinated, multisectoral preparedness and response during prolonged heat events.

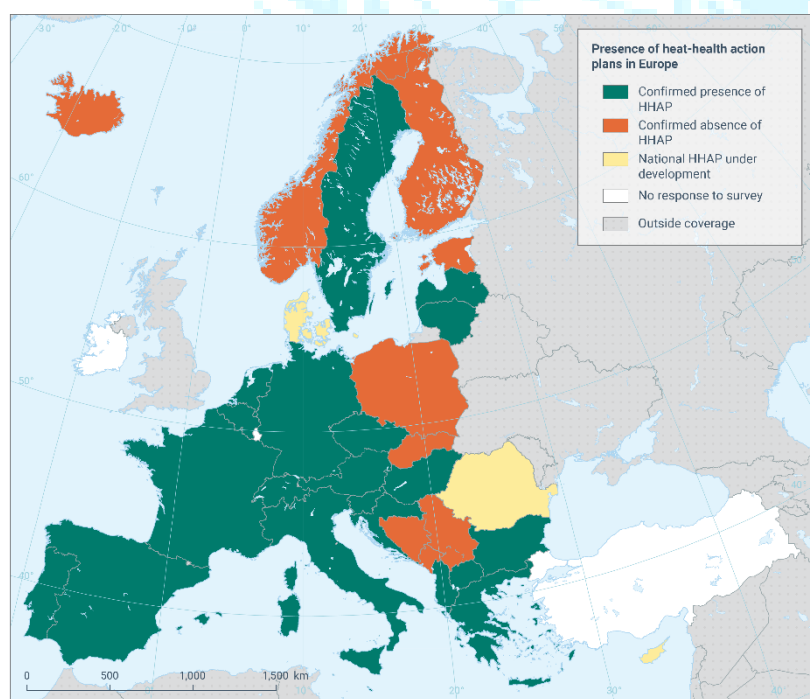
Europe is the fastest-warming continent, with average temperatures approximately 2,3 °C above pre-industrial levels, according to the European Environment Agency (EEA). Heatwaves are becoming more frequent, longer-lasting, and more intense, reflecting the growing influence of climate change on the Region. The current event is occurring in the context of ongoing global climate variability, including El Niño event (declared by WMO in mid-2026), which may contribute to above-normal temperatures and increase the likelihood of new heat records in the coming year.

The heatwave's scale and severity have placed considerable pressure on public health systems and other critical infrastructure across the WHO European Region. Many hospitals in Western Europe activated heat emergency protocols, increasing staffing and ventilation. However, the capacity of health facilities to respond varies across the Region, with some hospitals, particularly in traditionally cooler countries, having limited cooling capacity and infrastructure designed for prolonged periods of extreme heat. Heat-related pressures on energy, water, and transport systems may further affect the continuity of healthcare and other essential services.

Europe has an ageing population, with median ages exceeding 40 years in many countries, resulting in a larger proportion of people at increased risk of heat-related illness and death. The Region also has a high burden of non-communicable diseases (cardiovascular disease, COPD, diabetes, renal disease, etc.), which can be exacerbated by extreme heat. In addition, more than 70% of the European population lives in urban areas, where the urban heat-island effect can further increase heat exposure and associated health risks.

The WHO Regional Director for Europe emphasised that most heat-related deaths are preventable through effective preparedness and timely response. Preparedness capacities vary across the Region. According to the European Environment Agency survey, with the available data, 21 of the 53 countries in the WHO European Region have Heat Health Action Plans (HHAPs) in place, while several others are developing them. These plans typically include heat-health early warning systems, risk communications, identification and protection of vulnerable individuals (like telephone check-ins for the elderly living alone), and surge capacity plans for hospitals. However, preparedness gaps remain particularly in parts of Eastern Europe and Central Asia, where comprehensive HHAPs and real-time heat-health impact surveillance are not yet fully established or operational.

The updated WHO/Europe Guidance for the development of HHAP provides a state-of-the-art comprehensive blueprint for countries, regions and cities to strengthen preparedness and response to heat.



Reference data: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO

Figure 2: Presence of Heat-Health Action Plans in WHO Europe (source: [European Environment Agency](#))

Globally, the public health impacts of extreme heat may be amplified in settings affected by poverty, conflict, displacement, food and water insecurity and fragile health systems. Interruptions to electricity and water supplies may compromise access to cooling, safe drinking water, medical devices, medicines, the vaccine cold chain, and the operation of health facilities. Heat stress among healthcare workers, workforce shortages and increased demand for health services may further reduce the capacity and resilience of health systems during prolonged heat events.

Concurrent or successive severe heat events across multiple regions could increase demand for WHO technical guidance, coordination and operational support. Continued global monitoring, cross-regional information sharing and anticipatory preparedness are therefore important to strengthen readiness and support timely public health action.

Capacities and Vulnerabilities in WHO European Region

Capacities	Vulnerabilities
- Heat–Health Action Plans (HHAPs) have been developed in many countries to prepare for heatwaves - Most countries have good weather forecasts and early warning systems for risk communication and announcement for advice and response. - Most countries have experience in responding to heatwaves and have established HHAPs, heat-health early warning systems, and coordinated public health response mechanisms. - A WHO resources package is available for guidance, including the WHO Heatwaves: How to Stay Cool guide.	- The existence of a Heat–Health Action Plan does not necessarily ensure effective implementation. In some settings, warning thresholds, surveillance systems, outreach to populations at increased risk, access to cooling, and sector-specific response and continuity protocols may not be fully operational, regularly tested, adequately resourced, or activated, increasing vulnerability to the public health impacts of extreme heat. - Health care gaps in lower-resource countries and conflict areas - International guidance may not be available in local languages, and for migrants and displaced people. - Much of acute healthcare (hospitals) infrastructure across the Region is ageing and was designed for historical climate conditions rather than current extremes, making some facilities vulnerable to overheating and disruptions during prolonged heatwaves. - WHO IPC guidance is not explicitly designed for heatwave conditions and is therefore only partially resilient under extreme heat.

Reference documents used for risk assessment

- 1) European Environment Agency. European Climate and Health Observatory: heat. Copenhagen:European Environment Agency; 2024. Available from: <https://climate-adapt.eea.europa.eu/en/observatory/topics/health-impacts/heat-and-health>
- 2) World Health Organization. Climate change and heat: health impacts. World Health Organization; 2021. Available from: <https://www.who.int/news-room/fact-sheets/detail/climate-change-heat-and-health>
- 3) World Health Organization Regional Office for Europe. Heat–health action plans: guidance, second edition. Copenhagen: WHO Regional Office for Europe; 2026. Available from: <https://www.who.int/europe/publications/i/item/9789289062930>
- 4) World Health Organization. Climate change and health: vulnerability and adaptation assessment. Geneva: World Health Organization; 2021. Available from: <https://www.who.int/publications/i/item/9789240036383>
- 5) World Meteorological Organization. Records fall as extreme heat grips Europe. Geneva: World Meteorological Organization; 2026. Available from: <https://wmo.int/media/news/records-fall-extreme-heat-grips-europe> [cited 2026 Jun 25].
- 6) European mortality monitoring activity (EuroMOMO) [Internet]. Copenhagen: Statens Serum Institut; [cited 2026 Jul 20]. Available from: <https://euromomo.eu/>
- 7) Kazhydromet. Kazhydromet reported weather conditions in June. Available from: <https://agrosearch.kz/en/news/kazgidromet-rasskazal-o-pogodnyx-usloviyax-v-iyune> [cited 2026 Jun 25].
- 8) European Environment Agency. The impacts of heat on health. Copenhagen: European Environment Agency; Available from: <https://www.eea.europa.eu/en/analysis/publications/the-impacts-of-heat-on-health> [cited 2026 Jun 25].

- 9) European Environment Agency. Extreme weather: floods, droughts and heatwaves. Copenhagen: European Environment Agency; Available from: <https://www.eea.europa.eu/en/topics/in-depth/extreme-weather-floods-droughts-and-heatwaves> [cited 2026 Jun 25].
- 10) World Health Organization Regional Office for Europe. Statement – Europe lost 200 000 people to heat in 4 years yet nearly all of them were preventable. Copenhagen: WHO Regional Office for Europe; 2026. Available from: <https://www.who.int/europe/news/item/11-06-2026-statement---europe-lost-200-000-people-to-heat-in-4-years-yet-nearly-all-of-them-were-preventable> [cited 2026 Jun 25].
- 11) Brooks K, Landeg O, Kovats S, Sewell M, O'Connell E. Heatwaves, hospitals and health system resilience in England: a qualitative assessment of frontline perspectives from the hot summer of 2019. *BMJ Open*. 2023;13:e068298.
- 12) Damonti L, Atkinson A, Fontannaz L, et al. Influence of environmental temperature and heatwaves on surgical site infection after hip and knee arthroplasty: a nationwide study. *Journal of Hospital Infection*. 2023;135:125–131.
- 13) Sahtoe APH, Duraku LS, van der Oest MJW, et al. Warm weather and surgical site infections: a meta-analysis. *Plast Reconstr Surg Glob Open*. 2021;9:e3705.
- 14) Schwab F, Gastmeier P, Hoffmann P, Meyer E. Summer, sun and sepsis—The influence of outside temperature on nosocomial bloodstream infections: a cohort study and review. *PLOS One*. 2020;15:e0234656.
- 15) Limaylla DC, Silva MO, Fortaleza CM. Temperature, humidity, and climate control in hospital units: a clue for understanding the seasonality of healthcare-associated pathogens. *Infect Control Hosp Epidemiol*. 2019;40(7):829–830.
- 16) Wibowo R, Satow M, Quartucci C, et al. Impact of heat stress and protective clothing on healthcare workers: health, performance, and well-being in hospital settings. *Ann Work Expo Health*. 2025;69(6):665–675.
- 17) Quartucci C, Wibowo R, Do V, et al. Assessment of subjective well-being of healthcare workers in response to heat and PPE under controlled conditions. *J Occup Med Toxicol*. 2024;19:16.
- 18) Freire K, Green E, Kernaghan L, et al. Impact of heat and mitigation strategies on healthcare professionals: a scoping review. *Public Health Nurs*. 2025.
- 19) UK Health Alliance on Climate Change / BMJ report. Climate emergency: NHS buildings vulnerable to overheating. *BMJ*. 2025;389:r1275.
- 20) World Health Organization. Safe, climate-resilient and environmentally sustainable health care facilities: overview. 2024 guidance.
- 21) Copernicus Climate Change Service, Climate Data Store, (2023): ERA5 hourly data on pressure levels from 1940 to present. Copernicus Climate Change Service (C3S) Climate Data Store (CDS). DOI: 10.24381/cds.bd0915c6 (Accessed 26 June 2026)
- 22) Tedros Adhanom Ghebreyesus, WHO, Europe is the fastest-warming continent on Earth, <https://x.com/DrTedros/status/2071205410237723121> (accessed 29 June 2026)
- 23) BBC, Europe's heatwave linked to 1,300 deaths, WHO says, as Germany hits record 41.7C, available at <https://www.bbc.com/news/articles/cn4d2vv935lo> (accessed 29 June 2026)
- 24) UN News. Europe heatwave breaks records as UN agencies ramp up health warnings [Internet]. New York: United Nations; 25 Jun 2026 [cited 20 July 2026]. Available from: <https://news.un.org/en/story/2026/06/1167808>