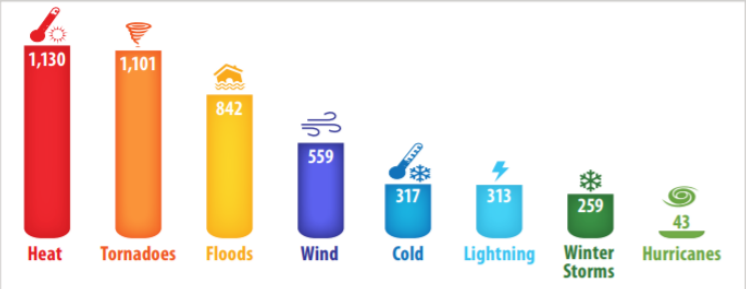
NATIONAL INTEGRATED HEAT HEALTH INFORMATION SYSTEM

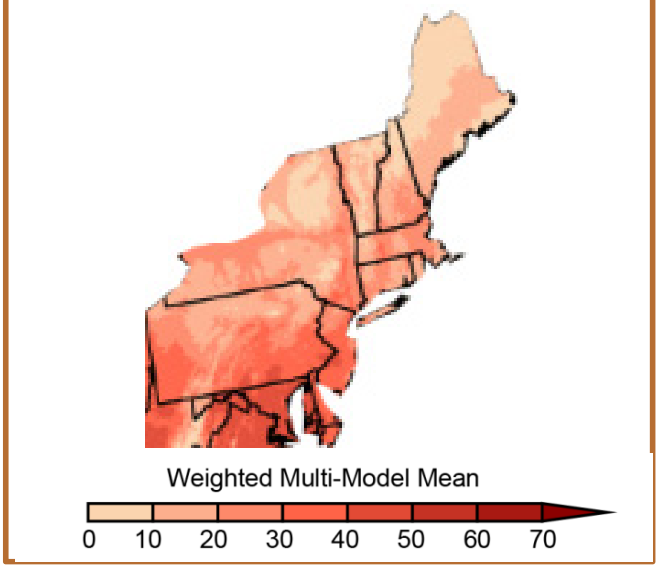
The National Integrated Heat Health Information System (NIHHIS) helps decision makers prepare for and manage heat health risk days, months, and years in the future with integrated information. Initiated in 2015, NIHHIS integrates the capabilities and information of many agencies – NOAA, CDC, FEMA, OSHA, NIOSH, ASPR, EPA, SAMHSA, USDA – to support informed multi-disciplinary decision making in cities and counties across the U.S. to protect vulnerable populations from extreme heat. NIHHIS employs a decision calendar approach to understand local context and information needs.

NWS hazard statistics indicate that heat waves are the deadliest natural hazard. Beyond this, they are the cause of suffering, hospital visits, reduced labor productivity, and other negative health outcomes. Projections from the Climate Science Special Report (2017) suggest that the number of hot days in many Northeastern states will increase by up to 50 additional days by mid-century.

Fatalities by Hazard, 2006–2015



Projected Change in Number of Days Above 90F Mid 21st Century, Higher Scenario (RCP 8.5)



NIHHIS has identified a series of key questions that need to be addressed to reduce heat's health risks (below). These questions are applied at the federal level as well as within each community. The process of creating decision calendars help us answer these questions for each community we work with.

Institutional Capacity & Partnerships

- What institutional partners have you engaged to help define the needs (esp. bridging disciplines: health, env. science, emergency management); is that sustainable and if so, how?

Heat Parameters & Health Outcomes

- What heat parameters (tmax, tmin, heat index, etc) are most important for which specific population and in what geographic conditions?

Data and Forecast Products

- What data and forecast products, indicators, surveillance, and monitoring is needed (at what spatial and temporal resolution & lead times?

Engagement and Communication Strategies

- What communication strategies are most effective both during an event and for long lead time planning (seasonal outlooks)?

Interventions and Effectiveness

- What health interventions are currently being employed in managing heat risk and at what timescales?
- Are these interventions successful?

Each community may arrive at different conclusions to these questions, based on the local decision-making context driven by culture, demographics, climate, and other factors that vary from place to place.

The Decision Calendar Approach

Decision calendars are a framework to organize information about user context in decision-making. They document what needs to be known when, by whom, and with what certainty in order to take actions to reduce heat health risk. Decision calendars support development of climate and health information and services that are useful and usable. Users are the decision-makers [emergency managers, public health officials, urban planners, tourism ministries, athletics officials, chief resilience officers, energy utility managers, etc…] who must take actions to protect at-risk groups from extreme heat.

Making Decision Calendars

Decision calendars may take many forms, but all must document the actions or interventions taken to reduce risk, the decisions made to support those actions, the decision makers, the information needed to support the decisions, and any assumptions built into the process.

At right is one template for a decision calendar, which breaks up the decisions that can be made along an annual cycle, grouping them into four categories of lead time: planning, preparing, responding, and recovering.

Planning (October – March; Out Years)

Annual planning; resource allocations; annual budget; resilience & sustainability studies

Preparing (April-May)

Spring heat season preparedness and messaging for heat season

Responding (June – August)

Weeks to days before event – prepositioning assets & messaging.	Duration of Event – ongoing support, monitoring, communication, rapid response.	Immediately Following – recovery.

Recovering (June – September)

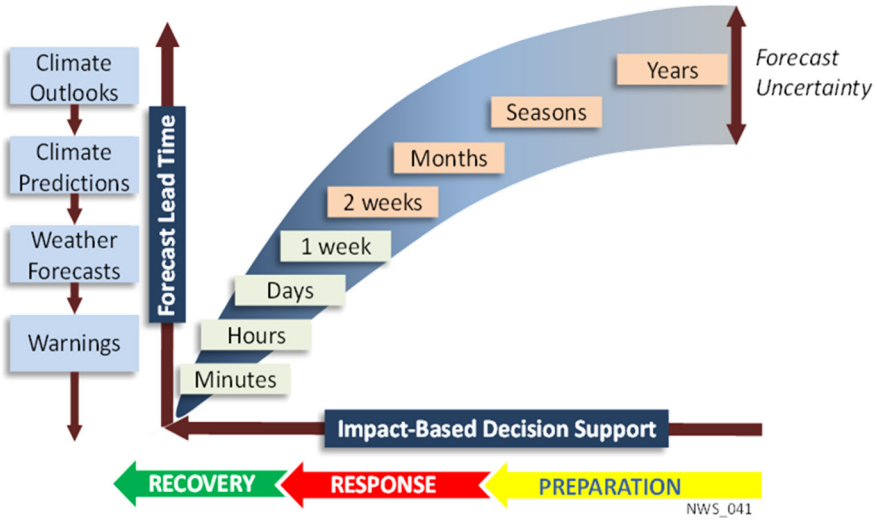
Longer-term recovery during heat season to bounce back to ready status.	Hot wash immediately after heat season.

Decision Calendars Help NOAA, CDC, and other agencies provide integrated information

Integrated Information at all timescales

While many exercises in heat health management focus on a shorter timescale (what happens when a heat wave is imminent), we focus on the climate timescale. We seek to understand how information could be used in heat health planning both over an annual cycle and on longer timescales. By identifying actions which can be taken well in advance of any heat wave or heat season, we can build heat-resilient communities that have worked to manage heat risk in advance, so that they will need to apply fewer resources to managing heat impacts under an active heat wave.

NOAA is striving to produce seamless predictions of weather and climate information for use in decision making.



Climate and health information can be used throughout an annual planning cycle, with certainty increasing over time.

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