

# CAPTURING SOCIAL & BEHAVIORAL DOMAINS & MEASURES IN ELECTRONIC HEALTH RECORDS: PHASE 2

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Committee on Recommended Social & Behavioral  
Domains & Measures for Electronic Health Records (EHRs)

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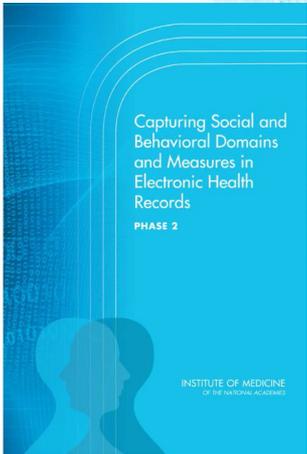
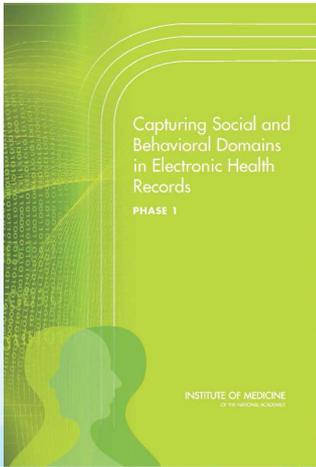
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# COMMITTEE CHARGE

## THE COMMITTEE WAS ASKED TO:

- Identify domains for consideration by ONC for Stage 3 meaningful use;
- Determine criteria for selection;
- Identify domains and measures for inclusion in all EHRs;
- Consider implications of incorporating recommended measures into all EHRs; and
- Identify Issues in linking other data systems.

# TIMELINE



# Conceptual Frameworks

- Selected 3 frameworks, Ansari et al., Kaplan et al., and MacArthur Research Network on SES Health Model
  - Frameworks looked at downstream and upstream determinants of health
- Models distinguish between characteristics that influence health that reside at 5 levels:
  - Socio-demographic
  - Psychological
  - Behavioral
  - Social relationships and living conditions
  - Physical and social environment

# CRITERIA to identify candidate domains

1

**STRENGTH**

3

RELIABLE &  
VALID MEASURES

5

SENSITIVITY

2

**USEFULNESS**

4

FEASIBILITY

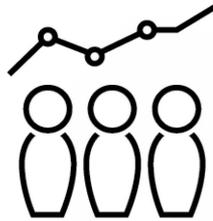
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ACCESSIBILITY

# USEFULNESS



**INDIVIDUAL**



**POPULATION  
HEALTH**



**RESEARCH**

# CANDIDATE DOMAINS

## ■ SOCIODEMOGRAPHIC DOMAINS

- Sexual orientation
- Race/ethnicity
- Country of origin/U.S. born or non-U.S. born
- Education
- Employment
- Financial resource strain  
(Food and housing insecurity)

## ■ PSYCHOLOGICAL DOMAINS

- Health literacy
- Stress
- Negative mood and affect  
(Depression, anxiety)
- Psychological assets  
(Conscientiousness, patient engagement/  
activation, optimism, self-efficacy)

## ■ BEHAVIORAL DOMAINS

- Dietary patterns
- Physical activity
- Tobacco use and exposure
- Alcohol use

## ■ INDIVIDUAL-LEVEL SOCIAL RELATIONSHIPS & LIVING CONDITIONS

- Social connections and social isolation
- Exposure to violence

## ■ NEIGHBORHOODS & COMMUNITIES

- Compositional characteristics

# CRITERIA applied to measures

1

STRENGTH

3

RELIABLE &  
VALID MEASURES

5

SENSITIVITY

2

USEFULNESS

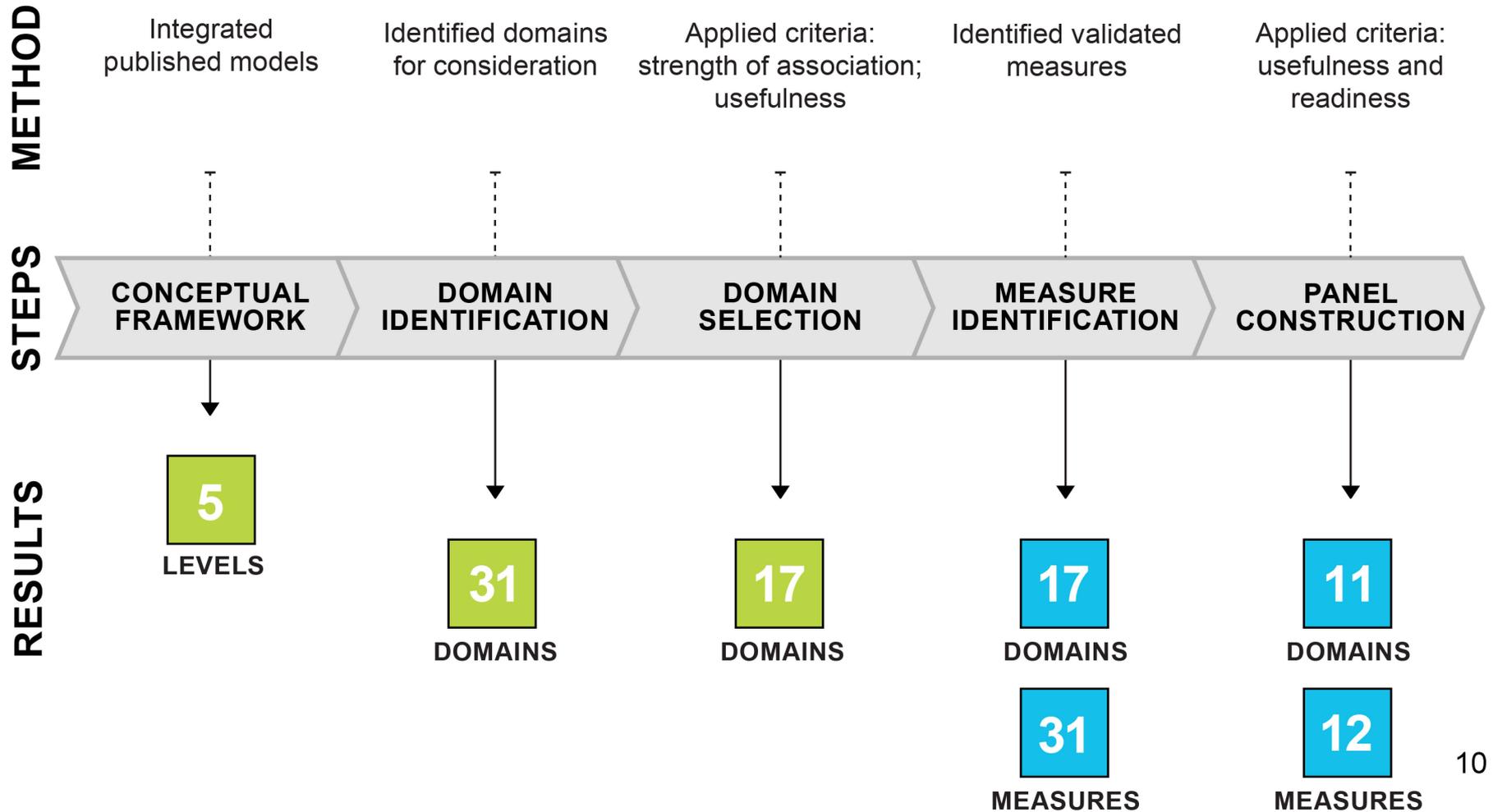
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FEASIBILITY

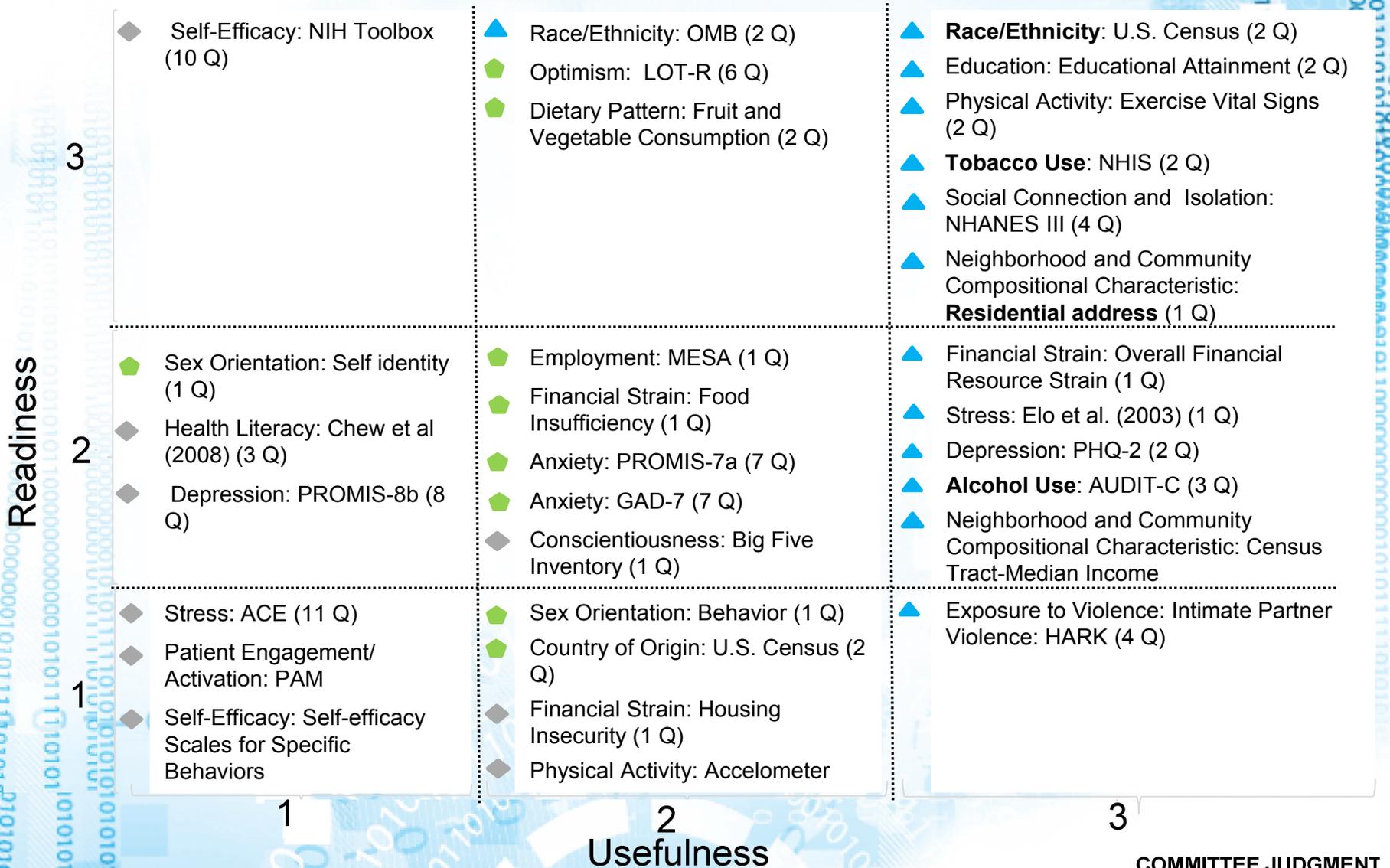
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ACCESSIBILITY

# PROCESS



# STANDARD DOMAIN MEASURES



**NOTE:** Bolded items are domains that are already frequently collected.

COMMITTEE JUDGMENT

1 = 2 = 3 =

# CORE DOMAINS & MEASURES

## WITH SUGGESTED FREQUENCY OF ASSESSMENT

DOMAIN/MEASURE	MEASURE	FREQUENCY
Alcohol Use	3 questions	Screen and follow up
Race and Ethnicity	2 questions	At entry
Residential Address	1 question (geocoded)	Verify every visit
Tobacco Use	2 questions	Screen and follow up
Census Tract-Median Income	1 question (geocoded)	Update on address change
Depression	2 questions	Screen and follow up
Education	2 questions	At entry
Financial Resource Strain	1 question	Screen and follow up
Intimate Partner Violence	4 questions	Screen and follow up
Physical Activity	2 questions	Screen and follow up
Social Connections & Social Isolation	4 questions	Screen and follow up
Stress	1 question	Screen and follow up

**NOTE:** Domains/Measures are listed in alphabetical order; domains/measures in the shaded area are currently frequently collected in clinical settings; domains/measures not in the shaded area are additional items not routinely collected in clinical settings.

# FINDING

5-1

Four social and behavioral domains of health are already frequently collected in clinical settings. The value of this information would be increased if standard measures were used in capturing these data.

# RECOMMENDATION

5-1

The Office of the National Coordinator for Health Information Technology and the Centers for Medicare & Medicaid Services should include in the certification and meaningful use regulations the standard measures recommended by this committee for four social and behavioral domains that are already regularly collected: race/ethnicity, tobacco use, alcohol use, and residential address.

# FINDING

5-2

The addition of selected social and behavioral domains, together with the four domains that are already routinely collected, constitute a coherent panel that will provide valuable information on which to base problem identification, clinical diagnoses, treatment, outcomes assessment, and population health measurement.

# RECOMMENDATION

5-2

The Office of the National Coordinator for Health Information Technology and the Centers for Medicare & Medicaid Services should include in the certification and meaningful use regulations addition of standard measures recommended by this committee for eight social and behavioral domains: educational attainment, financial resource strain, stress, depression, physical activity, social isolation, intimate partner violence (for women of reproductive age), and neighborhood median-household income.

# BENEFITS

Benefits of including recommended measures in all EHRs include:



**MORE EFFECTIVE  
TREATMENT**

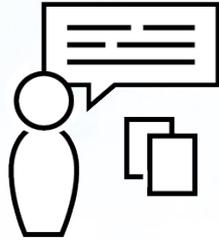


**MORE EFFECTIVE  
POPULATION  
MANAGEMENT**

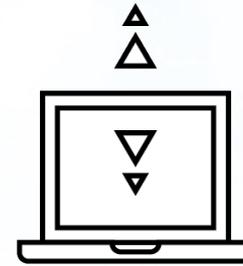


**DISCOVERY  
OF LINKAGES**

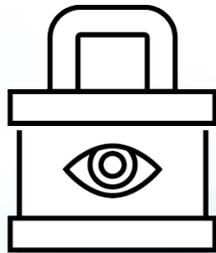
# IMPLEMENTATION ISSUES



**SELF-REPORTED  
DATA**



**LINKING  
DATA**



**PRIVACY  
PROTECTION**



**RESOURCE  
CONSIDERATIONS**

# FINDING

7-1

Standardized data collection and measurement are critical to facilitate use and exchange of information on social and behavioral determinants of health. Most of these data elements are experienced by an individual and are thus collected by self-report. Currently, EHR vendors and product developers lack harmonized standards to capture such domains and measures.

# RECOMMENDATION

7-1

The Office of the National Coordinator for Health Information Technology's electronic health record certification process should be expanded to include appraisal of a vendor or product's ability to acquire, store, transmit, and download self-reported data germane to the social and behavioral determinants of health.

# FINDING

7-2

The addition of social and behavioral data to EHRs will enable novel research. The impact of this research is likely to be greater if guided by federal prioritization activities.

# RECOMMENDATION

7-2

The Office of the Director of the National Institutes of Health (NIH) should develop a plan for advancing research using social and behavioral determinants of health collected in electronic health records. The Office of Behavioral and Social Science Research should coordinate this plan, ensuring input across the many NIH institutes and centers.

# FINDING

7-3

Advances in research in the coming years will likely provide new evidence of the usefulness and feasibility of collecting social and behavioral data beyond that which is now collected or which is recommended for addition by this committee. In addition, discoveries of interventions and treatments that address the social and behavioral determinants and their impact on health may point to the need for adding new domains and measures. There is no current process for making such judgments.

# RECOMMENDATION

7-3

The Secretary of Health and Human Services should convene a task force within the next three years, and as needed thereafter, to review advances in the measurement of social and behavioral determinants of health and make recommendations for new standards and data elements for inclusion in electronic health records. Task force members should include representatives from the Office of the National Coordinator for Health Information Technology, the Center for Medicare and Medicaid Innovation, the Agency for Healthcare Research and Quality, the Patient-Centered Outcomes Research Institute, the National Institutes for Health, and research experts in social and behavioral science.

# **THANK YOU SPONSORS:**

**The National Institutes of Health**

**Blue Shield of California Foundation**

**California HealthCare Foundation**

**Centers for Disease Control and Prevention**

**Centers for Medicare & Medicaid Services**

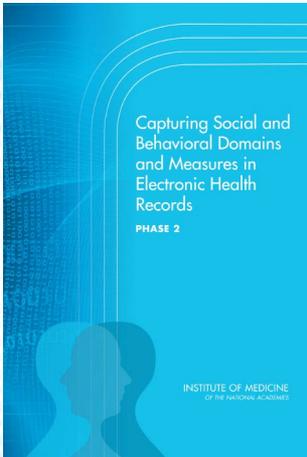
**The Department of Veterans Affairs**

**The Lisa and John Pritzker Family Fund**

**Robert Wood Johnson Foundation**

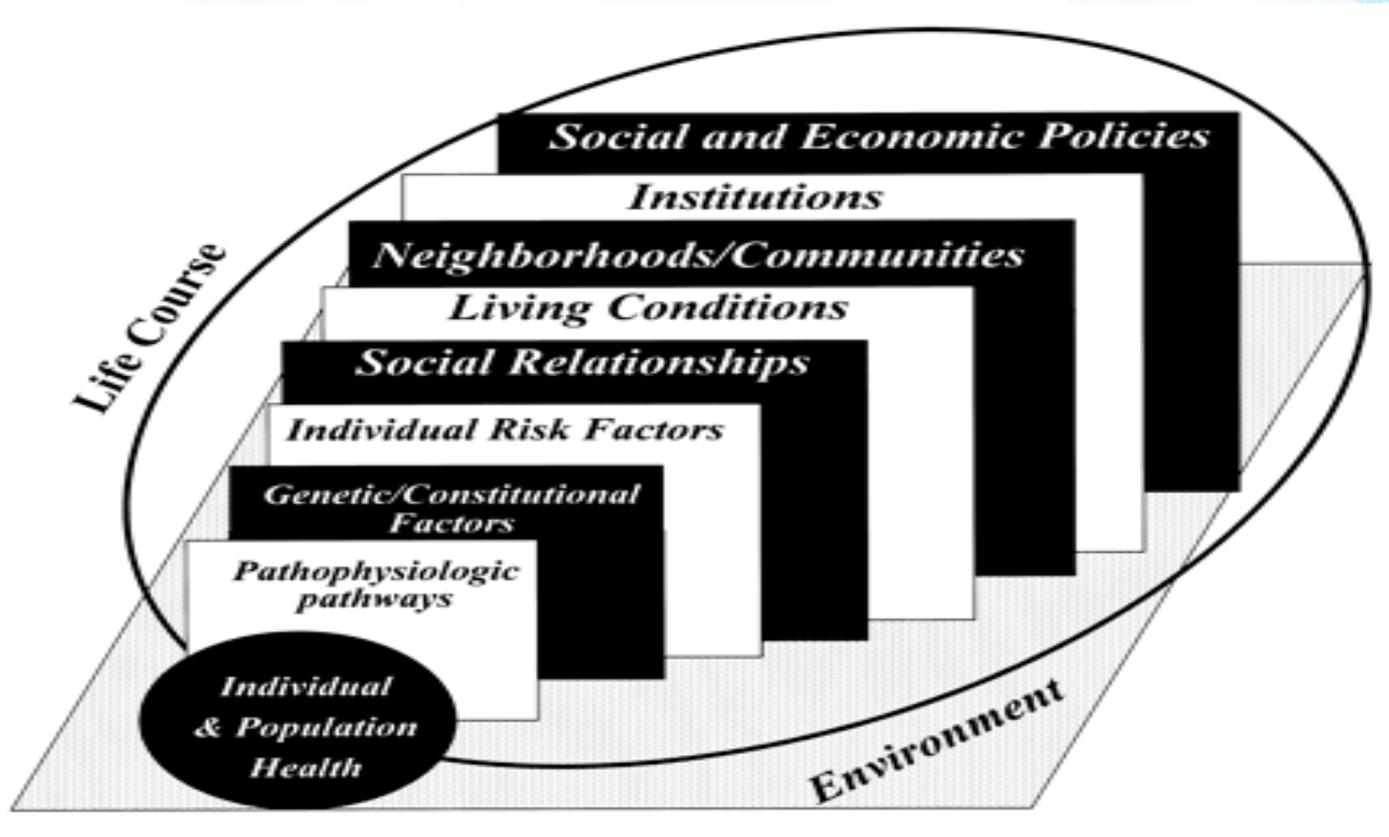
**Substance Abuse and Mental Health Services Administration**

# QUESTIONS



**THE FULL REPORT IS NOW AVAILABLE  
FOR FREE DOWNLOAD AT:  
[iom.edu/ehrdomains2](http://iom.edu/ehrdomains2)**

# Multilevel Model by Kaplan, et al. (2000)



**FIGURE 2-1** Multilevel approach to epidemiology, 2000. The approach of Kaplan et al. (2000) attempts to bridge various levels of explanation and intervention, bringing together theory and empirical work that link observations of causal influence and mechanism at multiple levels.

SOURCE: IOM (2000a).

# MEASURE VERSUS METRIC

Example: Physical activity

MEASURE	METRIC
<b>Exercise Vital Sign</b>	<b>Metabolic equivalent task minutes (METs)</b>
<ol style="list-style-type: none"><li>1. On average, how many days per week do you engage in moderate to strenuous exercise? (0-7)</li><li>1. On average, how many minutes do you engage in exercise at this level (blocks of 10 min)</li></ol>	<ul style="list-style-type: none"><li>• Light intensity 1.1-2.9</li><li>• Moderate intensity 3.0-5.9</li><li>• Vigorous intensity <math>\geq 6</math></li></ul>

# STANDARD MEASURE

Example: Tobacco Use

RECOMMENDED SELF REPORTED MEASURE	STAGE 2 MEASURE
NHIS Questions	SNOMED Codes
<ol style="list-style-type: none"><li>1. Have you smoked at least 100 cigarettes in your entire life? (Y/N/refused/do not know)</li><li>2. Do you NOW smoke cigarettes every day, some days or not at all?</li></ol>	<ul style="list-style-type: none"><li>•Current every day smoker</li><li>•Current some day smoker</li><li>•Former smoker</li><li>•Never smoker</li><li>•Smoker, current status unknown</li><li>•Unknown if ever smoked</li><li>•Heavy tobacco smoker</li><li>•Light tobacco smoker</li></ul>