

Winter February 2, 2015

# Orientation to the National Health Security Preparedness Index

Glen P. Mays, *University of Kentucky*

Anna Goodman Hoover, *University of Kentucky*

Michael Childress, *University of Kentucky*

# Orientation Virtual Meeting National Advisory Committee for the National Health Security Preparedness Index



**1-2pm EST | February 2, 2015**

**Web link for presentation slides: [http://connect.uky.edu/nhspi\\_nac/](http://connect.uky.edu/nhspi_nac/)**

**Phone line for audio: 1-877-394-0659 | access code: 7754838037#  
(please mute computer speakers if using phone audio)**

**NHSPI Program Management Office**

University of Kentucky

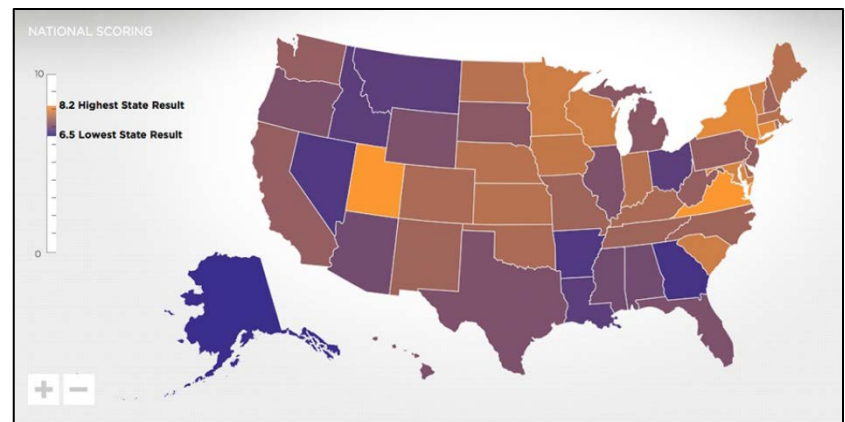


# Meeting Objective

**Orient members of the National Advisory Committee to the Index structure, methodology, and processes for future development and refinement.**



NATIONAL HEALTH SECURITY PREPAREDNESS INDEX



# Agenda

- **Welcome, Introductions, and Charge to the Committee**

Paul Kuehnert, Robert Wood Johnson Foundation

Glen Mays, University of Kentucky Program Management Office

- **Reflections on Index History and Progress to Date**

Tom Inglesby, UPMC Center for Health Security

- **Orientation to the Program Management Office**

Anna Goodman Hoover, University of Kentucky Program Management Office

- **Orientation to the Index Current Structure and Methodology**

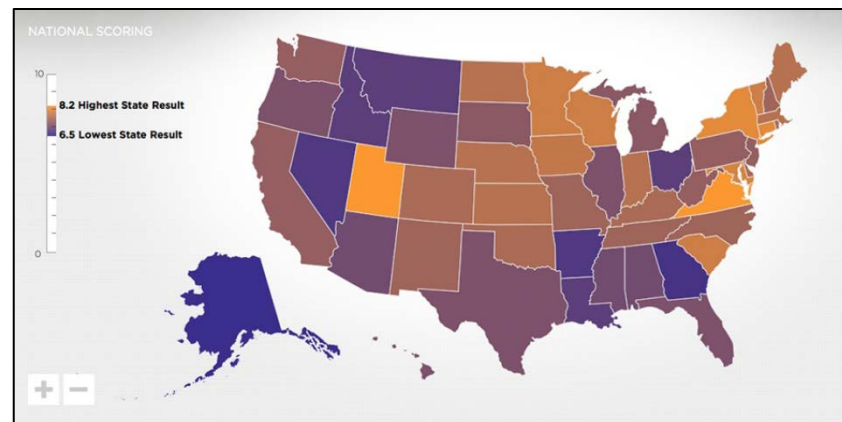
Michael Childress, University of Kentucky Program Management Office

- **Possible Directions for Index Development and Refinement**

Glen Mays

- **Next Steps and Conclusion**

Glen Mays



# Welcome and Introductions



Paul Kuehnert, DNP, RN  
Director and Senior Program Officer,  
Robert Wood Johnson Foundation



Glen Mays, PhD MPH  
Professor, University of Kentucky  
Director, Program Management Office



# National Advisory Committee Members | 2015

1. Tom Inglesby, (Chair) UPMC Center for Health Security
2. Robert Burhans, Emergency Management Consultant
3. Anita Chandra, RAND
4. Ana-Marie Jones, Collaborating Agencies Responding to Disasters
5. Eric Klinenberg, New York University
6. Jeff Levi, Trust for America's Health
7. Nicole Lurie, Assistant Secretary for Preparedness and Response
8. Stephanie Lynch, Caddo Parish (LA) Commissioner
9. Suzet McKinney, Chicago Department of Public Health
10. Stephen Redd, CDC Office of Public Health Preparedness & Response
11. Richard Reed, American Red Cross
12. Martin Jose Sepulveda, IBM Corporation
13. Claudia Thompson, NIH National Institute of Environmental Health Sci.
14. John Wiesman, Washington State Secretary of Health

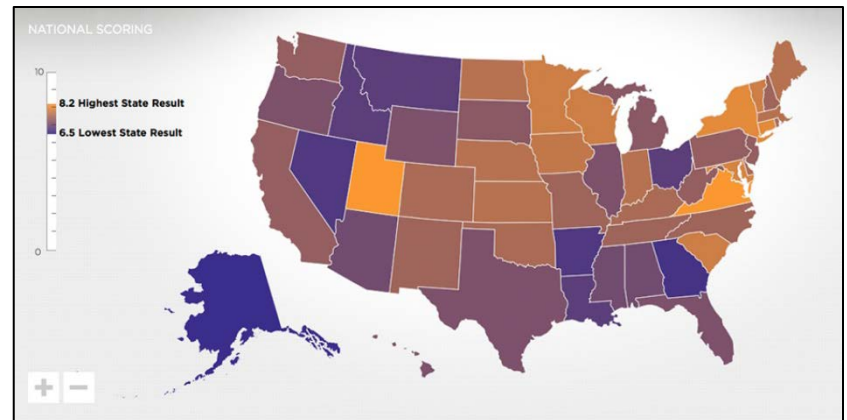


# National Advisory Committee Charge

**Provide scientific and strategic guidance on ways of improving the Index as a tool for advancing health security, preparedness and community resiliency**



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# Reflections on Index History & Progress to Date



Tom Inglesby, MD  
CEO, UPMC Center for Health Security  
Chair National Advisory Committee



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# Guiding Principles for the Index

<http://www.nhs.org/tools-resources/guiding-principles/>

- Health security is multifactorial
- Health security is a shared responsibility – all sectors
- Broad definition of preparedness from PPD-8
- Disaster 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



# Overarching Goals for the Index

- Increase awareness & understanding
- Stimulate dialogue, debate & discussion
- Encourage coordination & collaboration
- Facilitate planning & policy development
- Support benchmarking & quality improvement
- Drive research & development



# Orientation to the Program Management Office



Anna Goodman Hoover, PhD  
Assistant Professor, University of Kentucky  
Deputy Director, Program Management Office



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# Orientation to the Program Management Office



Anna Goodman Hoover, PhD  
Assistant Professor of EOH, UK  
Deputy Director, PMO



Glen Mays, PhD MPH  
Professor of HSR, UK  
Director, PMO



Chris Bollinger, PhD  
Professor of Economics, UK



Dominique Zephyr, MS  
Department of Statistics  
Statistician/Analyst PMO



Michael Childress MS  
UK Center for Business & Economic Research  
Program Manager, PMO



Tim Sellnow, PhD  
Professor of Risk Communication, UK



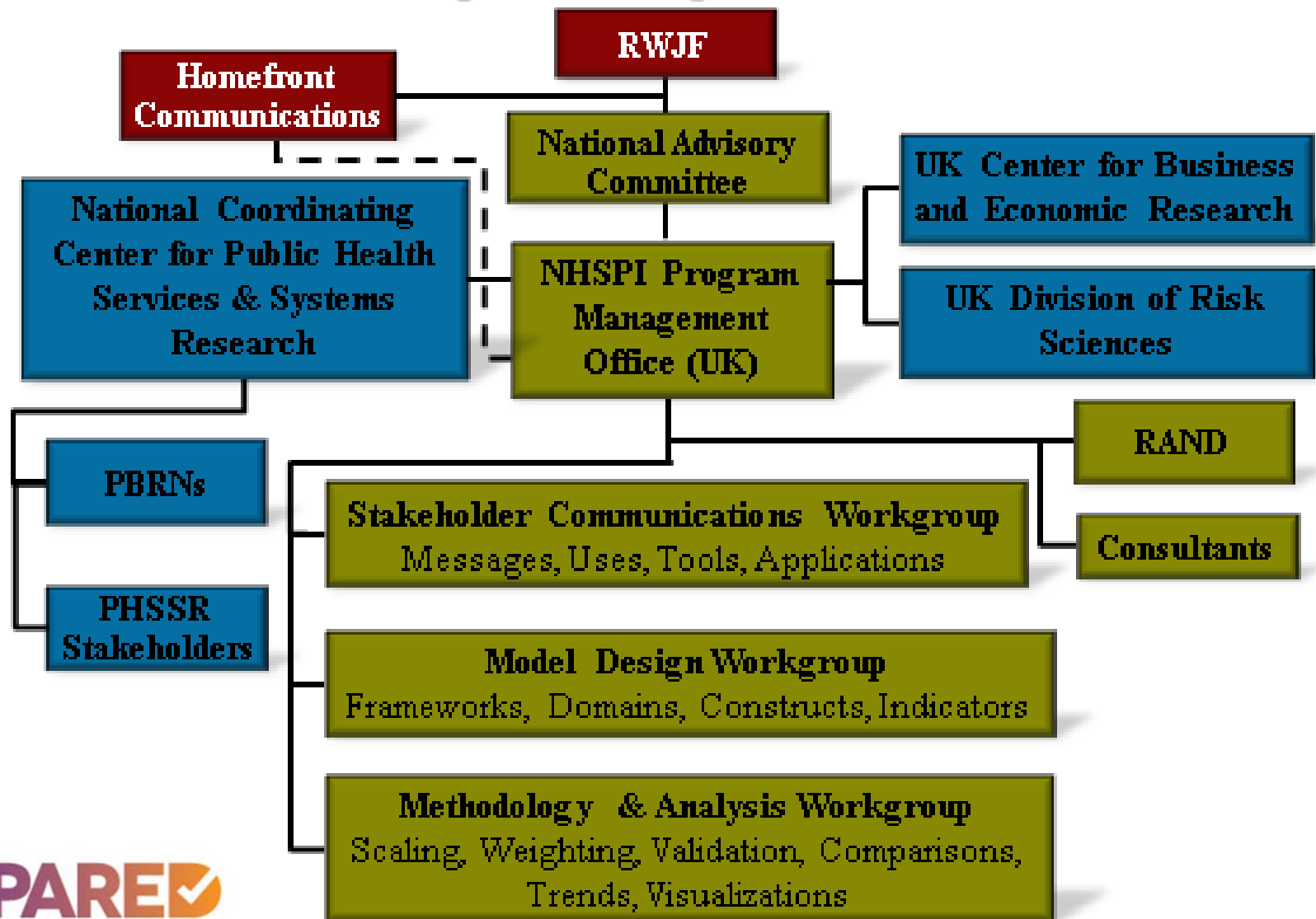
Mary Davis, DrPH  
UNC Consultant



Chris Nelson, PhD  
RAND Consultant



# Orientation to the Program Management Office



# Workgroup Candidates

## Model Design

- Chris Nelson, RAND (CHAIR)
- Tim Sellnow, UKY
- Susan Cutter, Univ SC
- James Kendra, U Delaware
- Pat Sweeney, LHD director
- Jennifer Horney, TAMU
- John J. Grefenste, UPitt
- Robert Burhans, NY
- Jim Blumenstock, ASTHO\*
- Daniel Hanfling, M.D. (chair of the healthcare task force)\*
- Jim Craig (past chair of directors of public health preparedness)\*
- Jackie Scott (DVM, preparedness director state of Michigan)\*
- Erin Sutton (Virginia Beach Emergency Management)\*

## Analytic Methodology

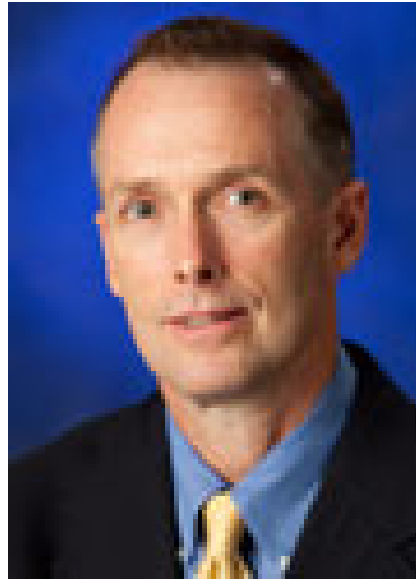
- Chris Bollinger, UKY (CHAIR)
- Cristine Bevc, UCF
- Jon Links, JHU
- Wilbert van Panhuis, Upitt
- Nathan Hubert, Cornell
- Ann Marie Mieir, UNC
- Bridget Booske Catlin, UWI
- Julie Ivy, NCSU
- David Eisenman, UCLA
- Robyn Gershon, UCSF
- Erica Martin, SUNY
- Jackie Merrill, Columbia U
- Joseph S. Mayunga, TAMU
- James Rajotte (from RI)\*
- Eric Carbone (CDC)\*

## Stakeholder

- Cathy Slempp
- Kathleen Kimball-Baker
- Gerrit Bakker, ASTHO
- Nicole Dunifon, NACCHO
- Andrew Jahier, FEMA
- Doug Farquhar, National Conference of State Legislatures
- Claire Reiss, National League of Cities
- Kelly DeGraff, Corporation for National and Community Service
- Jayne Lux, National Business Group on Health
- Liam O'Fallon, NIEHS/NIH
- Sarah, NYC OEPR
- CDC Representative (TBD)
- SAMHSA Representative (TBD)



# Current Index Structure and Methodology



Michael Childress MS  
UK Center for Business & Economic Research  
Program Manager, PMO



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# Current Index Structure and Methodology





# Current Index Structure and Methodology

- 194 individual measures



- 18 subdomains



- 6 domains



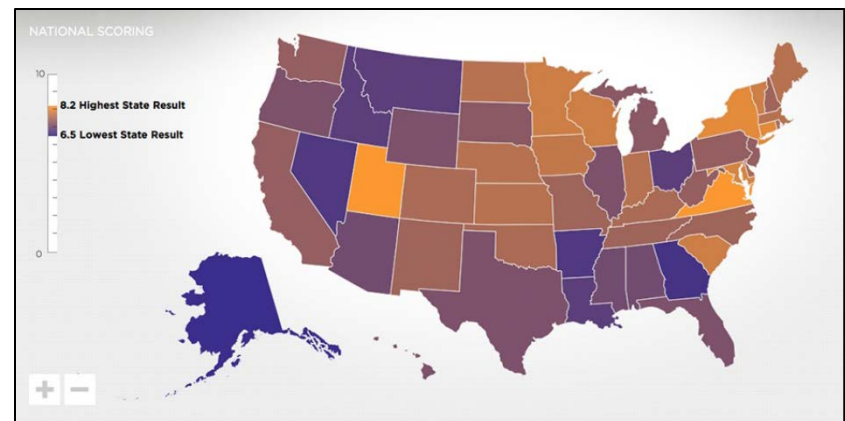
- State overall values



- 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



# 2014 Index Results



- National average: 7.5
- State overall results range from 6.5 to 8.4



# Directions for Development & Refinement



Glen Mays, PhD MPH  
Professor of Health Services Research, UK  
Director, PMO

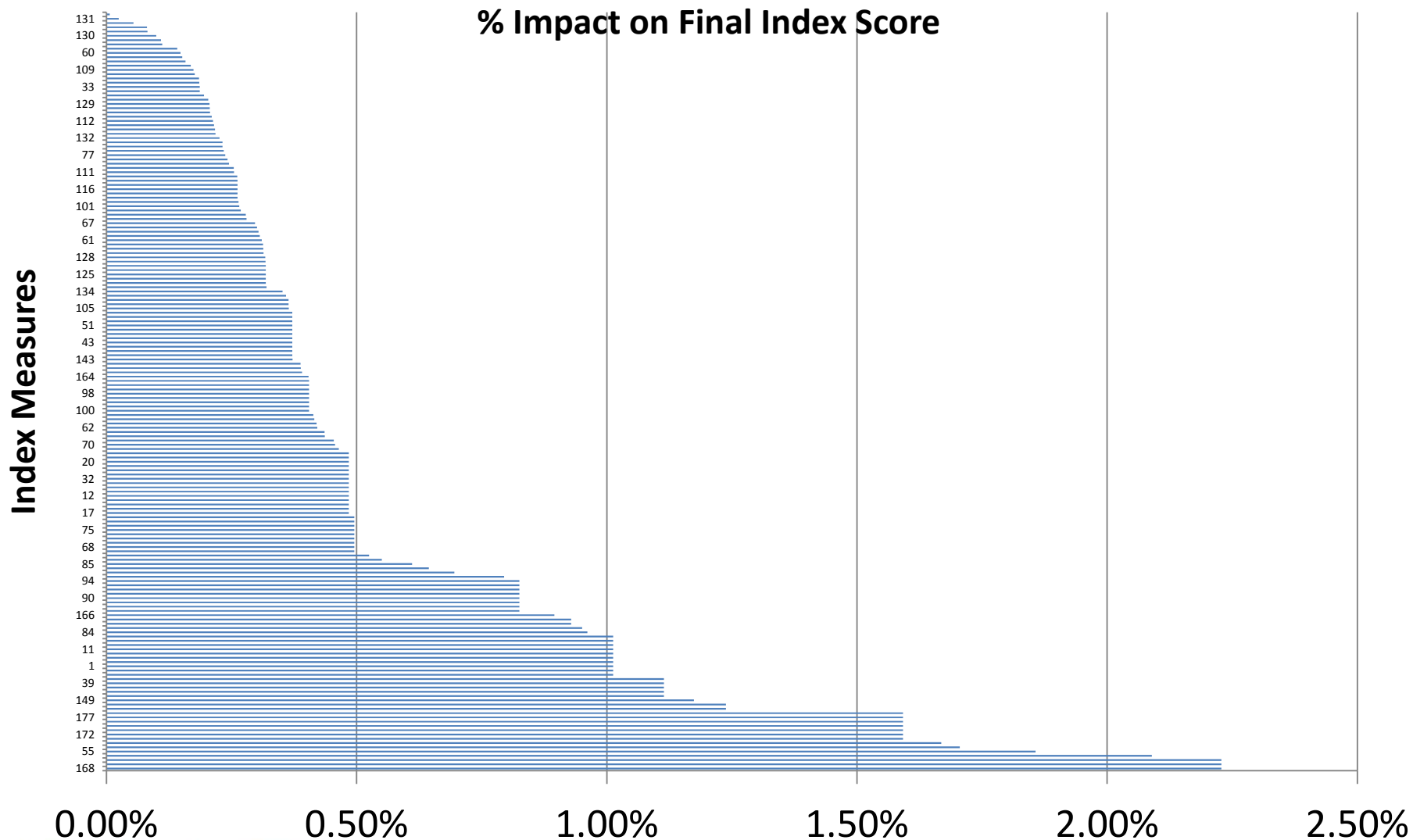


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# Validation studies with 2014 Index

- ***Internal Consistency Reliability (ICR)***: testing at domain and subdomain levels
- ***Multi-Trait Scaling Analysis (MTS)***: item to scale comparisons for convergence and discrimination
- ***Sensitivity analyses***: testing alternative scaling, weighting, imputation algorithms
- ***Comparison and trend tests***: use Bayesian latent variable methods to address uncertainty

# Validation studies with 2014 Index



# Validation studies with 2014 Index

## Internal Consistency Reliability Estimates

Domain	Alpha
Health security surveillance	0.377
Community planning & engagement	0.382
Incident & information management	0.455
Healthcare delivery	0.354
Countermeasure management	0.231
Environmental/occupational health	0.546
Overall	0.311



# Directions for Expansion and Refinement

- **Consolidation**: reduce correlated, redundant & noisy measures
- **Composition**: expand social, environmental economic indicators of preparedness & resiliency
- **Alignment**: with established national frameworks
- **Grouping & weighting**: use empirical methods for internal consistency, discriminant power
- **Scaling**: reflect distributional properties
- **Comparisons**: address accuracy and uncertainty
- **Trending**: track changes via backward compatibility

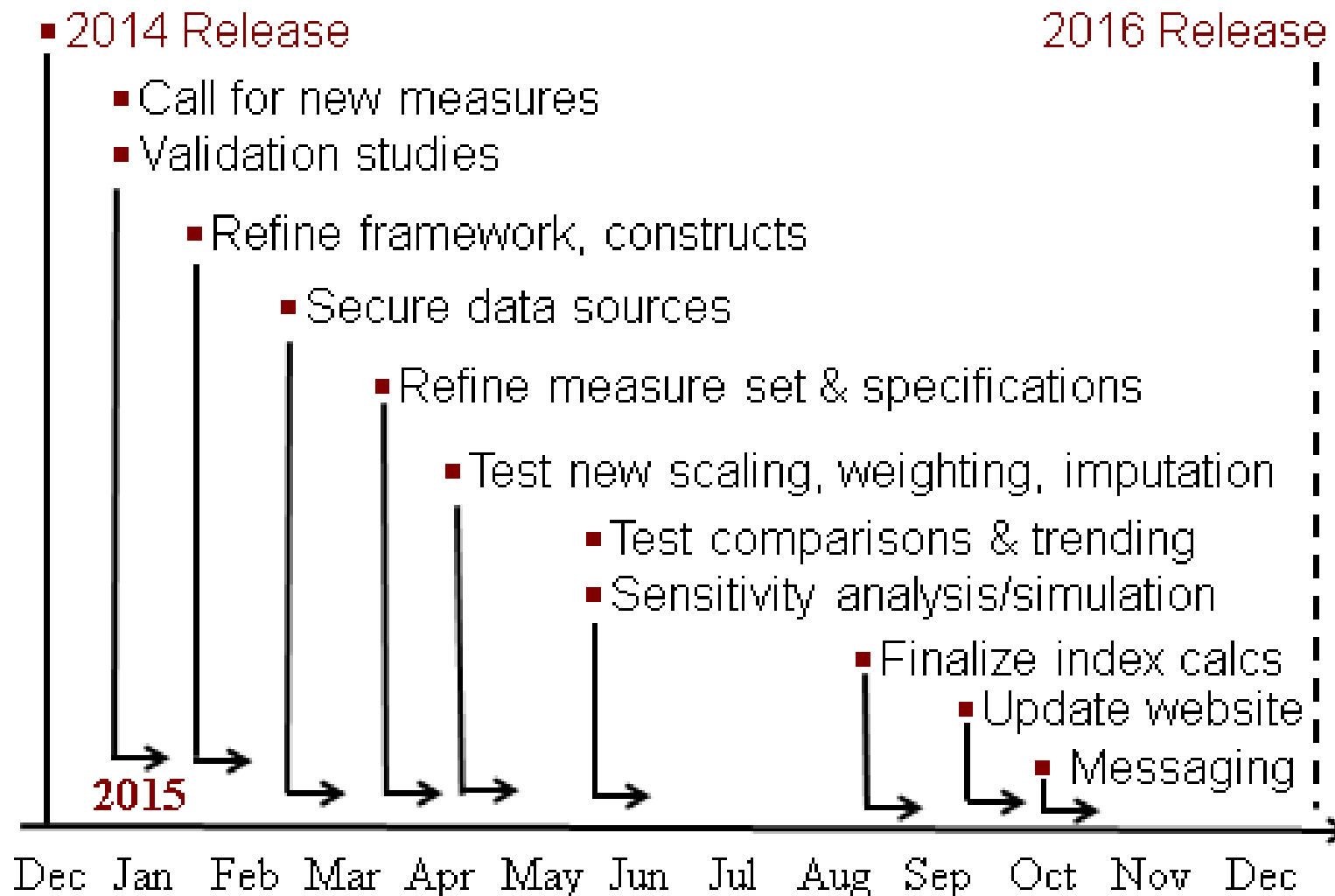


# Stakeholder engagement

- NAC provides overall **scientific & strategic** guidance
- Workgroups contain **representatives** from key scientific, policy, and operational sectors
- Solicit **online comments and feedback** from much larger groups of stakeholders
- Use iterative **online Delphi ratings** to inform key decisions on measures & methodology updates
- In-person workgroup meetings to make final decisions
- Monitor and evaluate **utilization and utility**



# 2015 Timeline



# Next Steps

- In-person NAC meeting
- Quarterly virtual meetings



# Concluding questions and comments



Glen Mays, PhD MPH  
Professor, University of Kentucky  
Director, Program Management Office



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# For More Information



**National Program Office**

**Supported by The Robert Wood Johnson Foundation**

Glen P. Mays, Ph.D., M.P.H. [glen.mays@uky.edu](mailto:glen.mays@uky.edu)

Anna Goodman Hoover, Ph.D. [Anna.Hoover@uky.edu](mailto:Anna.Hoover@uky.edu)

Michael Childress, M.S. [Michael.childress@uky.edu](mailto:Michael.childress@uky.edu)

**Email:** [NHSPI@uky.edu](mailto:NHSPI@uky.edu)

**Web:** [www.publichealthsystems.org](http://www.publichealthsystems.org)

**Journal:** [www.FrontiersinPHSSR.org](http://www.FrontiersinPHSSR.org)

**Archive:** [works.bepress.com/glen\\_mays](http://works.bepress.com/glen_mays)

**Blog:** [publichealtheconomics.org](http://publichealtheconomics.org)