

A. THE INDEX AND HEALTH SECURITY

A1. What is the National Health Security Preparedness Index?

The National Health Security Preparedness Index (the Index) is a tool for identifying strengths and gaps in the protections needed to keep people safe and healthy in the face of large-scale public health threats. This release of the Index combines 140 measures from 64 sources, offering a broad view of health security in the United States as a whole, each state, and the District of Columbia.

A2. What is national health security?

Health security is the nation's collective ability to keep its residents safe and healthy in the face of disease outbreaks, natural disasters, and other large-scale emergencies. Threats to U.S. health security are on the rise due to newly emerging infectious diseases, growing antibiotic resistance, globalization in travel and trade, political instability and terrorism, and extreme weather events.

A3. Why do we need to measure health security?

Although much has been accomplished toward strengthening U.S. health security, each natural disaster, disease outbreak, or other crisis illustrates that gaps remain even as new threats emerge. Measuring national health security generates knowledge to (1) inform resource and policy decision making, (2) guide quality improvement for health security activities, (3) enhance collaboration and shared responsibility, and (4) advance the science of measuring health security.

A4. Who developed the Index?

Multiple organizations and entities developed the Index. The initial Index releases in 2013 and 2014 were supported by the U.S. Centers for Disease Control and Prevention (CDC) and developed through a collaborative effort of more than 30 organizations led by the Association of State and Territorial Health Officials (ASTHO), the Oak Ridge Associated Universities (ORAU), the University of Pittsburgh Medical Center, and Johns Hopkins University.

Since 2015, the Robert Wood Johnson Foundation, together with the Index program office at the University of Kentucky, has led the annual, collaborative process to refine the Index and better inform health security.

Index development has been and continues to be a transparent process that includes continuous improvement, stakeholder involvement, and real-world experience. Feedback from many sectors has contributed to the development of the current Index. Learn more about the [Methodology](https://nhspi.org/wp-content/uploads/2018/04/2018-Index-Methodology.pdf) [<https://nhspi.org/wp-content/uploads/2018/04/2018-Index-Methodology.pdf>].

A5. Does the Index provide a complete picture of health security?

The 2018 Index release measures health security from a broad, multi-sectoral perspective using 140 measures from 64 sources. Although the Index has some data and measurement limitations, the Index currently provides the most accurate and complete assessment of health security across the United States.

A6. How does the Index differ from other evaluations of public health and state readiness?

Responsibility for the nation's health security is shared among the many sectors that prepare for, respond to, and recover from health security threats. Drawing data from many sources, the Index provides a broad, multi-sectoral, and multidimensional view of preparedness. It is the first national Index that assesses U.S. health security by collectively measuring the preparedness capabilities in the 50 states and the District of Columbia. The 2018 Index release includes results for five consecutive annual periods dating back to 2013, allowing for valid comparisons over time.

A7. How does the Index help to build a Culture of Health?

Building a Culture of Health in the United States includes preparing to protect everyone from health threats when disasters and other crises occur. The [Robert Wood Johnson Foundation's Action Framework](https://www.cultureofhealth.org/en/taking-action.html) [https://www.cultureofhealth.org/en/taking-action.html] stresses that preparedness and resiliency require strong collaboration across sectors and effective integration across health services and systems. By measuring the contributions of these multiple sectors and systems to health security, the Index suggests opportunities for collaboration and partnership to improve health, well-being, and security at national and state levels.

A8. How can stakeholders provide feedback on the Index?

All stakeholders can have a voice in shaping the future of the Index by:

- Participating in public workgroup meetings, submitting candidate measures, and providing feedback on recommended changes;
- Joining the Index mailing list by sending an email to HealthSecurity@uky.edu to receive updates about the Index and hear about other opportunities to provide feedback; and
- Participating in Index-related presentations and discussions at meetings, conferences, and virtual webinars.

To learn more, visit <https://nhspi.org/get-involved/>.

B. 2018 INDEX RELEASE

B1. What is the most recent Index score for the United States?

The 2018 Index release, which contains data through 2017, calculates U.S. health security as 7.1 on a 10-point scale. This represents a 10.9 percent improvement since the Index began in 2013 and a 2.9 percent improvement from the previous year. A complete summary of [Key Findings](https://nhspi.org/wp-content/uploads/2018/04/2018-Key-Findings.pdf) [https://nhspi.org/wp-content/uploads/2018/04/2018-Key-Findings.pdf] is available for download.

B2. What does this mean about the nation's state of health security?

The 2018 Index release indicates that U.S. health protections are growing stronger over time but at a slow and uneven pace. Gains in health protections are not keeping pace with rising health security threats. Large geographic areas in the Deep South and Mountain West trail the rest of the nation in health security, leaving many low-income populations and rural residents at elevated risk. Vulnerabilities related to health care delivery systems are particularly pronounced across the United States, indicating a need for focused attention.

B3. How does the 2018 Index release compare to previous releases?

The 2018 Index release retains the framework of the previous releases: It includes 6 domains and allows for comparing and tracking improvements over time through the inclusion of comparable annual results from 2017 to the baseline year of 2013.

Each annual Index update provides greater clarity about strengths and gaps, as well as the ability to track improvements and declines in health security over time. This Index release assesses 140 total measures across 19 subdomains. Five item measures are new to the 2018 release, with data added for all five years as available. Four measures were removed and do not appear in the 2018 release as data were no longer available. Details about the [2018 release changes](https://nhspi.org/wp-content/uploads/2018/04/2018_Key_Changes.pdf) are available at [https://nhspi.org/wp-content/uploads/2018/04/2018_Key_Changes.pdf].

C. UNDERSTANDING STATE SCORES

C1. What does an Index score of 10 mean?

An Index score of 10 would mean the state has fully achieved all capabilities included in the Index. To date, no state has reached this level of health security. While states may strive for improvement in Index scores because the Index reflects important components of health security, each state's strengths and gaps are unique and influenced by local socioeconomic, demographic, and environmental circumstances. For this reason, individual states and communities should develop tailored approaches to improving their health security. (See [Using the Index for Health Security Planning and Priority-Setting](https://nhspi.org/wp-content/uploads/2018/04/Health-Security-Planning.pdf) [<https://nhspi.org/wp-content/uploads/2018/04/Health-Security-Planning.pdf>])

C2. Why are Index results not ranked by state?

Rankings can be misleading because they obscure the magnitude and significance of numeric Index results. When Index results are clustered or have compressed distributions, two states can have very similar Index values but have very different rankings. When comparing results over time, small changes in Index values can cause large changes in rank that may have little practical or statistical significance. For clarity and transparency, the Index reports actual numeric results rather than rankings. (See question D5 for more information on calculations of Index values.)

C3. Why have the scores for previous years changed?

The methodology used to calculate the 2018 Index release was retroactively applied to previous years to obtain results that allow for comparison over time. Full details about Index methodology are available in the 2018 release [Methodology](https://nhspi.org/wp-content/uploads/2018/04/2018-Index-Methodology.pdf) [<https://nhspi.org/wp-content/uploads/2018/04/2018-Index-Methodology.pdf>]. Except for the addition and removal of a small number of measures as discussed in B3, no major methodological changes were made between the 2017 and 2018 releases.

C4. Are rural states at a measurement disadvantage?

No. Measures, where applicable, account for population size and do not favor populous areas. Index results are meant to reflect realities in the state, including both strengths and gaps, factors the community can easily influence and improve, and factors that are more difficult to address and change. Collectively, the measures should accurately reflect the state's health security.

C5. Are measures for which all states achieve the target value included in the Index?

A total of 19 measures are included in the Index as Foundational Capabilities, representing capabilities that are uniformly available in every state and firmly ingrained in practice. (See [2018 Measures List](https://nhspi.org/wp-content/uploads/2018/04/2018-List-of-Measures.pdf) [<https://nhspi.org/wp-content/uploads/2018/04/2018-List-of-Measures.pdf>])

C6. Are Puerto Rico, tribes, and U.S. territories included in the Index?

No. Previous and current versions of the Index are state-centric and do not include Puerto Rico, tribes, or U.S. territories.

D. METHODOLOGY AND DATA

Full details of the [2018 Index release Methodology](https://nhspi.org/wp-content/uploads/2018/04/2018-Index-Methodology.pdf) are available at <https://nhspi.org/wp-content/uploads/2018/04/2018-Index-Methodology.pdf>.

D1. Where did the data in the Index come from?

The Index is built on measures from existing data sources; no primary data collection is used in constructing the Index. Hundreds of data sources were examined to produce the 2018 release. The 140 measures selected are drawn from 64 sources. The Index uses the most recent data publicly available at the time of data request.

D2. Why are some data 2- to 3-years-old (or older) in the latest Index?

The Index uses existing data to avoid placing additional data-collection burdens on practitioners. There typically is a time lag between data collection by primary sources and publication. Sometimes this time lag can span two or three years. Both the frequency of data updating and data access are considered in measure selection and retention for each release.

D3. Is the Index a simple roll-up of PHEP and HPP performance measures?

No. The Index is much broader than the Public Health Emergency Preparedness (PHEP) Program and Hospital Preparedness Program (HPP) performance measures. The 2018 Index release includes 140 measures from 64 sources.

D4. Why calculate Index values?

Indices are widely used to extract and summarize meaningful information from multiple, often imperfect, data sources and measures. Well-constructed indices provide a holistic or global characterization of a phenomenon and allow users to see broad patterns and trends that are impossible to see using individual measures. Indices are particularly advantageous when individual measures have limitations that make them inadequate or problematic for revealing meaningful patterns and trends on their own. In the case of the National Health Security Preparedness Index, Index values provide a numeric representation of the broad health security constructs and capabilities reflected in Index domains and subdomains. Individual measures are imperfect representations of these constructs; however, the subdomain, domain, and overall Index values provide reliable and meaningful characterizations of the underlying (or *latent*) constructs of health security.

D5. Are the measures weighted?

Each measure is assigned a weight based on expert panel ratings of how important the measure is to the capabilities represented in each Index domain and subdomain. These weights are used to combine individual

measures into summary measures at the subdomain, domain, and overall level. This methodology ensures that more important measures receive more weight in the Index and prevents measures from arbitrarily receiving more weight based purely on the number of measures included in each domain and subdomain. For more details, visit <https://nhspi.org/wp-content/uploads/2018/04/2018-Index-Methodology.pdf>.

D6. How were the measures and Index structure selected?

Measures were selected by stakeholders involved in prior Index releases and through annual public calls for new measures beginning in 2015. All measures were selected with guidance from the National Quality Forum's measure selection criteria, which states that measures must be important to measure and report, include scientifically acceptable measure properties, and be both usable and feasible. Details on the National Quality Forum's measure selection criteria are available at www.qualityforum.org.

The Index structure remains the same as in the 2013 Index release, which was developed by a broad collection of preparedness stakeholders. History and rationale for the Index design are available at <https://nhspi.org/wp-content/uploads/2018/04/2018-Index-Methodology.pdf>.

D7. Why were some measures from the previous Index years dropped from the 2018 Index release and new measures added?

Each year Index measures are assessed for reliability and validity, and new measures are considered in order to enhance the Index. Four measures included in the 2017 Index release were dropped from the 2018 Index release due to a lack of updated data. Five new measures were added to the 2018 Index release following the 2017 Call for Measures, public comment period, and workgroup and National Advisory Committee discussions.

D8. How is the Index validated?

The Index began with face validation through stakeholder input and extensive dialogue among health security experts. The 2018 release of the Index has been validated for construct validity to ensure that component measures are reasonable representations of the health security constructs articulated in the six domains of the Index structure.

D9. How accurate are the Index values?

Each measure included in the Index contains some amount of measurement error, and some measures also contain sampling error due to data collection procedures. The limitations for each Index measure are noted in the [2018 List of Measures](https://nhspi.org/wp-content/uploads/2018/04/2018-List-of-Measures.pdf) [<https://nhspi.org/wp-content/uploads/2018/04/2018-List-of-Measures.pdf>].

To account for measurement and sampling error, the 2018 release includes **99 percent confidence intervals** for each national summary measure to reflect the level of measurement certainty surrounding these national estimates. This confidence interval shows the range of scores in which we are 99 percent certain that the true score lies. The size of this confidence interval for each domain depends upon the number of individual measures used in constructing each summary measure, and the degree of variability in each individual measure.

D10. How will the Index model be improved over time?

Stakeholders from the many diverse sectors influencing health security (such as private sector and community-based organizations) are regularly engaged to continue strengthening Index content and structure. Ongoing sensitivity analyses and model validation work will also continue to strengthen the Index.

E. USING THE NATIONAL HEALTH SECURITY PREPAREDNESS INDEX

E1. How should the Index be used?

The Index aims to provide an accurate portrayal of the nation's health security using relevant, actionable information to guide efforts to achieve a higher level of health security. The Index should be used to inform resource and policy decisions, guide quality improvement, enhance collaboration and strengthen shared responsibility, and advance the science of measuring health security. Learn more about how to use the Index at <https://nhspi.org/tools-resources>.

E2. Who is accountable for Index results?

The Index conceptualizes health security as a responsibility of all sectors and jurisdictions that work together to prepare for, respond to, and recover from health security threats. No single agency or organization has the ability to support all of the protections necessary to keep people safe and healthy in the face of health emergencies; therefore, the Index reflects health security as a responsibility shared by many different stakeholders in government and society. Improving Index results requires organizations and sectors to work together.

E3. Can the Index be used for trend analysis of national and state results (year-to-year comparisons)?

Yes, the Index allows for trend analysis. Measure changes implemented as part of the 2018 release are applied to all previous years, allowing for trend analysis over a five-year period (2013-2017).

E4. What does the Index mean for local jurisdictions?

The Index is an important summary of state-level data that looks at overall progress toward national health security. While variability within a state exists from community to community, the domains, subdomains, and measures included in the Index also are important for local jurisdictions. The Index can be a useful tool to explore variation across domains within a state, discuss where local jurisdictions likely contribute to state results, discuss interrelationships among sectors, enhance understanding of the types of efforts needed to advance health security, and generate ideas on how to ensure the highest level of preparedness is achieved through local and state partnerships and collaboration.

E5. How can policy makers use the Index to inform resource and policy decisions?

The Index is a tool to help policymakers to identify health security gaps and strengths. In addition, the Index can help policymakers identify how policies and resource allocations influence health security. For more on using the Index for policy development and resource allocation, see the [Innovator's Guide](https://nhspi.org/wp-content/uploads/2017/05/NHSPi-Innovators-Guide_17May2017.pdf) [https://nhspi.org/wp-content/uploads/2017/05/NHSPi-Innovators-Guide_17May2017.pdf].

E6. How can practitioners use the Index for quality improvement?

The Index supports quality improvement efforts and promotes shared responsibility for health security at the state and national levels. Practitioners can use the Index to identify gaps and strengths at the state level. This knowledge can inform strategic planning, program development, and grant applications. For more on using the

Index for quality improvement, see [Using the Index for Health Security Planning and Priority-Setting](https://nhspi.org/wp-content/uploads/2018/04/Health-Security-Planning.pdf) [<https://nhspi.org/wp-content/uploads/2018/04/Health-Security-Planning.pdf>]

E7. How can researchers and academics use the Index to advance the science of measuring health security?

The Index serves as a call for filling gaps in measurement and improving measures of health security. Researchers and academics can use the Index to identify additional measures and to examine how Index scores predict response and performance during an event. Index scores can also be used to identify best practices and solutions for health security problems. For more on using the Index for research, see the [Innovator's Guide](https://nhspi.org/wp-content/uploads/2017/05/NHSPI-Innovators-Guide_17May2017.pdf) [https://nhspi.org/wp-content/uploads/2017/05/NHSPI-Innovators-Guide_17May2017.pdf].

E8. How can other stakeholders use the Index?

Data in the 2018 Index release is meant to spark dialogue and collaborations with organizations beyond the traditional health security sectors of public health and emergency management. Other stakeholders, such as community organizations and businesses, can use the Index to identify opportunities for improvement and build coalitions to make meaningful change. Use the [Innovators Guide](https://nhspi.org/wp-content/uploads/2017/05/NHSPI-Innovators-Guide_17May2017.pdf) to explore the Index and identify how stakeholder organizations can support and improve health security [https://nhspi.org/wp-content/uploads/2017/05/NHSPI-Innovators-Guide_17May2017.pdf].

E9. How can the Index be framed and communicated?

The Index is designed to create opportunities for conversations about health security and educate the public, policymakers, and others about the importance of health security. The Index can be used to draw attention to health security and to create support for policy changes and resource allocations that improve and maintain health security levels. For ideas about how to communicate strategically about Index results, see [Using the Index to Raise Awareness and Support for Health Security](https://nhspi.org/wp-content/uploads/2018/04/Raise-Awareness-Support.pdf) [<https://nhspi.org/wp-content/uploads/2018/04/Raise-Awareness-Support.pdf>]

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