UK Health Security Agency

Met Office

User guide

New impact-based Weather-Health Alerting System

Contents

Overview of the new Weather-Health Alert system

The heat-health alert (HHA) operates from 1 June to 30 September and the cold-health alert (CHA) operates from 1 November to 30 March. An out of season alert may still be issued if impacts from adverse weather on health (heat and cold) are expected.

Both systems are based on the Met Office forecasts and data. Depending on the level of alert, a response will be triggered to communicate the risk to the NHS England, government, and public health system. Advice and information will be sent for the public and health and social care professionals, particularly those working with at-risk groups, after an alert is issued or updated. This includes both general preparation for hot weather and more specific advice when a severe heatwave has been forecast.

The platform aims to cover the spectrum of action from different groups. In general terms:

- **Green (preparedness)**: No alert will be issued as the conditions are likely to have minimal impact and health; business as usual and summer/winter planning and preparedness activities.

- **Yellow (response):** These alerts cover a range of situations. Yellow alerts may be issued during periods of heat/cold which would be unlikely to impact most people but could impact those who are particularly vulnerable.

- **Amber (enhanced response):** An amber alert indicates that weather impacts are likely to be felt across the whole health service, with potential for the whole population to be at risk. Non-health sectors may also start to observe impacts and amore significant coordinated response may be required.

- **Red (emergency response):** A red alert indicates significant risk to life for even the healthy population.

The cold-health alert platform is currently under development. More information will be available by September 2023.

Overview of the Heat-Health Alert (HHA)

The HHA is operational year-round. However, the core alerting season is between 1 June and 30 September. Within this core alerting period a Heat-Health Planner will also be issued every Monday and Friday to provide Heat-Health horizon scanning for the next 5 days, 6 to 15 days, and 16 to 30 days ahead.

During the warm season, UKHSA and the Met Office will monitor the weather forecasts and where episodes of hot weather are identified using predefined evidence-based considerations, a dynamic risk assessment will be carried out and the appropriate alert issued.

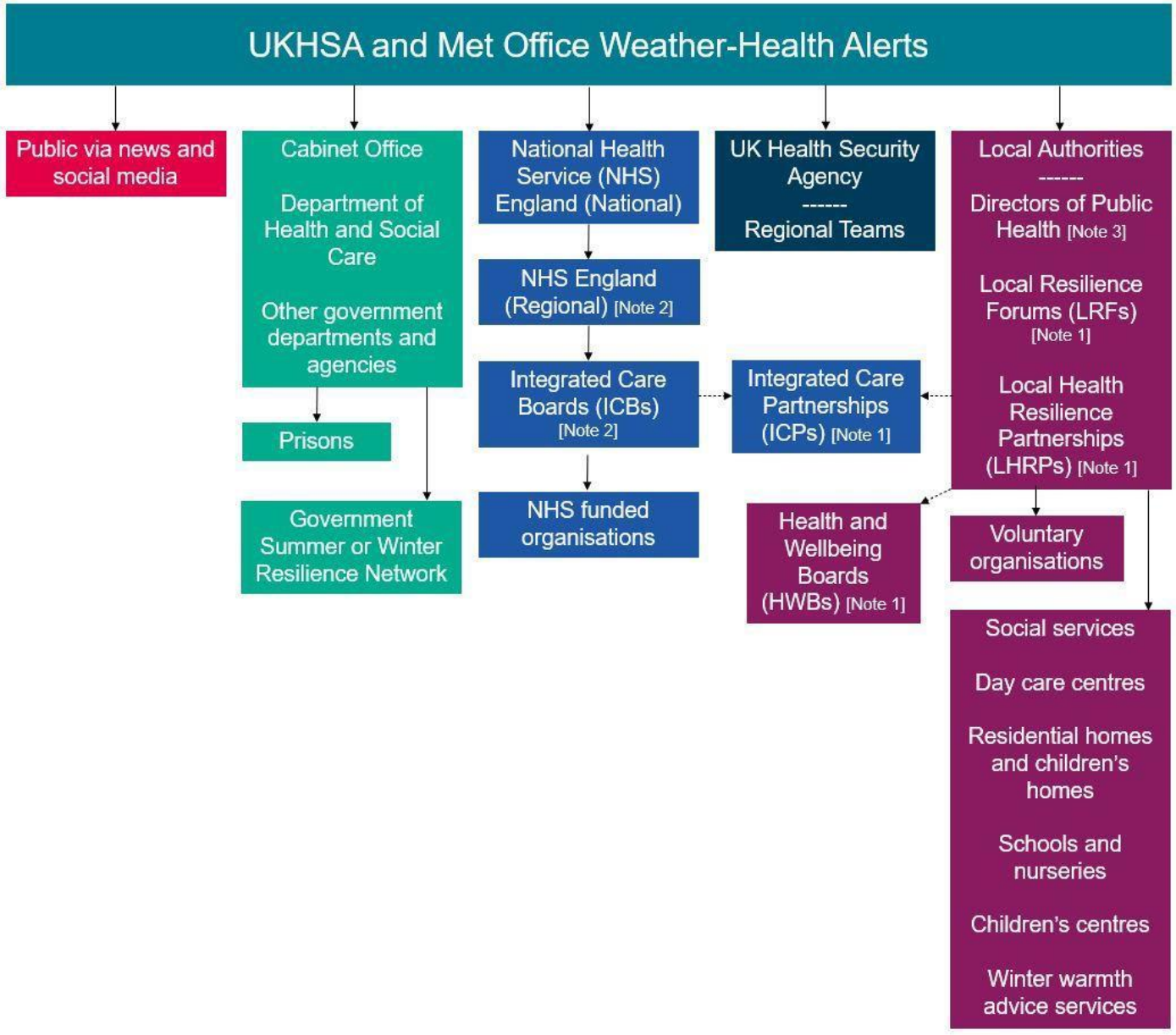
Commencing from 1 June 2023, HHAs and Heat-Health Planners will be issued by UKHSA in collaboration with the Met Office. Individuals and organisations that wish to receive the impact-based HHA must re-register to receive the alerts where users will be able to specify which regions they wish to receive alerts for.

In addition, the HHA will move from the previous system based on probabilities of reaching threshold temperatures to impact-based alerts. The new impact-based HHAs will contain:

- headline weather conditions expected in the coming days
- an outline of what impacts might be expected
- brief overview of regional impact assessment
- links to additional information, advice and guidance

As was the case with the previous HHA, it is anticipated that organisations will initiate cascade of alerts within their organisations and to partner organisations as appropriate and as agreed locally. Figure 1 below depicts the typical cascade of HHAs across the system.

Figure 1. Typical cascade of Weather-Health Alerts



[Note 1] LHRPs, HWBs and ICPs are strategic and planning bodies, but may wish to be included in local alert cascades.

[Note 2] NHS England Regional Teams and ICBs should work collaboratively to ensure that between them they have cascade mechanism for Heat-Health Alerts to all providers of NHS funded services both in business as usual hours and the out of hours period in their area.

[Note 3] UKHSA would be expected to liaise with directors of public health to offer support, but formal alerting would be expected through usual local authorities channels.

Accessible text equivalent for Figure 1. Typical cascade of Weather-Health Alerts

UKHSA and the Met Office Weather-Health Alert is issued and cascaded to:

- the public via news and social media
- the Cabinet Office, the Department of Health and Social Care (DHSC) and other government departments and agencies
- NHS England
- UKHSA and regional teams
- local authorities, including the directors of public health, local resilience forums (LFRs) and local health resilience partnerships (LHRPs)

The Cabinet Office, DHSC and other government departments and agencies cascade the alert to:

- the government summer or winter resilience network
- prisons

The NHS England national team cascades the alert to NHS England regional teams. The NHS England regional teams then cascade the alert to the Integrated Care Boards (ICBs). The ICBs and local authorities work closely within the Integrated Care Partnerships (ICPs). ICBs cascade the alert to the NHS funded organisations.

Further points to note on this cascade are that UKHSA would be expected to liaise with directors of public health to offer support, but formal alerting would be expected through usual local authority channels.

Local Health Resilience Partnerships, Health and Wellbeing Boards, Integrated Care Partnerships are strategic and planning bodies, but may wish to be included in local alert cascades.

NHS England regional teams and ICBs should work collaboratively to ensure that between them they have a cascade mechanism for weather and health alerts to all providers of NHS funded services both in business as usual hours and the out of hours period in their areas.

Local authorities, including the directors of public health, LRFs, LHRPs cascade the alert to:

- health and wellbeing boards (HWBs)
- social services
- day care centres
- residential homes and children’s homes
- winter warmth advice services
- community and voluntary organisations

Alerting colours and risk matrix

In line with other weather warning systems in operation within England (and the UK), warnings will be issued when the weather conditions have the potential to impact the health and wellbeing of the population.

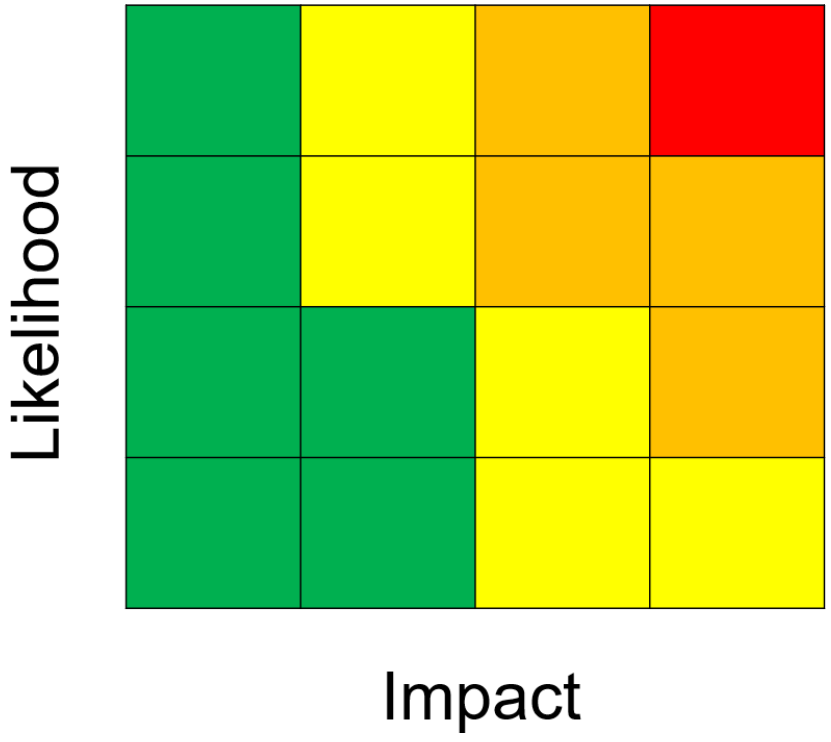
The alerts will be given a colour (yellow, amber or red) based on the combination of the impact the weather conditions could have, and the likelihood of those impacts being realised. These assessments are made in conjunction with the Met Office when adverse weather conditions are indicated within the forecast.

Yellow and amber alert assessments cover a range of potential impacts (including impacts on specific vulnerable groups (for example people sleeping rough) through to wider impacts on the general population) as well as the likelihood (low to high) of those impacts occurring. This additional information should aid making decisions about the appropriate level of response during an alert period. Within the alert that is issued, the combination of impact and likelihood will be displayed within a risk matrix as illustrated in Figure 2.

Once the decision is made to issue an alert (yellow, amber, or red), these will be cascaded to those registered to receive the alerts and made available on the new dedicated web platform. Alerts will be issued with as much lead time to the event as is possible to allow users time to make their local assessments and to initiate all appropriate actions to reduce harm to health.

Users should review every alert when issued to ensure they fully understand the potential impacts and how likely they are to occur.

Figure 2. Impact and likelihood risk matrix



Green (summer preparedness)

No alert will be issued as the conditions are likely to have minimal impact and health. However, during periods where the risk is minimal it is important that organisations ensure that they have plans in place and are prepared to respond should an alert (yellow, amber or red) be issued.

The AWHP HHA action cards provide information on the strategic year-round actions to address health risks from heat and suggested summer preparedness actions.

Yellow (response)

These alerts cover a range of situations. Yellow alerts may be issued during periods of heat in which it would be unlikely to impact most people, however those who are particularly vulnerable (for example the elderly with multiple health conditions and on multiple medications) are likely to struggle to cope, and where action is required within the health and social care sector specifically. A yellow alert may also be issued if the confidence in the weather forecast is low, but there could be more significant impacts if the worst-case scenario is realised. In this situation the alert may be upgraded as the confidence in both the weather forecast and the likelihood of observing those impacts improves.

Amber (enhanced response)

An amber alert would represent a situation in which the expected impacts are likely to be felt across the whole health service, with potential for the whole population to be at risk and where other sectors apart from health may also start to observe impacts, indicating that a coordinated response is required. In addition, in some circumstances a National Severe Weather Warning Service (NSWWS) Extreme Heat (EH) warning may be issued in conjunction with and aligned to the HHA. This situation would indicate that significant impacts are expected across multiple sectors.

Red (emergency response)

A red alert would indicate significant risk to life for even the healthy population. A red warning would be issued in conjunction with and aligned to a red NSWWS Extreme Heat warning.

Severe impacts would be expected across all sectors with a coordinated response essential.

Heat impacts overview

Based on the epidemiological evidence, experience and professional opinion, the possible levels of potential impacts from high temperatures are described in the table below. The text within the table indicates the level of impact which, when combined with likelihood of those impacts occurring, would lead to the selection of a warning level (yellow, amber or red). The impacts outlined within the table are not exhaustive and do not include specific impacts that may occur within other sectors apart from health.

Table 1. Heat impact criteria

	Very low	Low	Medium	High
Population at risk	Little impact observed on health, healthcare services and social care provision.	Increased mortality amongst vulnerable population groups (for example an increase in those aged 65 years and over daily mortality dependant on time of year).	Observed increase in mortality across the population, particularly in those aged 65 years and over or those with health conditions, but impacts may also be seen in younger age groups.	Increased mortality expected across the whole population with significant mortality observed in older age groups.
Demand for and impacts on health and social care services		Potential for increased usage of healthcare services by vulnerable population. Internal temperatures in care settings (hospitals and care homes) may become very warm increasing risk of indoor overheating.	Increased demand for GP services, ambulance call out, remote healthcare services (NHS111) likely. Impact on ability of services delivered due to heat effects on workforce possible. Many indoor environments likely to be	Significant increased demand on all health and social care services. Impact on ability of services to be delivered due to heat effects on workforce. Indoor environments likely to be hot makingprovision of care challenging and

	Very low	Low	Medium	High
			overheating, risk to vulnerable people living independently in community as well as in care settings. Staffing issues due to external factors (for example transport). Patient medication regime may lead to increased risk of dehydration.	leading to increased risk of heatstroke and dehydration.
Other sectors			Non-health sectors starting to observe impacts (for example travel delays).	National critical infrastructure failures – such as generators and power outages or major roads and rail lines closed due to melting roads or overheating rail lines.

How to access HHAs

HHAs will be issued by UKHSA in partnership with the Met Office, and users will need to register for this new alerting system where they will be able to specify the government region they wish to receive alerts for. A new dedicated Weather-Health Alerting Service web platform has also been developed in which the current alert status over the 5 days ahead will be publicly available.

UKHSA has also developed the AWHP HHA action cards containing a list of potential actions that organisations and responders should consider that are aligned with the new alerting structure, such as yellow and red alerts.

Interaction with NSWWS Extreme Heat

In England there are 2 early warning systems related to high temperature, including HHA and the EH warnings as part of the National Severe Weather Warning Service (NSWWS). Since summer 2021 UKHSA and the Met Office have collaborated to ensure that the HHA and EH warnings are aligned and work together to communicate the expected impacts so that users act to minimise the potential impact. Each system has a slightly different target audience yet work together to help focus the messages being transmitted.

The HHA primarily targets the health and social care sector and responder community, while the NSWWS has a wider audience that includes the responder community, but also the general public. Due to the fact that the health sector is likely to observe impacts before other sectors, the HHA will issue yellow to red alerts, whereas NSWWS will only issue amber and red alerts for EH.

To ensure both systems are aligned, UKHSA and the Met Office will work together to undertake a combined risk assessment to determine the expected impacts and the likelihood of those impact occurring. This partnership working will ensure consistency across the systems, and a single overall message to users.

It should be noted that the HHA and NSWWS EH system are both separate to the Met Office Heatwave Definition. The Met Office provides an explanation for the difference between these systems.

Additional info and resources

- Adverse Weather and Health Plan
- Met Office NSWWS
- Met Office Weather Forecasts

About the UK Health Security Agency

UKHSA is responsible for protecting every member of every community from the impact of infectious diseases, chemical, biological, radiological and nuclear incidents and other health threats. We provide intellectual, scientific and operational leadership at national and local level, as well as on the global stage, to make the nation health secure.

UKHSA is an executive agency, sponsored by the Department of Health and Social Care.

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