The National Health Security Preparedness Index: Proposed Updates for 2015-16

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The National Health Security Preparedness Index:

Proposed Updates for 2015-16

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Overarching Goals for the Index

- Increase awareness & understanding of preparedness
- Encourage coordination & collaboration
- Support benchmarking & quality improvement
- Inform planning & policy development
- Stimulate research & development
Guiding Principles for the Index

http://www.nhspi.org/tools-resources/guiding-principles/

- Health security is multifactorial
- Health security is a shared responsibility – all sectors
- Broad definition of preparedness (PPD-8)
- Risk reduction and primary prevention as core concepts
- Must be practical and value-added
- Build on existing data sources: low-burden
- Align with existing capabilities and frameworks
- Accurately and completely reflect state and national preparedness
- Use transparent development process that is stakeholder driven, continuously improving, based on real-world experience
- Value of composite information exceeds sum of the parts
- Advance the science of preparedness measurement
Objectives for 2015-16 Updates

Offer users greater clarity and confidence about the meaning and use of Index values

- Comparisons across domains
- Comparisons across states
- Comparisons over time (new)
Current Index Structure and Methodology

Overall

Health Security Surveillance
- Health Surveillance & Epidemiological Investigation
- Biological Monitoring & Laboratory Testing
- Management of Volunteers during Emergencies
- Social Capital & Cohesion

Community Planning & Engagement
- Cross-Sector / Community Collaboration
- Children & Other At-Risk Populations

Incident & Information Management
- Incident Management & Multi-Agency Coordination
- Emergency Public Information & Warning
- Legal & Administrative

Healthcare Delivery
- Prehospital Care
- Inpatient Care
- Long-Term Care
- Mental & Behavioral Healthcare
- Home Care

Countermeasure Management
- Medical Materiel Management, Distribution, & Dispensing
- Countermeasure Utilization & Effectiveness

Environmental & Occupational Health
- Food & Water Security
- Environmental Monitoring
Current Index Structure and Methodology

- 197 individual measures
  - Unweighted average
- 18 subdomains
  - Unweighted average
- 6 domains
  - Unweighted average
- State overall values
  - Unweighted average
- National overall values

Scaling

- Dichotomous: value of 0 or 10
- Continuous: % of maximum state value x10, remove outliers >+2SD
- Missing values imputed as average of nonmissing measures within subdomain
Opportunities for Index improvement

**Strengths:** Large pool of existing measures having face validity with preparedness stakeholders

**Limitations:** Not all measures are created equal
- Non-validated and self-reported measures
- Redundancies in measurement
- Implicit weighting and scaling of measures
- Infrequent and irregular updates to data sources
- Longitudinally inconsistent measure specifications
- Imbalances in measures across preparedness sectors

**Opportunities:** selectively pruning, modifying, and adding measures to enhance validity & reliability
Proposed Index updates for 2015-2016

- Updates to computation methods
  - Scaling/normalization
  - Weighting
  - Missing values
  - Comparisons: cross-sectional and longitudinal

- Updates to measures
  - New measures to add
  - Existing measures to modify or reclassify
  - Existing measures to exclude
Updates to computational methods

- **Rescale** based on min/max transformation anchored on baseline 2013 data
- **Reweight** measures based on Delphi panel, with option to reweight based on user-defined priorities
- **Impute missing values** using prior & concurrent data
- **Calculate confidence intervals** for comparisons across domains, subdomains and states
- Add **retrospective longitudinal comparisons** back to 2013 baseline in every Index release
Updates to measures

Add new measures for under-represented constructs

- **Hospital partnerships**: AHA survey
- **Health department community collaborations**: NACCHO survey
- **Health care EM accreditation compliance**: Joint Commission
- **Public health response timeliness**: HP2020 personnel activation, public information, after-action reports
- **Occupational health**: CPS paid time off and telecommuting
- **Fatality management**: electronic death registration and disaster mortuary EMS capability
- **Infrastructure resilience**: Cutter Index: social, economic, institutional, housing, environmental
Updates to measures

Cull and regroup measures using validation studies and data availability assessments

- **Low construct validity**: internal consistency reliability & multi-trait scale validity
- **Inadequate data periodicity**: 3 year cycle
- **No measure validation** from prior studies
- **No variation across states**: 11 measures

Retain: 69 measures
Modify/Regroup: 20 measures
Exclude: 89 measures/composites
Navigating the “Updates” Report

http://www.nhspi.org/comment-on-index/

CONTENTS

Background ........................................................................................................................................3
Methods .............................................................................................................................................4
Recommendations ..........................................................................................................................6
  1. Recommendations on Computational Methods .................................................................6
  2. Recommendations on Individual Measures ............................................................................9
    2.1 New Measures to be Added to the Index ............................................................................9
    2.2 Existing Measures to Retain, Exclude, Modify or Reposition Within the Index ...............12

References .......................................................................................................................................214
Health Security Surveillance

Health Surveillance & Epidemiological Investigation

Has your (state public health) laboratory implemented the Laboratory Information Management System (LIMS) capability to electronically receive and report laboratory information (e.g., electronic test order and report with hospitals and clinical labs, surveillance data from public health laboratory to epidemiology)?

<table>
<thead>
<tr>
<th>ID</th>
<th>M217</th>
<th>Type</th>
<th>Process</th>
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</thead>
<tbody>
<tr>
<td>Measure last updated</td>
<td>2012</td>
<td>Obtained for the Index</td>
<td>Jul-14</td>
</tr>
</tbody>
</table>

Rationale for Measure
Labaratory Information Management Systems (LIMS) are important contributors to timely and accurate sending and receiving of critical laboratory testing information.

Limitations of Measure
Since the introduction of LIMS, newer technologies and standards have been introduced to laboratories, including policies requiring uptake of electronic laboratory reporting (ELR).

Use of Measure
The measure, when combined with other measures that assess informatics and information technology components of laboratory testing and systems, can be used to describe the overall laboratory information sharing and linking capability.

Data Source
Association of Public Health Laboratories (APHL). Comprehensive Laboratory Services Survey (CLSS). 2012. 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.

Target Setting
Subject matter expert opinion

Data Type
Qualitative

Recommendation: Retain measure due to acceptable construct validity from internal consistency reliability tests and multi-trait scale analysis, and acceptable data periodicity.
Submitting Comments During the Public Comment Period

Submit via:  http://www.nhspi.org/comment-on-index/

Deadline:  September 30, 2015 at 11:59pm

Review:  Comments will be considered for their ability to improve:

(1) Index validity and reliability;

(2) Accuracy and relevance of comparisons;

(3) Usability and utility of the Index for key stakeholders;

(4) Feasibility of implementing the revised Index for 2015-16.
For More Information

National Program Office

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