Measures List for 2019 Release

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The 2019 release of the National Health Security Preparedness Index includes 129 measures of capabilities that research and experience have shown to be important in protecting people from the health consequences of large-scale hazards and emergencies. Responsibility for achieving these capabilities spans across both public and private sector agencies and organizations, from federal, state, and local public health and emergency management to health care providers, businesses, and volunteer organizations across the U.S. Data included in the Index is drawn from more than 60 different sources. This document describes each measure in detail, providing key information about data source(s) and measurement limitations that should be considered when using the Index to understand and address gaps in health security capabilities.

2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
Domain 1: Health Security Surveillance	
Subdomain 1.1: Health Surveillance & Epidemiological Investigation	
M17* - State health department participates in the Behavioral Risk Factor Surveillance System (BRFSS)	**2012—2015**
Source: Centers for Disease Control and Prevention (CDC), Behavioral Risk Factor Surveillance System Survey Questionnaire (BRFSS). Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Survey data analyzed by authors. Limitations: The state's extensiveness of participation in the BRFSS based on sampling and instrumentation is not measured, and varies widely across states.	
M18 - Number of epidemiologists per 100,000 population in the state, by quintile	**2012—2017**
Source: Bureau of Labor Statistics (BLS), Occupational Employment Statistics (OES) and ASTHO Profile of State and Territorial Public Health--2012 and 2016 Epidemiologists by Jurisdiction Limitations: The measure may overestimate the number of epidemiologists who are available to prepare for and respond to emergencies, because it counts all personnel regardless of the occupational settings in which they practice and the job responsibilities they perform. BLS and other national data sources on health provider supply have been shown to undercount certain types of professionals, and may differ considerably from the estimates available from state licensing boards. Since the measurement undercounting in the BLS data are expected to be relatively consistent across states, this is unlikely to cause significant bias in the Index state and national results. BLS produces occupational estimates by surveying a sample of non-farm establishments. As such, estimates produced through the OES program are subject to sampling error.	
M19* - State health department participates in the Epidemic Information Exchange (Epi-X) System	**2013**
Source: Centers for Disease Control and Prevention (CDC), The Epidemic Information Exchange (Epi-X) Program Limitations: The measure does not evaluate the quality or comprehensiveness of state participation in the system.	
M20* - State health department participates in the National Electronic Disease Surveillance System (NEDSS)	**2013—2015**
Source: Centers for Disease Control and Prevention (CDC), Division of Health Informatics and Surveillance (DHIS), National Electronic Disease Surveillance System (NEDSS) Limitations: The measure does not evaluate the quality or comprehensiveness of state participation in the system.	
M22 - State health department has an electronic syndromic surveillance system that can report and exchange information	**2012 & 2016**
Source: Association of State and Territorial Health Officials (ASTHO), ASTHO Profile of State Public Health: Volume Three	

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Limitations: Data are self-reported by state public health agency personnel and may reflect differences in awareness, perspective, and interpretation among respondents. Nevada did not complete the survey used as the original data source but they subsequently provided information for this measure.	
M217 - State public health laboratory has implemented the laboratory information management system (LIMS) to exchange laboratory information and results electronically with hospitals, clinical labs, state epidemiology units, and federal agencies	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS)	
Limitations: Data are self-reported by public health laboratory representatives and may reflect differences in awareness, perspective and interpretation among respondents.	
M220 - State has legal requirement for nongovernmental laboratories (e.g. clinical, hospital-based) in the state to send clinical isolates or specimens associated with reportable foodborne diseases to the state public health laboratory	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS)	
Limitations: Data are self-reported by public health laboratory representatives and may reflect differences in awareness, perspective, and interpretation among respondents. Selected responses from the 2016 survey have been corrected for North Carolina and therefore no longer correspond to the originally published survey results.	
M256* - State public health laboratory participates in either of the following federal surveillance programs: Foodborne Diseases Active Surveillance Network (FoodNet) or National Molecular Subtyping Network for Foodborne Disease Surveillance (PulseNet)	**2012 & 2014**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS)	
Limitations: The measure does not evaluate the quality or comprehensiveness of participation in the surveillance networks.	
M23 - Percent of foodborne illness outbreaks reported to CDC by state and local public health departments for which a causative infectious agent is confirmed	**2012—2017**
Source: Centers for Disease Control and Prevention (CDC), National Outbreak Reporting System (NORS)	
Limitations: The measure does not evaluate the quality or comprehensiveness of the state's reporting of foodborne illness outbreaks.	
M289* - State health department participates in a broad prevention collaborative addressing health care-associated infections (HAIs)	**2013**
Source: Centers for Disease Control and Prevention (CDC), National Healthcare Safety Network (NHSN), Prevention Status Reports	
Limitations: The measure does not evaluate the quality, comprehensiveness, or effectiveness of HAI prevention collaboratives.	
M290 - State has a public health veterinarian	**2014 & 2015, 2017—2019**
Source: National Association of State Public Health Veterinarians (NASPHV), Designated and Acting State Public Health Veterinarians	

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Limitations: The measure does not evaluate the quality or comprehensiveness of the veterinarian's integration into an animal response plan or coordination with other animal-related resources, such as a board of animal health, particularly in an emergency response situation.	
M265 - State uses an Electronic Death Registration System (EDRS)	**2014—2018**
Source: National Association for Public Health Statistics and Information Systems (NAPHSIS), Electronic Death Registration Systems by Jurisdiction (State) Limitations: The measure does not evaluate the quality or comprehensiveness of the state's death registration system, or indicate other redundant systems that might be used if the EDRS is not available such as in the event of cyber-attacks and power outages.	
M801* - State public health laboratory participates in the Centers for Disease Control and Prevention (CDC) Influenza surveillance program, and/or the World Health Organization (WHO) Influenza Surveillance Network	**2012 & 2014**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: The measure does not evaluate the quality or comprehensiveness of participation in the surveillance networks.	
Domain 1: Health Security Surveillance	
Subdomain 1.2: Biological Monitoring & Laboratory Testing	
M1* - Public Health Emergency Preparedness (PHEP) Cooperative Agreement-funded Laboratory Response Network chemical (LRN-C) laboratories collect, package, and ship samples properly during an LRN-C exercise	**2011—2013**
Source: Centers for Disease Control and Prevention (CDC), Office of Public Health Preparedness and Response (OPHPR), National Snapshot of Public Health Preparedness Limitations: The measure is based on an exercise that includes only simulated samples, excluding real-life scenarios such as mislabeled specimens or specimens arriving at the laboratory at different times.	
M1314 - State public health chemical OR radiological terrorism/threat laboratory is accredited or certified by the College of American Pathologists (CAP) or Clinical Laboratory Improvement Amendments (CLIA)	**2013—2018**
Source: Association of Public Health Laboratories (APHL), All-Hazards Laboratory Preparedness Survey Limitations: Certification may be based on simulated samples, since actual chemical samples are lacking. Selected responses from the 2018 survey have been corrected for Colorado and therefore no longer correspond to the originally published survey results.	
M208 - State public health laboratory has a permit for the importation and transportation of materials, organisms, and vectors controlled by USDA/APHIS (U.S. Department of Agriculture/ Animal and Plant Health Inspection Service)	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: Data are self-reported by public health laboratory representatives and may reflect differences in awareness, perspective and interpretation among respondents.	

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M8 - State public health laboratory has a plan for a six to eight week surge in testing capacity to respond to an outbreak or other public health event, with enough staffing capacity to work five 12-hour days for six to eight weeks in response to an infectious disease outbreak, such as novel influenza A (H1N1)	**2013—2018**
Source: Association of Public Health Laboratories (APHL), All-Hazards Laboratory Preparedness Survey Limitations: The measure does not evaluate the quality or comprehensiveness of the plan, or the frequency of the plan being used or tested.	
M9 - State public health laboratory has a continuity of operations plan consistent with National Incident Management System (NIMS) guidelines	**2013—2018**
Source: Association of Public Health Laboratories (APHL), All-Hazards Laboratory Preparedness Survey Limitations: The measure does not evaluate the quality or comprehensiveness of the plan, or the frequency of the plan being used or tested.	
M11 - State public health laboratory has a plan to receive specimens from sentinel clinical laboratories during nonbusiness hours	**2013—2018**
Source: Association of Public Health Laboratories (APHL), All-Hazards Laboratory Preparedness Survey Limitations: The measure does not evaluate the quality or comprehensiveness of the plan, or the frequency of the plan being used or tested.	
M12 - State public health laboratory has the capacity in place to assure the timely transportation (pick-up and delivery) of samples 24/7/365 days to the appropriate public health Laboratory Response Network (LRN) reference laboratory	**2013—2018**
Source: Association of Public Health Laboratories (APHL), All-Hazards Laboratory Preparedness Survey Limitations: The measure does not evaluate the timeliness of the sample transport, or the whether the transport is available for all sentinel laboratories in the state.	
M211 - Percent of 10 tests for infectious diseases that the state public health laboratory provides or assures, including the study of the characteristics of a disease or organism in blood tests for arbovirus, hepatitis C, Legionella, measles, mumps, Neisseria meningitides serotyping, Plasmodium identification, Salmonella serotyping, Shigella serotyping, and Varicella	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States	

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that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/). Inclusion of this measure ensures that the Index is consistent with national expert opinion and federal recommendations concerning comprehensive public health laboratory testing capabilities. However, the measure does not assess the quality of the testing, the timeliness of results reporting to enable responses to public health threats, nor whether sufficient capacity exists to test the volume of samples required during a health security event.

M216 - Percent of 15 tests for infectious diseases that the state public health laboratory provides or assures including: antimicrobial susceptibility testing confirmation for vancomycin resistant Staphylococcus aureus, Anaplasmosis (Anaplasma phagocytophilum), Babesiosis (Babesia sp.), botulinum toxin—mouse toxicity assay, Dengue Fever, Hantavirus serology, identification of unusual bacterial isolates, identification of fungal isolates, identification of parasites, Klebsiella pneumoniae Carbapenemase (blaKPC) by PCR, Legionella by culture or PCR, malaria by PCR, norovirus by PCR, Powassan virus, rabies — **2012, 2014, & 2016**

Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS)
Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/). Inclusion of this measure ensures that the Index is consistent with national expert opinion and federal recommendations concerning comprehensive public health laboratory testing capabilities. However, the measure does not assess the quality of the testing, the timeliness of results reporting to enable responses to public health threats, nor whether sufficient capacity exists to test the volume of samples required during a health security event. Selected responses from the 2016 survey have been corrected for North Carolina and therefore no longer correspond to the originally published survey results.

M2 - Percent of Laboratory Response Network biological (LRN-B) proficiency tests successfully passed by Public Health Emergency Preparedness (PHEP) Cooperative Agreement-funded laboratories — **2011—2016**

Source: Centers for Disease Control and Prevention (CDC), Office of Public Health Preparedness and Response (OPHPR), National Snapshot of Public Health Preparedness
Limitations: Laboratories may not undergo proficiency testing for all assay capabilities.

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M3 - Percent of pulsed field gel electrophoresis (PFGE) subtyping data results for E. coli submitted to the CDC PulseNet national database within four working days of receiving samples from clinical laboratories	**2011—2016**
Source: Centers for Disease Control and Prevention (CDC), Office of Public Health Preparedness and Response (OPHPR), National Snapshot of Public Health Preparedness Limitations: The measure does not encompass time elapsed for specimen transport and identification, and is limited to foodborne agents that have PFGE subtyping.	
M5 - Percent of chemical agents correctly identified and quantified from unknown samples during unannounced proficiency testing during the state's Laboratory Response Network (LRN) Emergency Response Pop Proficiency Test (PopPT) Exercise	**2013—2016**
Source: Centers for Disease Control and Prevention (CDC), Office of Public Health Preparedness and Response (OPHPR), National Snapshot of Public Health Preparedness Limitations: The measure does not consider the public health laboratory's ability to process a large number of samples.	
M7 - Number of additional chemical agent detection methods—beyond the core methods—demonstrated by Laboratory Response Network chemical (LRN-C) Level 1 or 2 laboratories in the state	**2011—2016**
Source: Centers for Disease Control and Prevention (CDC), Office of Public Health Preparedness and Response (OPHPR), National Snapshot of Public Health Preparedness Limitations: The measure does not consider all methods that the laboratory is capable of testing.	
M286 - Number of chemical threat and multi-hazards preparedness exercises or drills the state public health laboratory conducts or participates in annually	**2013—2018**
Source: Association of Public Health Laboratories (APHL), All-Hazards Laboratory Preparedness Survey Limitations: Data are self-reported by public health laboratory representatives and may reflect differences in awareness, perspective, and interpretation among respondents.	
M287 - Percent of pulsed field gel electrophoresis (PFGE) sub-typing data results for Listeria monocytogenes submitted by state and local public health laboratories to the CDC PulseNet national database within four working days of receiving samples from clinical laboratories	**2011—2016**
Source: Centers for Disease Control and Prevention (CDC), Office of Public Health Preparedness and Response (OPHPR), National Snapshot of Public Health Preparedness Limitations: The measure does not consider the volume of samples processed or quality of PFGE results, nor encompass time elapsed for specimen transport and identification.	
M288 - Number of core chemical agent detection methods demonstrated by Level 1 or 2 LRN-C laboratories in the state	**2011—2016**
Source: Centers for Disease Control and Prevention (CDC), Office of Public Health Preparedness and Response (OPHPR), National Snapshot of Public Health Preparedness Limitations: The measure does not consider compliance with the standards set by the Clinical Laboratory Improvement Amendments (CLIA) and the College of American Pathologists (CAP) accreditation program, and whether proficiency is achieved annually for the methods reported. Selected responses from the	

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original data source have been corrected for Colorado and therefore no longer correspond to the originally published results.	
M288 - State public health laboratory provides or assures testing for soil	**2012, 2014, & 2016**
Source: Centers for Disease Control and Prevention (CDC), Office of Public Health Preparedness and Response (OPHPR), National Snapshot of Public Health Preparedness Limitations: The measure does not consider compliance with the standards set by the Clinical Laboratory Improvement Amendments (CLIA) and the College of American Pathologists (CAP) accreditation program, and whether proficiency is achieved annually for the methods reported. Selected responses from the original data source have been corrected for Colorado and therefore no longer correspond to the originally published results.	
M911 - State has a high-capability laboratory to detect chemical threats (Level 1 or 2 LRN-C laboratory)	**2016 & 2017**
Source: Association of Public Health Laboratories (APHL). Comprehensive Laboratory Services Survey (CLSS). 2012 & 2014. Additional details about this measure are available from the source. Data have been compiled by APHL biennially since 2004. The CLSS covers the 50 states, the District of Columbia, and Puerto Rico. State-level data are not available to the public but can be accessed by public health laboratory directors, among others. Data were obtained directly from the source. Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/). Inclusion of this measure ensures that the Index is consistent with national expert opinion and federal recommendations concerning comprehensive public health laboratory testing capabilities. However, the measure does not assess the quality of the testing, the timeliness of results reporting to enable responses to public health threats, nor whether sufficient capacity exists to test the volume of samples required during a health security event. Selected responses from the 2016 survey have been corrected for North Carolina and therefore no longer correspond to the originally published survey results.	
M902 - State has a high-capability laboratory to detect chemical threats (Level 1 or 2 LRN-C laboratory)	**2016 & 2017**
Source: Centers for Disease Control and Prevention (CDC), National Center for Environmental Health (NCEH), Division of Laboratory Sciences (DLS), Emergency Response Branch (ERB) Limitations: The measure does not evaluate the quality or comprehensiveness of the laboratory capabilities.	

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Domain 2: Community Planning & Engagement Coordination	
Subdomain 2.1: Cross-Sector / Community Collaboration	
M87 - State health department is accredited by the Public Health Accreditation Board (PHAB)	**2013—2018**
Source: Public Health Accreditation Board (PHAB), Health Departments in e-PHAB Limitations: The measure does not reflect health departments that are in process of achieving accreditation.	
M501 - Percent of the state's population served by a comprehensive public health system, as determined through the National Longitudinal Survey of Public Health Systems	**2012, 2014 & 2016**
Source: National Longitudinal Survey of Public Health Systems (NLSPHS), National Association of County and City Health Officials (NACCHO), and Area Resource File (ARF) data analyzed by PMO and affiliated personnel. Limitations: Data are self-reported by local health department representatives and may reflect differences in perspective and interpretation among respondents.	
M9031 - Percent of hospitals in the state that participate in health care preparedness coalitions supported through the federal Hospital Preparedness Program of the Office of the Assistant Secretary for Preparedness and Response	**2013—2017**
Source: Division of National Healthcare Preparedness Programs in the Office of the Assistant Secretary for Preparedness and Response (ASPR) at the U.S. Department of Health and Human Services Limitations: The measure does not evaluate the quality or comprehensiveness of participation in the health care preparedness coalitions.	
M9032 - Percent of emergency medical service agencies in the state that participate in health care preparedness coalitions supported through the federal Hospital Preparedness Program of the Office of the Assistant Secretary for Preparedness and Response	**2013—2017**
Source: Division of National Healthcare Preparedness Programs in the Office of the Assistant Secretary for Preparedness and Response (ASPR) at the U.S. Department of Health and Human Services Limitations: The measure does not evaluate the quality or comprehensiveness of participation in the health care preparedness coalitions.	
M9033 - Percent of emergency management agencies in the state that participate in health care preparedness coalitions supported through the federal Hospital Preparedness Program of the Office of the Assistant Secretary for Preparedness and Response	**2013—2017**
Source: Division of National Healthcare Preparedness Programs in the Office of the Assistant Secretary for Preparedness and Response (ASPR) at the U.S. Department of Health and Human Services Limitations: The measure does not evaluate the quality or comprehensiveness of participation in the health care preparedness coalitions.	
M9034 - Percent of local health departments in the state that participate in health care preparedness coalitions supported through the federal Hospital Preparedness Program of the Office of the Assistant Secretary for Preparedness and Response	**2013—2017**

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Source: Division of National Healthcare Preparedness Programs in the Office of the Assistant Secretary for Preparedness and Response (ASPR) at the U.S. Department of Health and Human Services Limitations: The measure does not evaluate the quality or comprehensiveness of participation in the health care preparedness coalitions.	
Domain 2: Community Planning & Engagement Coordination	
Subdomain 2.2: Children & Other At-Risk Populations	
M163 - Number of pediatricians per 100,000 population under 18 years old in the state	**2010, 2015-2016**
Source: U.S. Health Resources & Services Administration (HRSA), Area Health Resources Files (AHRF) Limitations: The measure does not consider mutual aid plans that may be in place for health care facilities to supplement the number of available pediatricians in the event of an emergency.	
M164 - Number of obstetricians and gynecologists per 100,000 female population in the state	**2010, 2015-2016**
Source: U.S. Health Resources & Services Administration (HRSA), Area Health Resources Files (AHRF) Limitations: The measure does not consider mutual aid plans that may be in place for health care facilities to supplement the number of available obstetricians and gynecologists in the event of an emergency.	
M170 - Percent of state children (0-18 years) who reside within 50 miles of a pediatric trauma center, including out-of-state centers	**2012—2017**
Source: American Hospital Association (AHA), AHA Annual Survey of Hospitals data and U.S. Census population data analyzed by PMO personnel. Limitations: The measure does not indicate the capacity of the trauma center, such as the number of available pediatric trauma beds or inpatient treatment beds for the care of pediatric patients.	
M53B - Percent of youth who missed one or more days of school in past month due to concerns about safety	**2011, 2013, 2015 & 2017**
Source: Youth Risk Behavior Survey Limitations: The measure is self-reported and does not distinguish reasons for safety concerns.	
Domain 2: Community Planning & Engagement Coordination	
Subdomain 2.3: Management of Volunteers during Emergencies	
M36* - State participates in Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) Program and has a state volunteer registry	**2014**
Source: Assistant Secretary for Preparedness and Response (ASPR), The Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) Limitations: The measure does not evaluate the quality or comprehensiveness of the volunteer registry, indicate whether it has been used during exercises or responses, or reflect state capacity for volunteer surge during emergencies.	
M266 - Percent of the state's population who live in a county with a Community Emergency Response Teams (CERT)	**2012—2014, 2016**

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Source: Federal Emergency Management Agency (FEMA), Citizen Corps Community Emergency Response Teams (CERT), and U.S. Census data analyzed by PMO personnel. Limitations: The measure does not evaluate the quality or comprehensiveness of the CERT, including leadership strength, local and governmental agency support, or participation by multiple sectors.	
M346 - Number of total Medical Reserve Corps members per 100,000 population in the state	**2012—2014, 2016—2018**
Source: Medical Reserve Corps (MRC), MRC Units Database and Census Bureau data analyzed by PMO personnel. Limitations: The measure does not evaluate the quality of the MRC management and current status of licensed/credentialed/trained members, or include other formal and informal systems of registering, credentialing, and managing health and medical volunteers such as ESAR-VHP (Emergency System for the Advance Registration of Volunteer Health Professionals).	
M176 - Number of Medical Reserve Corps (MRC) members who are physicians per 100,000 population in the state	**2015—2018**
Source: Medical Reserve Corps (MRC), MRC Units Database and Census Bureau data analyzed by PMO personnel. Limitations: The measure does not evaluate the quality of the MRC management and current status of physician members who are licensed, credentialed, and received emergency response training.	
M179 - Number of Medical Reserve Corps (MRC) members who are nurses or advanced practice nurses per 100,000 population in the state	**2015—2018**
Source: Medical Reserve Corps (MRC), MRC Units Database and Census Bureau data analyzed by PMO personnel. Limitations: The measure does not evaluate the quality of the MRC management and current status of nurses or advanced practice nurses who are licensed, credentialed, and received emergency response training.	
M186 - Number of Medical Reserve Corps (MRC) members who are other health professionals per 100,000 population in the state	**2015—2018**
Source: Medical Reserve Corps (MRC), MRC Units Database and Census Bureau data analyzed by PMO personnel. Limitations: The measure does not evaluate the quality of the MRC management and current status of other health professionals who are licensed, credentialed, and received emergency response training.	
Domain 2: Community Planning & Engagement Coordination	
Subdomain 2.4: Social Capital & Cohesion	
M175 - Percent of voting-eligible population in the state participating in the highest office election	**2012, 2014 & 2016**
Source: United States Election Project, General Election Turnout Rates Limitations: The ideal numerator is total ballots counted (voting eligible population is the denominator), but these data are not available for all jurisdictions. Therefore, the Index uses a measure of the total votes cast for the highest office (e.g., presidential, gubernatorial, or congressional election).	
M188 - Percent of adults in the state who volunteer in their communities	**2012—2015, 2017**

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Source: Current Population Survey (CPS), Volunteer Supplement data analyzed by PMO personnel. Limitations: Data do not reflect the frequency, regularity, or sustainability of volunteering, and respondents may be inclined to over-report their volunteerism.	
M189 - Number of annual volunteer hours per state resident, 15 years and older	**2012—2015, 2017**
Source: Current Population Survey (CPS), Volunteer Supplement data analyzed by PMO personnel. Limitations: Respondents may be inclined to over-report the number of hours they volunteer. Also, certain communities that have strong social cohesion may have a low reported rate, such as settings where both parents work full-time and may not have time to volunteer.	
Domain 3: Incident & Information Management	
Subdomain 3.1: Incident Management	
M10* - State public health laboratory uses a rapid method (e.g., Health Alert Network (HAN), blast e-mail or fax) to send messages to their sentinel clinical laboratories and other partners	**2013—2016**
Source: Association of Public Health Laboratories (APHL), All-Hazards Laboratory Preparedness Survey Limitations: The measure does not evaluate the frequency that the alert network is used or tested for routine or emergency messages, or whether it reaches all sentinel clinical laboratories and other partners in the state.	
M84 - State all hazards emergency management program is accredited by the Emergency Management Accreditation Program (EMAP)	**2014—2018**
Source: Emergency Management Accreditation Program (EMAP), Who Is Accredited? Limitations: The measure does not consider state emergency management programs with conditional accreditation, and some states may choose not to pursue accreditation for various state and local reasons.	
M107 - Percent of local health departments in the state with an emergency preparedness coordinator for states with local health departments, excludes Rhode Island and Hawaii	**2013 & 2016**
Source: National Association of County and City Health Officials (NACCHO), 2013 National Profile of Local Health Departments Limitations: The measure does not apply to states that do not have local health departments. The measure does not evaluate the quality or robustness of the local emergency management system.	
M229* - State public health laboratory has a 24/7/365 contact system in place to use in case of an emergency	**2012 & 2014**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: The measure does not evaluate the quality or comprehensiveness of the system, or the frequency of the plan being used or tested.	
M150* - State uses a system for tracking hospital bed availability during emergencies	**2012-2018**

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Source: Assistant Secretary for Preparedness and Response (ASPR) Hospital Preparedness Program Limitations: The measure data is collected by existing state and local reporting systems using secure data entry to measure bed counts during emergencies, and does not replace states' need to evaluate state and local bed count system development and implementation.	
M701 - Average number of minutes for state health department staff with incident management lead roles to report for immediate emergency response duty	**2011—2016**
Source: Centers for Disease Control and Prevention (CDC), Office of Public Health Preparedness and Response (OPHPR), National Snapshot of Public Health Preparedness Limitations: Data are self-reported by health department representatives and may reflect differences in awareness, perspective, and interpretation among respondents.	
M344 - State has adopted the Nurse Licensure Compact (NLC)	**2014—2018**
Source: National Council of State Boards of Nursing (NCSBN), Nurse Licensure Compact (NLC) Member States Limitations: The measure does not evaluate state capacity to implement the agreement and incorporate out-of-state nurses into medical surge responses. Some states have other limited regional agreements precluding the need for participation in the national Nurse Licensure Compact.	
M338* - State requires healthcare facilities to report healthcare-associated infections to the Centers for Disease Control and Prevention's (CDC's) National Health Safety Network (NHSN) or other systems	**2012 & 2013**
Source: Centers for Disease Control and Prevention (CDC), National Healthcare Safety Network (NHSN), Healthcare—Associated Infections (HAI) Progress Report Limitations: The measure does not evaluate the healthcare facility compliance with reporting requirements.	
M341* - State law includes a general provision regulating the release of personally identifiable information (PII) held by the health department	**2013**
Source: CDC Public Health Law Program resources. https://www.cdc.gov/phlp/ Limitations: The measure does not evaluate the state's legal scope of authority, infrastructure to investigate violations, or other strategies to respond to inappropriate release of personal information.	
M342* - State law requires healthcare facilities to report communicable diseases to a health department	**2013**
Source: Centers for Disease Control and Prevention (CDC), Division of Health Informatics and Surveillance (DHIS), National Electronic Disease Surveillance System (NEDSS) Limitations: The measure does not evaluate the effectiveness of state monitoring and enforcement of reporting requirements, the timeliness or completeness of reporting, or the ability of the health departments to receive and use the reported information.	
M345* - State has adopted Emergency Management Assistance Compact (EMAC) legislation	**2014**
Source: National Emergency Management Association (NEMA) Limitations: The measure does not evaluate state capacity to implement the agreement and incorporate out-of-state health care providers into medical surge responses.	

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Domain 3: Incident & Information Management	
Subdomain 3.2: Information Management	
M64* - State has a public information and communication plan developed for a mass prophylaxis campaign	**2012-2018**
Source: Centers for Disease Control and Prevention (CDC), Public Health Emergency Preparedness and Response Cooperative Agreement Program. Limitations: The measure focuses on pre-event planning during a mass dispensing scenario, and does not include planning for broader emergency scenarios, capacity for response-driven public information and risk communication strategies, or capabilities in implementing the plan.	
M228 - Percent of households in the state with broadband in the home	**2012—2017**
Source: American Community Survey (ACS), 1-year estimate (GCT2801). Limitations: The measure focuses only on fixed broadband connections, and does not include an indication of the broadband system's ability to remain operational in an emergency or disaster.	
M906 - Percent of hospitals in the state that have demonstrated meaningful use of certified electronic health record technology (CEHRT). This includes the demonstration of meaningful use through either the Medicare or Medicaid EHR Incentive Programs. Critical Access hospitals are facilities with no more than 25 beds and located in a rural area further than 35 miles from the nearest hospital, and/or are located in a mountainous region.	**2013—2016**
Source: The Office of the National Coordinator for Health Information Technology, a division of the U.S. Department of Health and Human Services Limitations: The measure reflects performance during routine care delivery and may not reflect capabilities in emergency situations.	
M907 - Percent of hospitals in the state that have demonstrated meaningful use of certified electronic health record technology (CEHRT). This includes the demonstration of meaningful use through either the Medicare or Medicaid EHR Incentive Programs. Critical Access hospitals are facilities with no more than 25 beds and located in a rural area further than 35 miles from the nearest hospital, and/or are located in a mountainous region.	**2013—2016**
Source: The Office of the National Coordinator for Health Information Technology, a division of the U.S. Department of Health and Human Services Limitations: The measure reflects performance during routine care delivery and may not reflect capabilities in emergency situations.	
M1001 - . The state's 911 authorities are capable of processing and interpreting location and caller information using Next Generation 911 infrastructure.	**2014—2017**
Source: National 911 Program, Office of Emergency Medical Services (OEMS), National Highway Traffic Safety Administration (NHTSA), U.S. Department of Transportation (USDOT). Limitations: Call centers and first responders may vary in the extent to which Next Generation 911 capabilities are implemented and used.	
Domain 4: Healthcare Delivery	
Subdomain 4.1: Prehospital Care	

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2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
M140 - Number of emergency medical technicians (EMTs) and paramedics per 100,000 population in the state	**2012—2017**
Source: Bureau of Labor Statistics (BLS), Occupational Employment Statistics (OES) Limitations: The measure may not distinguish licensed EMTs and paramedics from those that are licensed, practicing, and affiliated. BLS and other national data sources have been shown to undercount certain types of health professionals, and may differ considerably from the estimates available from state licensing boards. Since the measurement undercounting in the BLS data are expected to be relatively consistent across states, they should not cause significant bias in the Index state and national results. The Bureau of Labor Statistics (BLS) produces occupational estimates by surveying a sample of non-farm establishments. As such, estimates produced through the Occupational Employment Statistics (OES) program are subject to sampling error.	
M331 - Percent of local emergency medical services (EMS) agencies that submit National EMS Information System (NEMSIS) compliant data (e.g., Version 2 in earlier years, Version 3 in later years) to the state	**2015 & 2019**
Source: National Highway Traffic Safety Administration (NHTSA), State NEMIS Progress Reports: State & Territory Version 2 Information Limitations: The quality of local data submissions is not well documented and may vary across communities and states. Data submissions may not reflect the extent to which data are used to inform EMS system improvements.	
M349 - State has adopted EMS Personnel Licensure Interstate CompAct (REPLICA) legislation	**2013—2018**
Source: National Association of State EMS Officials Limitations: Other legal actions such as EMAC and state emergency declarations may enable cross-border EMS practice without REPLICA.	
M350U - The average length of time in minutes between EMS notification and arrival at a fatal motor vehicle crash (MVC) in urban areas.	**2015—2017**
Source: National Highway Traffic Safety Administration (NHTSA), Fatality Analysis and Reporting System (FARS) Limitations: Selected states fail to record response times for all fatal events.	
M350R - The average length of time in minutes between EMS notification and arrival at a fatal motor vehicle crash (MVC) in rural areas.	**2015—2017**
Source: National Highway Traffic Safety Administration (NHTSA), Fatality Analysis and Reporting System (FARS) Limitations: Selected states fail to record response times for all fatal events.	
Domain 4: Healthcare Delivery	
Subdomain 4.2: Hospital and Physician Services	
M147 - Median time in minutes from hospital emergency department (ED) arrival to ED departure for patients admitted to hospitals in the state (identifier ED-1)	**2013—2018**
Source: Centers for Medicare & Medicaid Services (CMS), Timely and Effective Care—State	

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2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
Limitations: The measure does not evaluate the severity of the patients' conditions, or the nature of their treatment between emergency department arrival and discharge.	
M148 - Median time in minutes from hospital admission decision to emergency department (ED) departure for patients admitted to hospitals in the state (identifier ED-2)	**2013—2018**
Source: Centers for Medicare & Medicaid Services (CMS), Timely and Effective Care—State	
Limitations: The measure does not evaluate the hospital's capacity to move patients from the emergency department to inpatient care during a mass casualty or other event.	
M152 - Percent of the state's population who live within 50 miles of a trauma center, including out-of-state centers	**2012—2017**
Source: American Hospital Association (AHA), AHA Annual Survey of Hospitals data and U.S. Census population data analyzed by PMO personnel.	
Limitations: The measure does not evaluate the quality or comprehensiveness of care provided by the trauma centers.	
M160 - Number of physicians and surgeons per 100,000 population in the state	**2012—2017**
Source: U.S. Census, American Community Survey	
Limitations: The measure does not consider mutual aid plans that may be in place for health care facilities to supplement the number of available physicians and surgeons in the event of an emergency. Also, BLS and other national data sources on physician supply have been shown to undercount certain types of physicians, and may differ considerably from the estimates available from state medical licensing boards. Since the measurement undercounting in the BLS data are expected to be relatively consistent across states, they should not cause significant bias in the Index state and national results. The Bureau of Labor Statistics (BLS) produces occupational estimates by surveying a sample of non-farm establishments. As such, estimates produced through the Occupational Employment Statistics (OES) program are subject to sampling error.	
M167 - Number of active registered nurse (RN) and licensed practical nurse (LPN) licenses per 100,000 population in the state	**2013-2016, 2018 & 2019**
Source: National Council of State Boards of Nursing (NCSBN), National Nursing Database	
Limitations: The measure does not consider mutual aid plans that may be in place to supplement the number of available RNs and LPNs in the event of an emergency. The source data may undercount the RNs and LPNs available to provide care during an emergency due to limited or non-reporting by some states.	
M168 - Percent of the state's population living within 100 miles of a burn center, including out-of-state centers	**2014 & 2018**
Source: American Burn Association (ABA) data on Burn Care Facilities analyzed by PMO personnel.	
Limitations: The measure does not evaluate the specialized resources needed for surge capacity when an emergency results in a large number of burn patients.	
M296 - Percent of hospitals in the state providing a specialty geriatric services program (includes general as well as specialized geriatric services, such as psychiatric geriatric services/Alzheimer care)	**2012—2017**
Source: American Hospital Association (AHA), Annual Survey of Hospitals	

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2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
Limitations: The measure does not consider hospital geriatric services provided through contractual arrangements, the program's capacity to provide services during an emergency, or whether high quality care is provided to geriatric patients without having a designated specialty program.	
M297 - Percent of hospitals in the state providing palliative care programs (includes both palliative care program and/or palliative care inpatient unit, but excludes pain management program, patient-controlled analgesia, and hospice program)	**2012—2017**
Source: American Hospital Association (AHA), Annual Survey of Hospitals	
Limitations: The measure does not evaluate the quality of services provided, or the program's capacity to provide services during an emergency.	
M298 - Number of hospital airborne infection isolation room (AIIR) beds per 100,000 population in the state, including hospitals with AIIR rooms within 50 miles from neighboring states	**2012—2017**
Source: American Hospital Association (AHA), Annual Survey of Hospitals	
Limitations: The measure does not consider mutual aid plans that may be in place to supplement the number of available AIIR beds in the event of an emergency.	
M299 - Risk-adjusted 30-day survival rate (percent) among Medicare beneficiaries hospitalized in the state for heart attack, heart failure, or pneumonia	**2011-2013, 2015 & 2016**
Source: The Commonwealth Fund, Aiming Higher: Results from a Scorecard on State health System Performance	
Limitations: Variation in state population health, such as obesity or smoking rates, may have a greater effect on the measure results than prevention and preparedness programs.	
M300 - Percent of hospitals in the state with a top quality ranking (Grade A) on the Hospital Safety Score	**2013—2018**
Source: The Leapfrog Group, Hospital Safety Score (HSS)	
Limitations: The measure source data does not include critical access hospitals, specialty hospitals, pediatric hospitals, hospitals in Maryland, territories exempt from public reporting to CMS, and others. Critical Access hospitals are facilities with no more than 25 beds and located in a rural area further than 35 miles from the nearest hospital, and/or are located in a mountainous region.	
Domain 4: Healthcare Delivery	
Subdomain 4.3: Long-Term Care	
M308 - Average number of nurse (RN) staffing hours per resident per day in nursing homes in the state	**2014—2018**
Source: Centers for Medicare & Medicaid Services (CMS), Nursing Home State Averages	
Limitations: The measure source data are collected during a specific two-week period and do not take into account variations related to season, region, resident acuity, skill mix of other care providers, and other factors. The measure does not evaluate staff availability for a disaster or whether staff received disaster response training.	
M309 - Average number of nursing assistant (CNA) staffing hours per resident per day in nursing homes in the state	**2014—2018**
Source: Centers for Medicare & Medicaid Services (CMS), Nursing Home State Averages	

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2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
Limitations: The measure source data are collected during a specific two-week period and do not take into account variations related to season, region, resident acuity, skill mix of other care providers, and other factors. The measure does not evaluate staff availability for a disaster or whether staff received disaster response training.	
M307 - Percent of long-stay nursing home residents in the state that are assessed and appropriately given the seasonal influenza vaccine	**2013—2018**
Source: Centers for Medicare & Medicaid Services (CMS), Nursing Home State Averages	
Limitations: Vaccine effectiveness varies each year as a function of the accuracy in predicting the influenza strains covered by each year's vaccine. As a result, expected influenza protection and reduced demand on healthcare facilities may be marginal in the event of a major disaster.	
M310 - Average number of licensed practical nurse (LPN) staffing hours per resident per day in nursing homes in the state	**2014—2018**
Source: Centers for Medicare & Medicaid Services (CMS), Nursing Home State Averages	
Limitations: The measure source data are collected during a specific two-week period and do not take into account variations related to season, region, resident acuity, skill mix of other care providers, and other factors. The measure does not evaluate staff availability for a disaster or whether staff received disaster response training.	
M303B - Number of licensed skilled nursing facilities with deficiencies in compliance with CMS Emergency Preparedness requirements, per 100 facilities in the state (expressed as quintiles)	**2014—2018**
Source: CMS Nursing Facility Inspection Reports	
Limitations: Nursing facility inspectors may vary in their ability to detect meaningful deficiencies in emergency plans.	
M23NH - Number of disease outbreaks in nursing homes or assisted living facilities per 1,000 certified nursing home residents in a state	**2012—2017**
Source: Centers for Disease Control and Prevention (CDC), National Outbreak Reporting System (NORS)	
Limitations: States vary in their ability to detect and report outbreaks in long-term care settings.	
Domain 4: Healthcare Delivery	
Subdomain 4.4: Mental & Behavioral Healthcare	
M316 - Percent of hospitals in the state providing psychiatric emergency services	**2012—2017**
Source: American Hospital Association (AHA), Annual Survey of Hospitals	
Limitations: The measure source data does not have a standard definition of emergency psychiatric services, and survey respondents may have different interpretations for positive responses. All hospital emergency medical services include emergency psychiatric services, but fewer hospitals have more complete, specialty-staffed, comprehensive psychiatric emergency services. Negative responses may indicate the absence of any emergency psychiatric services, or the absence of a separate, identifiable, comprehensive service. The measure does not evaluate the extent of service integration with other disaster preparedness and response efforts by the hospital or emergency psychiatric service, or the disaster-related services provided such as mobile crisis response capacity and telephone-based crisis services.	

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2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
M317 - Percent of need met for mental health care in health professional shortage areas (HPSA) in the state	**2014, 2016—2018**
Source: The Henry J. Kaiser Family Foundation, Mental Health Care Health Professional Shortage Areas (HPSA) Limitations: The measure data is based on the availability of psychiatrists, and does not include other behavioral health professionals (e.g., psychologists, social workers, licensed counselors, pastoral counselors, psychiatric nurses) who provide the majority of behavioral health services following disasters. The measure does not consider the ability of a state to temporarily move mental health resources within the state in response to a disaster, such as state trained and certified crisis teams that can be activated and deployed to disaster zones and rapidly supplement local resources. In addition, the measure does not evaluate lack of provider availability and readiness during disasters due to appointment waiting lists, contractual obligations to serve certain populations, or their status of skills and training necessary for optimal performance in disasters.	
M800 - Percent of the state's population not living in an HRSA Mental Health Professional Shortage Area	**2015—2017, 2019**
Source: U.S. Census Bureau and Health Resources & Services Administration (HRSA) data analyzed by PMO personnel. Limitations: The measure data is estimated based on matching U.S. Census area definitions with the geographic boundaries for HRSA Mental Health Professional Shortage Areas.	
Domain 4: Healthcare Delivery	
Subdomain 4.5: Home Care	
M291 - Percent of home health episodes of care in the state where the home health team determined whether their patient received a flu shot for the current flu season	**2013—2018**
Source: Centers for Medicare & Medicaid Services (CMS), Home Health Care-State by State Data Limitations: Vaccine effectiveness varies each year as a function of the accuracy in predicting the influenza strains covered by each year's vaccine. As a result, expected influenza protection and reduced demand on healthcare facilities may be marginal in the event of a major disaster.	
M292 - Percent of home health episodes of care in the state where the home health team began their patients' care in a timely manner	**2013—2018**
Source: Centers for Medicare & Medicaid Services (CMS), Home Health Care-State by State Data Limitations: The measure does not evaluate the quality of the services provided including length of service delays.	
M293 - Number of home health and personal care aides per 1,000 population in the state aged 65 or older	**2012—2017**
Source: American Community Survey (ACS), 1-year Public Use Microsample (PUMS) data analyzed by PMO personnel (3-year average) Limitations: The measure does not evaluate availability of home health aide services during a health emergency, or whether providers have emergency care plans for their clients.	

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2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
Domain 5: Countermeasure Management	
Subdomain 5.1: Medical Materiel Management, Distribution, & Dispensing	
M60* - State has developed a written countermeasure management plan including Strategic National Stockpile (SNS) elements	**2012—2018**
Source: CDC PHEP Limitations: The measure does not evaluate whether the state has the resources and ability to implement the plan in a timely and effective manner.	
M161 - Number of Pharmacists per 100,000 population in the state	**2012—2017**
Source: Bureau of Labor Statistics (BLS), Occupational Employment Statistics (OES) Limitations: The measure does not consider mutual aid plans that may be in place for healthcare facilities to supplement the number of available pharmacists in the event of an emergency. Also, BLS and other national data sources on health provider supply have been shown to undercount certain types of providers, and may differ considerably from the estimates available from state licensing boards. Since the measurement undercounting in the BLS data are expected to be relatively consistent across states, they should not cause significant bias in the Index state and national results. The Bureau of Labor Statistics (BLS) produces occupational estimates by surveying a sample of non-farm establishments. As such, estimates produced through the Occupational Employment Statistics (OES) program are subject to sampling error.	
M270 - Percent of hospitals in the state participating in a group purchasing arrangement	**2012—2017**
Source: American Hospital Association (AHA), Annual Survey of Hospitals Limitations: Although group purchasing arrangements may be in place, many other economic and non-economic factors affect shortages of drugs and medical supplies and create gaps in the supply chain.	
Domain 5: Countermeasure Management	
Subdomain 5.2: Countermeasure Utilization & Effectiveness	
M24 - Percent of children ages 19-35 months in the state receiving recommended routine childhood vaccinations, including four or more doses of diphtheria, tetanus, and pertussis vaccine, three or more doses of poliovirus vaccine, one or more doses of any measles-containing vaccine, and three or more doses of Hepatitis B vaccine	**2012—2017**
Source: Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHC), National Immunization Survey (NIS) Limitations: The measure evaluates routine vaccines for preventable disease in pre-school age children, and may not reflect the vaccination rate for a severe emerging disease.	
M32 - Percent of seniors age 65 and older in the state receiving a seasonal flu vaccination	**2013—2018**
Source: Centers for Disease Control and Prevention (CDC), National Immunization Survey (NIS) and the Behavioral Risk Surveillance System (BRFSS), FluVaxView State, Regional, and National Vaccination Report Limitations: Vaccine effectiveness varies each year as a function of the accuracy in predicting the influenza strains covered by each year's vaccine. As a result, expected influenza protection and reduced demand on health care facilities may be marginal in the event of a major disaster.	
M33 - Percent of seniors age 65 and older in the state receiving a pneumococcal vaccination	**2012—2017**

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2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
Source: Centers for Disease Control and Prevention (CDC), Behavioral Risk Factor Surveillance System Survey Questionnaire (BRFSS). Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Survey data analyzed by PMO personnel. Limitations: The measure evaluates the recommended vaccine for preventable disease in seniors, and may not reflect the vaccination rate for a severe emerging disease.	
M34 - Percent of children aged 6 months to 4 years old in the state receiving a seasonal flu vaccination	**2012—2018**
Source: Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHC), National Immunization Survey (NIS) Limitations: Vaccine effectiveness varies each year as a function of the accuracy in predicting the influenza strains covered by each year's vaccine. As a result, expected influenza protection and reduced demand on healthcare facilities may be marginal in the event of a major disaster.	
M35 - Percent of adults aged 18 years and older in the state receiving a seasonal flu vaccination	**2013—2018**
Source: Centers for Disease Control and Prevention (CDC), National Immunization Survey (NIS) and the Behavioral Risk Surveillance System (BRFSS), FluVaxView State, Regional, and National Vaccination Report Limitations: Vaccine effectiveness varies each year as a function of the accuracy in predicting the influenza strains covered by each year's vaccine. As a result, expected influenza protection and reduced demand on health care facilities may be marginal in the event of a major disaster.	
Domain 6: Environmental & Occupational Health	
Subdomain 6.1: Food & Water Security	
M275_DW - State public health laboratory provides or assures testing for drinking water	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/). Inclusion of this measure ensures that the Index is consistent with national expert opinion and federal recommendations concerning comprehensive public health laboratory testing capabilities. However, the measure does not assess the quality of the testing, the timeliness of results reporting to enable responses to public health threats, nor whether sufficient capacity exists to test the volume of samples required during a health security event.	

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2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
M275_PWW - State public health laboratory provides or assures testing for private well water	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/).	
M275_REC - State public health laboratory provides or assures testing for recreational water	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/).	
M275_SUR - State public health laboratory provides or assures testing for surface water	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is	

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2019 Release Measure ID, Data Source, and Limitations	Data Date(s)

guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/). Selected responses from the 2016 survey have been corrected for North Carolina and therefore no longer correspond to the originally published survey results.

M275_WST - State public health laboratory provides or assures testing for waste water — **2012, 2014, & 2016**

Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS)
Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/). Selected responses from the 2016 survey have been corrected for North Carolina and therefore no longer correspond to the originally published survey results.

M276 - Percent of 16 tests for different organisms or toxins that the state public health laboratory provides or assures to assist with foodborne disease outbreak investigations, including Bacillus cereus, Brucella sp., Campylobacter sp., Clostridium botulinum, Clostridium perfringens, Cryptosporidium sp., Cyclospora cayetanensis, Listeria monocytogenes, norovirus, Salmonella, Shigella, Staphylococcus aureus, STEC non-O157, STEC O157, Vibrio sp., Yersinia enterocolitica. — **2012, 2014, & 2016**

Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS)
Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public

2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/).	
M195 - Percentage of community water systems in a state that meet all applicable health-based standards	**2012—2017**
Source: Environmental Protection Agency (EPA), Safe Drinking Water Information System Federal (SDWIS/FED) Drinking Water Data Limitations: The measure does not evaluate drinking water supplies that are non-public (private), or provide information on community water supplies that were adversely affected by emergencies or disasters.	
M925 - Percentage of community water systems in a state that meet all applicable non-health-based standards	**2012—2017**
Source: Environmental Protection Agency (EPA), Safe Drinking Water Information System Federal (SDWIS/FED) Drinking Water Data Limitations: The measure does not cover drinking water supplies that are non-public (private) and does not directly provide information on community water supplies that were adversely affected by emergencies or disasters.	
M23PC - Number of foodborne illness outbreaks reported to CDC by state and local public health departments for which a causative infectious agent is confirmed (per 1 million population)	**2012—2017**
Source: Centers for Disease Control and Prevention (CDC), National Outbreak Reporting System (NORS) Limitations: The measure does not evaluate the quality or comprehensiveness of the state's reporting of foodborne illness outbreaks.	
Domain 6: Environmental & Occupational Health	
Subdomain 6.2: Environmental Monitoring	
M202 - State public health laboratory provides or assures testing for air samples	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/). Selected responses from the 2016 survey have	

2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
been corrected for North Carolina and therefore no longer correspond to the originally published survey results.	
M257_AIHA - State public health laboratory is certified or accredited by the American Industrial Hygiene Association (AIHA)	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: Data are self-reported by public health laboratory representatives and may reflect differences in awareness, perspective, and interpretation among respondents.	
M257_EPA - State public health laboratory is certified or accredited by the Environmental Protection Agency (EPA)	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: Data are self-reported by public health laboratory representatives and may reflect differences in awareness, perspective, and interpretation among respondents.	
M257_NELAC - State public health laboratory is certified or accredited by the National Environmental Laboratory Accreditation Conference (NELAC)	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: Data are self-reported by public health laboratory representatives and may reflect differences in awareness, perspective, and interpretation among respondents.	
M196* - State public health laboratory provides or assures testing for environmental samples in the event of suspected chemical terrorism	**2012 & 2014**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/).	
M272 - Percent of 12 tests for different contaminants in environmental samples that the state public health laboratory provides or assures, including asbestos, explosives, gross alpha and gross beta, inorganic compounds (e.g., nitrates), metals, microbial, lead, persistent organic pollutants, pesticides (including organophosphates), pharmaceuticals, radon, or volatile organic compounds	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS)	

*Foundational Measure

2019 Release Measure ID, Data Source, and Limitations	Data Date(s)
Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/).	
M273 - State public health laboratory provides or assures testing for hazardous waste	**2012, 2014, & 2016**
Source: Association of Public Health Laboratories (APHL), Comprehensive Laboratory Services Survey (CLSS) Limitations: The state public health laboratory testing "provide or assure" standard is based on national consensus expert opinion and is recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services, and is reflected in the Healthy People 2020 goals concerning access to comprehensive public health and environmental health laboratory testing. This standard requires the state public health authority, through its laboratory, engage in the testing and reporting process—either by directly performing the tests or by assuring that alternative labs perform the tests adequately. This standard is designed to ensure that laboratory testing, interpretation, and reporting is guided by specialized public health knowledge and expertise found within the state public health agency, and that timely, effective public health responses and protective actions occur based on test results. States that provide testing through another type of laboratory, with no assurance role performed by the public health laboratory, do not meet this standard. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846798/). Selected responses from the 2016 survey have been corrected for North Carolina and therefore no longer correspond to the originally published survey results.	
M274* - State participates in the National Plant Diagnostic Network (NPDN)	**2014**
Source: National Plant Diagnostic Network (NPDN), National Plant Diagnostic website Limitations: The measure does not evaluate the level or effectiveness of the state participation, including the resources committed and state success in quickly detecting and identifying pathogens.	
M904 - Number of environmental scientists and specialists (including health) per 100,000 population in the state	**2012—2017**
Source: Bureau of Labor Statistics (BLS), Occupational Employment Statistics (OES), OES 19-2041 Limitations: The measure does not evaluate the level of training of the environmental and health scientists. The measure does not consider mutual aid plans that may be in place for agencies to supplement the number of available environmental and health scientists in the event of an emergency. Also, BLS and other national data sources on health provider supply have been shown to undercount certain types of health	

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professionals, and may differ considerably from the estimates available from state medical licensing boards. Since the measurement undercounting in the BLS data are expected to be relatively consistent across states, they should not cause significant bias in the Index state and national results. BLS produces occupational estimates by surveying a sample of non-farm establishments. As such, estimates produced through the OES program are subject to sampling error.	
M23A - Number of disease outbreaks in a state due to animal contact per 1 million population	**2012—2017**
Source: Centers for Disease Control and Prevention (CDC), National Outbreak Reporting System (NORS) Limitations: The measure does not evaluate the quality or comprehensiveness of the state's reporting of illness outbreaks.	
Domain 6: Environmental & Occupational Health	
Subdomain 6.3: Occupational Health	
M922 - Transportation Structural Integrity, percent of bridges that are in good or fair condition (not poor)	**2012—2017**
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Bridges and Structures Limitations: The frequency of bridge inspections varies according to numerous criteria. Most bridges are on a one-, two-, or four-year inspection cycle. Consequently, the data year does not necessarily coincide with the inspection year.	
M923 - Surface Water Control Structural Integrity, percent of High-Hazard Potential Dams that are in Fair or Satisfactory condition	**2016 & 2018**
Source: U.S. Corp of Engineers, National Inventory of Dams (NID) and the Association of State Dam Safety Officials (ASDSO) Limitations: A small, but growing number of states exempt categories of dams from inspection based on the purpose of the impoundment or the owner type. Nationally roughly a quarter (22%) of the high-hazard dams are not rated for condition, with wide differences among the states	
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	**2017—2018**
Source: FEMA National Flood Insurance Program (NFIP) Community Rating System (CRS) Limitations: Participation in the National Flood Insurance Program (NFIP) is voluntary. It is possible that some communities located in flood zones are not part of the NFIP.	
M929 - Flood Insurance Coverage, FEMA National Flood Insurance Policies (NFIP) in-force as a percentage of total housing units located in 100- and 500-year floodplains	**2013—2018**
Source: U.S. Department of Homeland Security, FEMA, National Flood Insurance Program, and the NYU Furman Center (FloodzoneData.us) Limitations: Participation in the National Flood Insurance Program (NFIP) is voluntary. It is possible that some communities located in flood zones are not part of the NFIP. Also, many flood zone maps are outdated.	

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M334 - State has a climate change adaptation plan	**2014—2018**
Source: Center for Climate and Energy Solutions (C2ES), State and Local Climate Adaptation Limitations: The measure does not evaluate the quality or comprehensiveness of the plan, or the degree to which the plan is implemented.	
Domain 6: Environmental & Occupational Health	
Subdomain 6.4: Built Environment	
M530 - Percent of employed population in the state with some type of paid time off (PTO) benefit	**2013—2018**
Source: Current Population Survey (CPS), Annual Social and Economic Supplement (ASEC) data analyzed by PMO personnel. Limitations: The measure data is estimated based on a survey of a sample of the general population.	
M531 - Percent of employed population in the state engaging in some work from home by telecommuting	**2011—2013, 2015, 2017**
Source: Current Population Survey (CPS), Work Schedules Supplement data analyzed by PMO personnel. Limitations: The measure data is estimated based on a survey of a sample of the general population.	
M705 - Percent of employed population (16 and older) in the state who work from home	**2012—2017**
Source: American Community Survey (ACS), 1-year estimate (Table B08128) Limitations: The measure data does not include all individuals who can work at home on a "part-time" basis.	