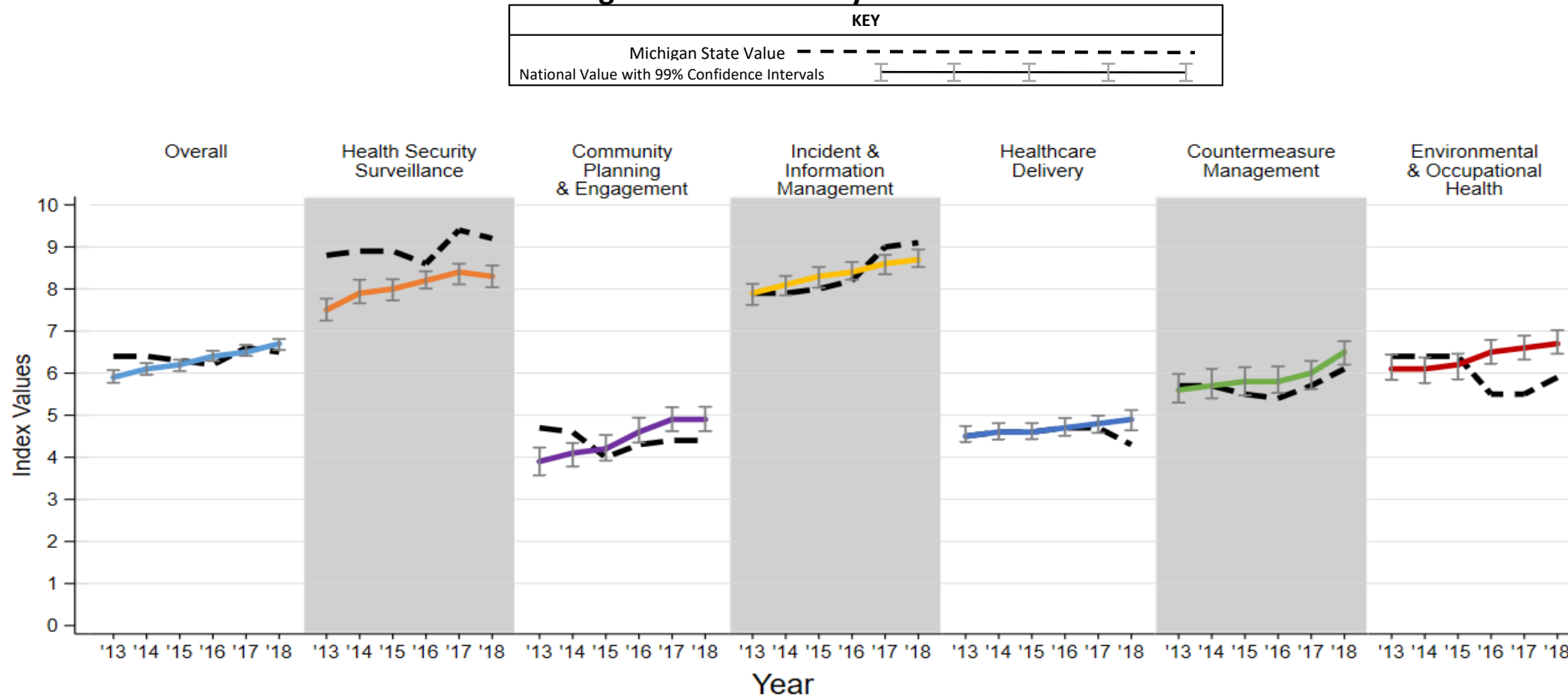


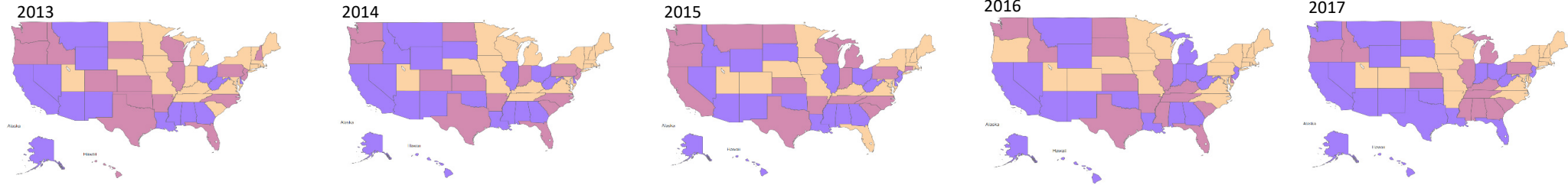
Michigan Health Security Profile

The National Health Security Preparedness Index tracks state and national progress in preparing for disasters, disease outbreaks, and other emergencies that pose risks to health and well-being. The Index measures changes in national and state health security capabilities over time, across a broad array of domains and sectors. The 2019 release of the Index is based on 129 measures organized into the six domains and 19 subdomains listed on page 3. The 2019 release includes annual results for six years (2013-2018) and a comparison of Index values to hazards faced (page 4). Pages 5 to 10 display data for all measures included in the Index and the chart below shows health security trends from 2013-2018 overall, and across all domains.

Michigan Health Security Trends 2013-2018

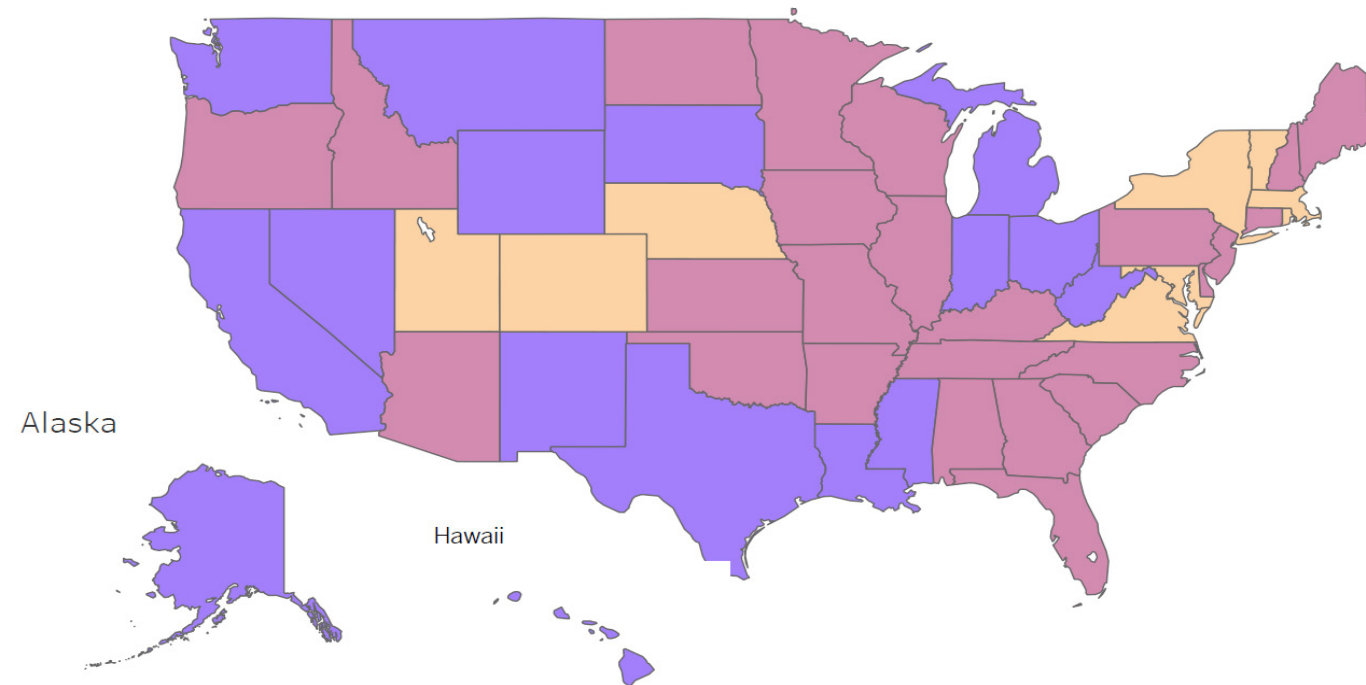


National Health Security Trends 2013-2018



2018 Overall Health Security

- Above National Average
- Meets National Average
- Below National Average



Michigan Domain and Subdomain Summary

Michigan's overall health security level reached 6.5 out of 10 in 2018, a 1.6% increase from 2013. The overall health security level in Michigan was significantly below the national average health security level of 6.7 in 2018.

MEASURE	2018 Value	% Change since 2017	% Change since 2013
OVERALL INDEX VALUE*	6.5	-1.5%	1.6%
DOMAIN 1: HEALTH SECURITY SURVEILLANCE	9.2	-2.1%	4.5%
Subdomain 1.1: Health Surveillance & Epidemiological Investigation	8.4	0.0%	3.7%
Subdomain 1.2: Biological Monitoring & Laboratory Testing	9.5	-5.0%	8.0%
DOMAIN 2: COMMUNITY PLANNING & ENGAGEMENT COORDINATION	4.4	0.0%	-6.4%
Subdomain 2.1: Cross-Sector / Community Collaboration	5.7	0.0%	-12.3%
Subdomain 2.2: Children & Other At-Risk Populations	3.3	0.0%	0.0%
Subdomain 2.3: Management of Volunteers during Emergencies	1.7	-5.6%	-10.5%
Subdomain 2.4: Social Capital & Cohesion	4.0	0.0%	-9.1%
DOMAIN 3: INCIDENT & INFORMATION MANAGEMENT	9.1	1.1%	15.2%
Subdomain 3.1: Incident Management & Multi-Agency Coordination	7.3	0.0%	9.0%
Subdomain 3.2: Information Management	8.8	1.1%	144.4%
DOMAIN 4: HEALTHCARE DELIVERY	4.3	-8.5%	-4.4%
Subdomain 4.1: Prehospital Care	2.5	-47.9%	-49.0%
Subdomain 4.2: Hospital and Physician Services	5.2	-5.5%	2.0%
Subdomain 4.3: Long-Term Care	6.0	87.5%	76.5%
Subdomain 4.4: Mental & Behavioral Healthcare	3.7	2.8%	-2.6%
Subdomain 4.5: Home Care	6.0	5.3%	33.3%
DOMAIN 5: COUNTERMEASURE MANAGEMENT	6.1	7.0%	7.0%
Subdomain 5.1: Medical Materiel Management, Distribution, & Dispensing	6.3	26.0%	12.5%
Subdomain 5.2: Countermeasure Utilization & Effectiveness	4.1	-12.8%	7.9%
DOMAIN 6: ENVIRONMENTAL & OCCUPATIONAL HEALTH	5.9	7.3%	-7.8%
Subdomain 6.1: Food & Water Security	6.7	-1.5%	-20.2%
Subdomain 6.2: Environmental Monitoring	5.1	0.0%	-26.1%
Subdomain 6.3: Physical Environment and Infrastructure	6.3	50.0%	50.0%
Subdomain 6.4: Workforce Resiliency	3.2	-5.9%	-5.9%

■ Above National Average
■ Meets National Average
■ Below National Average

* For an overview of the Index, methodology, and measure details, go to <https://goo.gl/gSPq8m>

Acknowledgements

Support for the National Health Security Preparedness Index is provided by the Robert Wood Johnson Foundation. The views expressed here do not necessarily reflect the views of the Foundation. The Index Program Office is based at the University of Kentucky. For more information, contact HealthSecurity@uky.edu.

Strengths:

- Michigan's largest improvement occurred in the Incident & Information Management domain, which increased by 15.2% between 2017 and 2018.
- The state's highest health security level in 2018 occurred in the domain of Health Security Surveillance with a value of 9.2.
- Health security levels in 2018 significantly exceeded the national average in 2 domains: Health Security Surveillance, and Incident & Information Management.

Challenges:

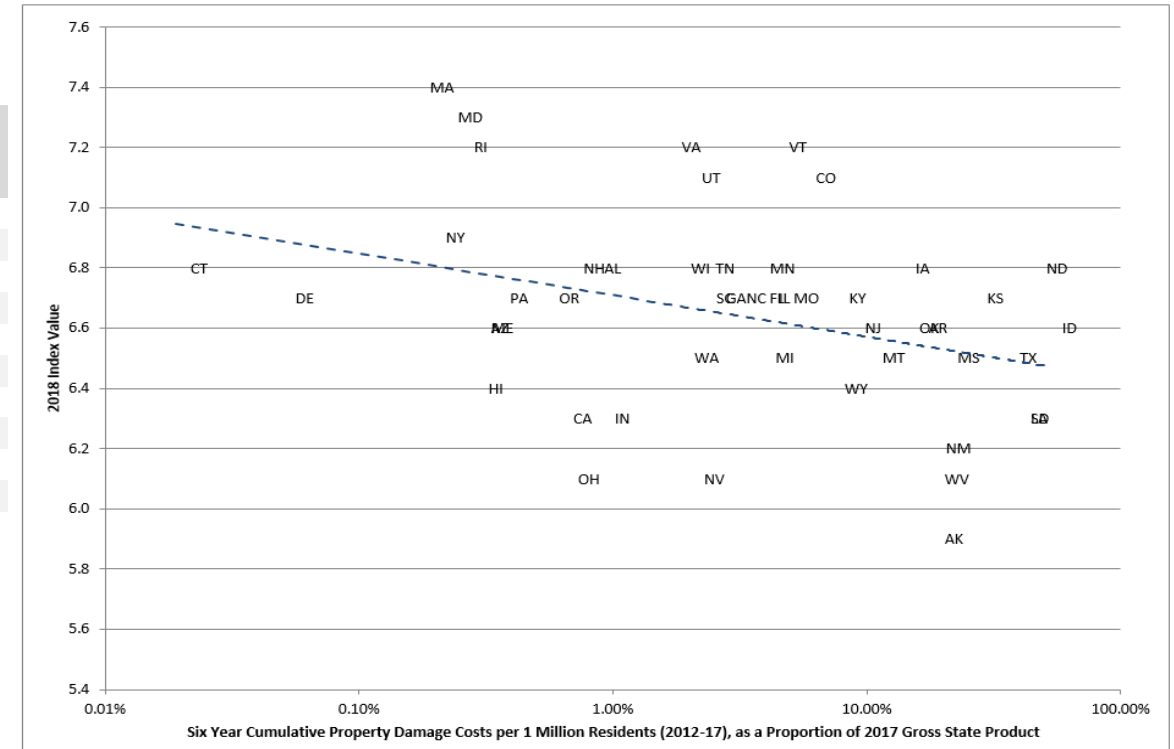
- Health security levels in 2018 declined in 3 domains, with the largest decline of 7.8% occurring in Environmental & Occupational Health.
- The state's lowest health security level in 2018 occurred in Healthcare Delivery with a value of 4.3.
- Health security levels in 2018 were significantly below the national average in 4 domains: Community Planning & Engagement, Healthcare Delivery, Countermeasure Management, and Environmental & Occupational Health.

Michigan Health Security Hazards 2012-2017

Each state faces unique health security hazards. The table below shows health security hazards that Michigan experienced between 2012 and 2017 and the aggregated effects of those hazards in terms of event length, injuries, deaths, and economic damages. During those same years, health security hazards in the United States resulted in 12,249 injuries, 2,852 deaths, and 191 billion dollars in property and crop damage. Our analysis comparing Index scores to the cost of actual hazards suggests that states with higher levels of health security incur less economic damage from the hazards they face (see chart, below).

Michigan Health Security Hazards 2012-2017

Hazard Type	Duration of Events (Days)	Injuries	Deaths	Property Damage (\$ in 1000s)	Crop Damage (\$ in 1000s)
Coastal Event	1	0	9	2	-
Flooding	7	0	2	2,223,128	21,000
Hail	1	0	0	94,118	4,302
Heat	7	288	0	-	-
High Wind	2	6	5	639,158	-
Lightning	1	9	3	1,289	-
Severe Storm/Thunder Storm	2	6	2	31,715	-
Severe Winter Weather	3	1	0	57,351	166,003
Tornado	1	13	0	33,097	-
Wildfire	31	0	0	13,057	-
Total	56	323	20	3,092,916	191,306



Note: Numbers reflect author’s analysis of data from the Spatial Hazard Events and Losses Database for calendar years 2012-2017. Data on event duration do not include response and recovery time periods that extend beyond the active event period. Hazardous events are limited to those recorded in federal registries for weather, climate, and geological events and for Presidential Disaster Declarations. Disease outbreaks, industrial and infrastructure events, and other non-natural events are included only in cases of Presidential Disaster Declaration. Monetary data are adjusted to 2017 dollars. For more information, see: "Spatial Hazard Events and Losses Database for the United States, Version 17.0." at <https://cemhs.asu.edu/sheldus/>

Above National Average

Meets National Average

Below National Average

Michigan Measure Details 2013-2018*

	2013	2014	2015	2016	2017	2018
OVERALL INDEX VALUE (0-10)	6.4	6.4	6.3	6.2	6.6	6.5
DOMAIN 1: HEALTH SECURITY SURVEILLANCE (0-10)	8.9	9.0	9.0	8.7	9.4	9.2
SUBDOMAIN 1.1: HEALTH SURVEILLANCE & EPIDEMIOLOGICAL INVESTIGATION (0-10)	8.3	8.1	8.0	6.9	8.6	8.5
M18 – Number of Epidemiologists per 100,000 population in the state, by quintile (1=Lowest Quintile, 5=Highest Quintile)(Min=1.0,	2.0	1.0	1.0	2.0	3.0	3.0
M22 – State health department has an electronic syndromic surveillance system that can report and exchange information	Yes	Yes	Yes	Yes	Yes	Yes
M217 – State public health laboratory has implemented the laboratory information management system (LIMS) to receive and report laboratory information electronically	Yes	Yes	Yes	Yes	Yes	Yes
M220 – State has legal requirement for nongovernmental laboratories to send specimens associated with reportable foodborne diseases to the state public health laboratory	Yes	Yes	Yes	Yes	Yes	Yes
M23 – Percent of foodborne illness outbreaks reported to CDC by state and local public health departments for which a causative infectious agent is confirmed (Min=0.0%, Max=100.0%)	32.3%	37.0%	34.4%	38.2%	33.3%	29.3%
M290 – State has a public health veterinarian	Yes	Yes	Yes	Yes	Yes	Yes
M265 – State uses an Electronic Death Registration System	Yes	Yes	Yes	No	Yes	Yes
SUBDOMAIN 1.2: BIOLOGICAL MONITORING & LABORATORY TESTING INDEX VALUE (0-10)	8.8	9.3	9.5	9.6	10.0	9.5
M1314 – State public health chemical OR radiological terrorism/threat laboratory is accredited or certified	Yes	Yes	Yes	Yes	Yes	Yes
M208 – State public health laboratory has a permit for the importation and transportation of materials, organisms, and vectors controlled by USDA Animal and Plant Health Inspection Service	Yes	Yes	Yes	Yes	Yes	Yes
M8 – State public health laboratory has a plan for a 6-8 week surge in testing capacity to respond to an emergency	Yes	Yes	Yes	Yes	Yes	Yes
M9 – State public health laboratory has a continuity of operations plan consistent with national incident management guidelines	Yes	Yes	Yes	Yes	Yes	Yes
M11 – State public health laboratory has a plan to receive specimens from sentinel clinical laboratories during nonbusiness hours	No	Yes	Yes	Yes	Yes	Yes
M12 – State public health laboratory assures the timely transportation of samples to appropriate reference laboratories at all times	Yes	Yes	Yes	Yes	Yes	Yes
M211 – Percent of 10 tests for infectious diseases that the state public health laboratory provides or assures, including but not limited to measles, mumps, and hepatitis C (Min=10.0%, Max=100.0%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
M216 – Percent of 15 tests for infectious diseases that the state public health laboratory provides or assures including but not limited to dengue fever, legionella, malaria, and rabies (Min=10.0%, Max=100.0%)	93.3%	100.0%	100.0%	100.0%	100.0%	100.0%
M2 – Percent of Laboratory Response Network biological (LRN-B) proficiency tests successfully passed by laboratories in the state (Min=0.0%, Max=100.0%)	77.8%	71.4%	100.0%	100.0%	100.0%	50.0%
M3 – Percent of e. coli-positive tests submitted by state and local public health laboratories to the CDC PulseNet national database within four working days of receiving samples from clinical laboratories (Min=0.0%, Max=100.0%)	97.0%	87.0%	86.0%	98.0%	100.0%	97.0%
M5 – Percent of chemical agents correctly identified and quantified during unannounced proficiency testing during the state’s Laboratory Response Network (LRN) Emergency Response Pop Proficiency Test (PopPT) Exercise (Min=50.0%, Max=100.0%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Learn more about the Index and health security levels at www.NHSPI.org

Above National Average

Meets National Average

Below National Average

Michigan Measure Details 2013-2018*

	2013	2014	2015	2016	2017	2018
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 (Min=0, Max=4)	4.0	4.0	4.0	4.0	4.0	4.0
M286 – Number of chemical threat and multi-hazards preparedness exercises the state public health laboratory conducts annually (Min=0.0, Max=32.0)	9.0	7.0	7.0	11.0	32.0	19.0
M287 – Percent of listeria-positive tests submitted by state and local public health laboratories to the CDC PulseNet national database within four working days of receiving samples from clinical laboratories (Min=0.0%, Max=100.0%)	96.0%	84.0%	82.0%	92.0%	94.0%	100.0%
M288 – Number of core chemical agent detection methods demonstrated by Level 1 or 2 LRN-C laboratories in the state (Min=0, Max=9)	9.0	9.0	9.0	9.0	9.0	9.0
M911 – State public health laboratory provides or assures testing for soil	Yes	Yes	Yes	Yes	Yes	Yes
M902 – State has a high-capability laboratory to detect chemical threats (Level 1 or 2 LRN-C laboratory)	Yes	Yes	Yes	Yes	Yes	Yes
DOMAIN 2: COMMUNITY PLANNING & ENGAGEMENT COORDINATION INDEX VALUE (0-10)	5.3	5.1	4.4	4.8	4.8	4.7
SUBDOMAIN 2.1: CROSS-SECTOR / COMMUNITY COLLABORATION INDEX VALUE (0-10)	6.5	6.7	5.5	5.6	5.7	5.7
M87 – State health department is accredited by the Public Health Accreditation Board	No	No	No	No	No	No
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 (Min=10.0%, Max=90.0%)	32.2%	39.9%	39.9%	46.0%	46.0%	46.2%
M9031 – Percent of hospitals in the state that participate in health care preparedness coalitions supported by ASPR and CDC (Min=0.0%, Max=100.0%)	100.0%	100.0%	100.0%	92.6%	89.9%	89.9%
M9032 – Percent of emergency medical service agencies in the state that participate in health care preparedness coalitions supported by ASPR and CDC (Min=0.0%, Max=100.0%)	89.9%	89.9%	11.1%	12.5%	22.2%	22.2%
M9033 – Percent of emergency management agencies in the state that participate in health care preparedness coalitions supported by ASPR and CDC (Min=0.0%, Max=100.0%)	65.5%	66.4%	70.9%	75.5%	75.5%	75.5%
M9034 - Percent of local health departments in the state that participate in health care preparedness coalitions supported by ASPR and CDC (Min=0.0%, Max=100.0%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
SUBDOMAIN 2.2: CHILDREN & OTHER AT-RISK POPULATIONS INDEX VALUE (0-10)	5.4	5.4	4.8	5.0	4.7	4.7
M163 – Number of pediatricians per 100,000 population under 18 years old in the state (Min=23.6, Max=334.6)	64.8	65.5	65.0	67.5	68.0	68.4
M164 – Number of obstetricians and gynecologists per 100,000 female population in the state (Min=12.14, Max=57.4)	24.2	24.2	23.8	23.8	23.8	23.8
M170 – Percent of state children (0-18 years) who reside within 50 miles of a pediatric trauma center, including out-of-state centers (Min=0.0%, Max=100.0%)	93.7%	93.7%	93.7%	93.7%	94.0%	94.0%
M53B - Percent of youth who did not miss one or more days of school in past month due to concerns about safety (Min=86.9%, Max=100.0%)	5.0%	5.0%	7.1%	6.5%	7.6%	7.6%
SUBDOMAIN 2.3: MANAGEMENT OF VOLUNTEERS DURING EMERGENCIES INDEX VALUE (0-10)	1.9	2.0	2.0	1.8	1.8	1.7
M266 – Percent of the state’s population who live in a county with a Community Emergency Response Team (CERT) (Min=18.1%, Max=100.0%)	87.3%	87.3%	87.3%	79.9%	79.9%	79.9%
M346 – Number of total Medical Reserve Corps members per 100,000 population in the state (Min=1.7, Max=427.5)	10.7	14.2	14.2	13.9	12.3	10.1

Learn more about the Index and health security levels at www.NHSPI.org

Above National Average

Meets National Average

Below National Average

Michigan Measure Details 2013-2018*

	2013	2014	2015	2016	2017	2018
M176 – Number of Medical Reserve Corps (MRC) members who are physicians per 100,000 population in the state (Min=0.0, Max=32.6)	0.4	0.4	0.4	0.5	0.4	0.4
M179 – Number of Medical Reserve Corps (MRC) members who are nurses or advanced practice nurses per 100,000 population in the state	2.3	5.1	5.1	4.9	3.8	3.3
M186 – Number of Medical Reserve Corps (MRC) members who are other health professionals per 100,000 population in the state	8.0	8.6	8.6	8.5	8.2	6.4
SUBDOMAIN 2.4: SOCIAL CAPITAL & COHESION INDEX VALUE (0-10)	4.4	2.9	2.2	3.9	4.0	4.0
M175 – Percent of voting-eligible population in the state participating in the highest office election (Min=27.8%, Max=76.0%)	64.7%	42.7%	42.7%	64.7%	64.7%	64.7%
M188 – Percent of adults in the state who volunteer in their communities (Min=16.7%, Max=51.1%)	29.1%	28.4%	24.9%	26.5%	29.4%	29.4%
M189 – Number of annual volunteer hours per state resident, 15 years and older (Min=15.9, Max=89.4)	30.5	31.6	25.0	25.2	22.7	22.7
DOMAIN 3: INCIDENT & INFORMATION MANAGEMENT INDEX VALUE (0-10)	7.9	7.9	8.0	8.2	9.0	9.1
SUBDOMAIN 3.1: INCIDENT MANAGEMENT INDEX VALUE (0-10)	6.7	6.3	6.2	6.2	7.3	7.3
M84 – State all hazards emergency management program is accredited by the Emergency Management Accreditation Program (EMAP)	Yes	Yes	Yes	Yes	Yes	Yes
M107 – Percent of local health departments in the state with an emergency preparedness coordinator (Min=25.0%, Max=100.0%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
M701 – Average number of minutes for state health department staff with incident management lead roles to report for immediate emergency response duty (reverse coded)(Min=2.0, Max=651.0)	41.0	56.0	62.0	60.0	14.0	15.0
M344 – State has adopted the Nurse Licensure Compact (NLC)	No	No	No	No	No	No
SUBDOMAIN 3.2: INFORMATION MANAGEMENT INDEX VALUE (0-10)	3.6	4.3	4.8	5.8	8.7	8.8
M228 – Percent of households in the state with broadband in the home (Min=56.7%, Max=89.1%)	73.4%	70.7%	72.9%	79.9%	80.5%	82.8%
M906 - Percent of hospitals in the state that have demonstrated meaningful use of certified electronic health record technology (CEHRT)(Min=61.0%, Max=100.0%)	89.0%	96.0%	98.0%	100.0%	100.0%	100.0%
M907 - Percent of office-based medical doctors and doctors of osteopathy in the state that have demonstrated meaningful use of certified electronic health record technology (CEHRT)(Min=16.0%, Max=93.0%)	37.0%	51.0%	59.0%	70.0%	70.0%	70.0%
M1001 - State has implemented Enhanced 911 (E911) call centers	No	No	No	No	Yes	Yes
DOMAIN 4: HEALTHCARE DELIVERY INDEX VALUE (0-10)	4.6	4.6	4.6	4.7	4.7	4.3
SUBDOMAIN 4.1: PREHOSPITAL CARE INDEX VALUE (0-10)	4.9	4.9	4.9	4.9	4.8	2.5
M140 – Number of emergency medical technicians (EMTs) and paramedics per 100,000 population in the state (Min=32.8, Max=224.79)	70.0	69.5	66.8	65.5	66.2	68.8
M331 – Percent of local emergency medical services (EMS) agencies that submit National EMS Information System compliant data to the state (Min=0.0%, Max=100.0%)	87.3%	87.3%	87.3%	87.3%	87.3%	4.0%
M349 - State has adopted EMS Personnel Licensure Interstate CompAct (REPLICA) legislation	No	No	No	No	No	No
M350U - The average length of time in minutes between EMS notification and arrival at a fatal motor vehicle crash (MVC) in urban areas (reverse coded)(Min=1.0, Max=12.1)	6.4	6.4	6.4	5.5	6.0	6.0
M350R - The average length of time in minutes between EMS notification and arrival at a fatal motor vehicle crash (MVC) in rural areas (reverse coded)(Min=5.0, Max=30.0)	8.6	8.6	8.6	10.3	10.9	10.9

Above National Average
 Meets National Average
 Below National Average

Michigan Measure Details 2013-2018*

	2013	2014	2015	2016	2017	2018
SUBDOMAIN 4.2: HOSPITAL AND PHYSICIAN SERVICES INDEX VALUE (0-10)	5.1	5.3	5.2	5.3	5.5	5.2
M147 – Median time in minutes from hospital emergency department (ED) arrival to ED departure for patients admitted to hospitals in the state (reverse coded)(Min=172.0, Max=496.0)	290.0	284.0	292.0	287.0	284.0	285.0
M148 – Median time in minutes from hospital admission decision to emergency department (ED) departure for patients admitted to hospitals in the state (reverse coded)(Min=39.0, Max=264.0)	103.0	100.0	102.0	100.0	100.0	99.0
M152 – Percent of the state’s population who live within 50 miles of a trauma center, including out-of-state centers (Min=1.0%, Max=100.0%)	98.8%	98.9%	98.1%	98.2%	98.6%	98.9%
M160 – Number of physicians and surgeons per 100,000 population in the state (Min=125.9, Max=604.9)	274.0	327.0	307.8	278.1	336.5	321.7
M167 – Number of active registered nurse (RN) and licensed practical nurse (LPN) licenses per 100,000 population in the state (Min=0, Max=4253.76)	1763.7	1725.6	1705.8	1770.0	1752.7	0.0
M168 – Percent of the state’s population living within 100 miles of a burn center, including out-of-state centers (Min=0.0%, Max=100.0%)	92.9%	92.9%	92.9%	92.9%	92.9%	92.9%
M296 – Percent of hospitals in the state providing geriatric services (Min=17.9%, Max=71.5%)	46.5%	46.5%	46.2%	46.4%	44.9%	54.8%
M297 – Percent of hospitals in the state providing palliative care programs (Min=10.3%, Max=57.4%)	34.9%	34.3%	36.7%	35.7%	32.9%	41.5%
M298 – Number of hospital airborne infection isolation room beds per 100,000 population in the state, including beds within 50 miles from neighboring states (Min=5.6, Max=244.5)	34.8	36.0	33.8	34.8	35.5	34.6
M299 – Risk-adjusted 30-day survival rate (percent) among Medicare beneficiaries hospitalized in the state for heart attack, heart failure, or pneumonia (Min=11.9%, Max=15.7%)	12.4%	12.8%	13.0%	13.0%	14.2%	13.9%
M300 – Percent of hospitals in the state with a top quality ranking (Grade A) on the Hospital Safety Score (Min=0.0%, Max=83.3%)	29.0%	30.8%	23.8%	32.5%	24.7%	24.7%
SUBDOMAIN 4.3: LONG-TERM CARE INDEX VALUE (0-10)	3.4	3.2	3.8	3.3	3.2	6.0
M308 – Average number of nurse (RN) staffing hours in nursing homes in the state—hours per resident per day (Min=0.5, Max=2.1)	0.9	0.9	0.9	0.9	0.9	0.8
M309 – Average number of nursing assistant (CNA) staffing hours in nursing homes in the state—hours per resident per day (Min=2.1, Max=4.3)	2.6	2.6	2.6	2.5	2.6	2.5
M307 – Percent of long-stay nursing home residents in the state given the seasonal influenza vaccine (Min=86.2%, Max=98.3%)	0.9%	0.9%	0.9%	0.9%	0.9%	92.6%
M310 – Average number of licensed practical nurse (LPN) staffing hours in nursing homes in the state—hours per resident per day (Min=0.3, Max=1.2)	0.8	0.8	0.8	0.8	0.9	0.9
M303B - Number of nursing home deficiencies (evacuation plan deficiencies or emergency planning deficiencies) per 100 nursing homes in the state (1=Highest Quintile and 5=Lowest Quintile)(Min=1.0, Max=5.0)	5.0	5.0	4.0	5.0	5.0	3.0
M23NH - Number of disease outbreaks in nursing homes or assisted living facilities per 1,000 certified nursing home residents in a state (reverse coded)(Min=0.0, Max=16.6)	0.3	2.3	1.9	2.1	2.9	2.1

Above National Average
 Meets National Average
 Below National Average

Michigan Measure Details 2013-2018*

	2013	2014	2015	2016	2017	2018
SUBDOMAIN 4.4: MENTAL & BEHAVIORAL HEALTHCARE INDEX VALUE (0-10)	3.8	3.8	3.7	4.2	3.6	3.7
M316 – Percent of hospitals in the state providing psychiatric emergency services (Min=6.3%, Max=70.0%)	37.2%	37.2%	34.9%	35.1%	35.9%	40.7%
M317 – Percent of need met for mental health care in health professional shortage areas (HPSA) in the state (Min=5.3%, Max=100.0%)	41.4%	41.4%	41.4%	55.6%	28.7%	23.9%
M800 – Percent of the state’s population not living in a HRSA Mental Health Professional Shortage Area (Min=0.0%, Max=100.0%)	30.2%	30.2%	30.2%	30.2%	38.4%	41.8%
SUBDOMAIN 4.5: HOME CARE INDEX VALUE (0-10)	4.5	4.7	4.7	5.1	5.7	6.0
M291 – Percent of home health visits in the state where the home health team determined whether their patient received a flu shot (Min=60.0%, Max=87.0%)	72.0%	74.0%	72.6%	74.3%	77.1%	78.6%
M292 – Percent of home health visits in the state where the home health team began their patients' care in a timely manner (Min=76.0%, Max=100.0%)	87.0%	87.0%	87.6%	88.7%	89.6%	90.7%
M293 – Number of home health and personal care aides per 1,000 population in the state aged 65 or older (Min=2.1, Max=14.3)	6.4	6.4	6.6	6.7	6.8	6.7
DOMAIN 5: COUNTERMEASURE MANAGEMENT INDEX VALUE (0-10)	5.7	5.7	5.5	5.4	5.7	6.1
SUBDOMAIN 5.1: MEDICAL MATERIEL MANAGEMENT, DISTRIBUTION, & DISPENSING INDEX VALUE (0-10)	5.6	5.3	5.0	4.7	5.0	6.3
M161 – Number of Pharmacists per 100,000 population in the state (Min=60.1, Max=150.7)	98.8	96.0	89.4	87.7	91.1	94.6
M270 – Percent of hospitals in the state participating in a group purchasing arrangement (Min=0.0%, Max=100.0%)	74.4%	71.5%	72.8%	69.0%	71.9%	95.4%
SUBDOMAIN 5.2: COUNTERMEASURE UTILIZATION & EFFECTIVENESS INDEX VALUE (0-10)	3.8	4.3	4.4	4.4	4.7	4.1
M24 – Percent of children ages 19-35 months in the state receiving recommended routine childhood vaccinations (Min=57.1%, Max=85.3%)	70.5%	70.0%	65.0%	67.6%	70.2%	69.9%
M32 – Percent of seniors age 65 and older in the state receiving a seasonal flu vaccination (Min=49.9%, Max=78.0%)	61.0%	62.7%	65.7%	59.5%	62.6%	56.3%
M33 – Percent of seniors age 65 and older in the state receiving a pneumococcal vaccination (Min=60.5%, Max=79.7%)	66.8%	68.6%	69.3%	72.8%	71.8%	75.7%
M34 – Percent of children aged 6 months to 4 years old in the state receiving a seasonal flu vaccination (Min=43.9%, Max=92.7%)	61.6%	65.7%	65.2%	68.1%	63.6%	59.0%
M35 – Percent of adults aged 18 years and older in the state receiving a seasonal flu vaccination (Min=30.8%, Max=58.1%)	37.9%	39.5%	42.0%	38.5%	41.1%	35.5%
DOMAIN 6: ENVIRONMENTAL & OCCUPATIONAL HEALTH INDEX VALUE (0-10)	5.5	5.5	5.4	4.5	4.5	4.8
SUBDOMAIN 6.1: FOOD & WATER SECURITY INDEX VALUE (0-10)	5.4	5.4	5.3	3.6	3.6	3.5
M275_DW – State public health laboratory provides or assures testing for drinking water	Yes	Yes	Yes	No	No	No
M275_PWW – State public health laboratory provides or assures testing for private well water	Yes	Yes	Yes	No	No	No
M275_REC – State public health laboratory provides or assures testing for recreational water	Yes	Yes	Yes	No	No	No
M275_SUR – State public health laboratory provides or assures testing for surface water	Yes	Yes	Yes	No	No	No
M275_WST – State public health laboratory provides or assures testing for waste water	Yes	Yes	Yes	No	No	No
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 but not limited to listeria and salmonella (Min=40.0%, Max=99.1%)	75.0%	75.0%	75.0%	87.5%	87.5%	87.5%

Above National Average

Meets National Average

Below National Average

Michigan Measure Details 2013-2018*

	2013	2014	2015	2016	2017	2018
M195 – Percent of population in the state whose community water systems meet all applicable health-based standards (Min=15.4%, Max=98.3%)	4.2%	4.2%	5.4%	4.6%	2.5%	2.1%
M925 – Percent of population in the state whose community water systems meet all applicable non health-based standards (Min=19.2%, Max=85.0%)	14.5%	10.9%	8.2%	11.0%	13.5%	13.3%
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)(reverse coded)(Min=0.0, Max=14.9)	3.1	2.7	3.2	3.4	3.0	4.1
SUBDOMAIN 6.2: ENVIRONMENTAL MONITORING INDEX VALUE (0-10)	6.9	6.8	6.9	5.1	5.1	5.1
M202 – State public health laboratory provides or assures testing for air samples	Yes	Yes	Yes	Yes	Yes	Yes
M257_AIHA – State public health laboratory is certified or accredited by the American Industrial Hygiene Association (AIHA)	Yes	Yes	Yes	Yes	Yes	Yes
M257_EPA – State public health laboratory is certified or accredited by the Environmental Protection Agency (EPA)	No	No	No	No	No	No
M257_NELAC – State public health laboratory is certified or accredited by the National Environmental Laboratory Accreditation Conference (NELAC)	No	No	No	No	No	No
M272 – Percent of 12 tests for different contaminants in environmental samples that the state public health laboratory provides or assures, including but not limited to asbestos, lead, and radon (Min=0.0%, Max=100.0%)	70.0%	70.0%	70.0%	60.0%	60.0%	60.0%
M273 – State public health laboratory provides or assures testing for hazardous waste	Yes	Yes	Yes	No	No	No
M904 – Number of environmental scientists and specialists per 100,000 population in the state (Min=6.6, Max=237.6)	13.4	15.5	19.1	21.6	21.5	25.6
M23A - Number of disease outbreaks in a state due to animal contact per 1 million population (reverse coded)(Min=0.0, Max=5.2)	0.0	0.2	0.1	0.1	0.2	0.3
SUBDOMAIN 6.3: PHYSICAL ENVIRONMENT AND INFRASTRUCTURE INDEX VALUE (0-10)	4.0	3.9	3.9	3.9	3.8	5.8
M922 - Transportation Structural Integrity, percent of bridges that are in good or fair condition (not poor) (Min=2.0%, Max=100.0%)	11.9%	11.4%	11.3%	11.4%	10.8%	10.3%
M923 - Surface Water Control Structural Integrity, percent of High-Hazard Potential Dams that are not in poor or unsatisfactory condition (Min=2.0%, Max=100.0%)	70.6%	70.6%	70.6%	70.6%	70.6%	73.8%
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 (Min=0.0%, Max=100.0%)	68.7%	68.7%	68.7%	68.7%	68.7%	68.8%
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 (Min=1.8%, Max=100.0%)	13.6%	13.0%	12.8%	12.1%	11.3%	10.8%
M334 – State has a climate change adaptation plan	No	No	No	No	No	Yes
SUBDOMAIN 6.4: WORKFORCE RESILIENCY INDEX VALUE (0-10)	3.4	3.4	3.2	3.3	3.4	3.2
M530 – Percent of employed population in the state with some type of paid time off (PTO) benefit (Min=40.8%, Max=70.8%)	57.3%	57.2%	53.7%	50.2%	49.7%	47.9%
M531 – Percent of employed population in the state engaging in some work from home by telecommuting (Min=3.7%, Max=38.0%)	8.2%	7.3%	12.9%	21.7%	21.7%	21.6%
M705 – Percent of employed population in the state who work from home (Min=1.9%, Max=7.9%)	3.7%	3.8%	3.7%	3.6%	4.0%	4.2%

* For an overview of the Index, methodology, and measure details, go to <https://goo.gl/gSPq8m>

Min and Max values represent minimum and maximum values for all states in all years.

Learn more about the Index and health security levels at www.NHSPI.org

About the Index

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. The Program Office is directed by Glen P. Mays, PhD, Professor of Health Systems and Services Research at the University of Kentucky.

Additional Resources

Report of Key Findings: https://nhspi.org/wp-content/uploads/2019/05/NHSPI_2019_Key_Findings.pdf

List of Measures: https://nhspi.org/wp-content/uploads/2019/05/NHSPI_2019_Measures.pdf

Index Methodology: https://nhspi.org/wp-content/uploads/2019/05/NHSPI_2019_Methodology.pdf

Summary of Key Index Changes: https://nhspi.org/wp-content/uploads/2019/05/NHSPI_2019_Key_Changes.pdf

Index Data Explorer Tool: https://nhspi.org/wp-content/uploads/2019/05/NHSPI_2019_Data_Download.xlsx

Innovator's Guide to Index Use: https://nhspi.org/wp-content/uploads/2017/05/Innovators-Guide_24Apr2018.pdf

Report Authors:

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

Recommended Citation:

Center for Public Health Systems and Services Research. *National Health Security Preparedness Index 2019 Release Summary of Key Findings*. Lexington, KY: University of Kentucky; May 2019.

National Advisory Committee Members, 2018-2019:

Chair

Thomas V. Inglesby, MD, CEO and Director, Johns Hopkins Center for Health Security

Members

Anita Chandra, DrPH, Director of Justice, Infrastructure, and Environment, RAND

Eric Holdeman, Emergency Management Consultant

Ana-Marie Jones, Chief Resiliency Officer, Interpro

Dara Lieberman, MPP, Senior Government Relations Manager, Trust for America's Health

Robert Mauskapf, MPA, Colonel, USMC (ret.), Director of Emergency Preparedness, Virginia Department of Health

Suzet McKinney, DrPH, MPH, Executive Director, Illinois Medical District Commission

F. Christy Music, DoD Liaison, Program Director, Health and Medical Policy, Department of Defense

Stephen Redd, MD, Director, CDC Office of Public Health Preparedness & Response

John Wiesman, DrPH, MPH, Washington State Secretary of Health

Kevin Yeskey, MD, Deputy Assistant Secretary for Preparedness and Response

Program Consultants:

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

For More Information:

National Health Security Preparedness Index Program Office

Center for Public Health Systems and Services Research

University of Kentucky College of Public Health

111 Washington Avenue, Suite 201

Lexington, KY 40536

Email: healthsecurity@uky.edu

Web: www.nhspi.org

