



JOHNS HOPKINS
SCHOOL *of* NURSING

THE INSTITUTE FOR POLICY SOLUTIONS

Conceptualizing the Mechanisms of Social Determinants of Health: A Heuristic Framework to Inform Future Directions for Mitigation of Health Inequity

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Presentation Agenda



Health Inequities: A Defining Characteristic of the US Healthcare System

A **Paradigm Shift:** Integration of Clinical Expertise and SDOH Mitigation

Conceptualizing the Mechanisms of SDOH for Multi-Level **SDOH Mitigation**

The Path Forward: **Nurse-Driven Practice, Policy, and Advocacy**



Health Inequities:
A Defining Characteristic of
the US Healthcare System

Health Inequity is a Defining Characteristic of the US Healthcare System

Health Inequities:
*Systematic **unjust and unfair** differences limiting the opportunity for individuals, families and communities to achieve their optimal health.*



1. Health Status

→ Morbidity and mortality differentials



2. Distribution of Health Resources

→ Accessibility, acceptability, availability, and quality of health services



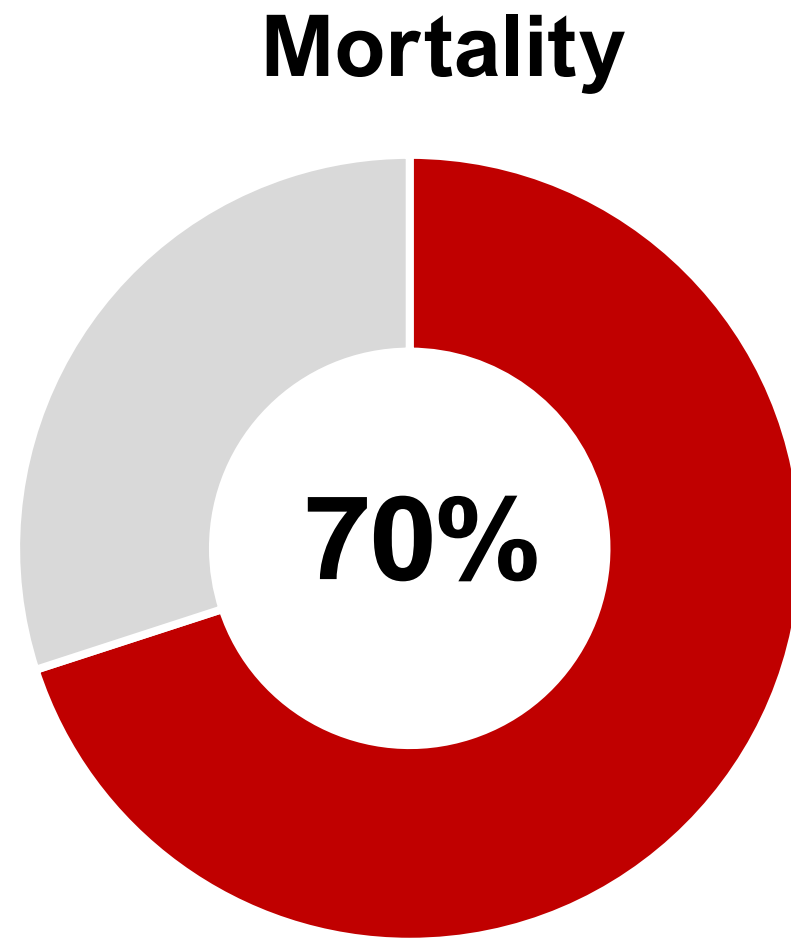
3. Social Conditions

→ Circumstances in which individuals are born, grow, live, work, and age



Health Status: Morbidity and Mortality

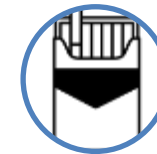
Morbidity:



Nearly **70%** of global premature adult mortality is associated with processes that initiate in adolescence.

Mortality:

Important risk factors that contribute to significant adult morbidity typically start in adolescence:



Tobacco use



Alcohol and drug use



Mental health issues



Unhealthy dietary behavior



Inadequate physical activity

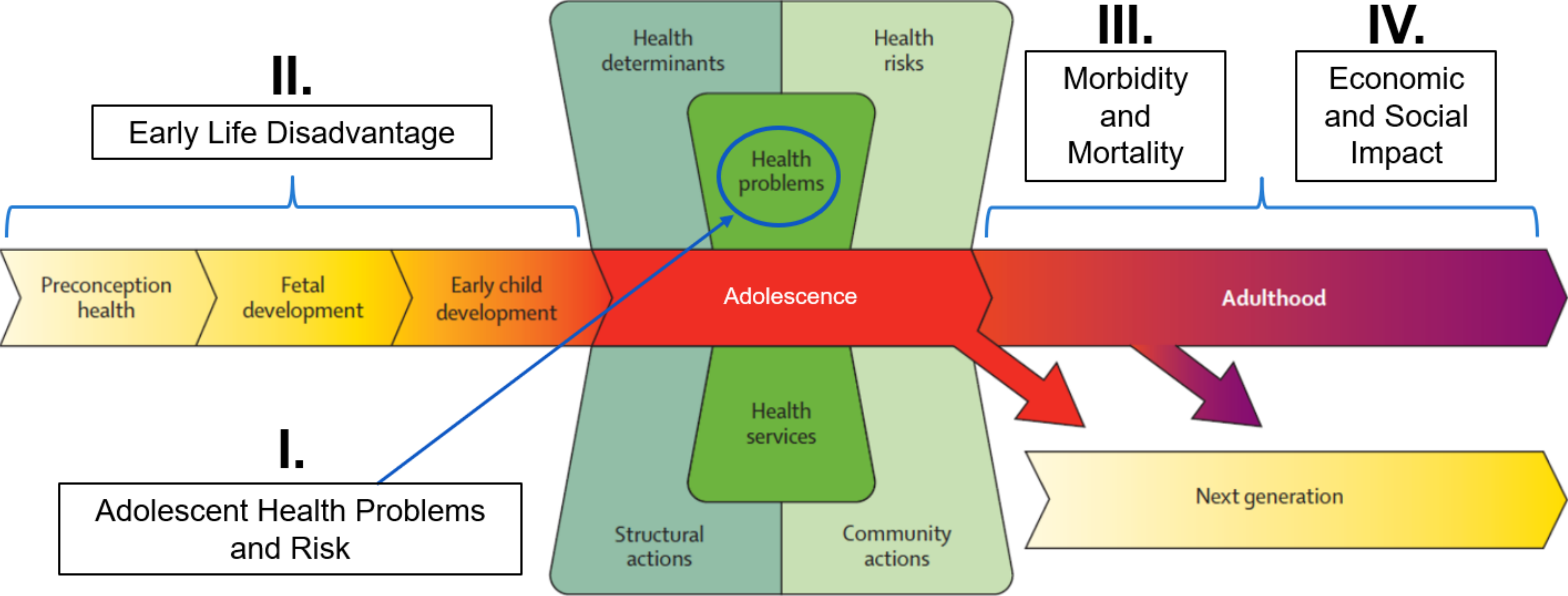


Risk behaviors resulting in unintentional injury



Sexual risk behaviors

Adolescence as a Critical Developmental Period



Patton, G. C., et al. (2016). Our future: A Lancet commission on adolescent health and wellbeing. *The Lancet*, 387(10036), 2423-2478.;



Distribution of Health Resources

→ **~1 in 10 Americans are uninsured**
(31.6 million)

→ **1 in 5 Americans are underinsured***

→ **2 in 5 American children are covered by a public option** such as Medicaid

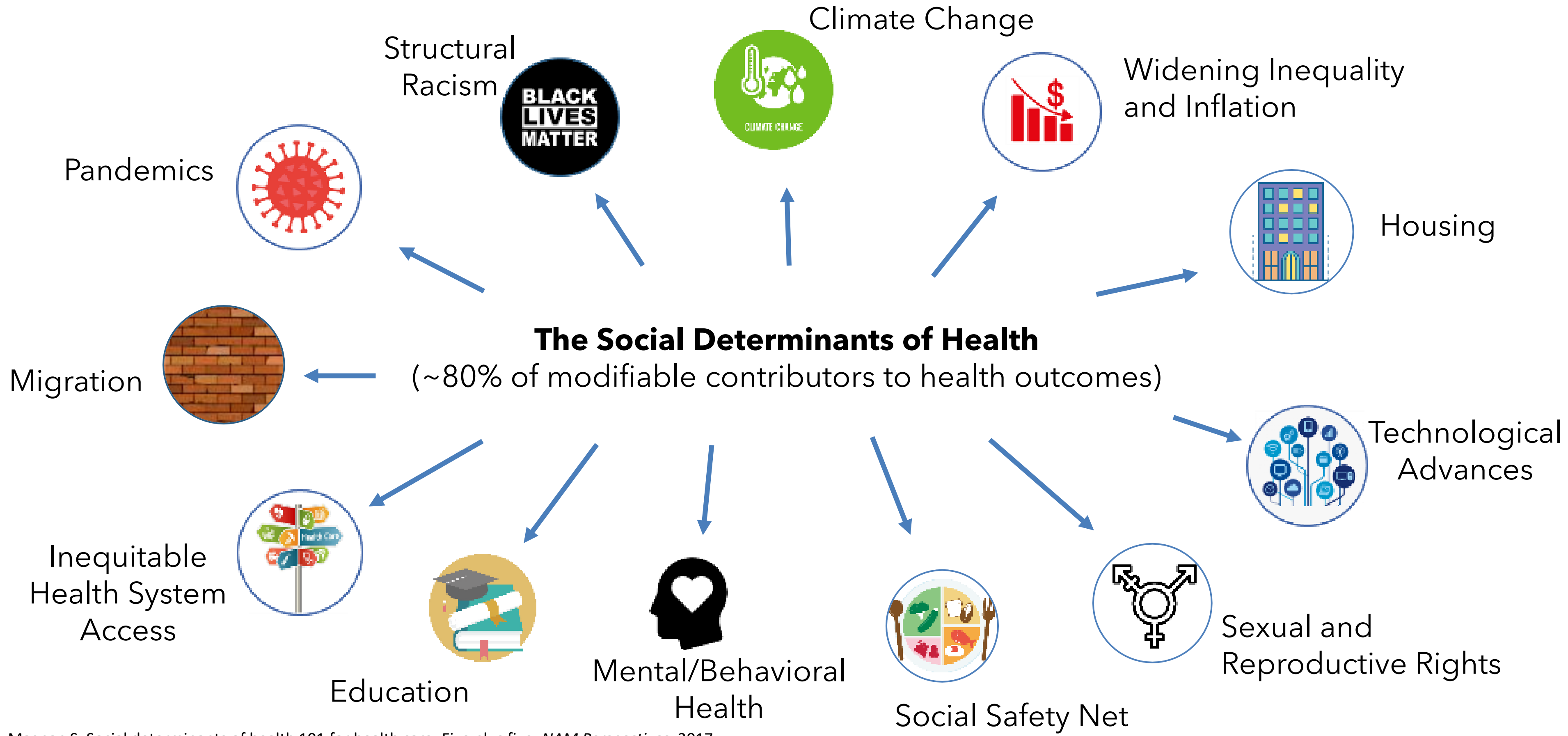
Healthcare Coverage, Population under 18, United States

	Number	Percentage
Under 18 Population	73.1 million	22% of total US population
CHIP Enrollment	7.2 million	12% of under 18 population
Medicaid and/or CHIP Enrollment	38.3 million	49% of under 18 population
Uninsured	3.9 million	5% of under 19 population

According to a KFF analysis, approximately 2.2 million uninsured children are eligible for Medicaid or CHIP.



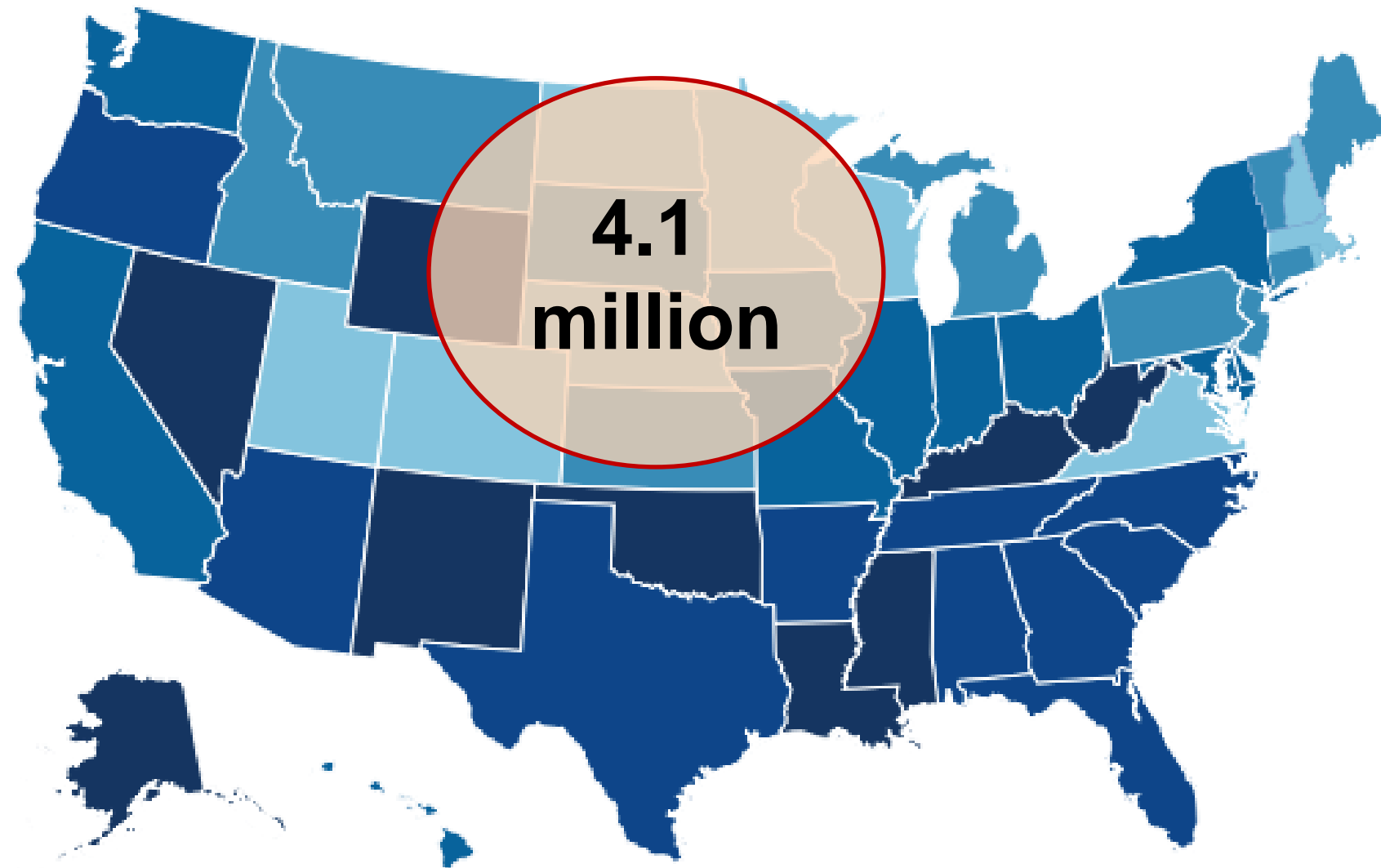
Social, Commercial and Political Conditions



Costs of Health Inequities: AYA Population

Disconnected Youth in the US

16-24 year olds who are not in school and do not have a job account for \$55 billion in forgone tax revenue annually and additional expenditures for health and social services.



Disconnected vs Connected Youth:

Poverty

Nearly twice as likely to experience poverty

Education

8x as likely to have dropped out of high school

Living Arrangements

22% of disconnected youth live apart from both parents at ages 16-17 (vs. 8.3%)

Health Insurance

25% of disconnected youth are uninsured (vs. 11%)

The Human Costs of Health Inequities

Health Inequities



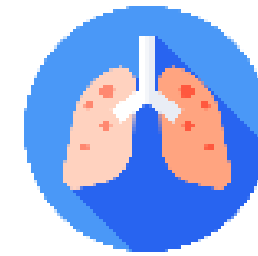
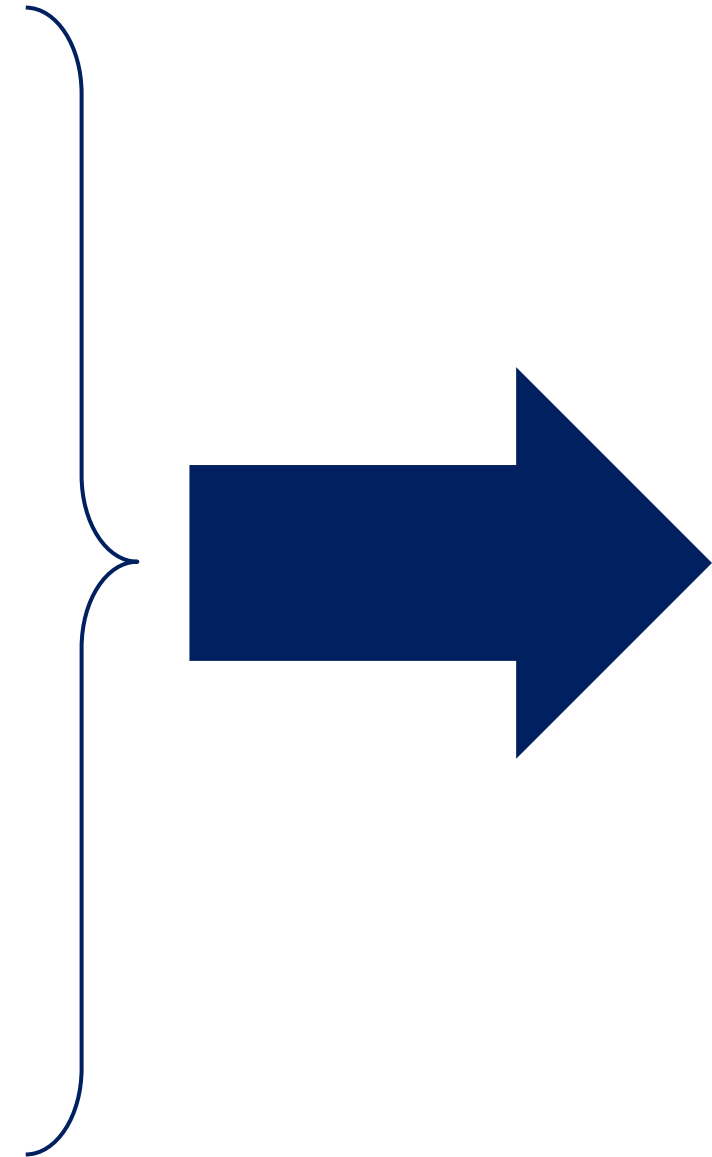
Health Status



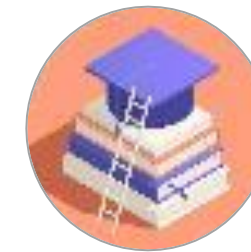
Distribution of Health Resources



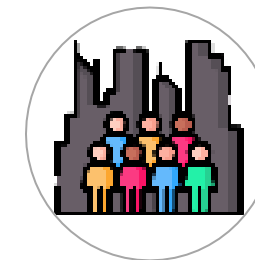
Social Conditions & Large-Scale Events



Excess morbidity, premature mortality



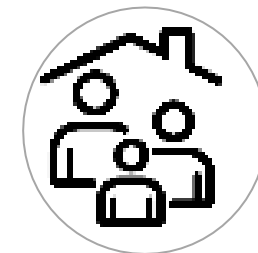
Unfulfilled human potential



Eroded social cohesion



Excess bereavement




Increased unpaid caregiver reliance

Without progress on reducing health inequities, their cost is projected to triple by 2040.



Modeling the future cost of health inequities*

Cost of Inequities Today

Cost to Healthcare Systems: **\$320 Billion** 

Annual Direct Cost to Individuals: **\$1000** 

Cost of Inequities in 2040

Cost to Healthcare Systems: **\$1 trillion** 

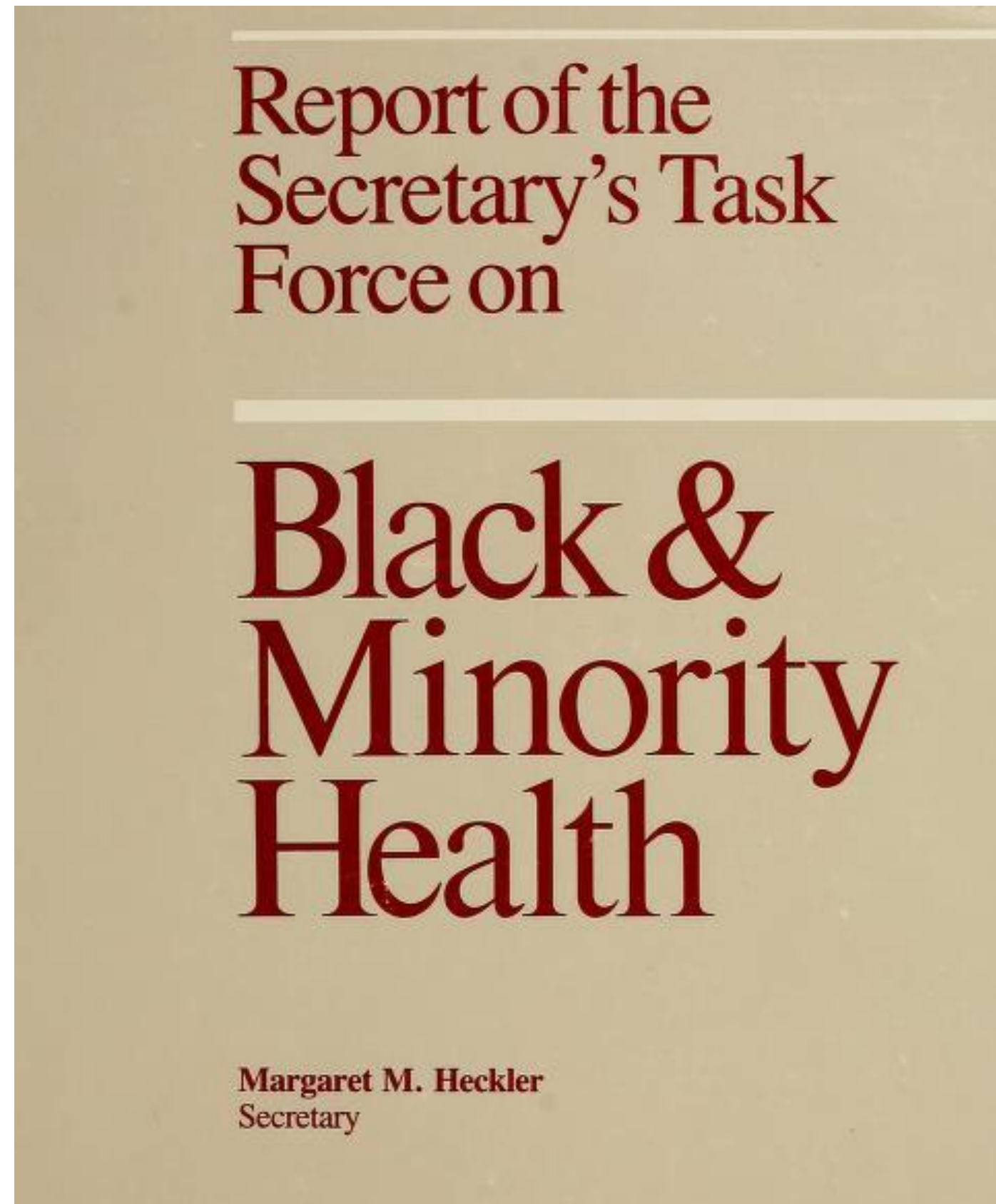
Annual Direct Cost to Individuals: **\$3000** 



Expected changes in population demographics, cost of care, and per capita spending

*Calculations and estimates based on a set of high-cost diseases (e.g. breast cancer, diabetes, colorectal cancer, asthma, and cardiovascular disease) and the corresponding proportion of spending attributed to health inequities.

Racial/Ethnic Inequities Within a Historic Context



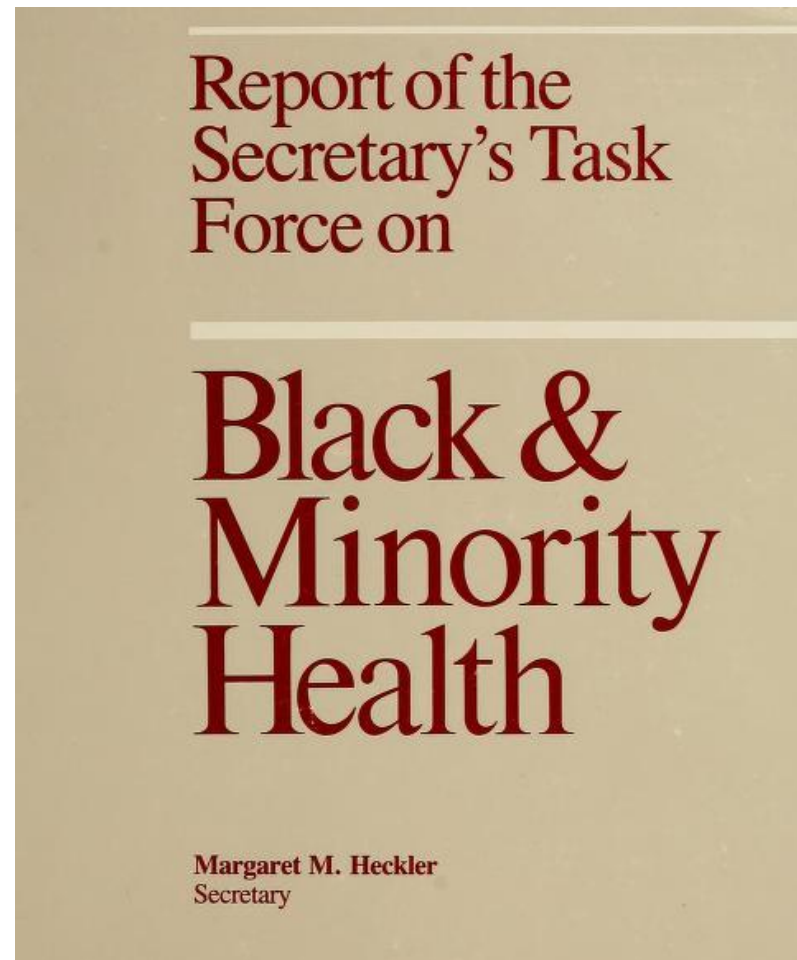
1985 Heckler Report:

The first **national convening to explore** racial and ethnic disparities, primarily evident in ***health status***

For Example:

“Life expectancy reached a new high...Nevertheless, Blacks today [in 1985] have a life expectancy already reached by Whites in the early 1950s, or **a lag of about 30 years.**”

The Policy Response to the Heckler Report



1986



2010



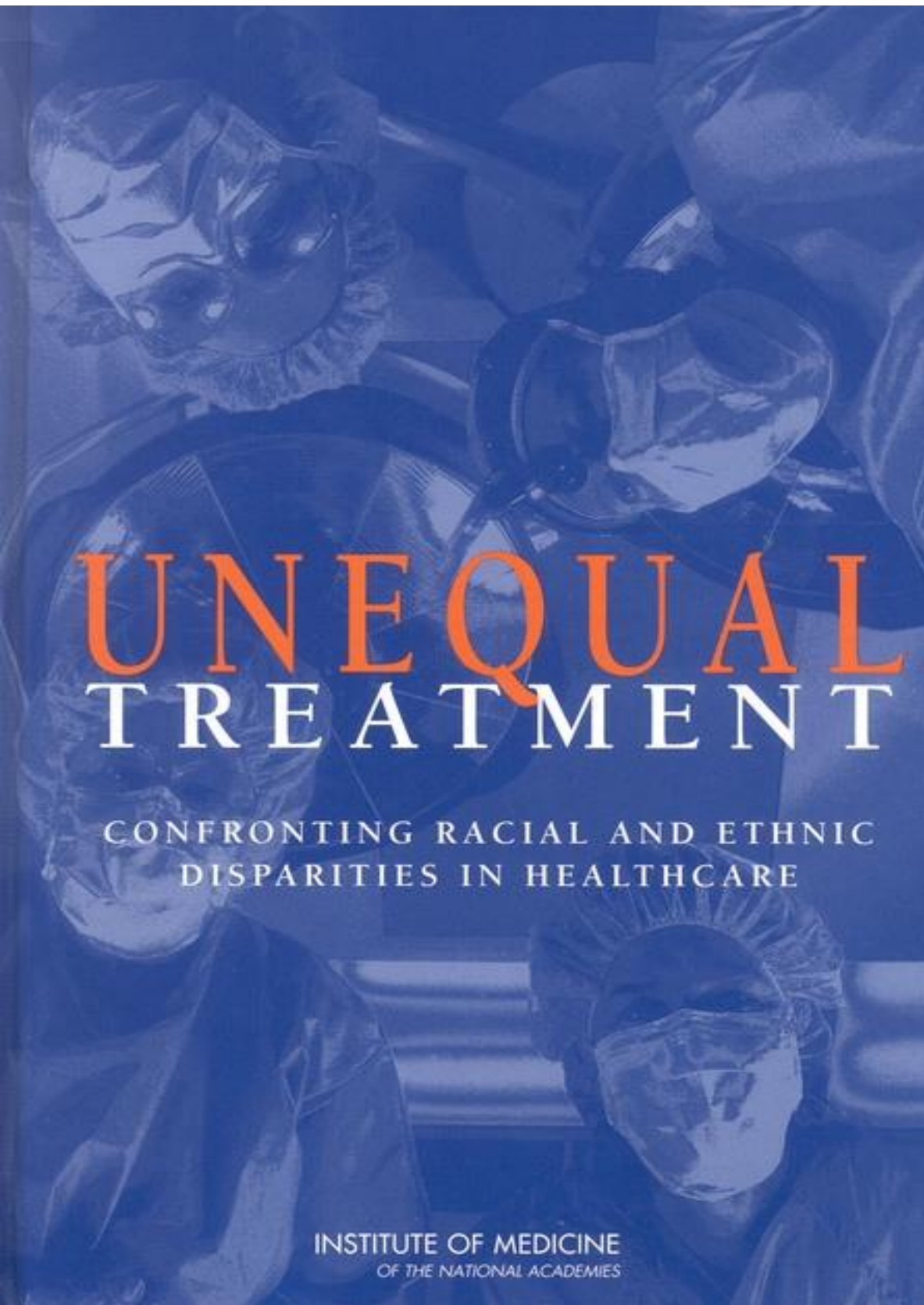
Previously: the National Center on Minority Health and Health Disparities (2000)

OMH Mission: To improve the health of racial and ethnic minoritized populations through the development of health policies and programs that **eliminate health disparities**

NIMHD Mission: To **lead** scientific research to improve minority health and **eliminate health disparities** (Congressional Mandate)

Source: OMH. <https://minorityhealth.hhs.gov/about-office-minority-health#:~:text=The%20mission%20of%20the%20Office,will%20help%20eliminate%20health%20disparities>. NIMHD. <https://www.nih.gov/about-nih/what-we-do/nih-almanac/national-institute-minority-health-health-disparities-nimhd>

US Health Inequities Within a Historic Context



2003 Unequal Treatment Report:

Landmark report to point to longstanding **systemic and structural racism in healthcare** — not poverty, lack of access, treatment refusal, or other social conditions — as a major reason for the nation's deeply entrenched health disparities

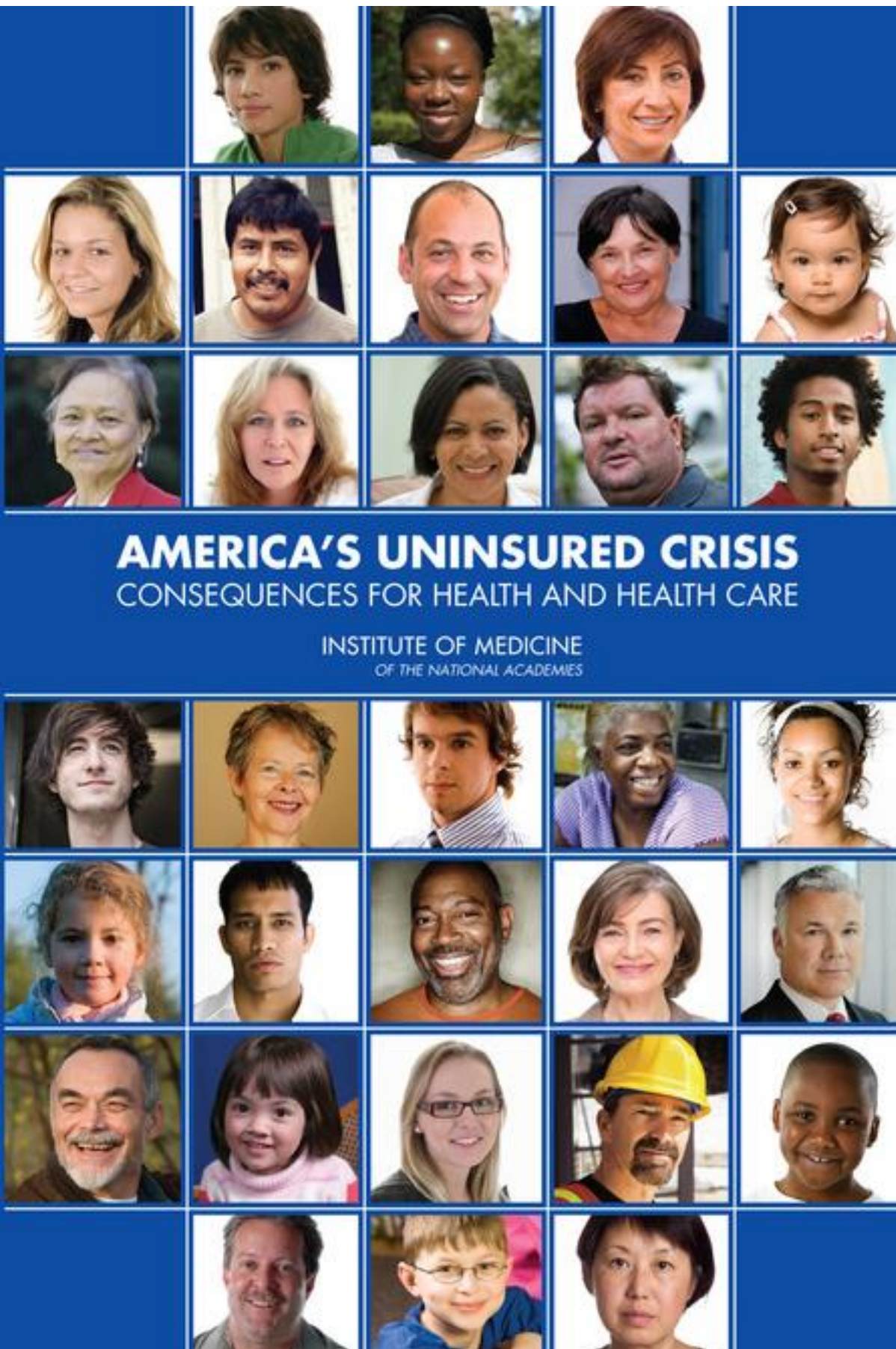
The Societal Costs of Health Inequities

In the U.S., the burden of health inequities is **most evident** amongst *minoritized* and *marginalized* populations

However, health inequities impact us **all**.



The Myth of the Zero-Sum Game



Policies and practices for marginalized and minoritized populations improve outcomes **for everyone**

For Example:

When **community-level uninsurance rates** are high [e.g., in communities with more minoritized individuals] **insured individuals face greater difficulties in receiving care.**



A Paradigm Shift Towards
Integration of Clinical
Expertise and SDOH

Investment in Primary Care Vs. Specialty Care

Primary care is the ONLY form of healthcare that is associated with:

Population health impact

AND improves health equity, healthcare quality, and lowers long-term healthcare expenditures

(Strange, K.C. et al.)

McCauley, L. et al. (co-chair): The NASEM *Implementing High-Quality Primary Care* report elevates the importance of the **interprofessional healthcare workforce** and **highlights nurses** as critically important in the elimination of health inequities.

Access Here:

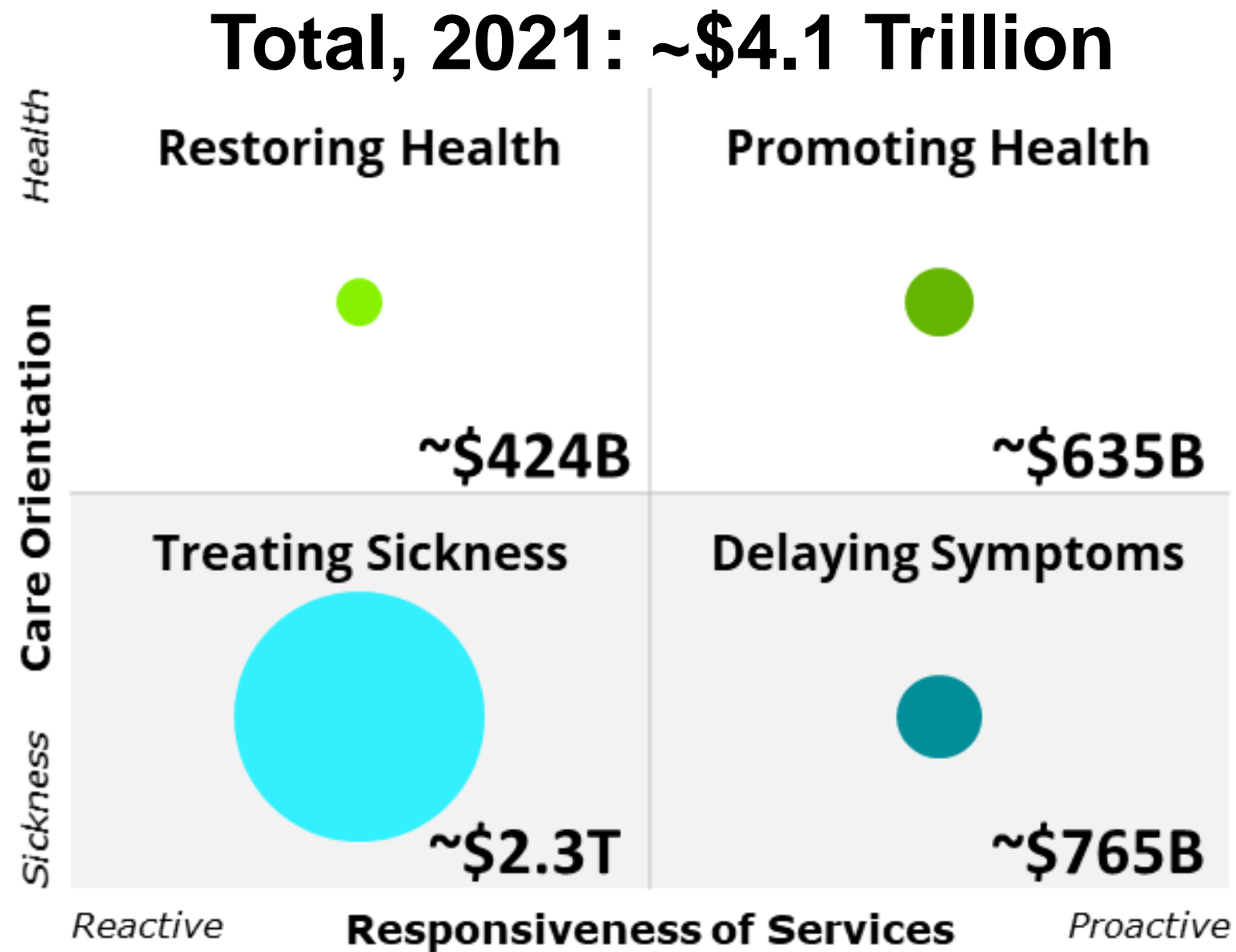


**Implementing High-Quality
Primary Care**

Rebuilding the Foundation of Health Care

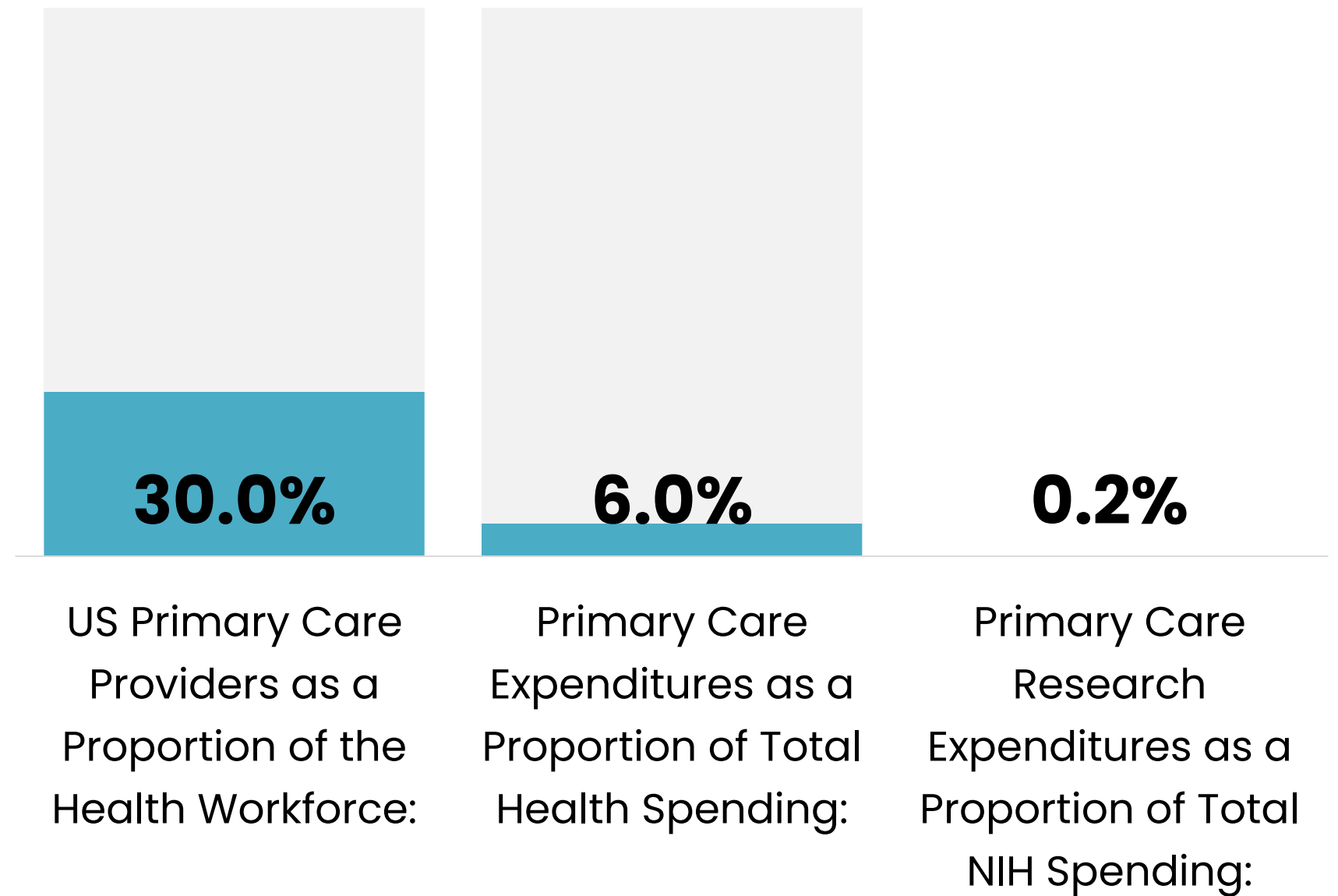
Investment in Specialty Care vs. Primary Care

US Healthcare Expenditures, by service*



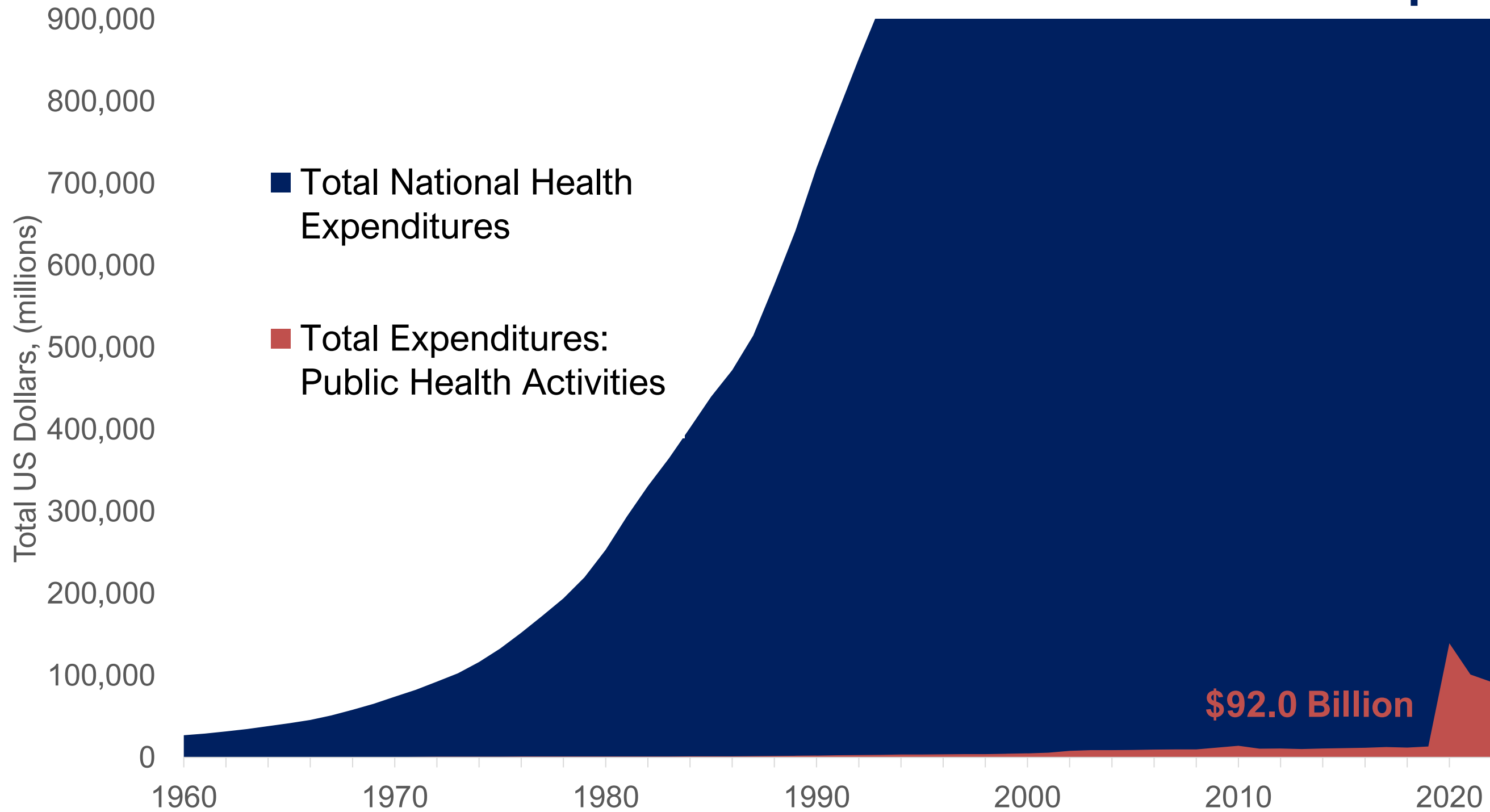
*Deloitte analysis

US Investment in Primary Care

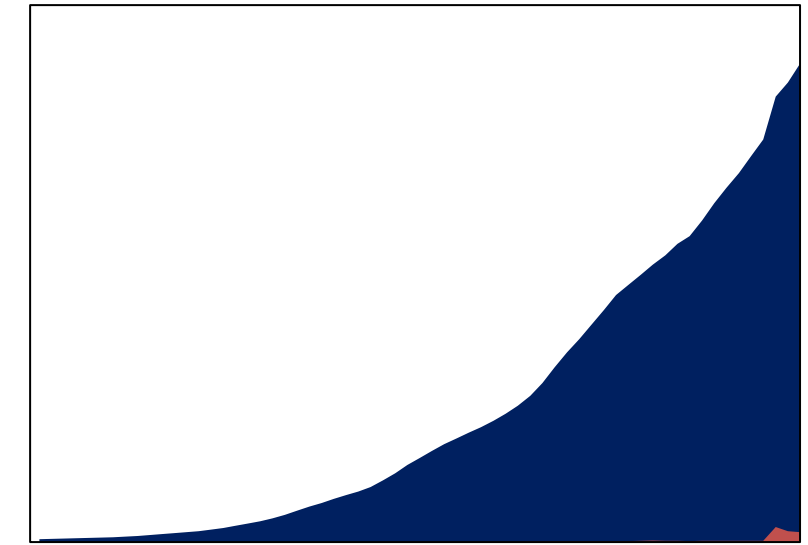


Public Health Spending as a Proportion of Total Health Expenditures

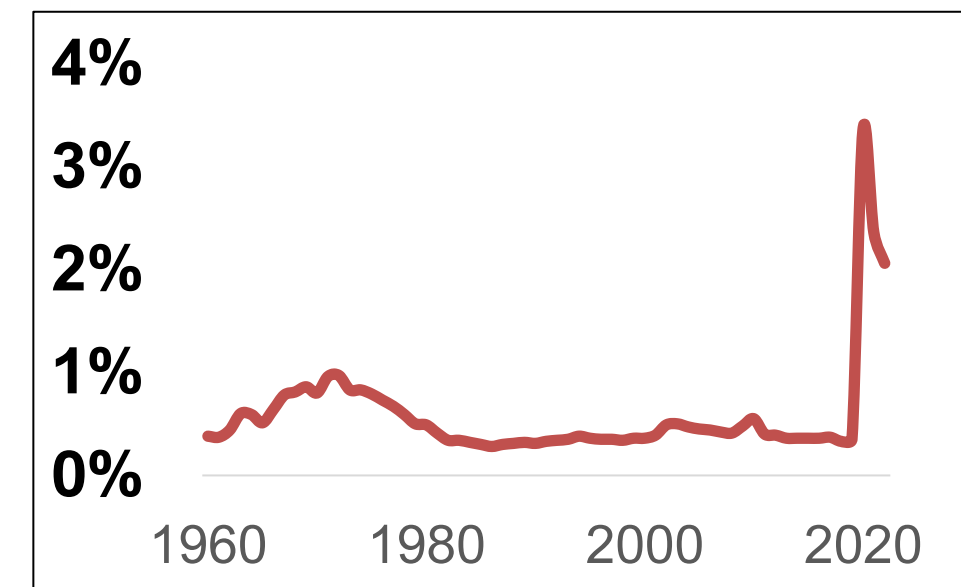
National Health Expenditures by Category, 1960-2022



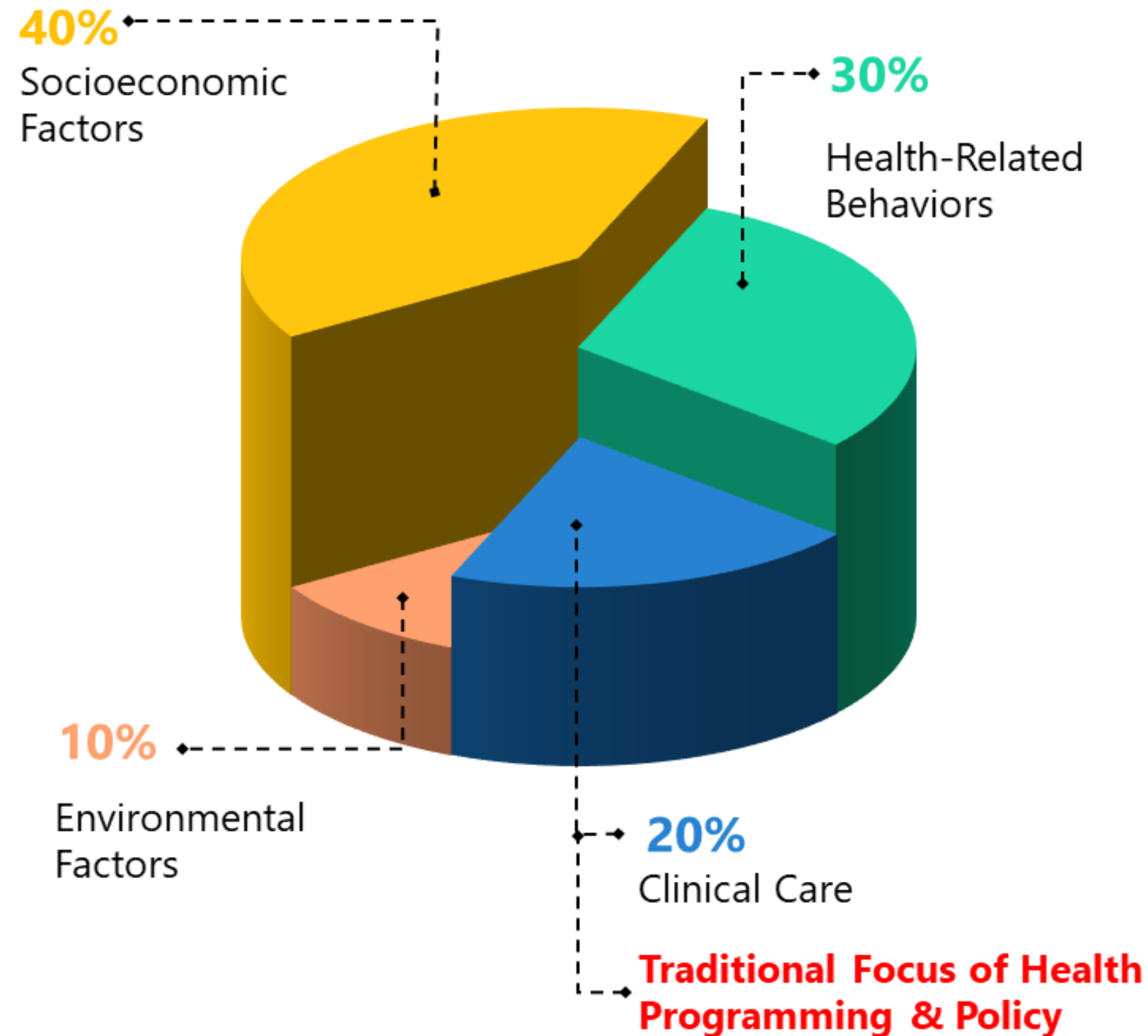
Full-Scale




Public Health Expenditures as a Proportion of Total NHE



A Paradigm Shift Towards Combining Clinical Care and SDOH



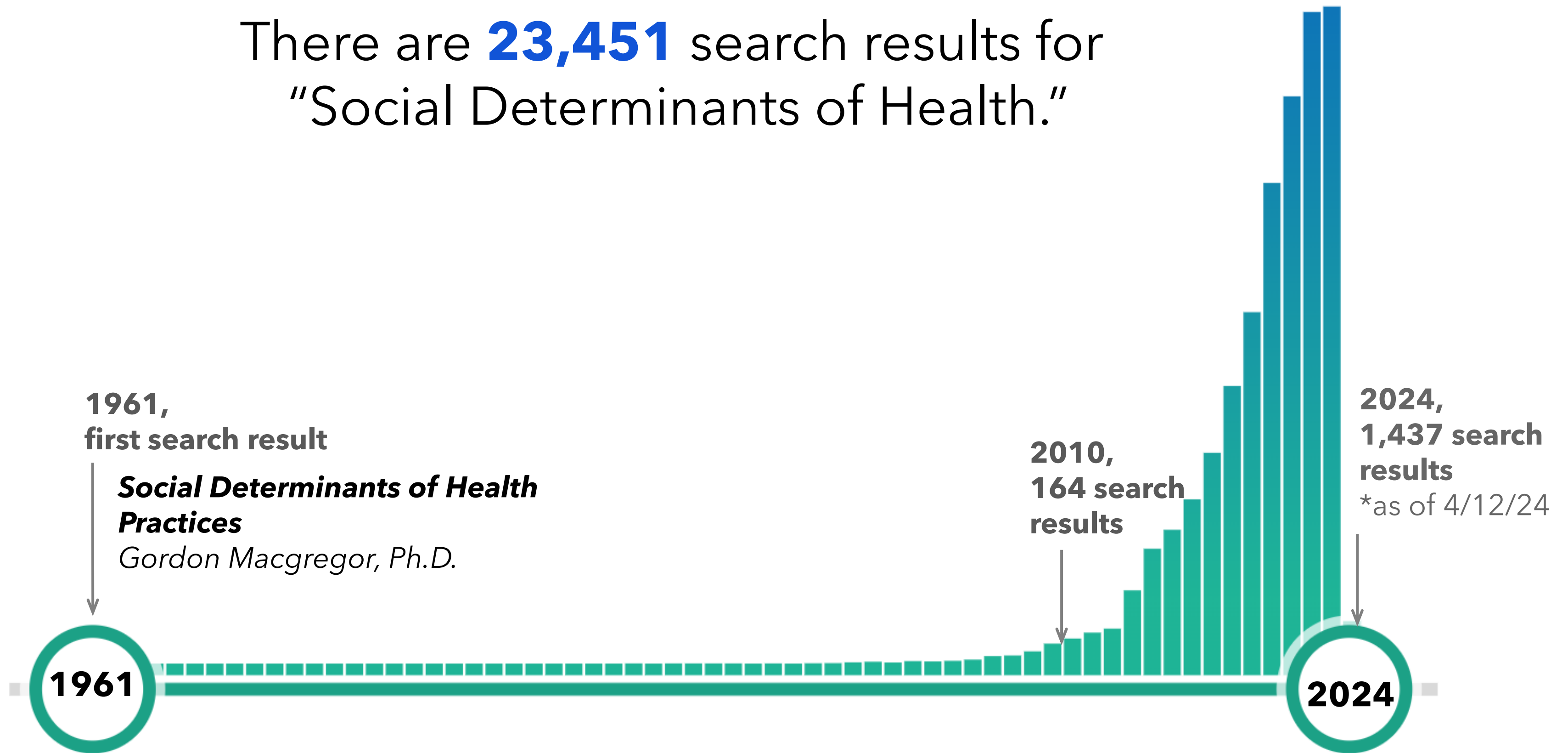
 NATIONAL ACADEMY OF MEDICINE
Perspectives | Expert Voices in Health & Health Care

Clinical care “is estimated to account for **only 10-20 percent** of the modifiable contributors to healthy outcomes for a population.”

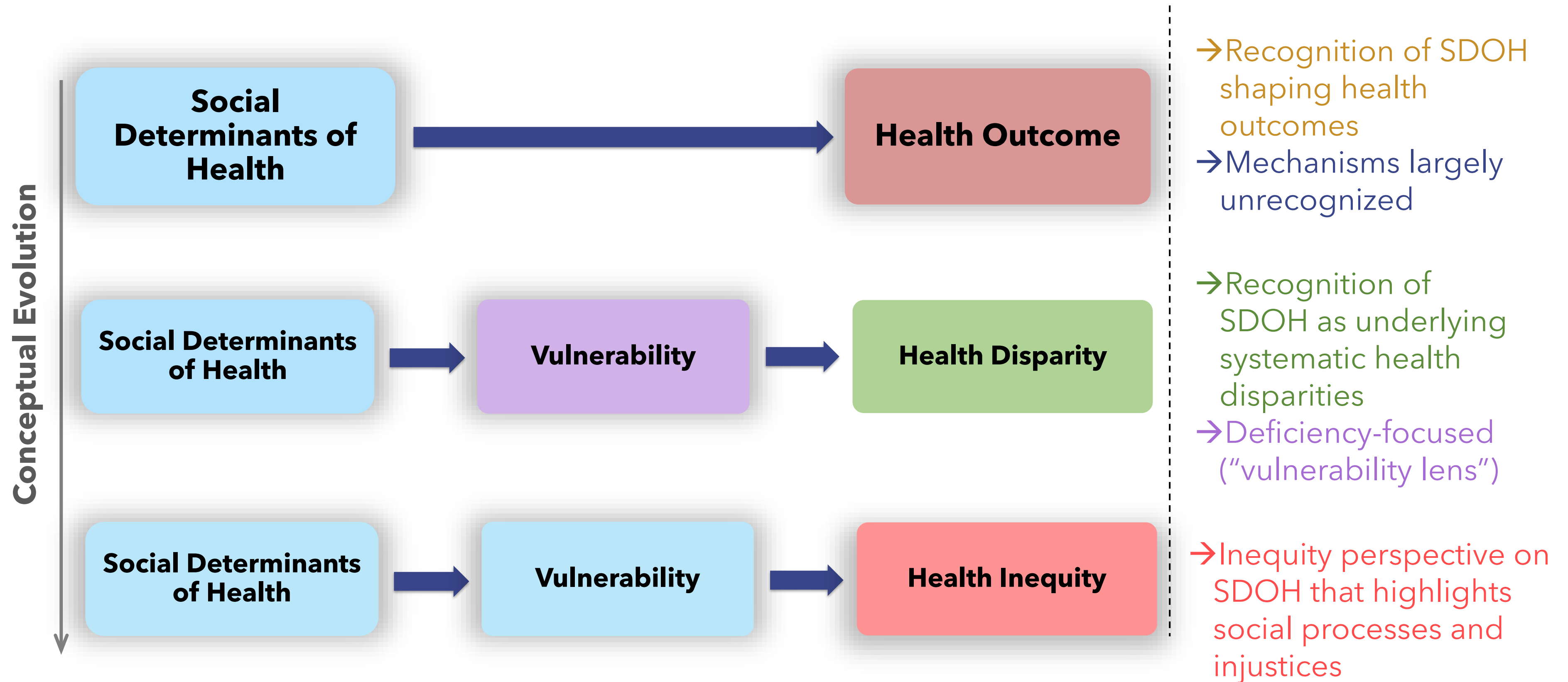
Article URL:
<https://nam.edu/social-determinants-of-health-101-for-health-care-five-plus-five/>

Six Decades of SDOH Research

There are **23,451** search results for
"Social Determinants of Health."



Important Shifts in Conceptualizing SDOH



*The conceptual evolution of SDOH is reflected in the extant literature.

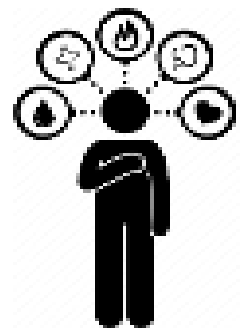
Inadequate Attention to Mechanisms of SDOH

Current
Dominant
Model



Important **constructs** and **dynamic mechanisms** identified in the literature are **missing** from this conceptualization:

Exposure



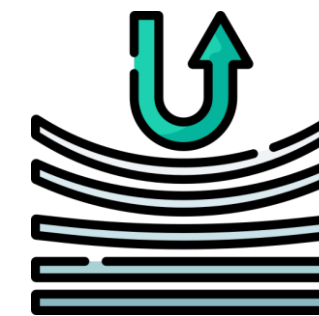
Susceptibility



Social Processes



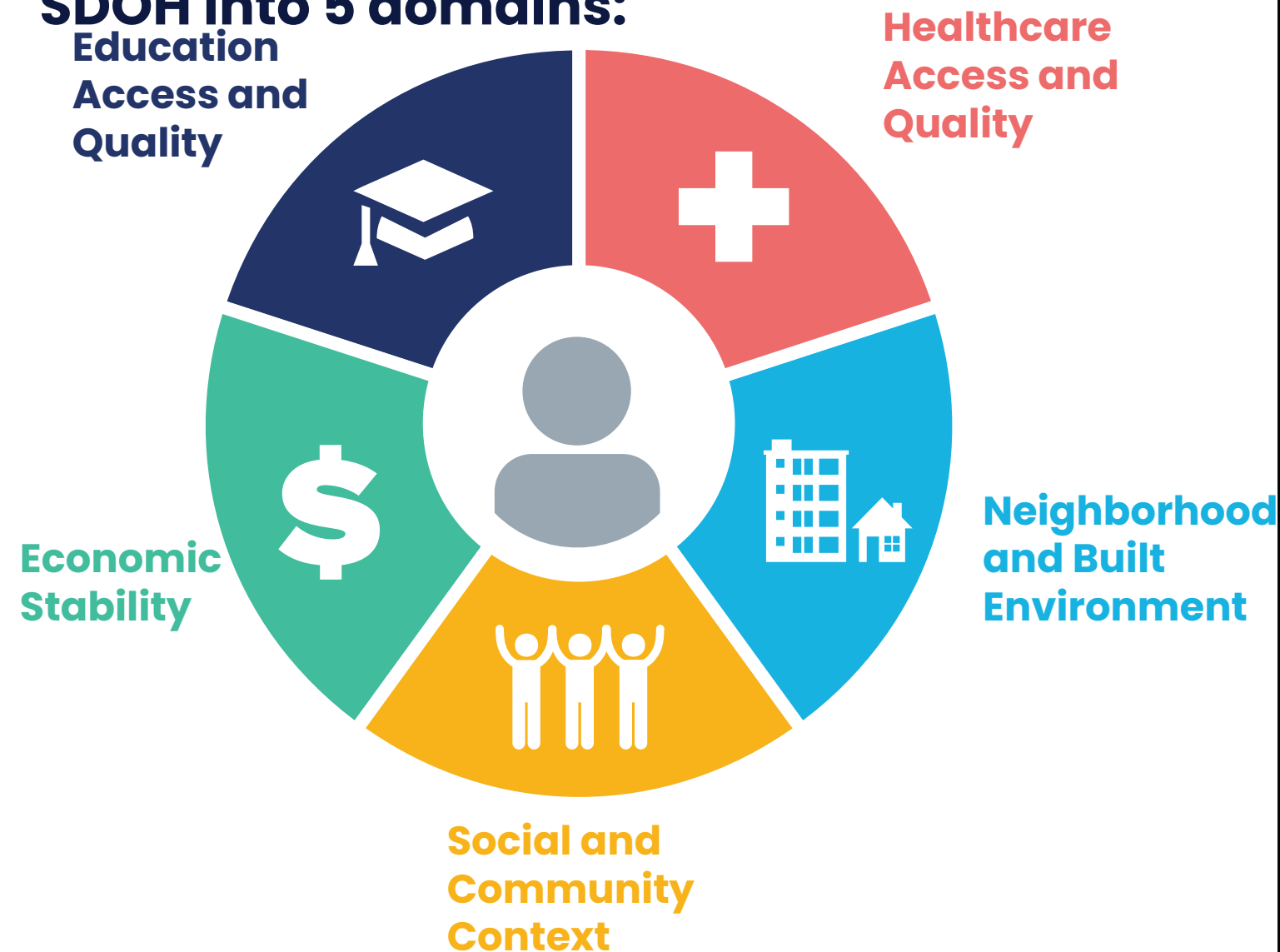
Resilience



Current Dominant Conceptualizations/Strategies for SDOH Mitigation

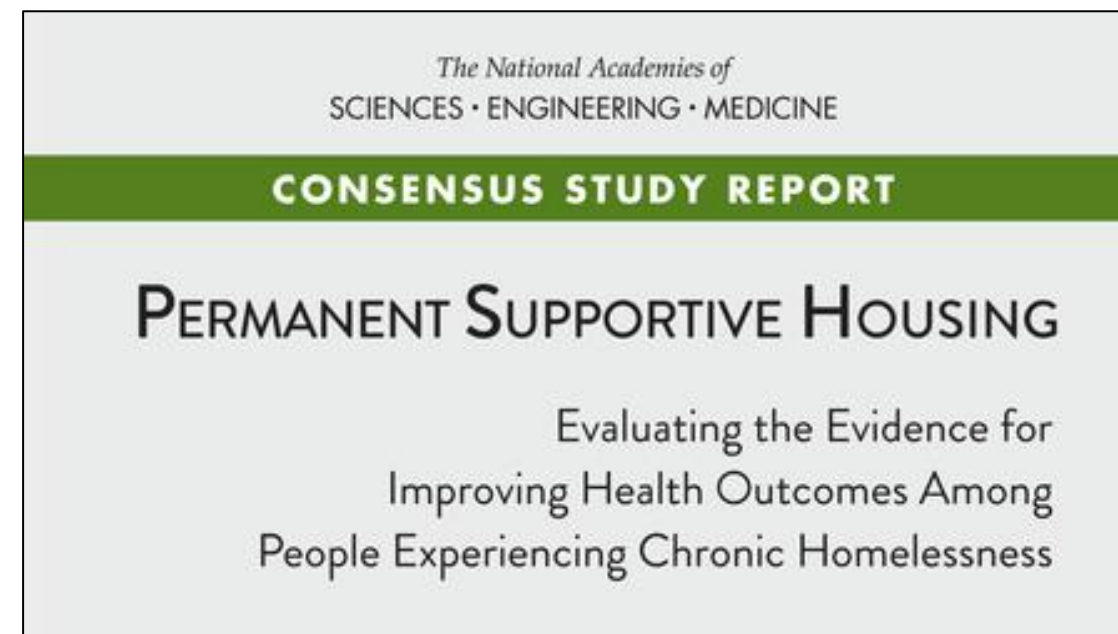
Static Domains of SDOH Influence

CDC's Healthy People 2030 classifies SDOH into 5 domains:



Prioritization of Health Related Social Needs (HRSN) Screening and Referral to Services

Evidence for HRSN screening and referral effects on health outcomes remains underdeveloped:



NASEM: "there is no substantial published evidence as yet to demonstrate the [housing and other help] improves health outcomes or reduces health-care costs."

Landmark Conceptual and Empirical Research Identifies *Eight Principles About the Mechanisms of Social Determinants of Health:*



**SDOH are Underlying
Causes of Health
Inequities**



**SDOH Context
Shapes Health
Inequities**



**SDOH Contextual
Disadvantage is
Not Deterministic**



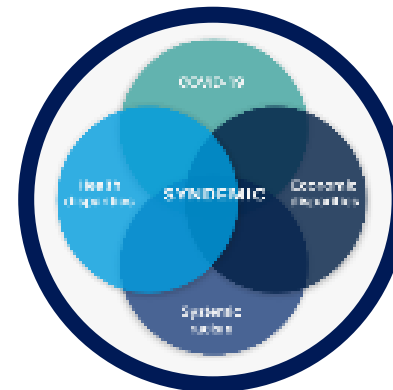
**SDOH Shapes
Health Over the
Life Course**



**SDOH Operate
Through Biological
Embedding**



**SDOH Operate
Intergenerationally**



**SDOH Shapes
Clustering and
Synergies of Health
Inequities**



**SDOH and Social
Injustices Interact to
Produce Health
Inequities**

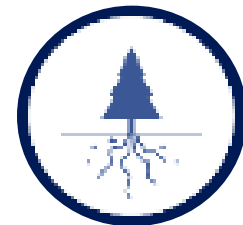
Principle #1: SDOH are Underlying Causes of Health Inequities



**Underlying Causes
Beyond Individual
Factors Drive
Health Inequities**

Fundamental Causes Theory

Landmark theory that moved beyond individual “risk factor epidemiology” to propose distal factors as fundamental for shaping health inequities.



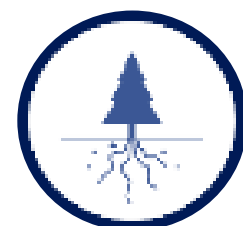
Distal factors/exposures influence **individual risk** and **protective factors**, and shape disease and health outcomes.



Distal factors (i.e., education, SES, etc.) represent **fundamental causes** of inequities in disease.



Fundamental causes **disrupt access to resources** that are important in avoiding or mitigating negative health outcomes.



Fundamental causes act through **complex mechanisms** and on **diverse health outcomes** → difficult to quantify total effect.

Principle #2: SDOH Context Shapes Health Inequities



Context Matters - The Structural Production of Risk

Risk Environment Framework:

Environmental Determinants of Exposure

Landmark framework that characterizes the **structural production of health inequities**

Understanding the risk environment:



Comprised of **risk-factors** that are **largely exogenous** to the **individual**

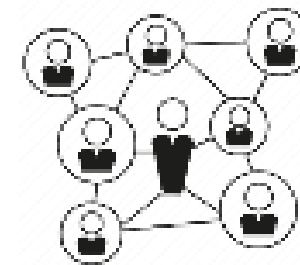


The social situations, structures, and places where factors largely exogenous to the individual interact to **produce health inequities**

Four dimensions of risk environment:



Physical



Social



Economic



Policy

Context Matters: A Tale of Two Communities

Community A



Community B



Principle #3: SDOH Contextual Disadvantage is Not Deterministic

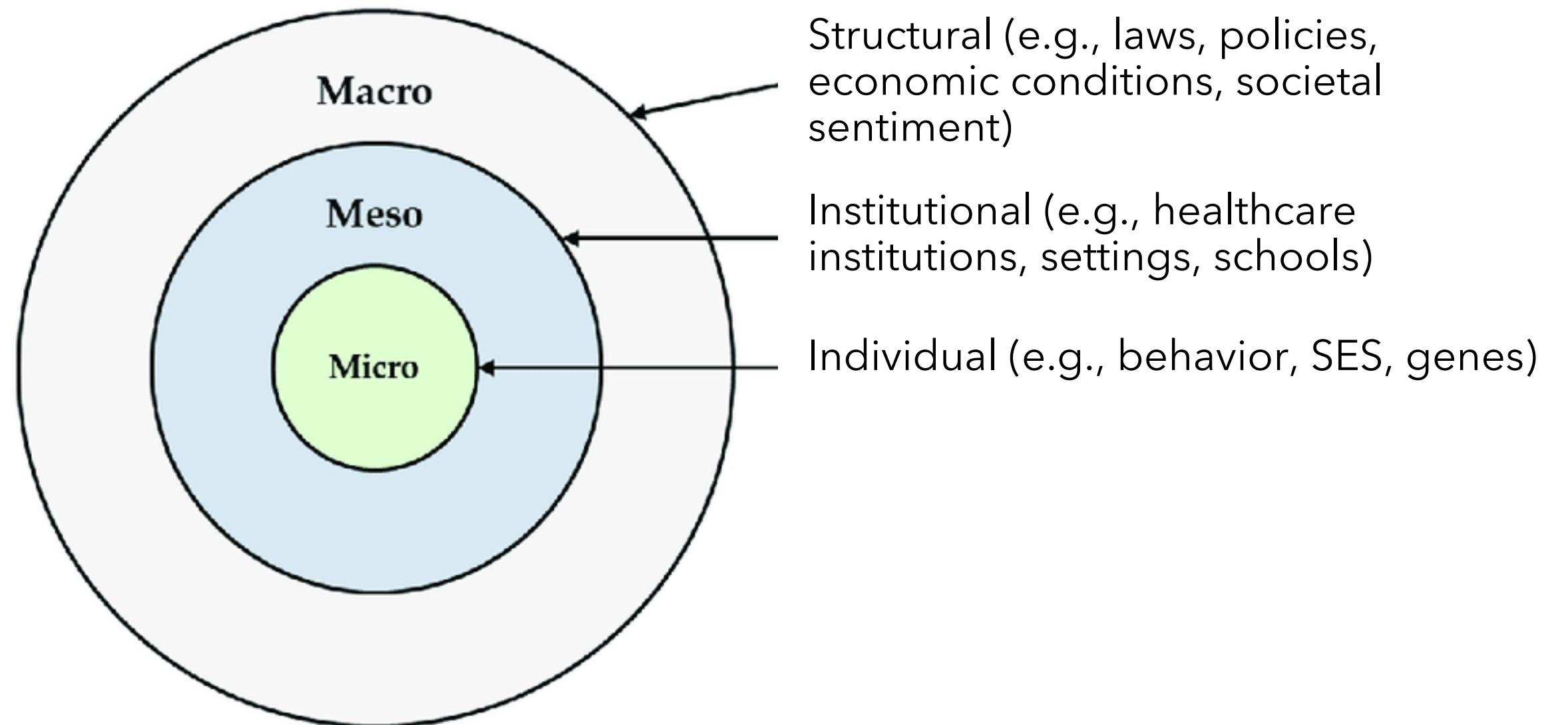


**Contextual
Disadvantage is
not Deterministic**

Risk Environment Framework:

Level of Influence

The Risk Environment Framework outlines influences **at three distinct levels** that interact to **reinforce or weaken** the effect of one another.

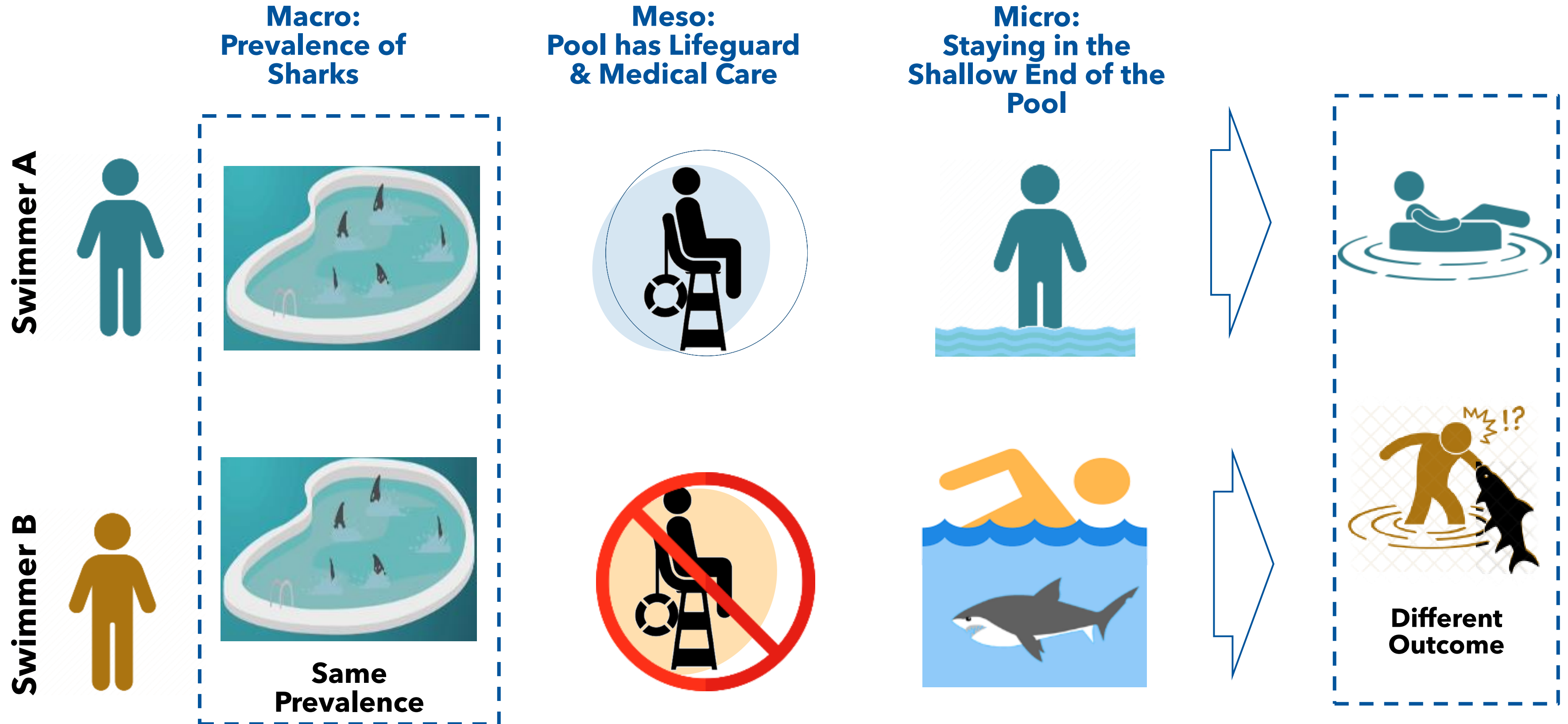


Structural (e.g., laws, policies, economic conditions, societal sentiment)

Institutional (e.g., healthcare institutions, settings, schools)

Individual (e.g., behavior, SES, genes)

Contextual Disadvantage is not Deterministic: Two Swimmers



Principle #4: SDOH Shape Health Over the Life Course



SDOH Influence Manifests Over the Life Course

Life Course Perspective:

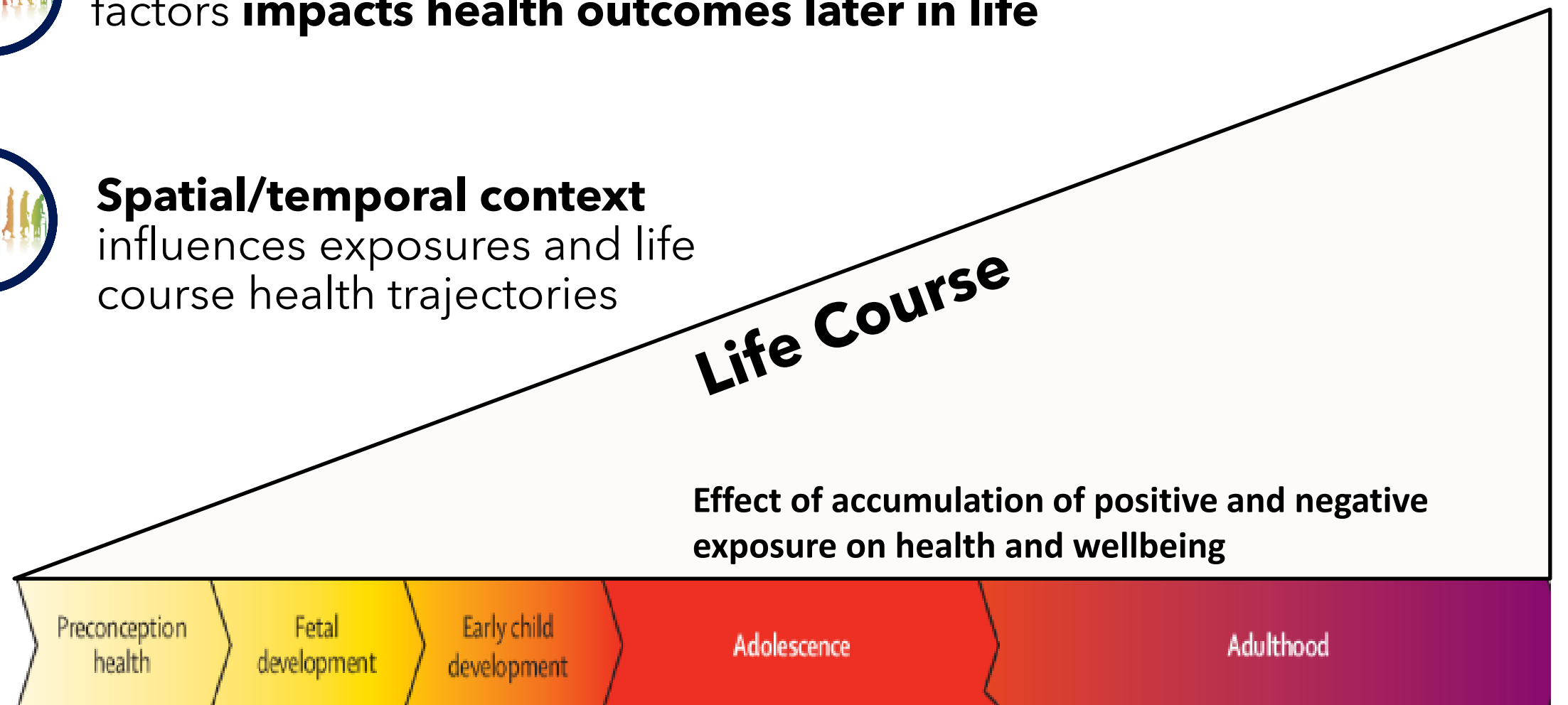
The Life Course Framework suggests **social, economic, psychological, and environmental influences accumulate over the life course** to shape health behaviors and mental and physical health.



Early-life exposure to risk or protective SDOH factors **impacts health outcomes later in life**



Spatial/temporal context influences exposures and life course health trajectories



Marmot et al. Fair Society, Healthy Lives: The Marmot Review. 2012.

Principle #5: SDOH Operate Through Biological Embedding



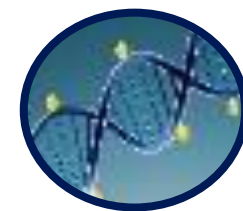
SDOH Operate Through Biological Embedding

Biological Embedding Framework:

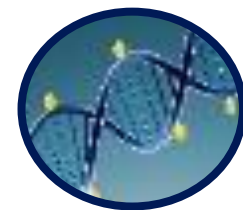
A Determinant of Biological Susceptibility

Biological Embedding: The process by which **social conditions initiate** and **sustain biological** changes that have short- and long-term effects on physical health and well-being.

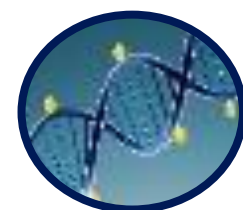
Properties of Biological Embedding:



Social conditions **alter biological processes** (e.g., epigenetic, neurodevelopmental, immune, endocrine, microbiome)



Alterations in biological processes are **stable** and **long-term**



Altered biological processes impact health, wellbeing, learning, and/or behavior **over the life course**

Principle #6: SDOH Operate Intergenerationally



SDOH Operate Intergenerationally

Framework of Biosocial Inheritance

Biosocial Inheritance: "The processes through which **social adversity** is **transmitted** across generations through **mechanisms both biological and social** in nature."

Three Types of Biosocial Inheritance

Cross-Generational

SDOH (Parent)

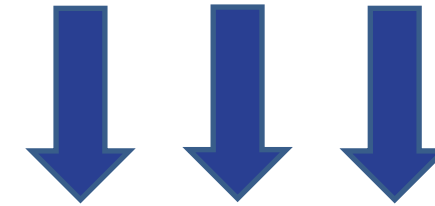


Health of the next generation (fetus)

Familial Biosocial Inheritance Mechanisms

Multi-Generational

SDOH



Health of multiple generations simultaneously

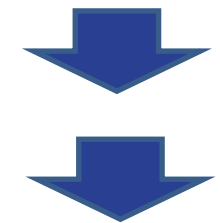
Biological

- Epigenetic
- Immune
- Neuro
- Endocrine
- Microbiome
- Metabolic programming

Transgenerational

SDOH

e.g.,
Transmission through germline



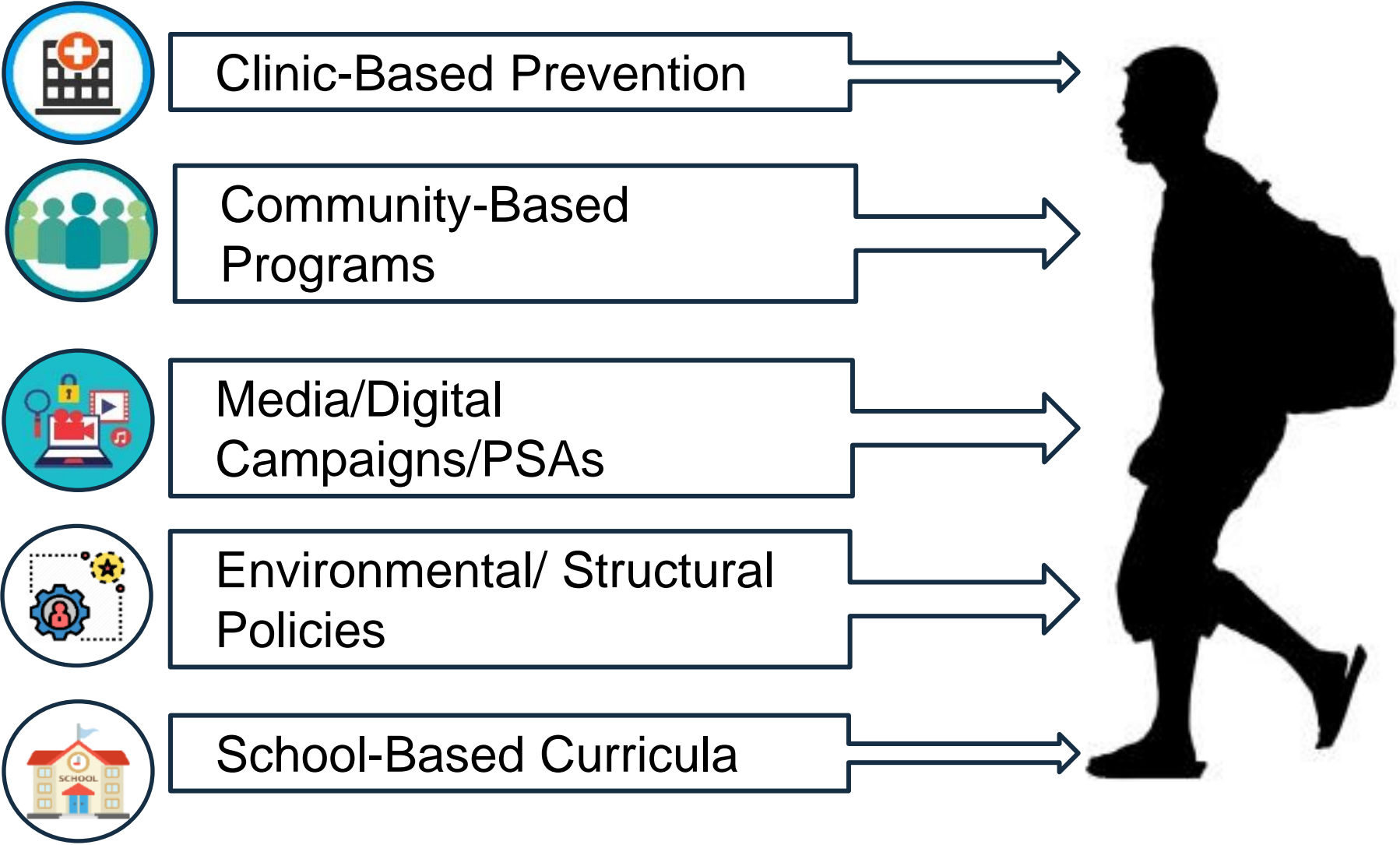
Multiple generations consecutively

Social

- Social arrangements
- Historical context
- Political-economic context

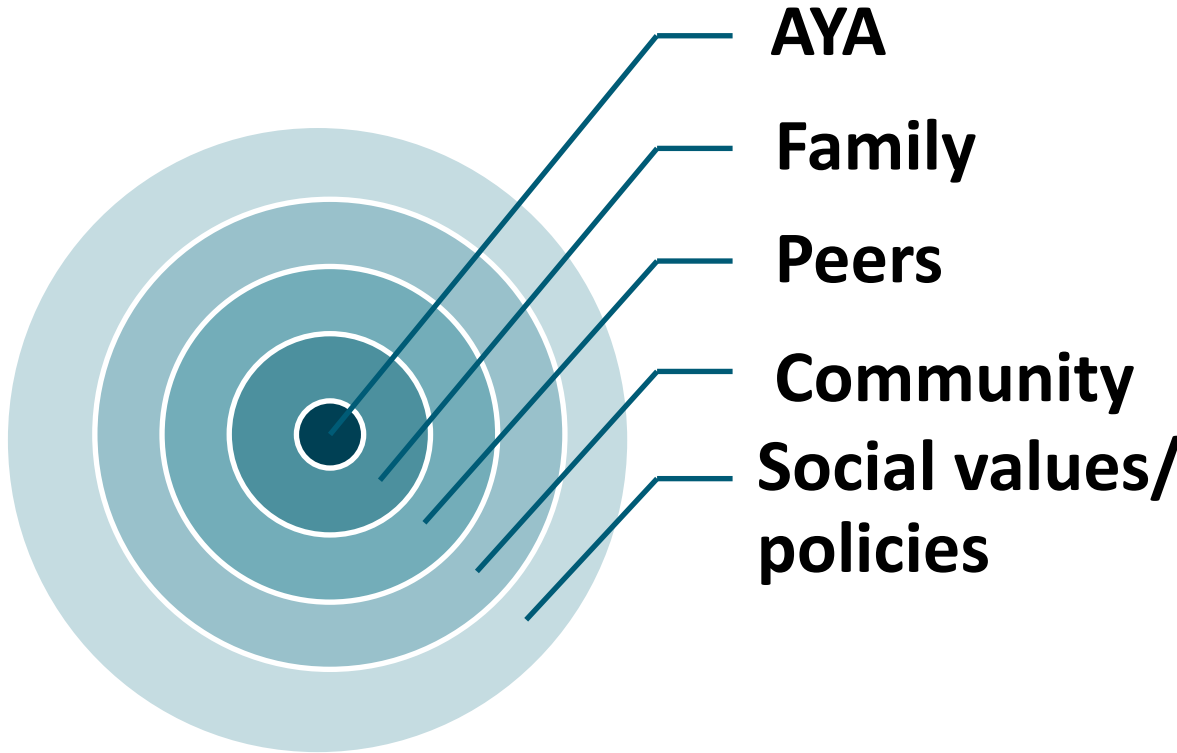
Dominant Approaches to AYA Health Focus on Individual Directly

Dominant approaches to reduce or prevent adolescent risk behavior **primarily focus on adolescents directly**

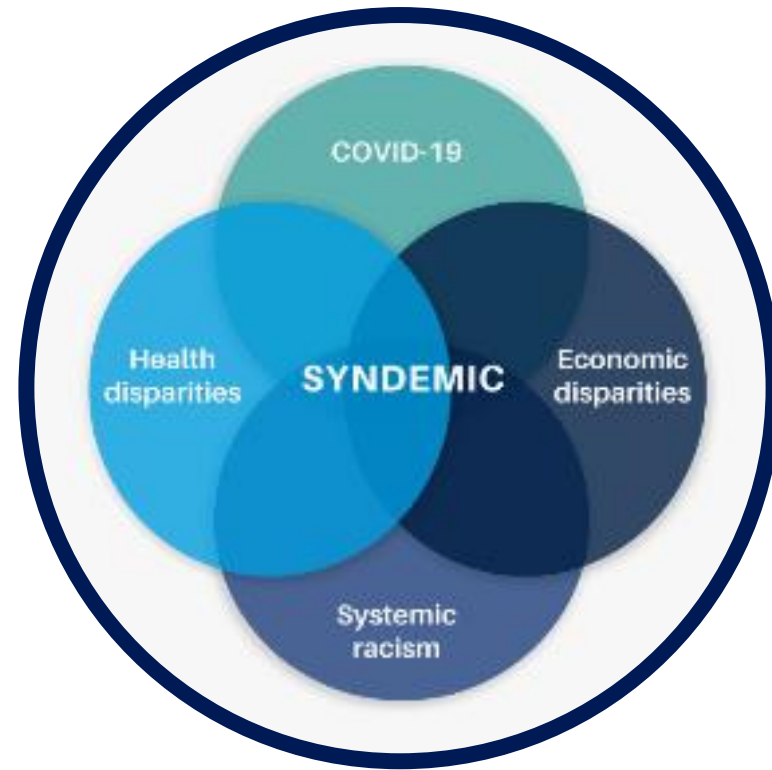


However, AYA health inequities exist in a **broader context.**

Among the most important contexts is **the family.**



Principle #7: SDOH Shape Clustering and Synergies of Health Inequities

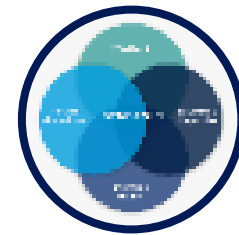


The Impacts of SDOH Cluster and Interact Synergistically

Syndemic Theory:

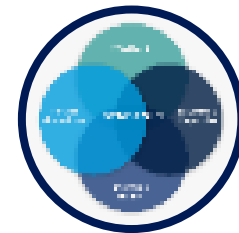
A **syndemic** is defined as two or more **clustered** epidemics interacting **synergistically** within a community or population, resulting in excess disease burden.

There are **two underlying mechanisms** that produce syndemics:



Biological synergism, e.g.: inflammation due to STIs facilitating transmission or acquisition of HIV.

AND / OR



Socio-contextual synergism, e.g.: increased risk of sexual HIV acquisition among substance users due to sexual and substance use networks.

SDOH may operate through both biological (e.g., inflammatory response) and socio-contextual synergisms.

Principle #8: SDOH and Social Injustices Interact to Produce Health Inequities



Social Injustices and Structural Racism Shape the Impact of SDOH

Ecosocial Framework:

Ecosocial Theory conceptualizes **health inequities** as **biological expressions of social processes**—the result of social injustices.

Social positioning (based on intersectional identity)



Unjust social processes

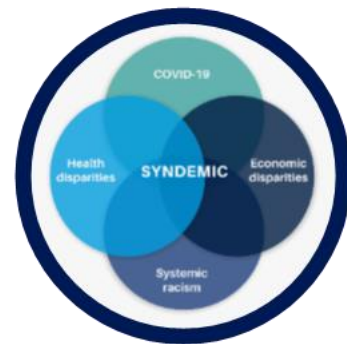


Health inequities

What Does This All Mean for Health Equity?

8 Principles About Mechanisms of the Social Determinants of Health:

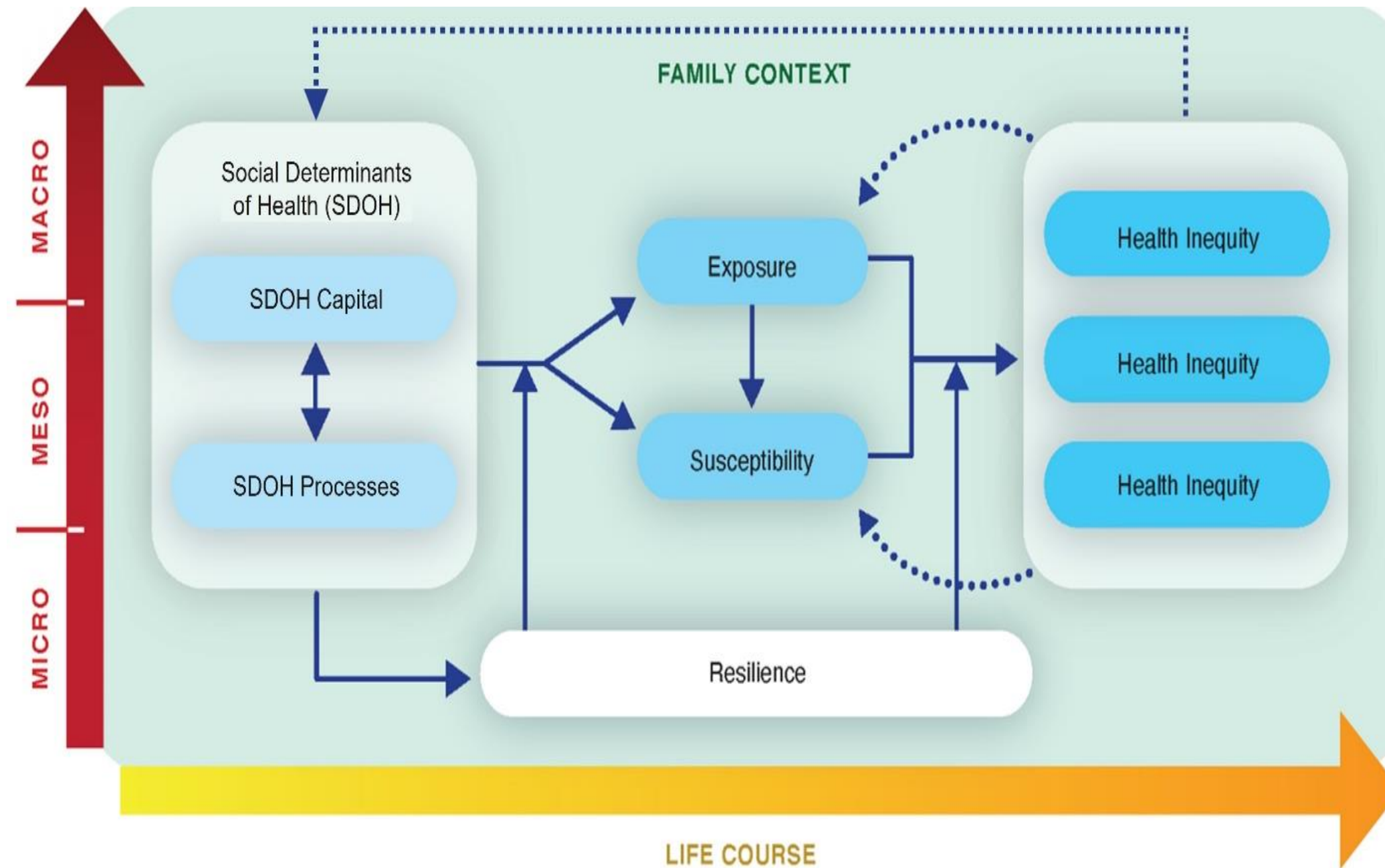
Where do we go from here?



Next Steps:

- 1 Integration of SDOH principles and mechanisms into a framework with applicability and utility
- 2 Conceptualization of applied mitigation approaches aligned with SDOH principles and mechanisms

The CLAFH Framework of SDOH Mechanisms



Innovations of the CLAFH SDOH Framework:

- **Dynamic** vs. static conceptualization of SDOH influence
- Specifies **relational forms/mechanisms**
- Accommodates both **SDOH capital & SDOH processes**
- **Multilevel and broad application**
- Goes beyond individual focus and centers on the **family context**
- Incorporates **co-occurring synergistic inequities**
- Takes a **life course perspective**
- Focuses on **exposure** and **susceptibility** (vs. "vulnerability")
- Integrates **social/behavioral and biological** factors
- Leverages assets and **resilience**

Download and Share: Synthesis of an Integrated Framework for Conceptualizing SDOH Mechanisms

THE
MILBANK
QUARTERLY



Conceptualizing the mechanisms of social determinants of health: A heuristic framework to inform future directions for mitigation

 **Open Access**

Download and Share: A Roadmap for Nurse-Driven Intervention Development

NURSING OUTLOOK

**Nurse-led approaches to address social determinants of health and advance health equity:
A new framework and its implications**

ELSEVIER
OPEN ACCESS



Four-Step Approach to Application of the SDOH Framework for Intervention Development:

Step 1. Identify the Specific Health Inequity within a Spatiotemporal Context

Step 2. Operationalize CLAFH SDOH Framework Constructs, Relationships, and Leverage Points

Step 3. Design SDOH Intervention Components Using Identified Leverage Points

Step 4. Evaluate the Nurse-driven Intervention Using Multi-Level Methods

NINR Leadership: Elimination of Health Inequities

MISSION: Lead nursing research to solve pressing health challenges and inform practice and policy—optimizing health and advancing health equity into the future.

RESEARCH LENSES

Health Equity



Reduce and ultimately eliminate the systemic and structural inequities that place some at an unfair, unjust, and avoidable disadvantage in attaining their full health potential.

Social Determinants of Health



Identify effective approaches to improve health and quality of life by addressing the conditions in which people are born, live, learn, work, play, and age.

Population and Community Health



Address critical health challenges at a macro level that persistently affect groups of people with shared characteristics.

Prevention and Health Promotion



Prevent disease and promote health through the continuum of prevention—from primordial to tertiary.

Systems and Models of Care



Address clinical, organizational, and policy challenges through new systems and models of care.

NINR Funding Opportunities

Short Courses in Social Determinants of Health for Research Education in Nursing Research

[RFA-NR-24-002](#)

Application Due Date: July 01, 2024.

Transformative Research to Address Health Disparities and Advance Health Equity (U01 Clinical Trial Optional)

[RFA-NR-24-004](#)

Application Due Date: March 22, 2024.

The Bridge-to-Care Initiative: Addressing Social Needs through Healthcare-Community Partnerships (R01 Clinical Trial Optional)

[RFA-NR-24-003](#)

Application Due Date: March 22, 2024.



**The Path Forward: Nurse-
Driven Practice, Policy, and
Advocacy**



The Status Quo

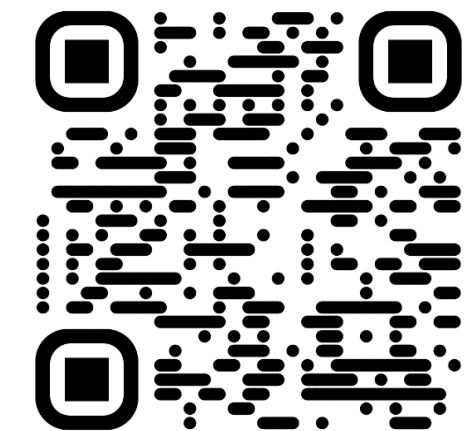
Improving Health through
Innovation and Leadership

Improving Health Through Nurse-Driven Policy Solutions



THE INSTITUTE FOR POLICY SOLUTIONS

1. Redesigning health and health care through the elimination of inequities and greater investments in preventive care, whole-person health and well-being.
2. Identifying, designing, and evaluating new approaches for delivering health care that considers both physical health and the social determinants of health.
3. Developing pathways for national scale and uptake of nurse-driven policies and programs.
4. Creating more opportunities for nurses as change agents and policy leaders.
5. Elevating the expertise, knowledge, and insights of nurses in the media to shift the public discourse about health and health care.



instituteforpolicysolutions.org

The Institute for Policy Solutions' Neighborhood Nursing Brings Health to Communities, Block by Block

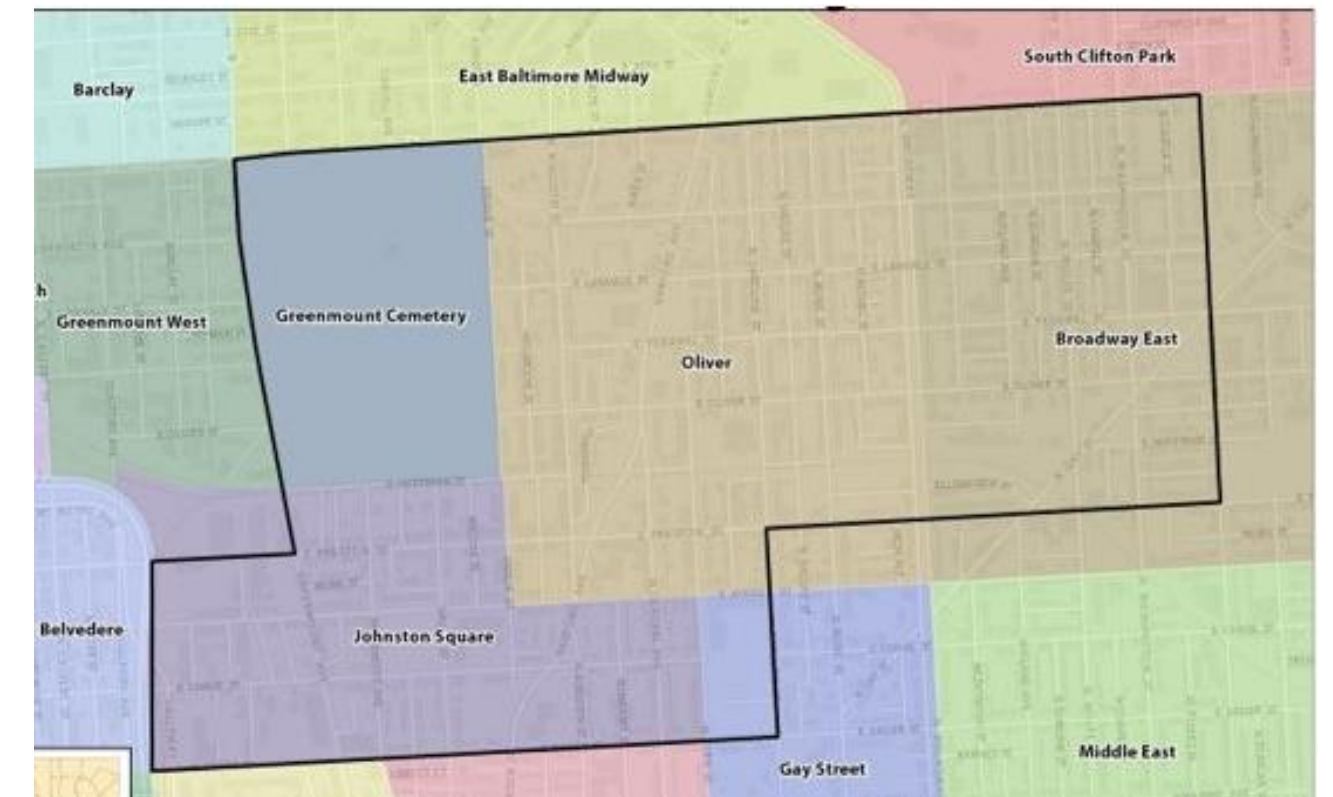
A Community-Based Approach to Eliminating Health Inequities:

A major demonstration project of the **Institute for Policy Solutions: Neighborhood Nursing** bypasses structural barriers to bring care directly to Baltimore residents in geographic areas—**furthest from the opportunity of equitable care**



ALL IN APPROACH – RN/CHW/Family Triadic Team

Collective Action: SON Partners and Community Partners:

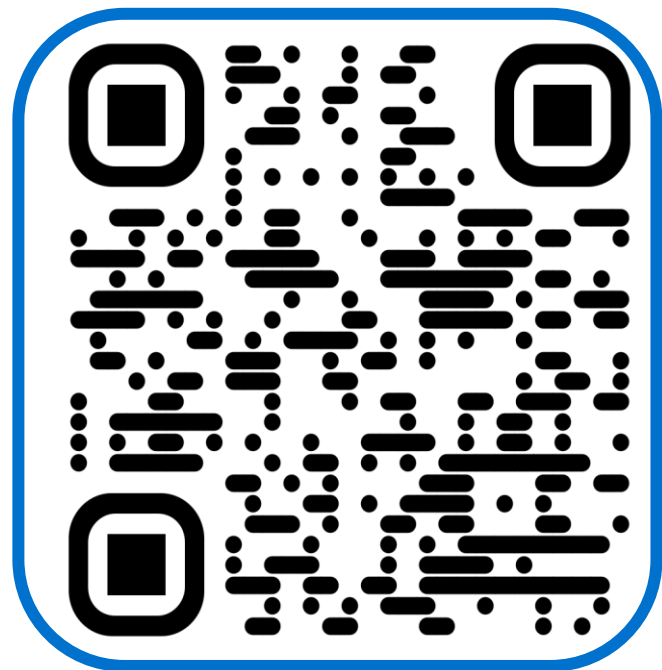


The 2024 Unequal Treatment Report: Revisited



A forthcoming **NASEM report**, to be released in 2024, will revisit the 2003 Unequal Treatment report **two decades later to consider:**

- What **progress** did we make in the past two decades?
 - How have **inequities persisted**?
- What are the **solutions to eliminating health inequities and structural and systemic racism**?



Dr. Vincent Guilamo-Ramos currently serves as a member of the NASEM Consensus Study Committee.

Special Request: Use the QR code to **weigh in on the importance of nursing** in eliminating inequities and structural and systemic racism in this country.

Thank You!

Dr. Vincent Guilamo-Ramos
Executive Director,
Institute for Policy Solutions

Please send any questions or comments to:

VincentRamos@jhu.edu



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