



# State Data Profiles

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**National Healthcare Preparedness Evaluation and  
Improvement Conference**

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# Agenda

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- ASPR/AHRQ Project Purpose
- Goals
  - Task 1: Develop state data profile template
  - Task 2: Develop emergency preparedness measures
- Objectives and activities
- The meaning of “evidence-based”
- How prepared are we?
  - General lessons from the data
- Next steps / Stakeholder input



# Project Purpose

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- Extend AHRQ's Quality Indicators to include healthcare emergency preparedness
- Respond to federal mandates to measure progress in healthcare emergency preparedness
  - Pandemic and All-Hazards Preparedness Act (P.L. 109-417)
  - Homeland Security Presidential Directives (e.g., HSPD-21)
  - Hospital Preparedness Program (HPP) Cooperative Agreement Guidance
- Provide a tool for decision-making by federal and state policy makers and program planners



# Pandemic and All-Hazards Preparedness Act

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- The adoption of measurable evidence-based benchmarks and objective standards



# AHRQ State Snapshots

NHQR State Snapshots

NHQR State Snapshots  
<http://statesnapshots.ahrq.gov/snaps08/index.jsp>

U.S. Department of Health & Human Services [www.hhs.gov](http://www.hhs.gov)

**AHRQ** Agency for Healthcare Research and Quality  
Advancing Excellence in Health Care [www.ahrq.gov](http://www.ahrq.gov)

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## 2008 State Snapshots

The State Snapshots provide State-specific health care quality information, including strengths, weaknesses, and opportunities for improvement. The goal is to help State officials and their public- and private-sector partners better understand health care quality and disparities in their State.

State-level information used to create the State Snapshots is based on data collected for the [National Healthcare Quality Report](#) (NHQR).

### State Selection Map

The [State Selection Map](#) allows you to choose your State to explore the quality of your State's health care against national rates or best performing States.



### Performance Measures

Summary measures of quality of care and States' performances relative to all States and the region by:

- Overall health care quality
- Types of care (preventive, acute, and chronic)
- Settings of care (hospitals, ambulatory care, nursing home, and home health)
- Five clinical conditions
- Special focus areas on diabetes, asthma, Healthy People 2010, clinical preventive services, and disparities

[Interpretation of Results](#) provides the user with background on what to consider in using results from this site — what the performance measures mean, original data sources used, and factors that might affect performance rates. The [Methods](#) section provides information on how each component of the Web site was developed, including how summary



# Project Goals

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- Task 1: State Data Profile
  - A template for state-by-state profiles
  - Structure will allow for comparison across states
  - Content will include existing data on healthcare emergency preparedness and measures developed under this project
  - Initial focus on hospitals, later attention to alternate care sites



# Project Goals

## ■ Template versions:

- Version 1: HPP grantee data and state demographics/background information
- Version 2: incorporate measures from other existing data sources
  - ◆ US Census
  - ◆ AHA Annual Survey
  - ◆ Area Resource File
  - ◆ AHRQ HCUP Data
    - State hospital discharge data
    - Emergency department data
    - State Ambulatory Surgery Data
- Version 3: incorporate newly developed measures



# Project Goals

- Measures of Population Characteristics
  - General population
    - Total population, population density
  - Categories of at-risk individuals
    - Children, pregnant women, elderly, disabled, institutionalized
  - Healthcare facilities
    - Acute care hospitals, ED, ASC, rehabilitation / psychiatric facilities, LTC facilities
  - Healthcare workforce
    - Nurse-staffing ratios, physician density



# Project Goals

- Measures of Healthcare Utilization
  - Acute care hospitalizations
    - Number of admissions, ADC, elective / avoidable, percent potential subject to altered standards of care
    - Demand dynamics / estimated surge capability
    - Technology availability
  - Emergency department visits
    - Number of visits, percent transferred, discharged, admitted, boarded



# Project Goals

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- Task 2: Develop measures
  - 20-30 evidence-based measures of healthcare emergency preparedness
  - Focused on the health care system and not the public health system or EMS system
  - Focused on the capacities and capabilities of hospitals and “hospital substitutes”
  - Based on existing data sources where possible, but may require original data collection if necessary



# Objectives and Activities

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- Compile list of candidate measures
- Review literature related to measures
- Evaluate measures based on criteria
- Assess data used for measure
  - Reliability
  - Validity
  - Utility/importance
  - Usability/feasibility
- Identify gaps in evidence

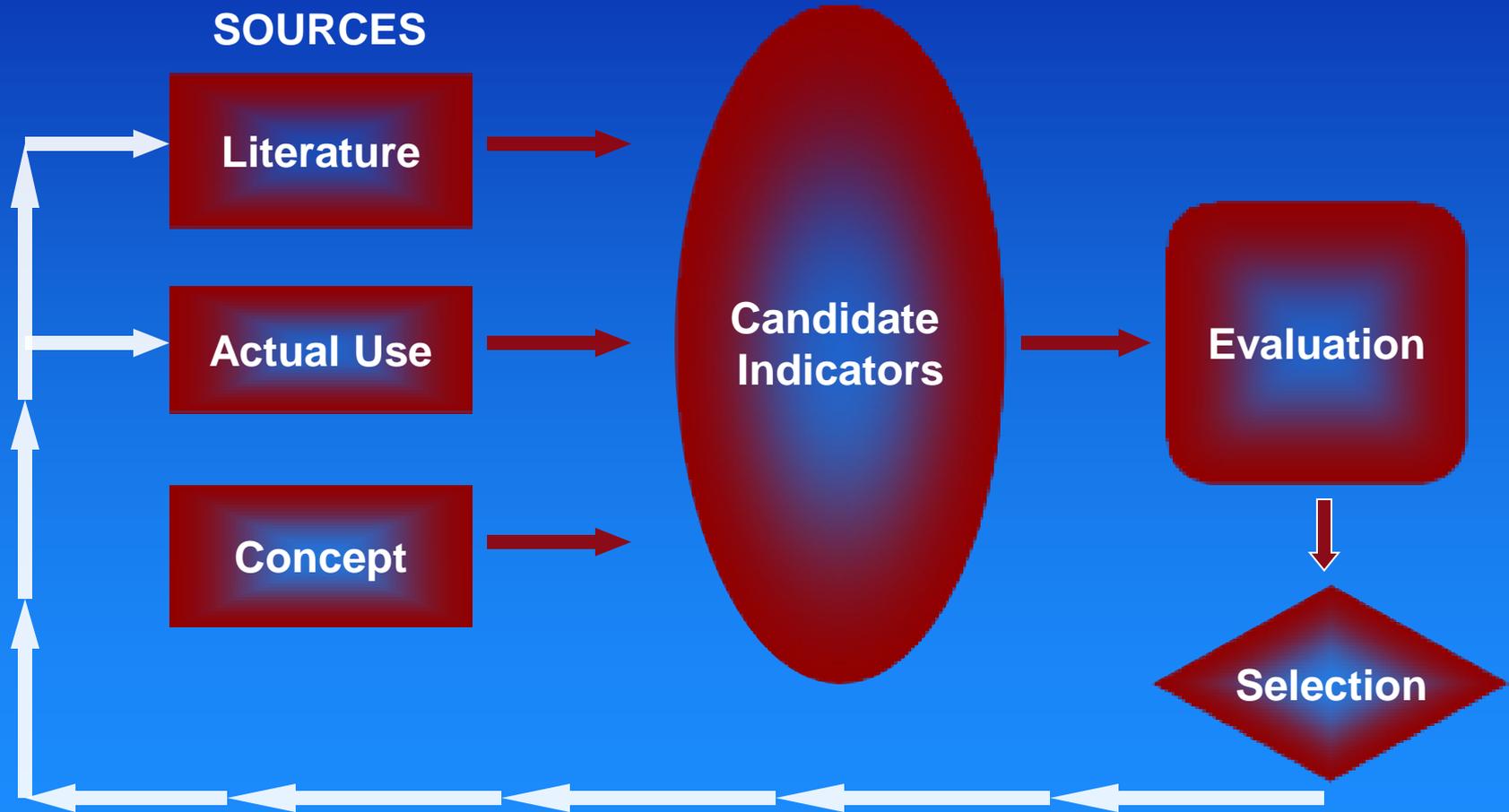


# Objectives and Activities

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- Tier measures based on gaps
- Develop strategy to address gaps
- Gather additional evidence
  - Conduct expert panels, empirical studies
- Re-assess measures
- Select most promising measures for inclusion in State Data Profile

# Measure development and validation process





# Partial list of sources

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- ASPR HPP guidance
- Joint Commission
- AHRQ products
- National Hospital Ambulatory Medical Care Survey
- American College of Emergency Physicians
- American Hospital Association
- Chemical Stockpile Emergency Preparedness Program
- Department of Homeland Security National Preparedness Guidelines
- Metropolitan Medical Response System
- National Incident Management System (NIMS)
- Occupational Safety and Health Administration
- Veteran's Health Administration (VHA)



# Indicator topics

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- Planning and Procedures
- Incident Management
- Communication Systems (Internal, Partners, Public, Equipment/Infrastructure)
- Surge Capacity and Alternate Care Sites
- Patient Management
- Workforce Training, Management, and Protection (Regular and Volunteer Staff)
- Facility Management (Safety, Security, and Access Control)



# Indicator topics (continued)

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- Evacuation and Shelter in Place
- Countermeasures (including Decontamination and Isolation)
- Community Integration
- Continuity of Operations and Resource Management
- Disease Reporting and Surveillance
- Behavioral Health
- Fatality Management



# Measure Development

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## ■ Template Version 3

- preliminary review of 800+ indicators to identify important topics
- approx. 200 indicators retained for further review
- Current status: ~30 indicators for expert panel review process



# What is Evidence-Based?

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- IOM Definition of Quality
  - The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge



# Scientific Method

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- “Evidence-based” measure is a measure developed using a process grounded in the scientific method
- Four components
  - An idea about how things work
  - Framed as a testable hypothesis
  - Measured and expressed in probabilistic terms
  - Open to critique and to revision



# Scientific Method

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- Probabilistic reasoning
  - Deterministic prediction of future behavior is not possible; the most that can be predicted is the probability of various behaviors
  - Observed behavior = systematic + random
- Theories are evaluated in relative terms
- Causal inference is a matter of explanation



# Measuring Performance

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- Conceptual framework
  - Standards describe desired or ideal performance
    - What to measure, how to measure, thresholds
  - Measures are the observable metrics used to ascertain actual performance
    - More than one measure for a given standard
    - Some measures may be better than others depending on the data quality and measure specifications



# Measuring Performance

- Types of measures
  - Structural measures are characteristics that are fixed in the short-term
    - Proxies for process measures that are otherwise difficult to measure directly
    - Necessary conditions for the ability to implement process measures
  - Evidentiary link
    - Specific preparedness structures to the ability to implement response processes

# Measuring Performance

- Types of measures
  - Process measures are activities executed during a medical emergency response (or in the simulation of such a response)
    - part of the ongoing operation, but must be performed faster or on a larger scale
    - performed only during a medical emergency
  - Evidentiary link
    - The activity will increase the likelihood of improved outcomes (reduce mortality and/or morbidity)

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# Measuring Performance

- Types of measures
  - Outcome measures are mortality, morbidity, resource use, proxies etc.
    - Death, disease, disability, health status
    - Utilization where mortality or morbidity is implied
  - Evidentiary link
    - Response processes under the control of the health care system



# How Prepared are We?

- General Lessons from the Data
  - Opportunities for improvement
    - A large amount of variation across HHS regions
  - The dimensionality of emergency preparedness
    - A large amount of that variation is explained by relatively few indicators of preparedness
      - ◆ Indicator measures
        - Reflects an un-measurable construct
      - ◆ Causal measures
        - Predictive of some gold standard or future state

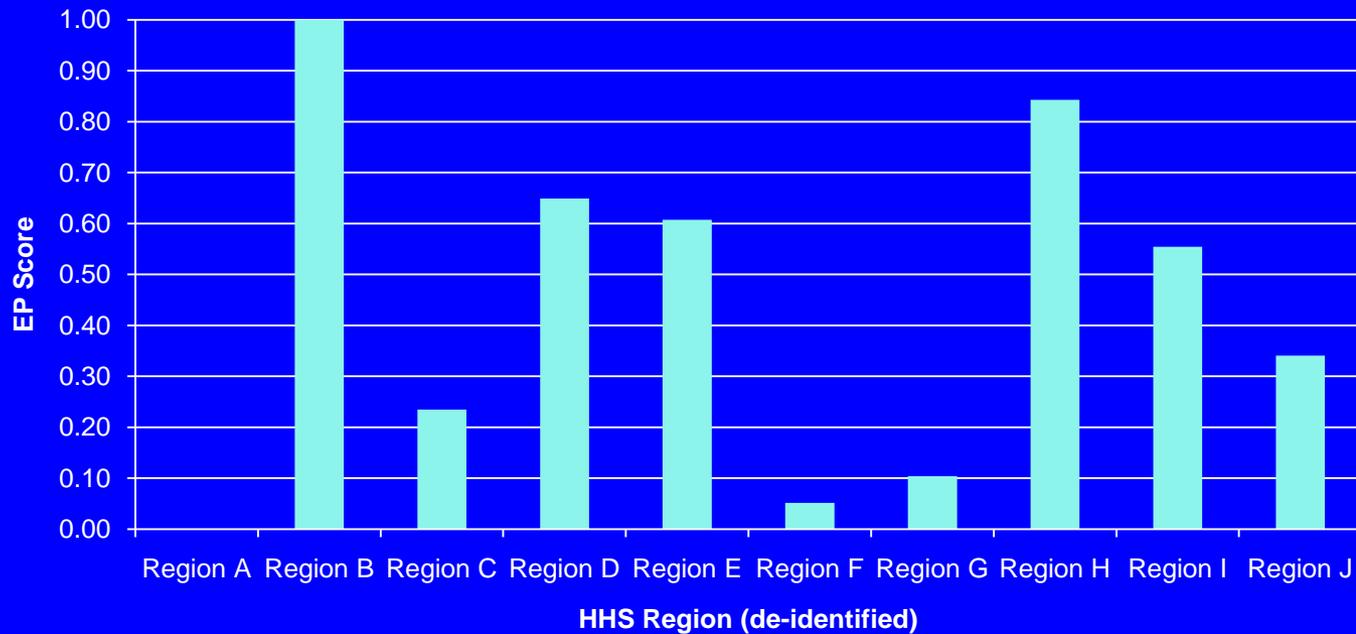


# An EP Index

Dimension 1 (explains about 60% of the statewide total variation; 90% of systematic variation)	Description
Two Way Communication	Number of participating hospitals that indicate they have two-way communications capability
Hospitals Emergency Command Structure	How many participating hospitals have adopted the incident command structure for handling emergency events?
Redundant Communication	Number of participating hospitals that indicate they have dedicated, redundant communications capability
Two Way Communications Exercise Event	Number of participating hospitals that have demonstrated two-way communications capability, during an exercise or incident
Redundant Communication Exercise Event	Number of participating hospitals that have demonstrated dedicated, redundant communications capability, during an exercise or incident
Hospitals Exercise Event	Number of hospitals that have participated in an exercise or incident during the reporting period

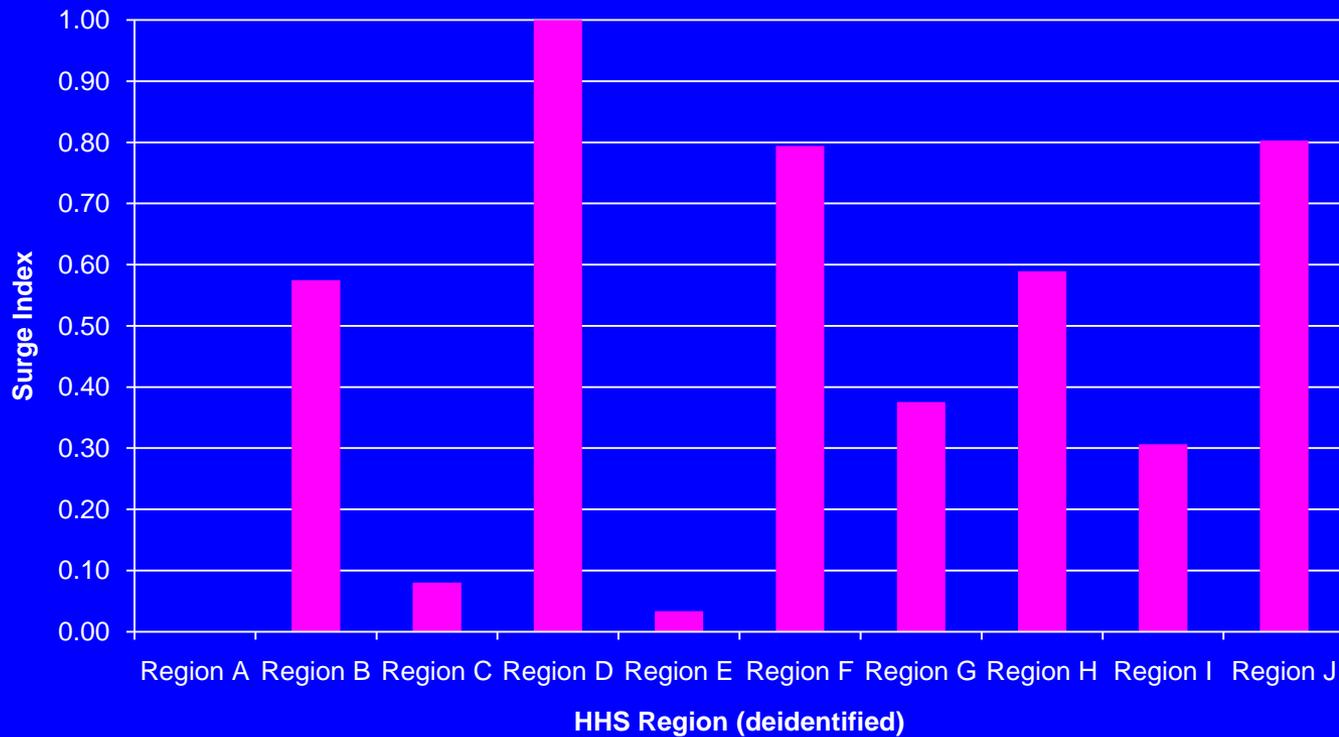
# How Prepared are We?

**Figure 1. Emergency Preparedness Index by Region**



# How Prepared are We?

Figure 2. Surge Index by Region





# Comparable Measures

Variable	2005	2006	2007	2008
Hospitals have 72-hr pharmaceutical caches for hospital personnel/first responders/families	Yes	Yes	Yes	No
Hospitals can maintain at least 1 case in negative pressure isolation	Yes	Yes	No	No
Persons that can be decontaminated within 3 hours	Yes	Yes	Yes	No
Hospital lab personnel trained in clinical sample referral	Yes	Yes	Yes	No
Drills that included hospital personnel, equipment, or facilities	Yes	Yes	No	No
Hospital can report available beds within 60 mins (HAvBED)	No	Yes	Yes	Yes
Hospital can demonstrate redundant communications capability	No	Yes	Yes	Yes
Hospital can demonstrate two-way communication	No	No	Yes	Yes
State can report data to DHHS SOC within 4 hours (HAvBED)	No	Yes	Yes	Yes
State can generate list of potential volunteers within 2 hours (ESAR-VHP)	No	No	Yes	Yes
State can compile initial list of volunteers within 12 hours	No	No	Yes	Yes



# Comparable Data

	2005						2006					
	N	Min	Max	Mean	Median	Std Dev	N	Min	Max	Mean	Median	Std Dev
Hospitals with 72-hr pharmaceutical caches for hospital personnel/first responders/families	47	0	100	68	82	34	49	0	100	70	89	36
Hospitals that can maintain 1 case in negative pressure isolation	50	50	100	94	100	12	48	23	100	92	100	15
Persons that can be decontaminated within 3 hours (per 100,000)	47	9	425	162	143	105	48	9	709	170	127	122
Hospital lab personnel trained in clinical sample referral	49	0	1454	375	266	390	48	0	4873	499	267	759



# HVA Information for Planning

States in FY2005 (20 Completed HVA)	Type of High-Risk Hazard, if Reported	States in FY2006 (35 Completed HVA)
Louisiana Hawaii	Hurricane & Tropical Cyclones	Maine, Virginia, Louisiana, South Carolina, Texas, Hawaii
	Flooding	Maine, Michigan, Ohio, Texas, Colorado, Idaho
	Tornado	Michigan, Ohio, Texas, Nebraska, South Dakota
	Snow & Iced Storms	Maine, Ohio, Colorado, North Dakota, South Dakota
	Severe Thunderstorms	Michigan, North Dakota, South Dakota
	Earthquake	South Carolina, Idaho
Hawaii	Tsunami	Hawaii
Hawaii	Pandemic Influenza	Maine, South Carolina, Idaho, New Mexico, Hawaii
	Chemical Event	Delaware, North Dakota, Nebraska, Oklahoma
	Explosion	South Carolina, New Mexico, Hawaii, Nevada, Idaho



# MOUs Reported

Support Needed	FY2005	FY2006
Multiple Goals	5	15
Bed Capacity	7	0
Isolation Capacity	1	1
ESAR-VHP	1	14
Pharmaceutical Caches	3	1
Personal Protection Equipment	2	1
Decontamination	0	0
Mental Health	1	2
Emergency Medical Services (EMS)	3	4
Surge Capacity	0	5
Alternate Care Sites	0	7
Mobile Medical Facilities	0	4
Tier Management	0	23
Hospital Laboratories	1	3



# Next Steps

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## ■ Stakeholder Input

- Need your input in order to make the measures and the state data profile template as useful as possible
- Meet 2-3 times via conference call
- If you are interested in participating, contact a member of the project team



# Acknowledgments

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## ■ Program staff

- **AHRQ:** Mamatha Pancholi, Sally Phillips, Kelly Johnson
- **ASPR:** Torrance Brown, Ibrahim Kamara

## ■ Project team

- **Stanford:** Kathryn McDonald, Dena Bravata Sheryl Davies, Tamara Chapman
- **UC Davis:** Patrick Romano, Christian Sandrock, David Chin, Aaron Bair, Teresa Farley
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