

Social Drivers of Health and Diabetes in American Indian and Alaska Native Communities

September 3, 2025

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Prevention





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gud ahl kíwaagang

Social Determinants of Health (SDOH)



The conditions in the environment where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.

(Healthy People 2030)



Determinants vs Drivers



Terms are often used interchangeably when discussing SDOH.

However, the use of “Drivers” instead of “Determinants” is increasingly favored as the use of “determinants” implies a finality and immutability that incorrectly reduces the agency of communities and individuals to impact their health.

More on Terminology: SDOH, Social Risk, HRSN

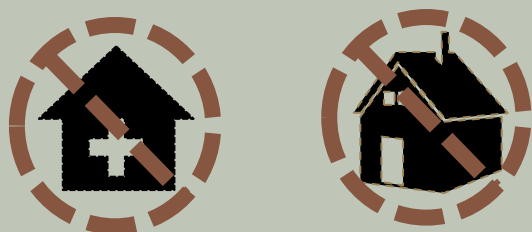
Social Determinants of Health (SDOH)

The conditions in which people are born, grow up, live, work and age which influence a person's opportunity to be healthy, his/her risk of illness and life expectancy.



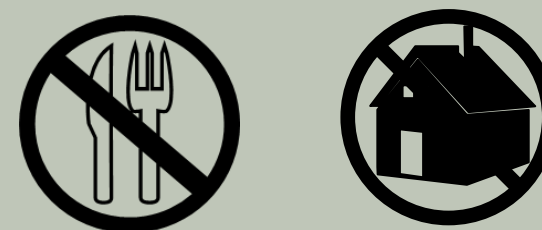
Social Risk Factors

Adverse social conditions associated with poor health, such as food insecurity and housing instability.



Health Related Social Needs (HRSN)

An individual's unmet, adverse social conditions that contribute to poor health.



More on Terminology: SDOH, Social Risk, HRSN



Social Determinants of Health (SDOH)

Conditions in the community and environment one lives in that do or do not support health

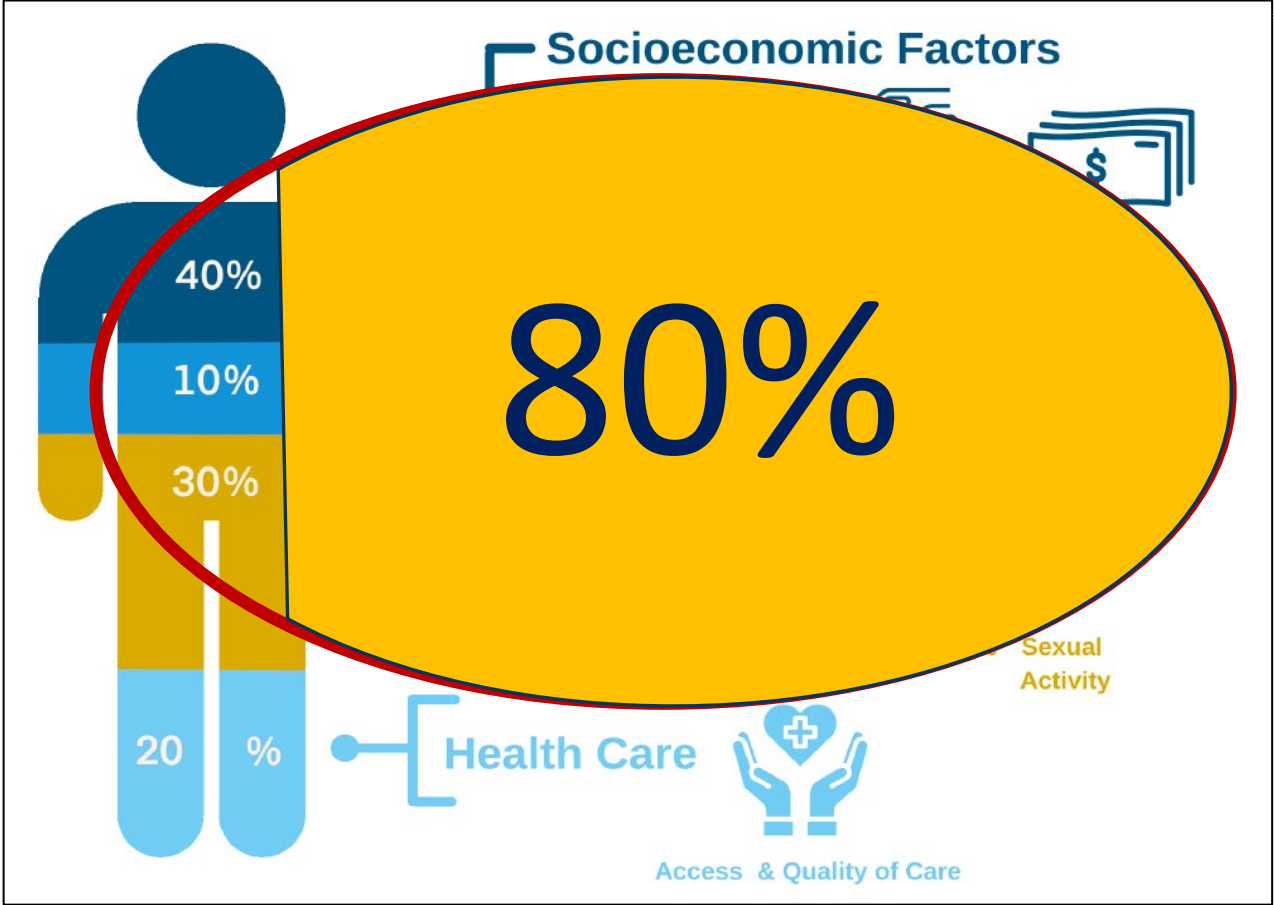
Social Risk Factors

Conditions in the community and environment that create *potential* for people to experience adverse health impacts

Health Related Social Needs (HRSN)

An individual's experience of negative health impacts due to adverse social conditions in the community or environment

Impact on Health Outcomes

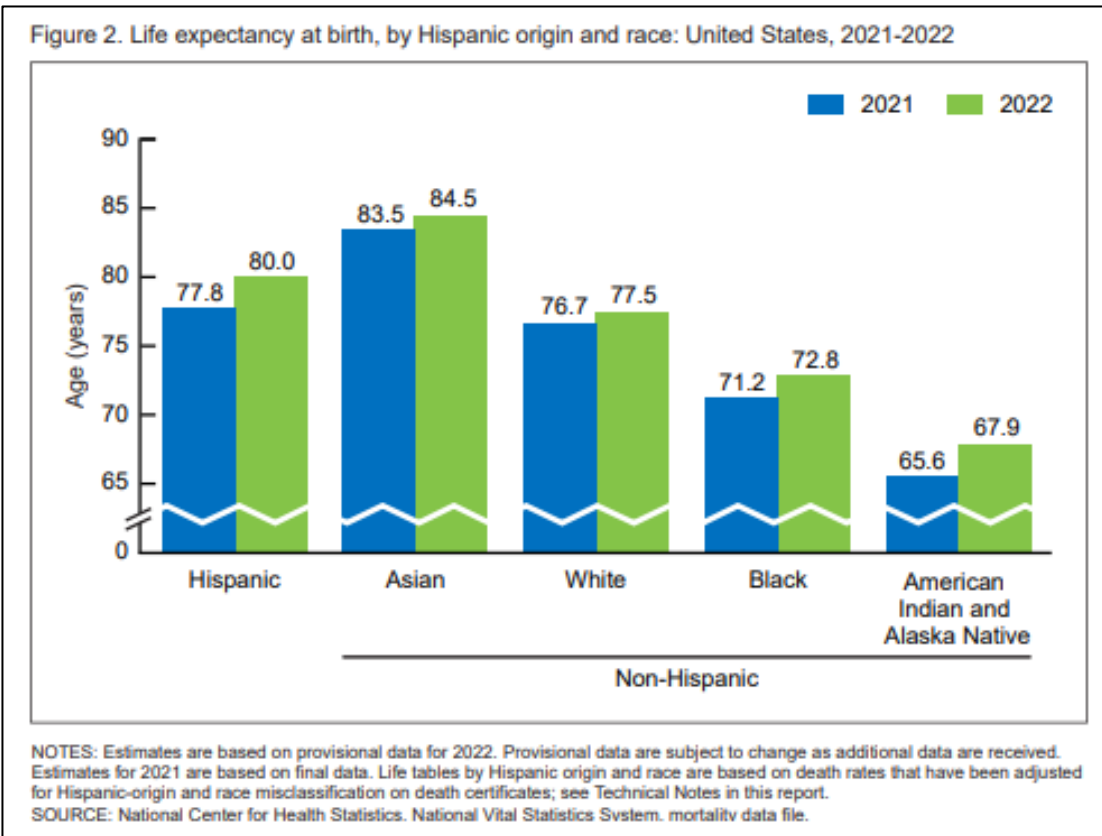
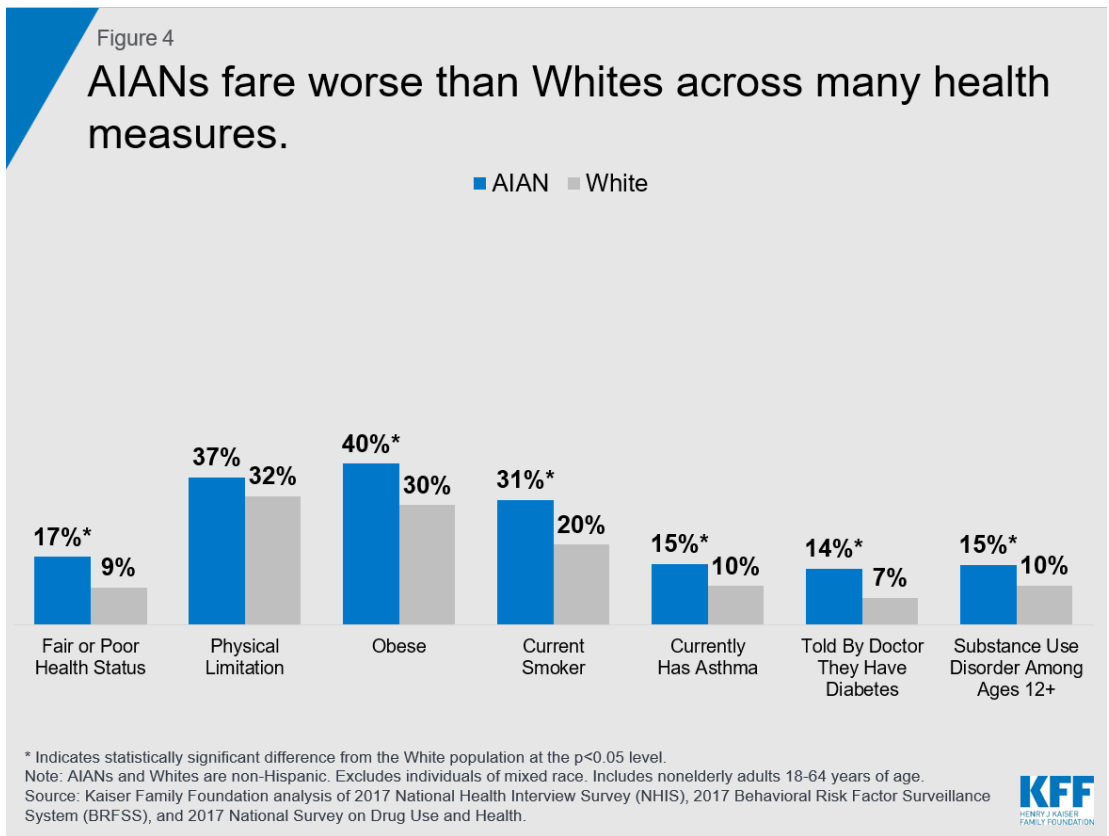


Source: <https://www.uclahealth.org/sustainability/social-determinants-of-health>



Source: "Meeting Individual Social Needs Falls Short Of Addressing Social Determinants Of Health", Health Affairs Blog, January 16, 2019. DOI: 10.1377/hblog20190115.234942

Disproportionate Impact: American Indian/Alaska Native Health Outcomes



Rooted in the Past



Neighborhood, As-built, and Ambient Environments

- Where we live—geographically remote locations impact access to food, water, utilities, services
- Pollution—affected water sources; particulate matter from dust, smoke
- Transportation limitations
- Ability to own land
- Lack of housing
- Access to broadband—emerging SDOH with impacts for telehealth, virtual education, commerce, access to information

Food/Nutrition Security

- Removal from traditional agriculture, hunting and gathering lands
- Remote locations impact food availability and nutritional quality
- Commodity foods

Social Cohesion/Belonging

- Removal from family, community, and cultural practices disrupted family and societal norms

Education

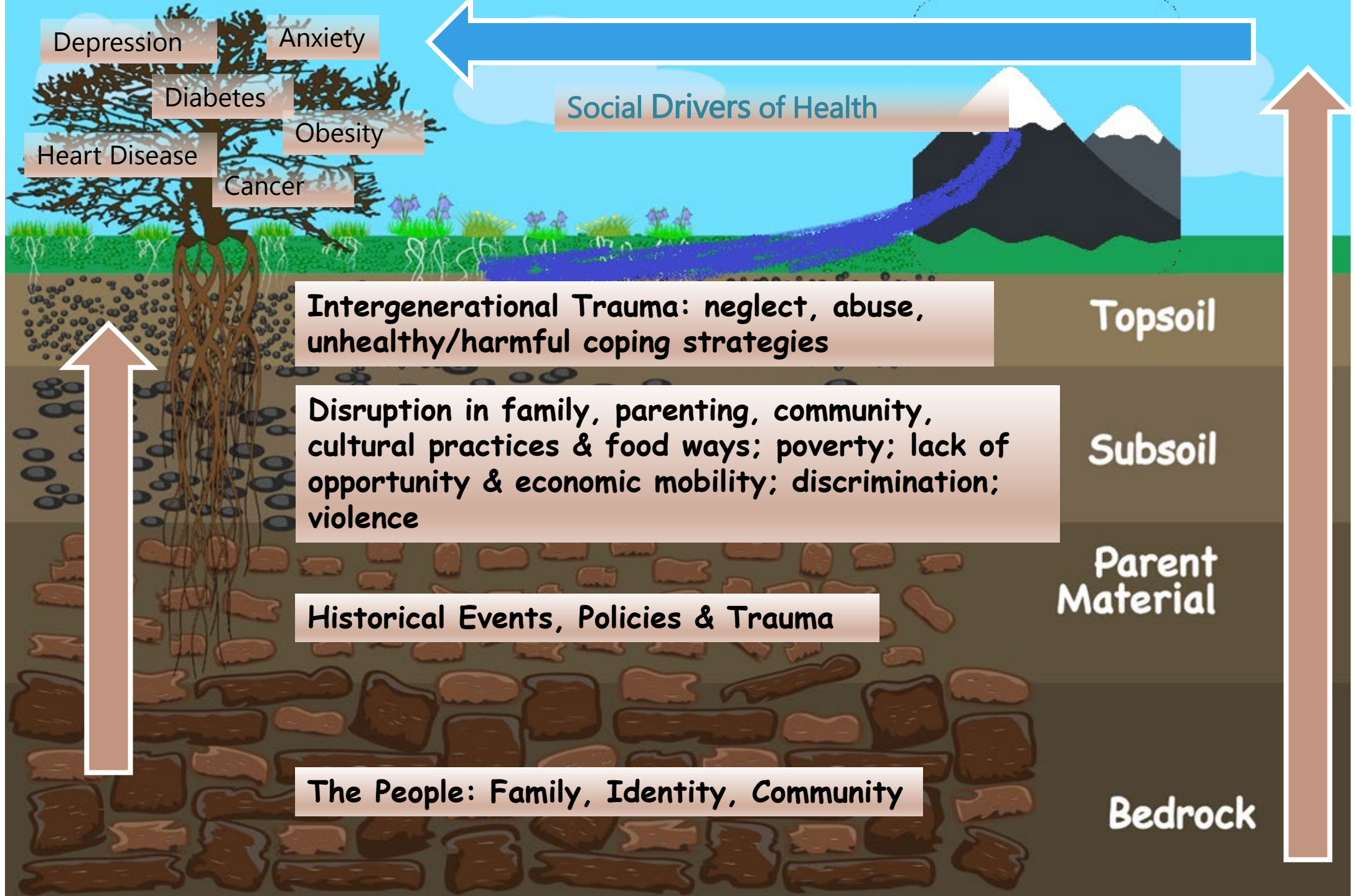
- Boarding schools
- Limited educational opportunities

Economic stability

- Disrupted ability to work and provide for families
- Segregation policies impacted education and employment opportunities
- Home/land ownership

Access to Health Care

- Limited
- Funding challenges



Depression

Anxiety

Diabetes

Obesity

Heart Disease

Cancer

Social Drivers of Health

Intergenerational Trauma: neglect, abuse, unhealthy/harmful coping strategies

Topsoil

Disruption in family, parenting, community, cultural practices & food ways; poverty; lack of opportunity & economic mobility; discrimination; violence

Subsoil

Historical Events, Policies & Trauma

Parent Material

The People: Family, Identity, Community

Bedrock

“Early childhood experiences, social inequality and social exclusion, security of access to food and water, stress, and the availability of and access to employment are among the social characteristics that have been shown to affect health outcomes for individuals and communities worldwide.” (Carroll, et al., 2022).



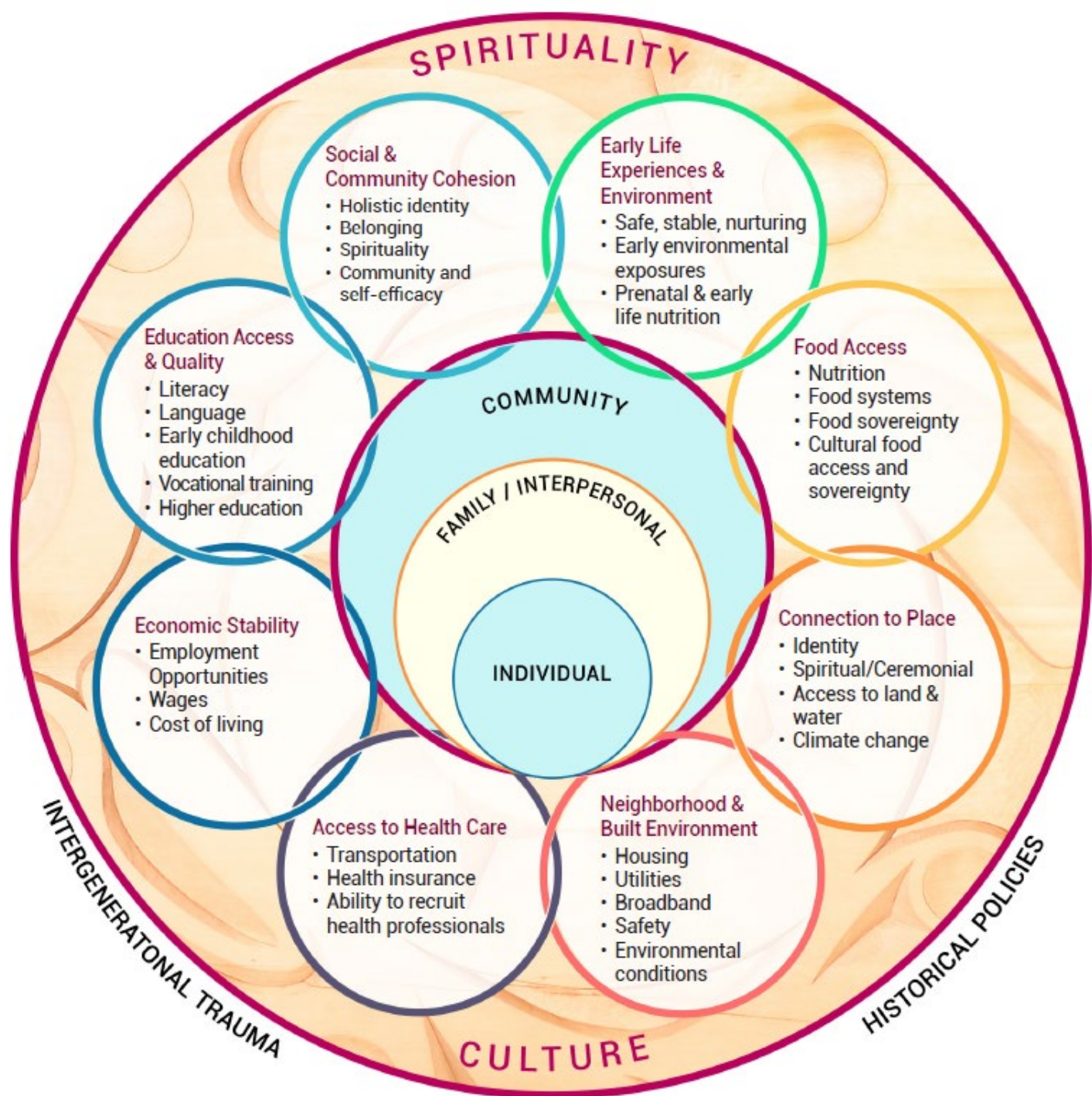
“What does health equity mean from a Tribal perspective?”

Health Equity in Indian Country: Rethinking How the Centers for Medicare & Medicaid Services Approaches Health Equity for American Indians and Alaska Natives:

“[Western ways of knowing and Western constructions of justice and health are] not the whole story...Across Indian Country, we have heard that health equity means joy and safety; dignity and kindness; justice and sovereignty; health and wholeness for the entire community. It means generosity, since taking care of others is essential for our health. It means understanding the interconnectedness of human health with our lands and waters and all living things. It means creating conditions on a societal level that support health for everyone.”



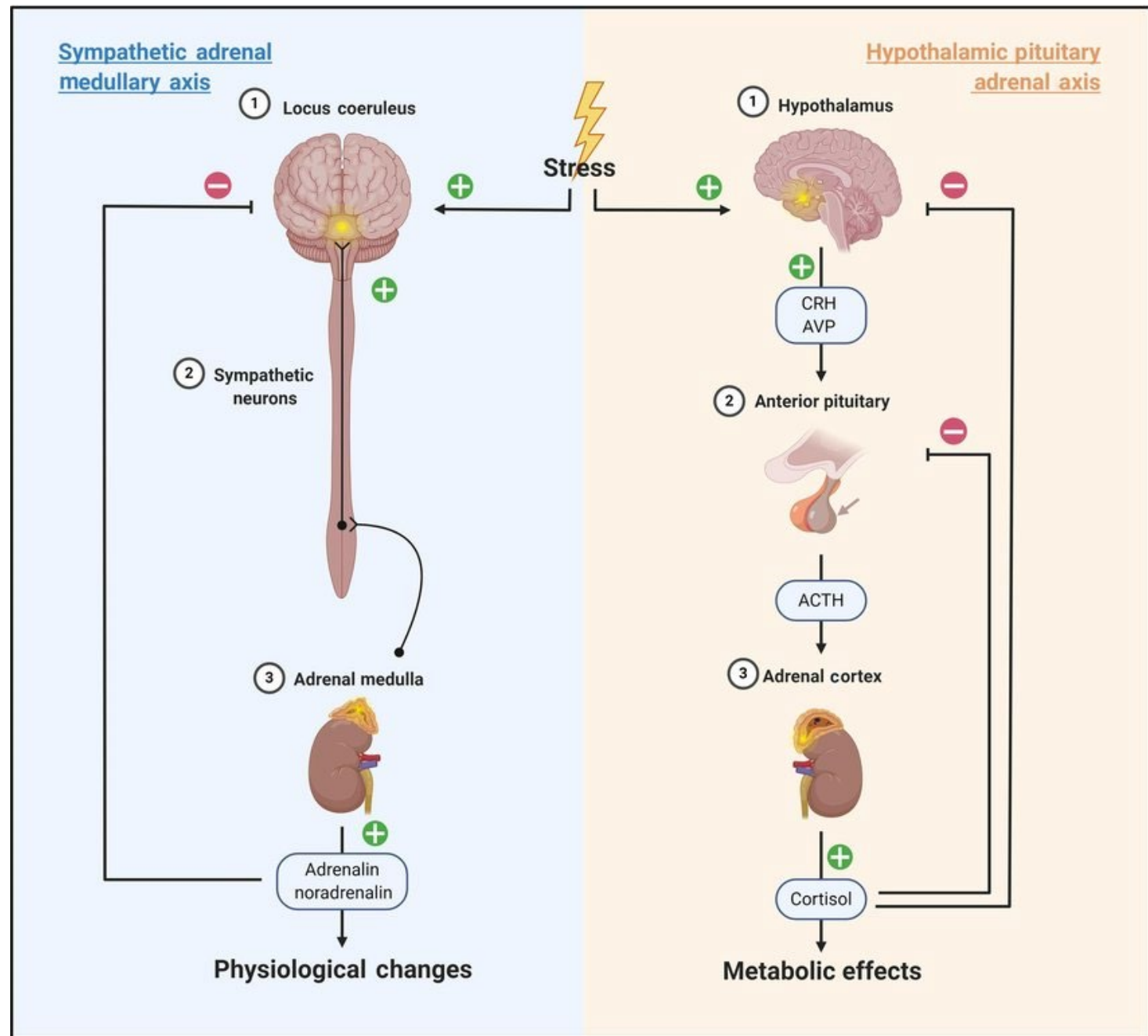
Indian Health Service Indigenous Social Drivers of Health Framework





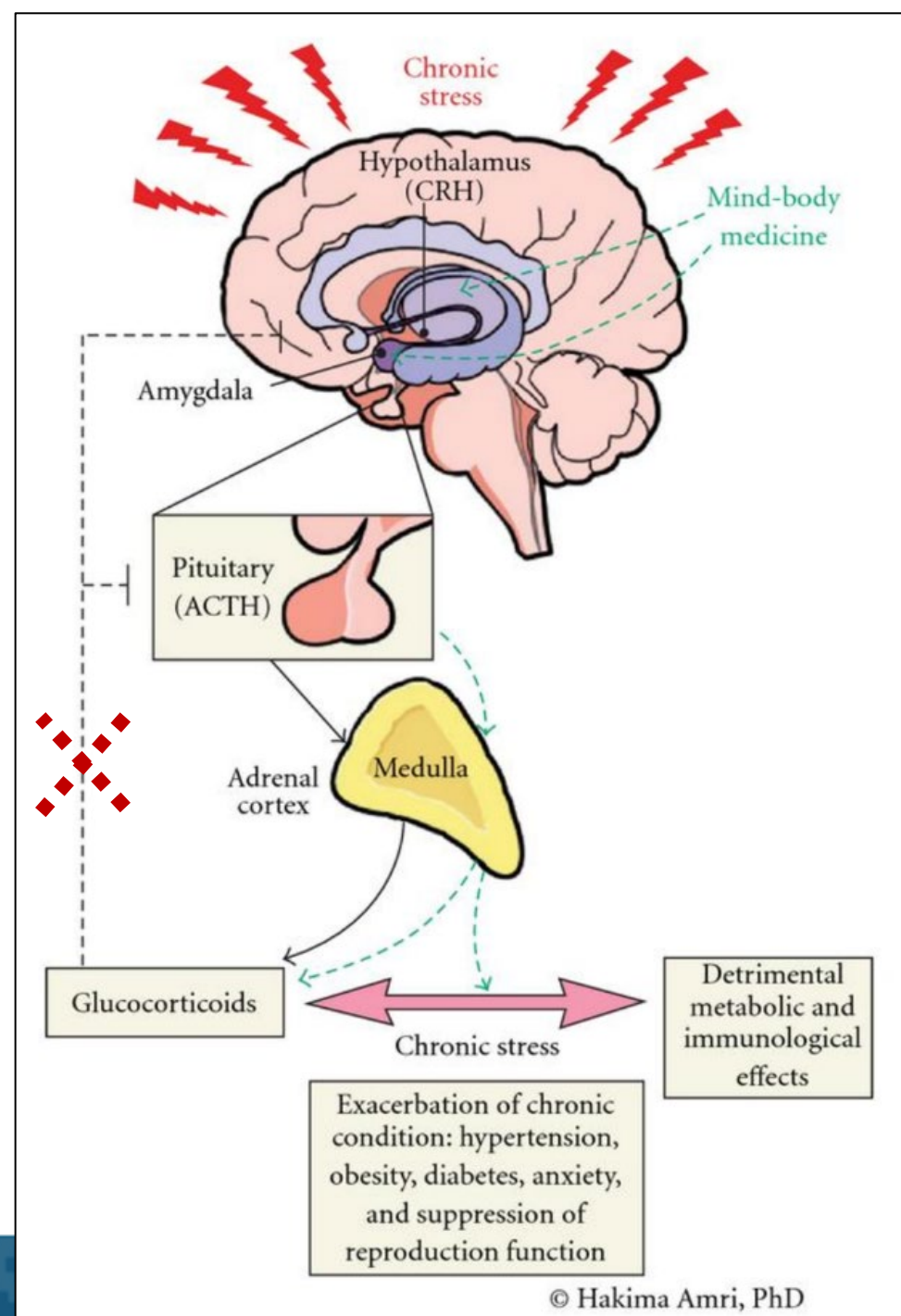
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Stress Response



Toxic Stress

- Overwhelming and unresolved stress
- H-P-A axis dysregulation occurs
- Glucocorticoid (GC) negative feedback loop becomes dysfunctional → GC Receptor (GR) resistance → stress hormones and immune system mediator response → compromised immune system and organ and tissue damage over time.
- Future Science OA 2015; 1(3): FSO23.



Social Determinants of Health



Economic Stability



Neighborhood & Built Environment



Education Access & Quality



Healthcare Access & Quality



Social & Community Context

Chronic Psychosocial and Environmental Stressors

Low Socioeconomic Status

Neighborhood Violence

Limited Healthcare

Early Childhood Adversity

Discrimination

Unsafe or Insecure Housing

Transportation Noise Exposure

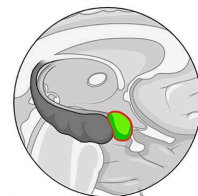
Food Insecurity

Social Isolation

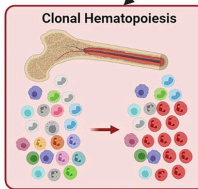
Pathway to Chronic Inflammation

Neuro-Hematopoietic Axis

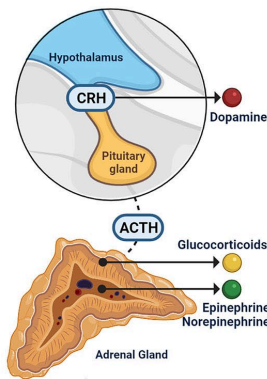
Chronic Amygdalar Activation



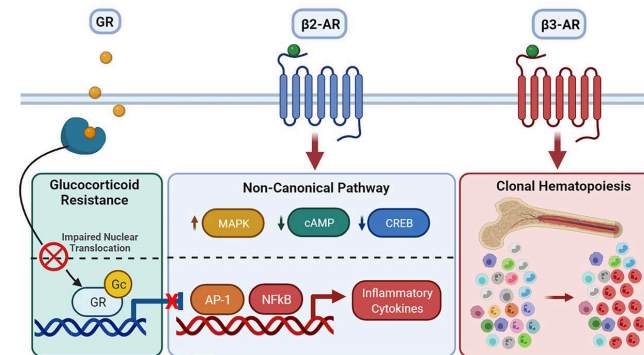
SNS Efferents



SAM Axis & HPA Axis

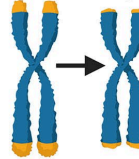


Glucocorticoid & Catecholamine Signaling under Chronic Stress

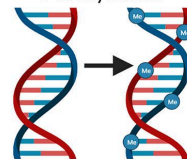


Epigenetic Modification

Telomere Shortening



DNA Methylation



CVD Development and Progression

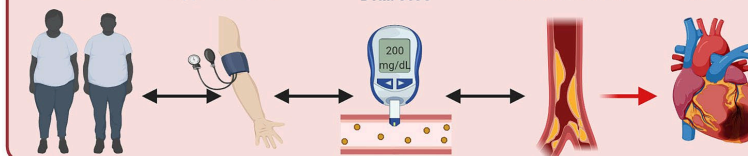
Obesity

Hypertension

Diabetes

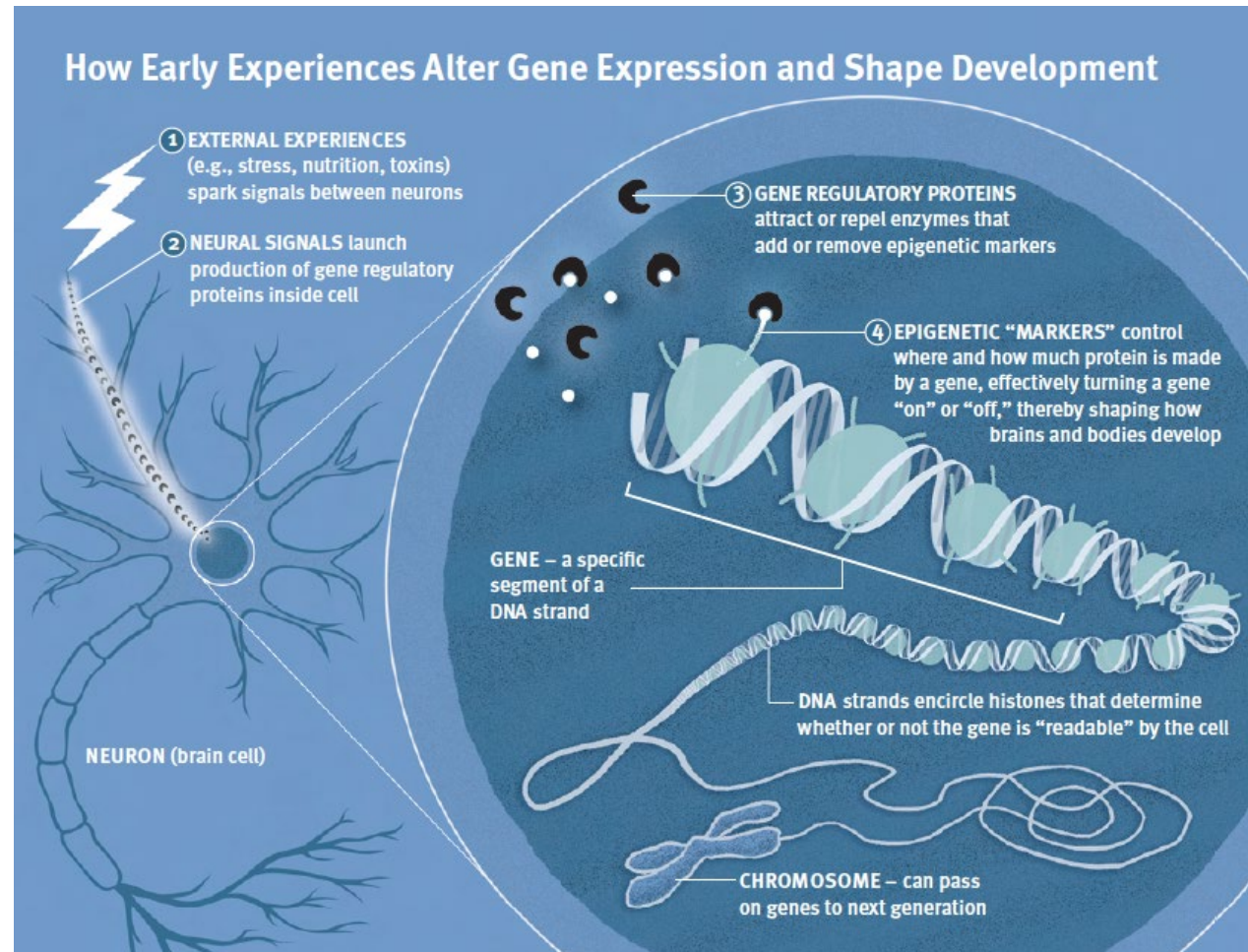
Atherosclerosis

MACE

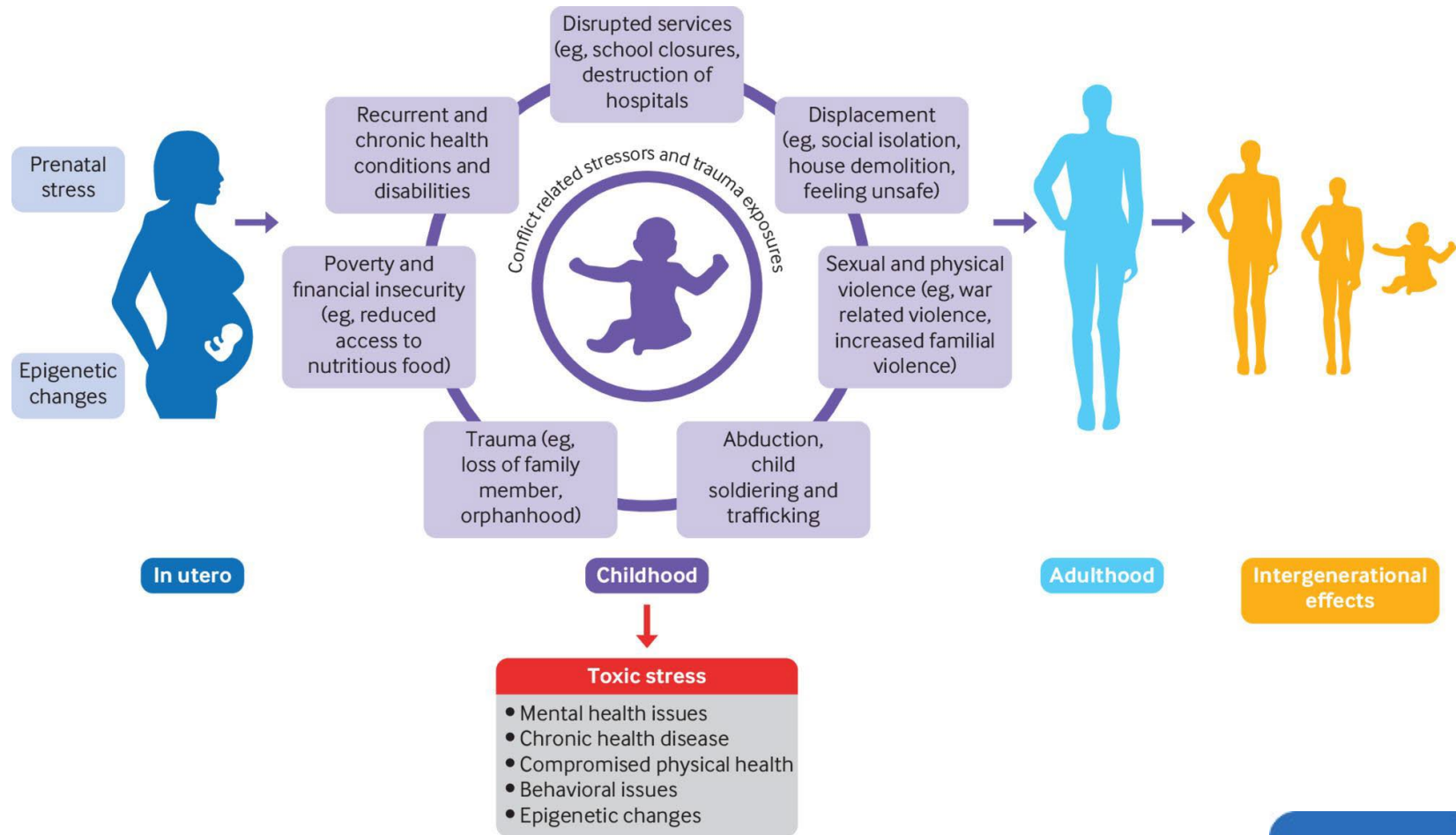


Source:
https://www.ahajournals.org/doi/10.1161/CIRCRESAHA.121.319811?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%20pubmed

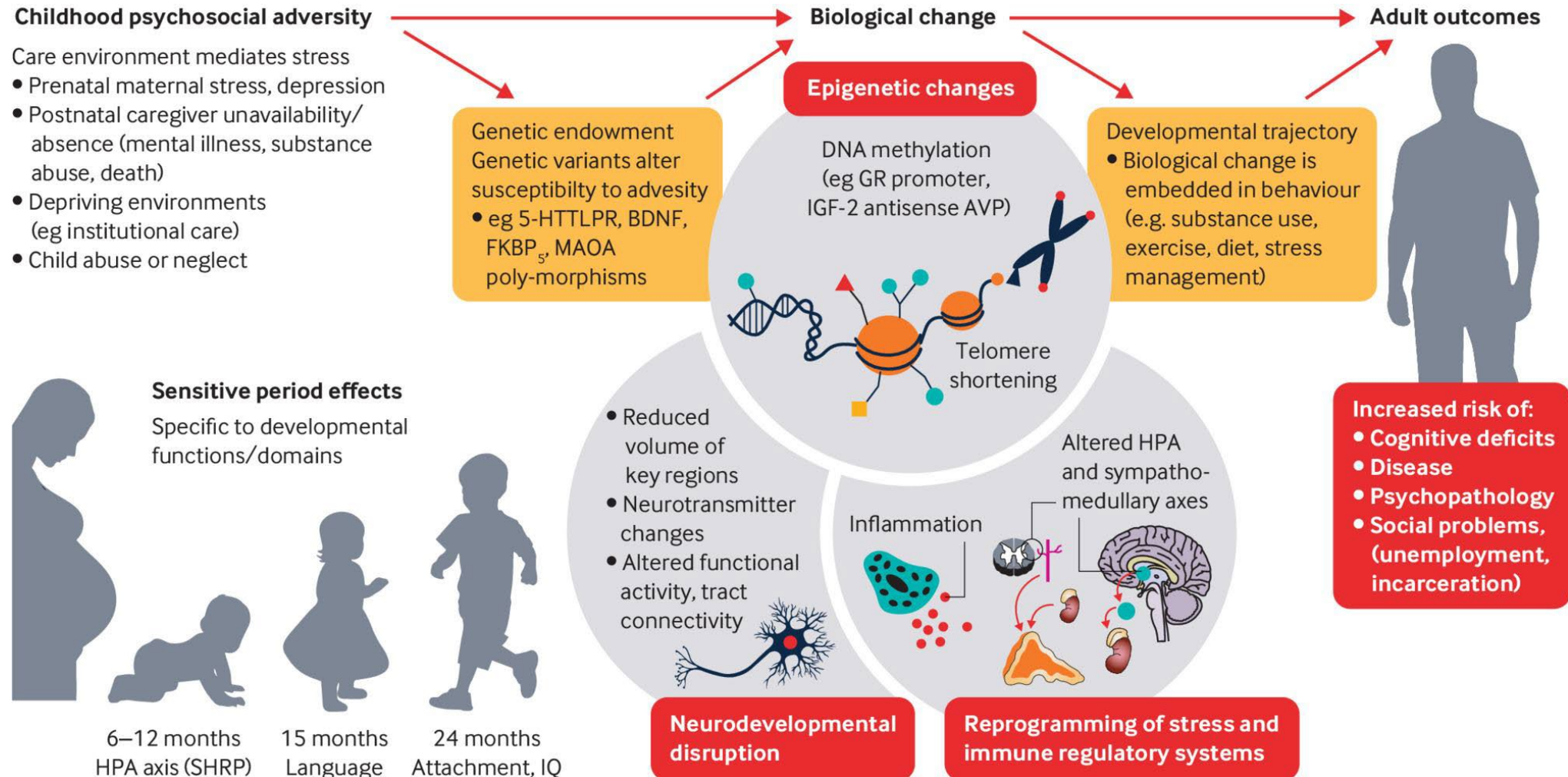
Epigenetics: Early Experiences Can Have Lifelong Consequences



Conflict related stressors and trauma exposures and their effect through the life course.



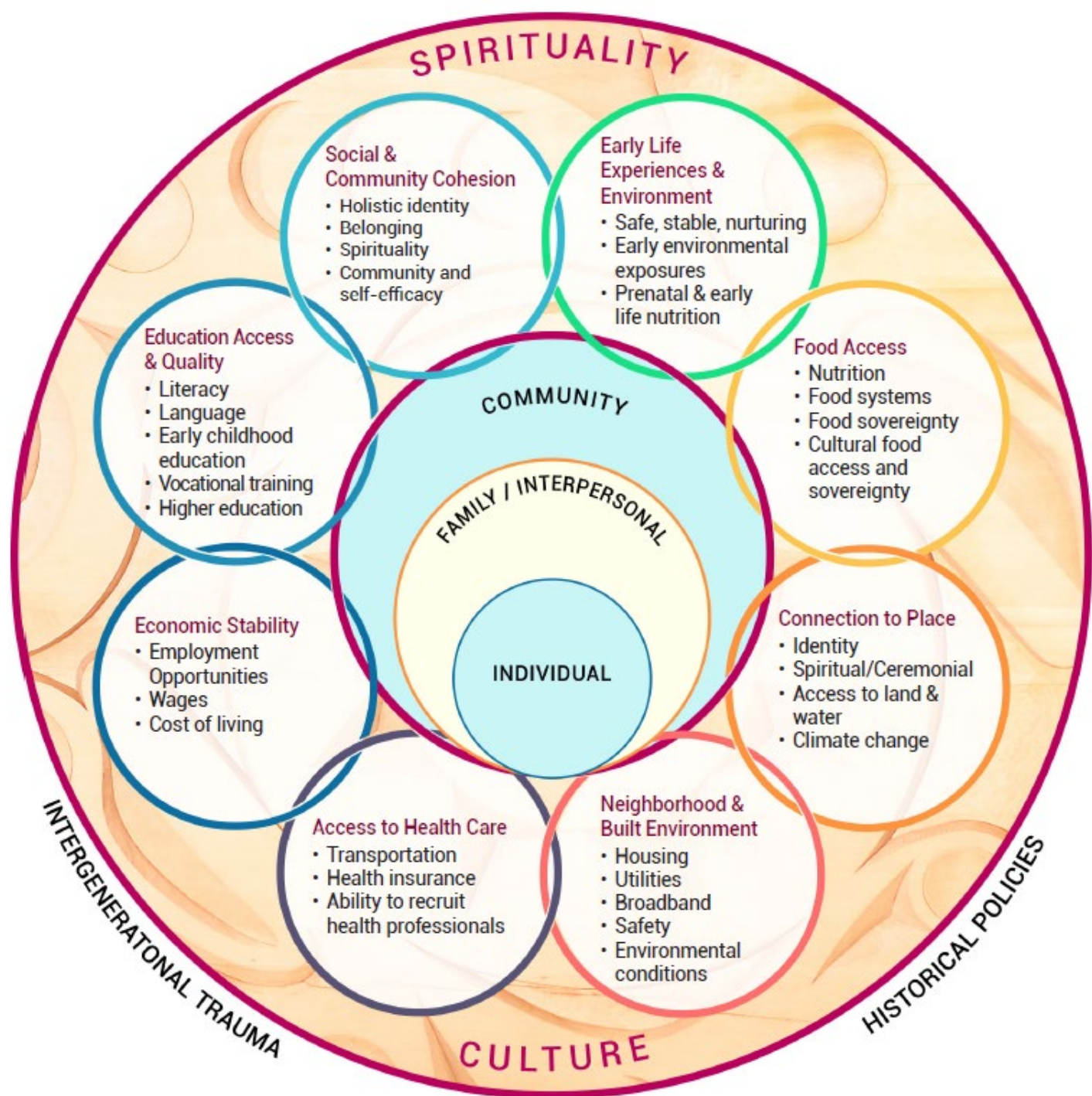
Some of the pathways that mediate exposure to early adversity and adult outcomes.



Charles A Nelson et al. *BMJ* 2020;371:bmj.m3048



Social Drivers of Health and Diabetes





Food Insecurity and Diabetes



- **Prevalence**
 - Higher diabetes prevalence in food insecure households
 - Journal of Nutrition 2010; 140(2): 304–10
 - 32 % of Medicaid-enrolled individuals with diabetes
 - Diabetes Care 2021; 35: 193–195
 - 44% insulin-dependent individuals with eye or kidney complications:
 - Diabetes Care 2021; 35: 193–195
- **Management**
 - Increased risk of hyperglycemia, poor glucose control, and hypercholesterolemia
 - Diabetes Care 2012; 35(2): 233-8
 - Diabetes Care 2013; 36: 3093–3099
 - More hypoglycemia episodes
 - Archives of Internal Medicine 2011; 171(13): 1204-6
 - Increased risk of Emergency Department visits or hospitalization during the last week of the month in low income individuals
 - Medical Care 2017 Jul;55(7):639-645
 - Reliance on less expensive, energy-dense foods
 - Cureus. 2021; 13(3): e13841



Environmental Conditions and Diabetes



- **Housing Insecurity**
 - Influences diabetes management and care processes: less likely to have a physicians visit, A1c check, and eye exam
 - BMC Health Serv Res 2022; 13;22(1):61
 - Unstable housing is associated with self-care, self-management routines, medications and supplies affordability, and healthy food consumption challenges
 - Diabetes Care 2021; 44(1):262
- **Air Pollution**
 - Activates catecholamine and glucocorticoid inflammation and immune response through SPA and HPA axes
 - Toxics 2021; 9(6):132
- **Green Spaces**
 - Associated with decreased risk of type 2 diabetes, cardiovascular mortality and decreased incidence of stroke, HTN, dyslipidemia, coronary artery disease, and asthma
 - Environmental Research 2018; 166:628-637



Education Access and Diabetes



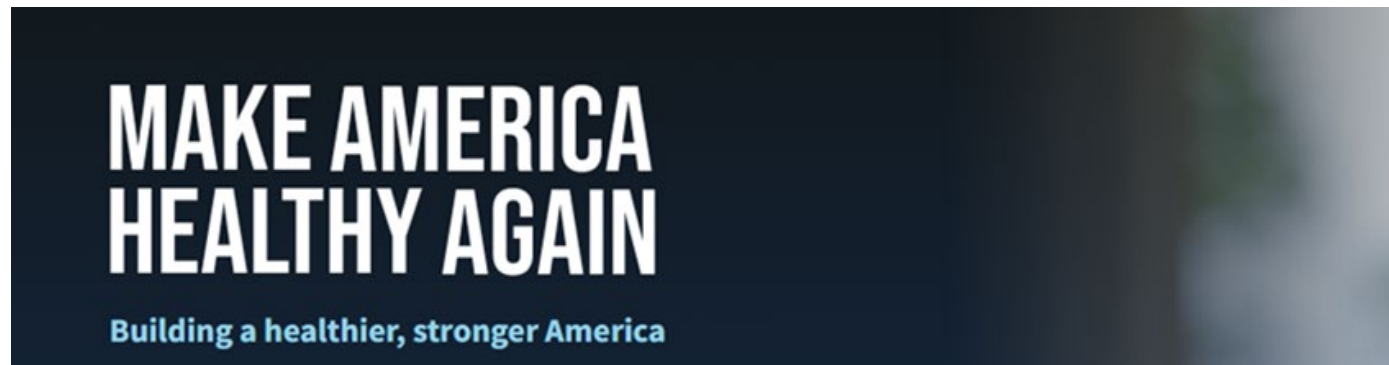
- Education
 - Health Literacy associated with lower HbA1c and better diabetes knowledge
 - J Gen Intern Med 2019; 34:1007–1017
 - Public Health Rep 2006; 121(3):245–254
 - Educational attainment associated with better glycemic control
 - Public Health Rep 2006; 121(3):245–254



National Efforts to Address Upstream Drivers of Health

Make America Healthy Again (MAHA)

- Make America Healthy Again Commission—February 2025
 - Executive Order 14212
- Assessment Report -- May 22, 2025.
 - Children's Health
 - Chronic Disease Prevention:
 - Policy Recommendations
- Finalized Recommendations – soon to be released.



HHS SDOH Action Plan



Purpose: Drive progress through coordinated strategies and activities to better integrate health and human services and to advance public health initiatives involving cross-sector partnerships and community engagement to address specific SDOH drivers.

- **Goal 1:** Improve access to health care services and foster greater attention to referring patients with SDOH needs to community partners
- **Goal 2:** Align cross-government approaches, support public-private partnerships, and leverage community engagement to address SDOH and enhance population health
- **Goal 3:** Enhance data infrastructure and utilization of data to facilitate progress on goals 1 and 2

Internal document that includes over 90 actions from 15 federal Operational and Staff Divisions

HHS's Strategic Approach to Addressing Social Determinants of Health to Advance Health Equity – At a Glance
April 1, 2022

Overview

The strategic approach that the U.S. Department of Health and Human Services (HHS) is adopting to address social determinants of health (SDOH) will guide efforts to make health outcomes more equitable by better coordinating health and human services and by adopting a whole-of-government, multi-sector strategy to address the underlying systemic and environmental factors that affect health status. It is estimated that clinical care accounts for only 20% of the county-level variation in health outcomes, while SDOH account for as much as 50% and are a major driver of health disparities.

Social Determinants of Health

- Education Access and Quality
- Health Care Access and Quality
- Neighborhood and Built Environment
- Social and Community Context
- Economic Stability

Addressing SDOH involves coordination across sectors including the government, community-based organizations, health care providers, health plans, and other private sector partners, recognizing that many factors contribute to disparities in health outcomes.

Social Determinants of Health Ecosystem

Upstream: Public Health and Prevention, Multi-sector private/public partners

Midstream: Human Services

Downstream: Healthcare

Objectives: Improve Community Conditions, Address Structural Racism, Address Individual/Social Needs, Address Individual/Healthcare Needs

Approaches: Enhance Data Infrastructure, Whole-of-Government, Cross-Sector, Community Driven Activities, Health and Human Services Integration, Improve Access Equitable Delivery, Referral Networks

Note: Adapted from Castrucci B, Auerbach J. Meeting Individual Social Needs Falls Short of Addressing Social Determinants of Health. Health Affairs Blog. January 16, 2019

www.hhs.gov

Strategies and activities involving

health care services, providers, as well as needs

public-private partnerships, diverse population

community-based organizations, health care providers, health plans, and other private sector partners, recognizing that many factors contribute to disparities in health outcomes.

Health and human services integration, improve access equitable delivery, referral networks

Addressing SDOH involves coordination across sectors including the government, community-based organizations, health care providers, health plans, and other private sector partners, recognizing that many factors contribute to disparities in health outcomes.

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Additional Federal SDOH Resources

- [Addressing Social Determinants of Health in Federal Programs | Health Policy | JAMA Health Forum | JAMA Network](#)
- [HHS's Strategic Approach to Addressing Social Determinants of Health to Advance Health Equity - At a Glance](#)
- [The U.S. Playbook to Address Social Determinants of Health](#)
- [HHS Call to Action: Addressing Health-Related Social Needs in Communities Across the Nation](#)
- [Addressing Social Determinants of Health: Examples of Successful Evidence-Based Strategies and Current Federal Efforts](#)
- [Community Care Hubs: A Promising Model for Health and Social Care Coordination](#)

The Office of the National Coordinator for Health Information Technology

SDOH Data Interoperability and Use



Priority areas

1. SDOH
2. Health Equity
3. Health Literacy.

- Accountable Health Communities Model: screening and addressing social needs
- Section 1115 Medicaid Demonstration Projects to address HRSNs
- Merit-based Incentive Payment System (MIPS) Clinical Quality Measure #487
- 2025 Physician Fee Schedule for Services Addressing Health-Related Social Needs: Community Health Integration Services, Social Determinants of Health Risk Assessment and Principal Illness Navigation Services

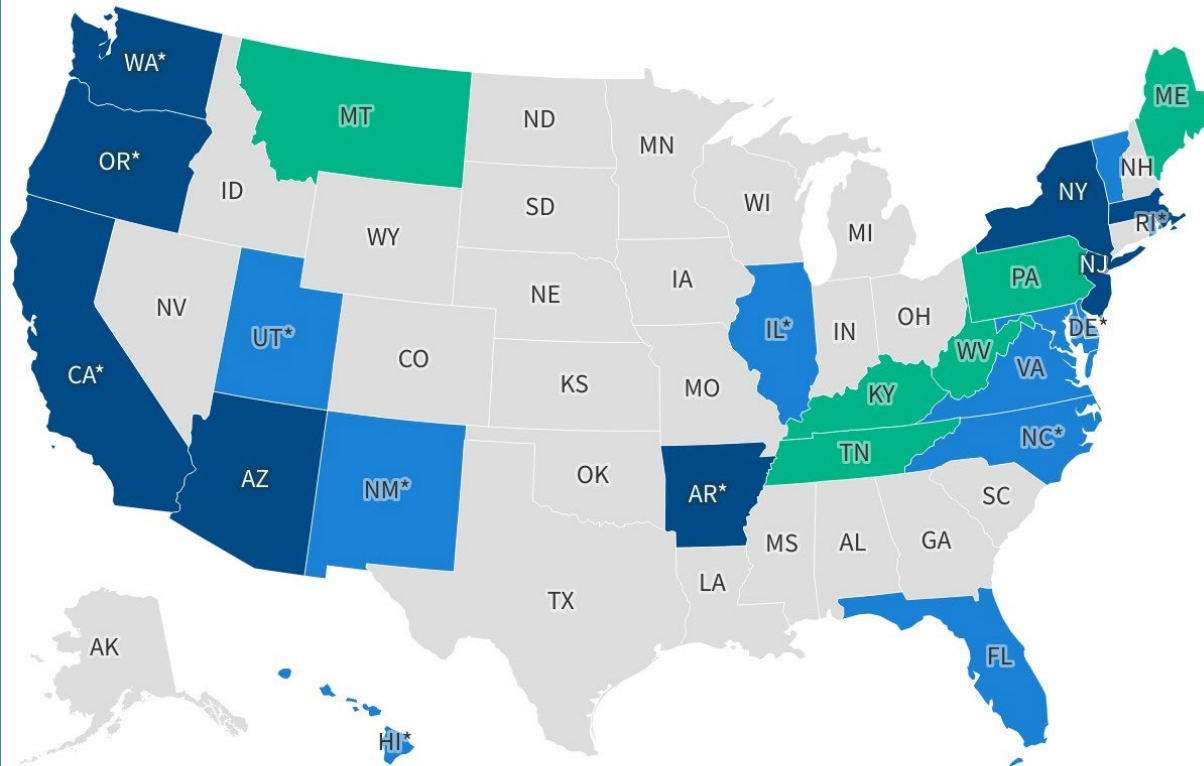


- SDOH Research Coordinating Committee (SDOH RCC)
- SDOH added to the Research, Condition, and Disease Classification (RCDC) system in 2020
- 2021-2025 NIH-Wide Strategic Plan-grow the evidence base on SDOH impacts to human health
- Support Common Data Elements (CDEs) for SDOH (*All of Us* Research Hub, Gravity Project, USCDI, PHenX Toolkit, etc.)

Figure 1

Section 1115 Waivers with Provisions Related to Social Determinants of Health (SDOH), as of February 2024

■ Approved under "HRSN framework" (8 states) ■ Approved prior to HRSN framework (11 states) ■ Pending (6 states)







Note: As of February 25, 2024

*Some states with approved 1115 waivers also have additional SDOH provisions pending at CMS.

Source: KFF Section 1115 Waiver Tracker



SDOH: Regulatory and Accreditation Requirements Updates

- CMS FY23 Hospital Inpatient Prospective Payment System (IPPS) Inpatient Quality Report (IQR).  REMOVED - FY26 IPPS Published 8/4/25
- TJC National Patient Safety Goal 16.  Updated - TJC Manual Update Jan 2025
- ONC USCDI Version 2
- CMS CY24 Hospital Outpatient Prospective Payment System (OPPS) and Ambulatory Surgery Center (ASC) Prospective Payment System Final Rule  Proposed for Removal – CY 2026
- Hospital Outpatient Quality Reporting (OQR), Ambulatory Surgical Center Quality Reporting (ASCQR), and Rural Emergency Hospital Quality Reporting (REHQR) Programs  Proposed for Removal – CY 2026

Opportunities

- Medicare Annual Wellness Visit screening reimbursement above all-inclusive rate
- 2024 Physician Fee Schedule Reimbursements for Services Addressing Health-Related Social Needs
 - Social Determinants of Health Risk Assessment
 - Administration of a standardized, evidence-based Social Determinants of Health Risk Assessment tool, (5–15 minutes)
 - Permanent status on the Medicare Telehealth List
 - Community HCPCS code G0136

Opportunities

- 2024 Physician Fee Schedule Reimbursements for Services Addressing Health-Related Social Needs (Cont'd)
 - Community Health Integration (CHI) Services
 - CHI services performed by certified or trained auxiliary personnel, **including a community health worker**
 - 60 minutes per calendar month, for activities to address SDOH need(s) that are significantly limiting ability to diagnose or treat problem(s) addressed in an initiating E/M visit
 - Requires supervision of the billing physician or other practitioner;
 - HCPCS code G0019
 - Principal Illness Navigation Services
 - CHI for each additional 30 minutes per calendar month (List separately in addition to G0019)
 - HCPCS code G0022

Proposed 2025 Physician Fee Schedule

- Proposed Changes
 - Terminology change from social determinants of health (SDOH) to “Upstream Driver(s)”
 - Encompasses “a wider range of root causes of the problems that practitioners are addressing through CHI services.”
 - Expanding to include Psychiatric diagnostic evaluation as an additional qualifying initiating visit for CHI
 - CMS proposing to allow for CPT code 90791 Health Behavior Assessment and Intervention (HBAI) • 96156, 96158, 96159, 96164, 96165, 96167, and 96168
 - Request for Information
 - Methods to better support prevention and management, including self-management of chronic disease
 - Services rendered in community settings

New Opportunities

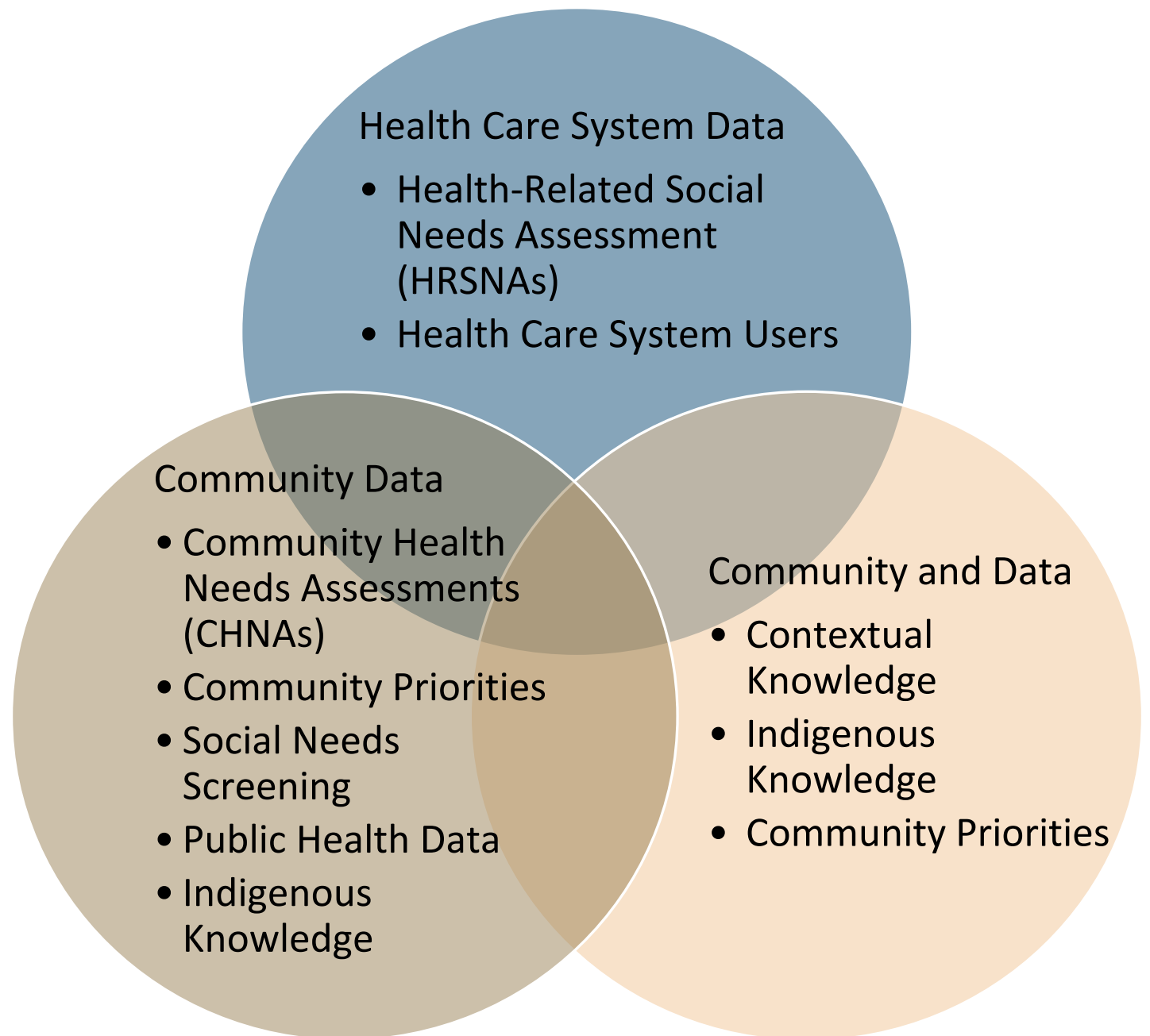


- 2025 Physician Fee Schedule Proposed Rule Request for Information Considerations
 - Coding for physical activity support programs like Fall Prevention programs
 - A physical activity benefit for time-based participation in supervised physical activity programs
 - Payment for medically tailored meals, as an incident-to service performed under general supervision of a billing practitioner; qualifying circumstances and conditions; and options for oversight in rural communities where registered dietitians may not be available, including general oversight of community-based organizations
 - Expanding qualifying requirements for health coaches to include training, national examination, experience, and when applicable, licensure/regulation beyond certification rather than just National Board for Health and Wellness Coaching and Certification and National Commission on Health Education Credentialing, Inc.



Indian Health Service Social Drivers of Health (SDOH) Initiative

SDOH Data



IHS Office of Quality Improving Patient Care Learning Lab on SDOH

- HRSN Screening Sprints
 - Aim: Speed dissemination of HRSN screening and documentation processes across IHS
 - 2023: Pilot—4 sites
 - Select, test, and implement Health Related Social Needs (HRSN) Screening Tools
 - Identify screening workflows
 - Begin developing EHR functionality to support screening
 - 2024 SDOH Screening Sprints
 - Wave 1: Feb 21- Apr 24—8 Teams
 - Wave 2: May 15-Jul 24—10 Teams
 - Wave 3: Sep-Nov 24—8 Teams



June 2025 – 40,991 individuals screened



Social Determinants of Health Screening

IPC-Learning Lab

Prepared by:
The Office of Quality

The Indian Health Service

SDOH Screening Toolkit

A Toolkit that guides a facility through the steps necessary to start SDOH screening with lessons learned from the Learning Lab incorporated.

- 1. Preparation
- 2. Tool Selection
- 3. Workflow Development
- 4. Screening Documentation
- 5. Respond to Findings
- 6. Closing the Loop

Rollout

1. Week in Review
2. IHS Blog Post
3. Publication on IHS intranet
4. Stakeholder Speaking Engagements
5. Learning Lab 2024 with tracks

LINK:

[IPC Learning Lab Social Drivers of Health Screening \(SDOH\) Toolkit](#)

Electronic Health Record/RPMS Enhancements Timeline

January 2024

- AUM Patch
- Addition of SDOH Screening Exam Codes
 - Food
 - Housing
 - Transportation
 - Utilities
 - Interpersonal Safety
- Captures positive, negative, refusal, or unable to assess
- Hunger Vital Sign

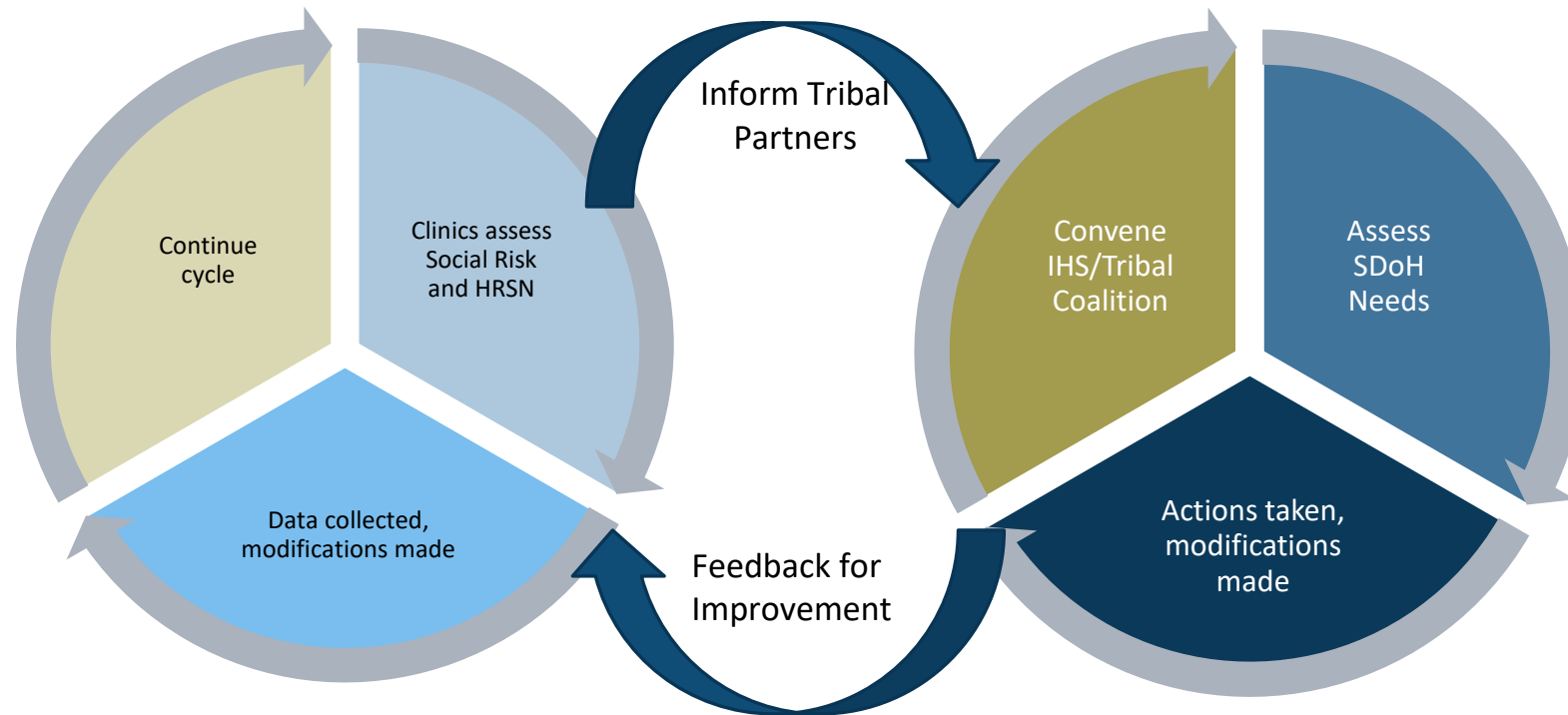
March 2025

- Clinical Reminder (Annual)
- Clinical Reminder Dialog
- Documents screening by DOMAIN, not individual questions to allow flexibility at each facility to use best-fit tool

Varied Reports Timing

- Data export to NDW— Live
- PCC/VGEN menu addition in Behavioral Health PKG— Live
- System level reports— First generation dashboard in draft

SDOH Cycles of Improvement



HRSN Screening Sprints

Reshaping the Drivers: SDOH Community Engagement Collaborative (ReD)—
Launched Fall 2024



Reshaping the Drivers (ReD) Model

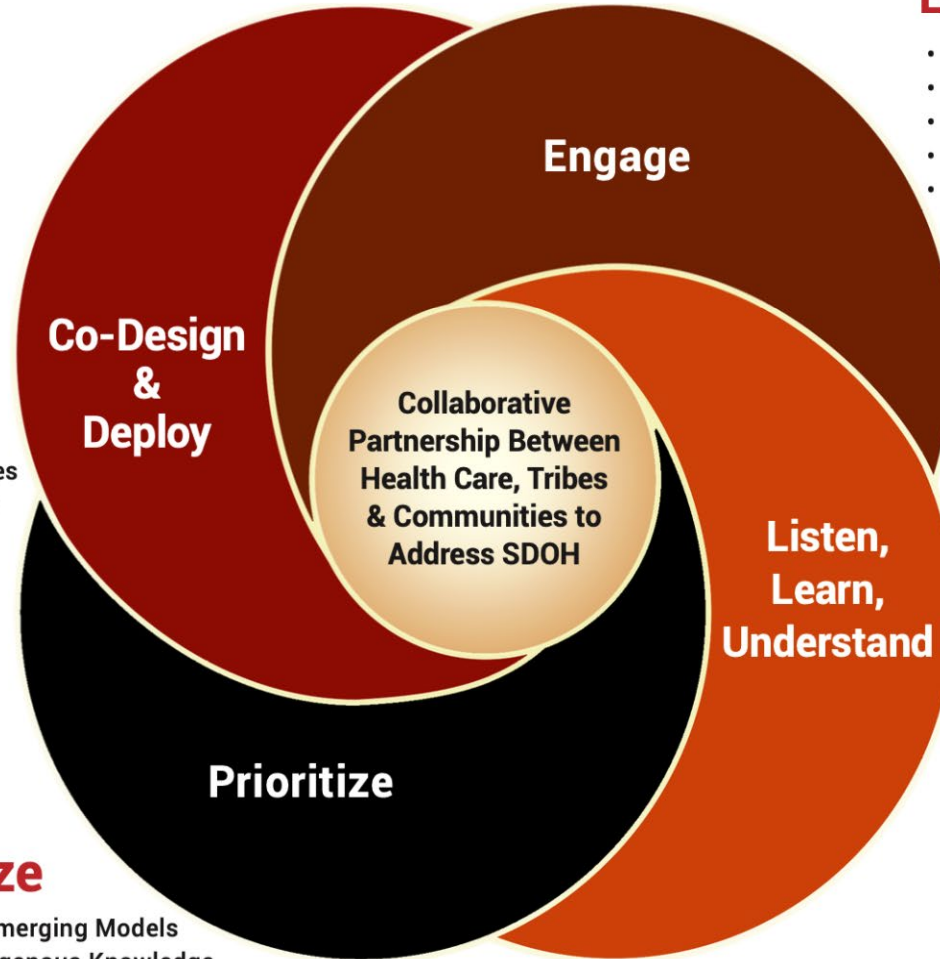
Reshaping the Drivers SDOH Community Engagement Collaborative

Co-Design & Deploy

- Create Interventions Using Human-Centered Design
- Incorporate the Culture, Values & Context of the Community

Prioritize

- Benchmark Emerging Models
- Integrate Indigenous Knowledge
- Align Federal Priorities With Community Priorities



Engage

- Build a Shared Vision
- Cultivate Trusting Relationships
- Understand Your Community
- Be a Facilitator
- Respect Cultural Humility & Safety

Listen, Learn, Understand

- Recognize Indigenous Knowledge as a Primary Knowledge System
- Leverage, Aggregate & Analyze Data
- Interpret Meaning of Data with Partners

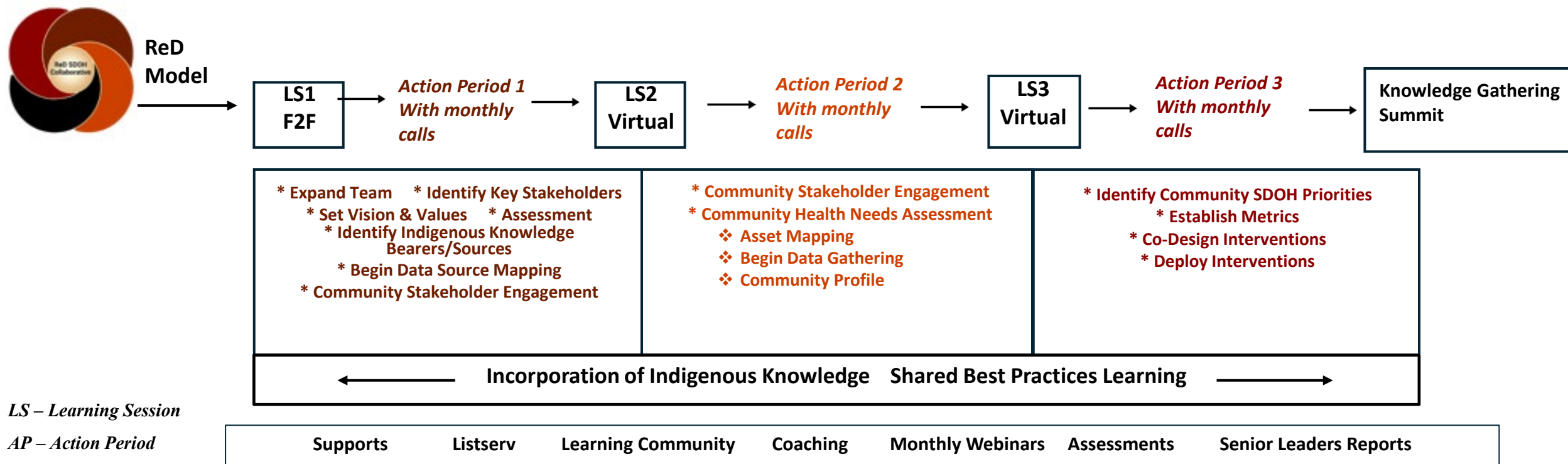


Reshaping the Drivers SDOH Community Engagement Collaborative Pilot Teams



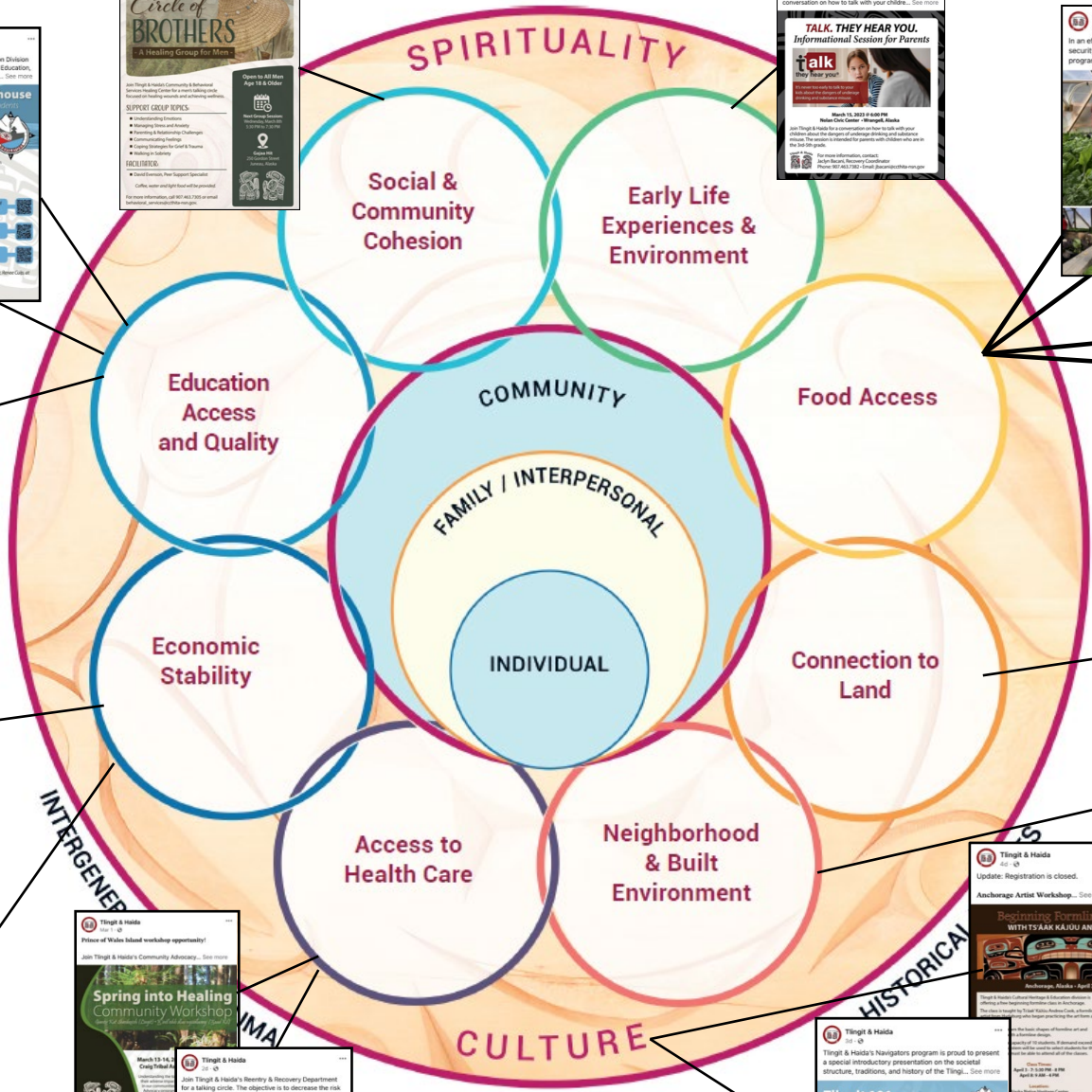
1. Four Corners Regional Health Center
2. Jicarilla Apache Health Care Facility
3. Sycuan Medical Dental Center
4. Tuolumne Me- Wuk Indian Health Center
5. Woodrow Wilson Keeble Memorial Health Center

The ReD Structure: Modified IHI Breakthrough Series (BTS) Collaborative Model





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Tlingit & Haida
 Here is an updated schedule for our Circle of Brothers men's healing group since we had to cancel last week due to... See more

Tlingit & Haida
 Tlingit & Haida's Cultural Heritage & Education Division has secured funding from the Department of Education, under an Alaska Native Education Program... See more

Tlingit & Haida
 Join the Alaska Tribal Residence Learning Network on January 11th (11AM-12PM AKST) to learn about exciting FREE summer programs for young tribal women... See more

Tlingit & Haida
 Tlingit & Haida is now accepting applications for the 2023-2024 Emerging Leader position and encourages all tribal citizens... See more

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 Tlingit & Haida is now accepting applications for the 2023-2024 Emerging Leader position and encourages all tribal citizens... See more

Tlingit & Haida
 Are you and your family having ongoing issues with your internet connectivity, or challenges paying for it? The State of Alaska's Broadband Office has solutions... See more

Tlingit & Haida
 Tlingit & Haida has relaunched the Rescue Small Business Relief Startup Grant program! Tribal citizens who are starting or have started a new small... See more

Tlingit & Haida
 Spring into Healing Community Workshop

Tlingit & Haida
 Haa Tuvda Sigoo Idakati Satú Aax "We Want All Voices Heard"

Tlingit & Haida
 Comprehensive Opioid, Stimulant & Substance Abuse Program (COSSAP) Talking Circle

Tlingit & Haida
 TALK. THEY HEAR YOU. Informational Session for Parents

Tlingit & Haida
 In an effort to increase food sovereignty and food security, Tlingit & Haida is expanding its greenhouse program, we need more staff to help us do it... See more

Tlingit & Haida
 The San Francisco Tlingit & Haida Community... See more

Harvest
 Traditional Indigenous Harvest and Foraging Techniques of and for Southeast Alaska Native

Tlingit & Haida
 Do you care about stewardship of our natural resources and want to engage our youth? ... See more

Tlingit & Haida
 Update: Registration is closed.

Tlingit & Haida
 Tlingit & Haida's Navigators program is proud to present a special introductory presentation on the societal structure, traditions, and history of the Tlingit... See more

Tlingit & Haida
 Tlingit 101: Introductory Historical Presentation

Tlingit & Haida
 Tlingit & Haida's Navigators program is proud to present a special introductory presentation on the societal structure, traditions, and history of the Tlingit people in the Petersburg area.

The Lower Sioux in Minnesota need homes – so they are building them from hemp

The Indigenous nation will soon have the only facility to create hempcrete in the country.



Aaron Nesheim / Grist



Pueblo of Jemez



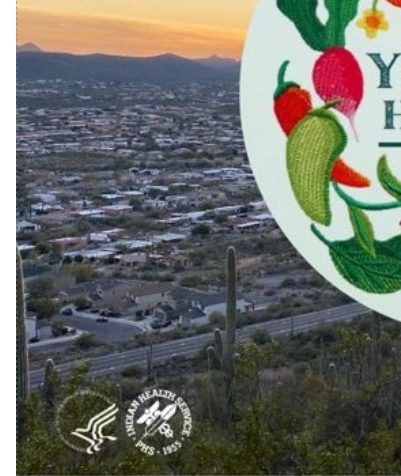


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Makoce Agriculture Development Awarded \$2.5 Million Community Innovation Grant to Build a Thriving Local Food System on Pine Ridge



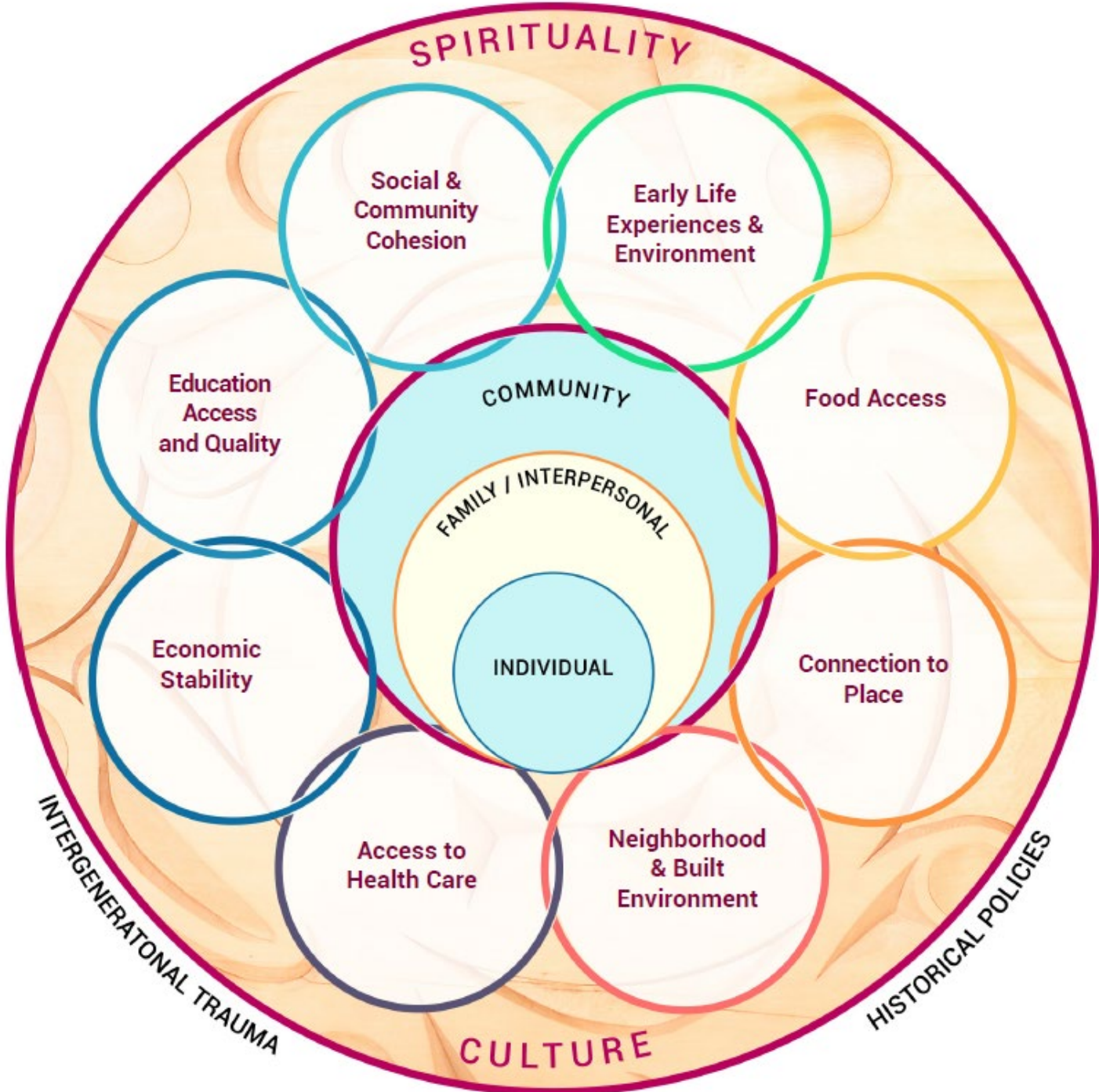
Makoce Agriculture Development is thrilled to announce we are the recipients of a \$2.5 million Community Innovation Grant from the Bush Foundation. This new and transformational funding will power our work to build an Indigenous food system on the Pine Ridge Reservation that supports thriving communities and a healthier homeland.





Challenge:

- Understand
- Connect
- Collaborate



Háw'aa/ Gunalchéesh/Thank you



