

2018 Index Release

Key Changes from the April 2017 Release

The purpose of this document is to delineate the key differences between the 2018 Release of the National Health Security Preparedness Index and the previous release in April 2017. While we discuss some aspects of the Index methodology here, one should refer to the [2018 Release Index Methodology](#) for a more detailed and comprehensive discussion of the Index's structure, composition, and methodology.

The National Health Security Preparedness Index tracks the nation's progress in preparing for, responding to, and recovering from disasters and other large-scale emergencies that pose risks to health and well-being in the United States. Because health security is a responsibility shared by many different stakeholders in government and society, the Index combines measures from multiple sources and perspectives to offer a broad view of the health protections in place for the nation as a whole and for each U.S. state.

Each state and the District of Columbia (DC) has an overall Index score that, theoretically, can range from 0 to 10. This score is determined by how well a state performs on 140 factors or item measures. An example of an item measure is the number of physicians and surgeons per 100,000 people in the state. Some measures vary significantly across the states and DC, with some scoring high and others low. A select number of measures, however, do not vary across the states—that is, all states score uniformly high or satisfy the requirements of the measure. An example is the CDC's Behavioral Risk Factor Surveillance System (BRFSS), a critically important annual survey of a state's population to estimate individual health behaviors, practices, and outcomes. Since all 50 states and the District of Columbia participate in the BRFSS, this item measure—along with 18 others—has achieved the status of a foundational measure. We distinguish between variable item measures and foundational measures, which are by definition constants, because we treat them differently when calculating Index scores. All item measures are grouped into categories such as health security surveillance, healthcare delivery, and other areas that we refer to as domains and subdomains.

In total, the 2018 Index release has 140 measures derived from more than 60 different sources. These measures are organized into six domains and 19 subdomains. Index values are calculated for five years and 50 states and the District of Columbia, for each subdomain, domain, and an overall Index score.

KEY CHANGES FROM 2017 RELEASE

Total Index Measures:

The total number of Index measures increased from 139 in 2017 to 140 in 2018, including both Item measures and Foundational measures:

	2017 Release	2018 Release
Item measures	120	121
Foundational measures	19	19
Total measures	139	140

Key Changes to Index Measures from 2017 Release:

The changed measures are listed on the following pages, grouped by the [Index Domains and Subdomains](#) including:

- Measures in three subdomains in the Incident & Information Management domain have been reorganized into two subdomains (Incident Management and Information Management subdomains) due to reassignment and retirement of five measures (M338, M341, M342, M345, and M340).
- Two subdomains (Physical Environment and Infrastructure and Workforce Resiliency Subdomains) are NEW in the 2018 release in the Environmental and Occupational Health domain, and which were not included in the 2017 release.
- Five item measures (M922, M923, M925, M928, and M929) are NEW in the 2018 release and were not included in the 2017 release; data were added for all five years 2013 to 2017 as available.
- One subdomain (Non-Pharmaceutical Intervention subdomain) that was included in the 2017 release was REMOVED from the 2018 release.
- Three existing measures (M530, M531, and M705) were moved in the 2018 release into the NEW Workforce Resiliency subdomain from the removed Non-Pharmaceutical Intervention subdomain. One existing measure (M334) was moved into the NEW Physical Environment and Infrastructure subdomain from Incident Management subdomain.
- Four measures (M197, M275_UST, M172, and M340) that were included in the 2017 release were REMOVED from the 2018 release because updated data are no longer being collected.

Methodology:

All methodological changes implemented for the 2016 and 2017 Index continue in the 2018 Index, and are described in detail in the [2018 Release Index Methodology](#) including:

- Normalization of each measure to a standard 10-point scale;
- Weighting of each measure based on expert panel ratings;
- Imputation for missing values;
- Longitudinal comparisons for measures for five years of data (increased from four years in 2017 Index); and
- Confidence Intervals for national summary measures.

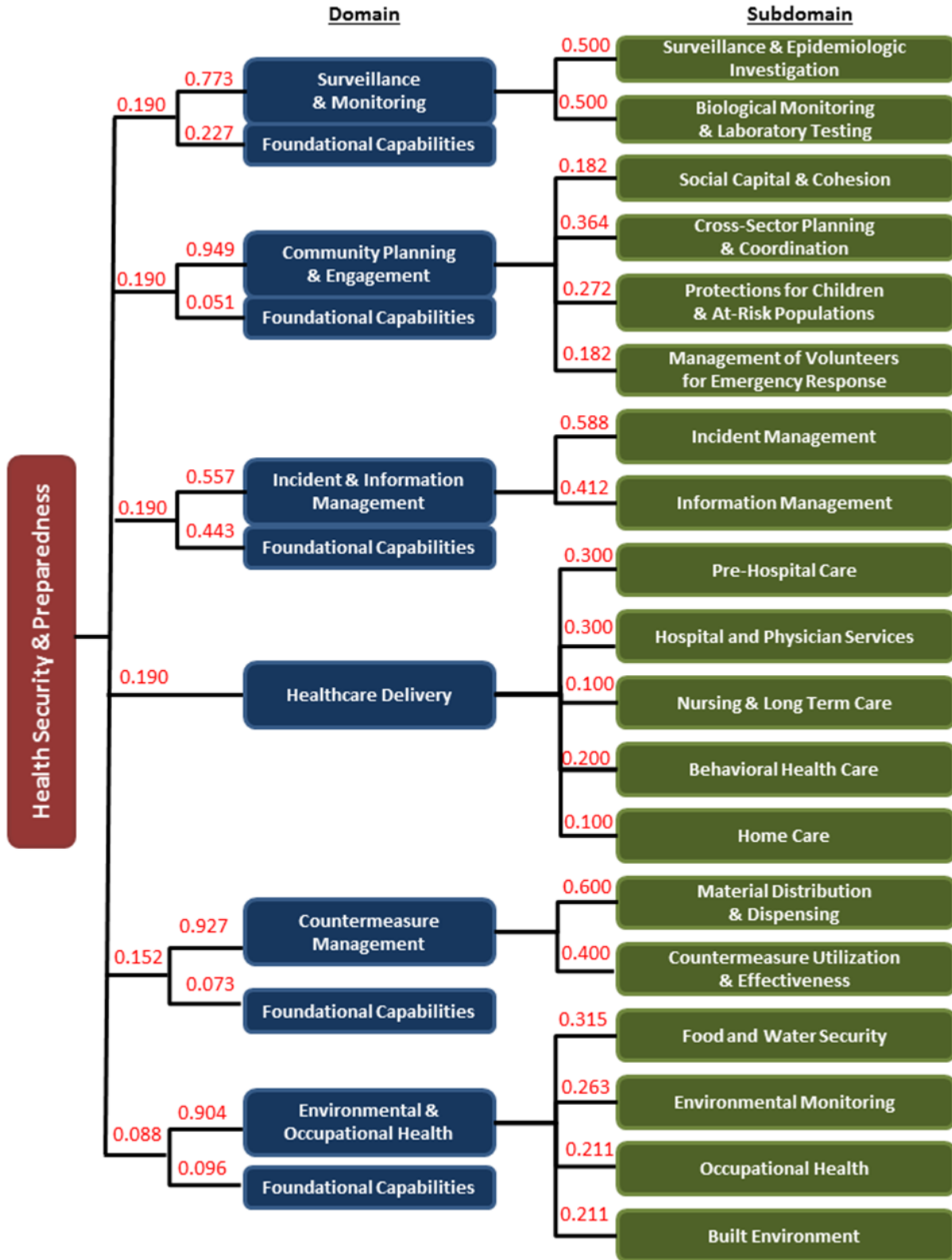
Table 2. Measure Changes from 2017 Release

Domain 2: Community Planning & Engagement Coordination	
Subdomain 2.4: Social Capital & Cohesion	
M172 – Percent of state residents doing favors for neighbors	Removed, updated data are no longer collected
Domain 3: Incident & Information Management	
Subdomain 3.1: Incident Management	
M334 – State has a climate change adaptation plan	Moved into new 6.3 Physical Environment & Infrastructure Subdomain
M701–Average number of minutes for state health department staff with incident management lead roles to report for immediate emergency response duty	Moved from 3.2 Information Management Subdomain
Subdomain 3.3: Legal & Administrative	
M340 – Number of sectors required by state to report foodborne illnesses, of six sectors including clinical laboratories, physicians, hospitals, nurses, physician assistants, and other health providers?	Removed, updated data are no longer collected
Domain 5: Countermeasure Management	
Subdomain 5.3: Non-Pharmaceutical Intervention	
M530 – Percent of employed population in the state with some type of paid time off (PTO) benefit	Moved into new 6.4 Workforce Resiliency Subdomain
M531 – Percent of employed population in the state engaging in some work from home by telecommuting	Moved into new 6.4 Workforce Resiliency Subdomain
M705 – Percent of employed population in the state who work from home	Moved into new 6.4 Workforce Resiliency Subdomain
Domain 6: Environmental & Occupational Health	
Subdomain 6.1: Food & Water Security	
M925 – Percent of population in the state whose community water systems meet all applicable non health-based standards	New Measure for 2018
M275_UST – State public health laboratory provides or assures testing for water in underground storage tanks	Removed, updated data are no longer collected

Subdomain 6.2: Environmental Monitoring	
M197 – State public health laboratory provides or assures testing for radiologic agents in environmental samples	Removed, updated data are no longer collected
Subdomain 6.3: Physical Environment and Infrastructure	
New Subdomain for 2018	
M922—Transportation Structural Integrity, percent of bridges that are in good or fair condition (not poor)	New Measure for 2018
M923—Surface Water Control Structural Integrity, percent of High-Hazard Potential Dams that are not in poor or unsatisfactory condition	New Measure for 2018
M928— Housing Mitigation for Flood Hazards, population living in a community participating in the FEMA Community Rating System (communities with a CRS of 1 through 9) as a percent of all communities participating in the National Flood Insurance Program	New Measure for 2018
M929—Flood Insurance Coverage, FEMA National Flood Insurance Policies (NFIP) in-force as a percentage of total housing units located in floodplains	New Measure for 2018
M334 – State has a climate change adaptation plan	Moved from 3.1 Incident Management Subdomain
Subdomain 6.4: Workforce Resiliency	
New Subdomain for 2018	
M530 – Percent of employed population in the state with some type of paid time off (PTO) benefit	Moved from 5.3 Non-Pharmaceutical Intervention Subdomain
M531 – Percent of employed population in the state engaging in some work from home by telecommuting	Moved from 5.3 Non-Pharmaceutical Intervention Subdomain
M705 – Percent of employed population in the state who work from home	Moved from 5.3 Non-Pharmaceutical Intervention Subdomain

UPDATES TO THE INDEX WEIGHTING

We used an expert panel methodology to derive weights for each of the five item measures listed in the table above that are identified as new measures in the 2018 Index release. Adopting the same approach that was used for the 2016 and 2017 Index releases, an online multi-stage Delphi process was used (refer to the [2018 Release Index Methodology](#) for details). A separate expert panel was convened for each domain included in the Index model, with each panel comprised of subject matter experts who were identified through a nomination process and reviews of the preparedness scientific and professional literature. In total, 285 experts were identified and invited to participate in the item measure assessment, with 148 experts participating (52 %). The iterative Delphi assessment of individual measures was conducted from December 5, 2017 to January 19, 2018. The final weights used in Index calculations are shown in the figure on the next page.



NOTE: numbers indicate Delphi expert panel weights

ACKNOWLEDGEMENTS

The National Health Security Preparedness Index is a program of the Robert Wood Johnson Foundation. The Program Office for the Index is based at the University of Kentucky and staffed through a collaboration between the Center for Public Health Systems and Services Research, College of Public Health and the Center for Business and Economic Research, Gatton College of Business and Economics.

Report Authors:

Glen P. Mays, PhD, MPH; Michael T. Childress, MA; Pierre Martin Dominique Zephyr, MS; Anna Goodman Hoover, PhD, MA; Ann Kelly, MHA; Nurlan Kussainov, MPP.

Recommended Citation:

Center for Public Health Systems and Services Research. Methodology for the 2018 Release, National Health Security Preparedness Index. Lexington, KY: University of Kentucky; April 2018.

Contributors at the Robert Wood Johnson Foundation:

Lori K. Grubstein, MPH, MSW, MPA, Program Officer
Alonzo Plough, PhD, MA, MPH, Vice President, Research-Evaluation-Learning and Chief Science Officer

National Advisory Committee Members, 2017-2018:

Thomas V. Inglesby, MD (Chair), Johns Hopkins University Center for Health Security
Robert Burhans, Health Emergency Management Consultant
Anita Chandra, DrPH, RAND Corporation
Mark DeCoursey, U.S. Chamber of Commerce Foundation
Eric Holdeman, Emergency Management Consultant
Harvey E. Johnson, Jr., American Red Cross
Ana-Marie Jones, Interpro
Eric Klinenberg, PhD, New York University
Dara Lieberman, MPP, Trust for America's Health
Suzet McKinney, DrPH, MPH, Illinois Medical District Commission
Stephen Redd, MD, CDC Office of Public Health Preparedness & Response
John Wiesman, DrPH, MPH, Washington State Secretary of Health

Program Consultants:

Christopher R. Bollinger, PhD, University of Kentucky; Christopher Nelson, PhD, RAND Corporation

Index Workgroups:

This work would not have been possible without the input and feedback provided by voluntary members of the Index Analytic Methodology and Model Design Workgroup, and the Stakeholder Engagement and Communication Workgroup.



For More Information:

National Health Security Preparedness Index Program Office
Center for Public Health Systems and Services Research
University of Kentucky
111 Washington Avenue, Suite 201, Lexington, KY 40536
Telephone: 859-257-2912
Email: HealthSecurity@uky.edu
Web: www.nhspi.org