Indian Health Service Office of Clinical and Preventive Services

Social Determinants of Health (SDOH): How the Contexts in Which We Live Impact Health

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Division of Diabetes Treatment and Prevention

August 17, 2022

Poll

The Social Determinants of Health of my community help to guide the services and care processes offered by my organization

1. Not at all
2. A little
3. Quite a bit
4. A great deal
5. What are the Social Determinants of Health?

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)

The conditions in which people are born, grow up, live, work and age. These conditions influence a person's opportunity to be healthy, his/her risk of illness and life expectancy. Social inequities in health – the unfair and avoidable differences in health status across groups in society – are those that result from the uneven distribution of social determinants. (World Health Organization)

The Social Determinants of Health (SDOH)

- Income and financial resources
- Educational attainment and access
- Employment and job security
- Food/Nutrition security
- Housing
- Neighborhood and built environment
- Transportation
- Early childhood development
- Social cohesion and belonging
- Health care access and quality
- Health Literacy

Frameworks

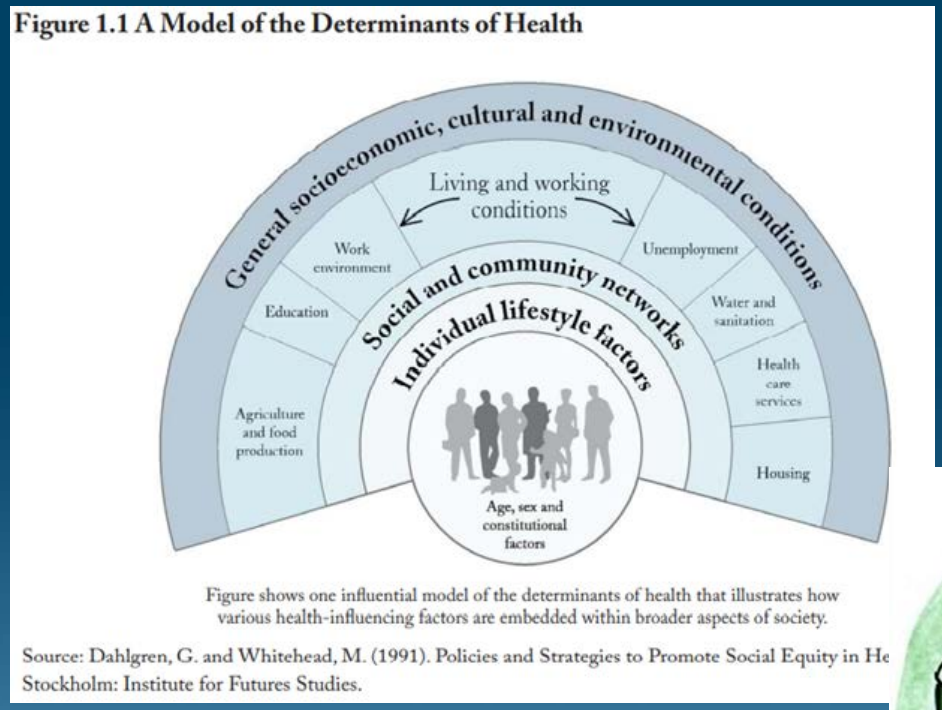
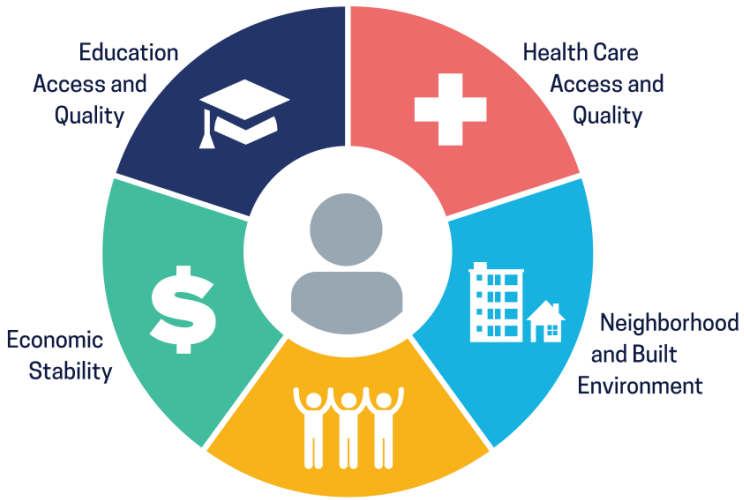


Figure 1.1 A Model of the Determinants of Health
General socioeconomic, cultural and environmental conditions
Living and working conditions
Social and community networks
Individual lifestyle factors
Work environment
Unemployment
Education
Water and sanitation
Health care services
Agriculture and food production
Housing
Age, sex and constitutional factors
Figure shows one influential model of the determinants of health that illustrates how various health-influencing factors are embedded within broader aspects of society.
Source: Dahlgren, G. and Whitehead, M. (1991). Policies and Strategies to Promote Social Equity in He
Stockholm: Institute for Futures Studies.


Social Determinants of Health
Education Access and Quality
Health Care Access and Quality
Economic Stability
Neighborhood and Built Environment
Social and ommunity Context
Healthy People 2030


SOCIAL DETERMINANTS OF HEALTH
environment
access
gender
land
control of resources
culture
Jobs
racism
Colonization
languages
Justice
self determination
and much more
School
Abc
early childhood education
Home
away from home
family
housing

Frameworks

Figure 1

Social Determinants of Health

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	Quality of care
Medical bills	Playgrounds	Higher education		Stress	
Support	Walkability				
	Zip code / geography				

Health Outcomes
Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

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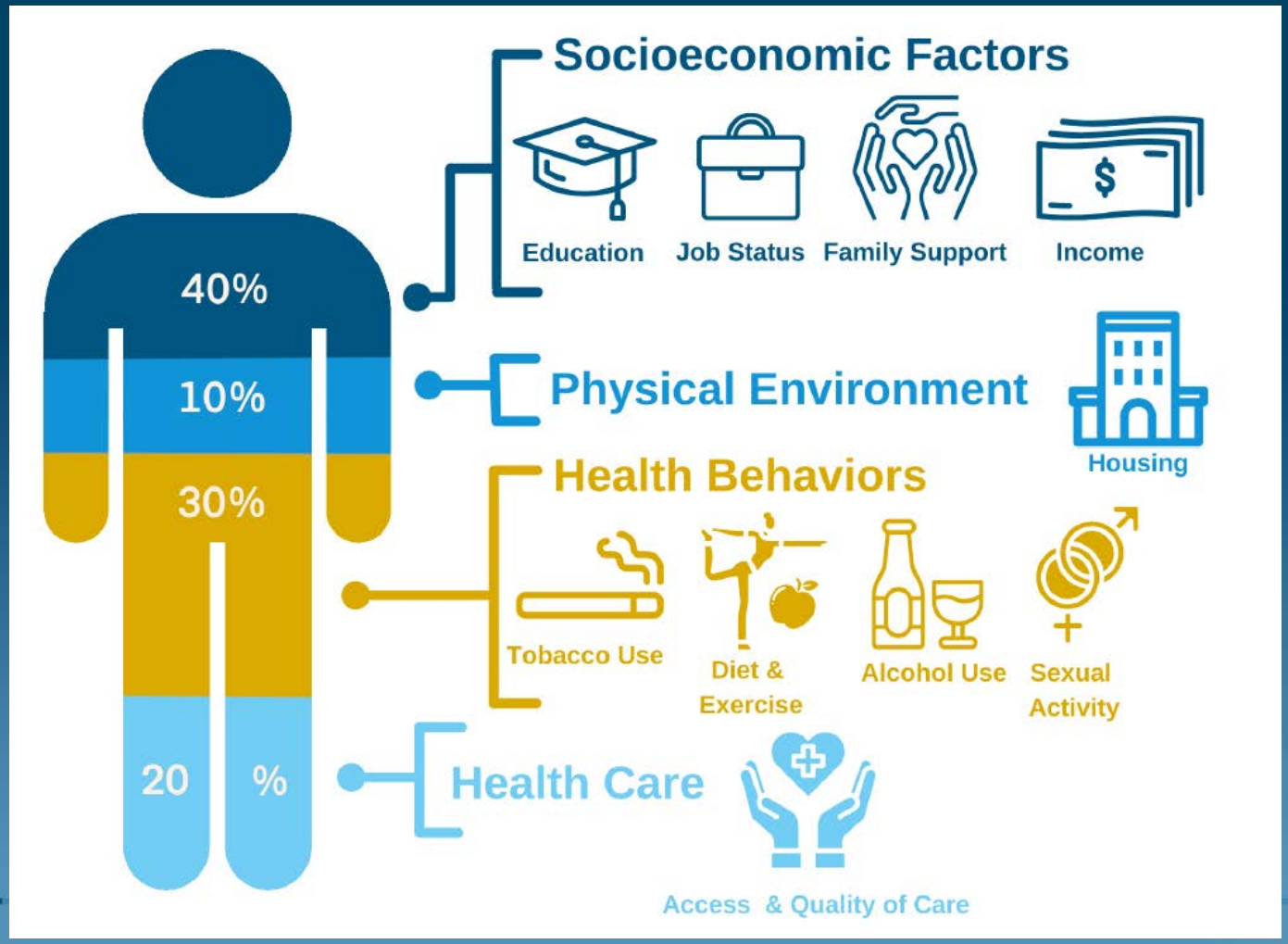
Indian Health Service

Mission: to raise the physical, mental, social, and spiritual health of American Indians and Alaska Natives to the highest level

Vision: healthy communities and quality health care systems through strong partnerships and culturally responsive practices

Impact on Health Outcomes



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

"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).

Disproportionate Impact

Mortality Disparity Rates	AI/AN Rate 2009-2011	U.S. All Races Rate – 2010	Ratio: AI/AN to U.S. All Races
All Causes*	999.1	747.0	1.3
Diseases of the heart (Heart Disease)	194.7	179.1	1.1
Accidents (unintentional injuries Including MVA)	93.7	38.0	2.5
Diabetes mellitus (diabetes)	66.0	20.8	3.2
Alcohol Induced	50.5	7.6	6.6
Chronic liver disease and cirrhosis	42.9	9.4	4.6
Drug Induced	23.4	12.9	1.8
Nephritis, nephrotic syndrome (kidney disease)	22.4	15.3	1.5
Intention self-harm (suicide)	20.1	12.1	1.7

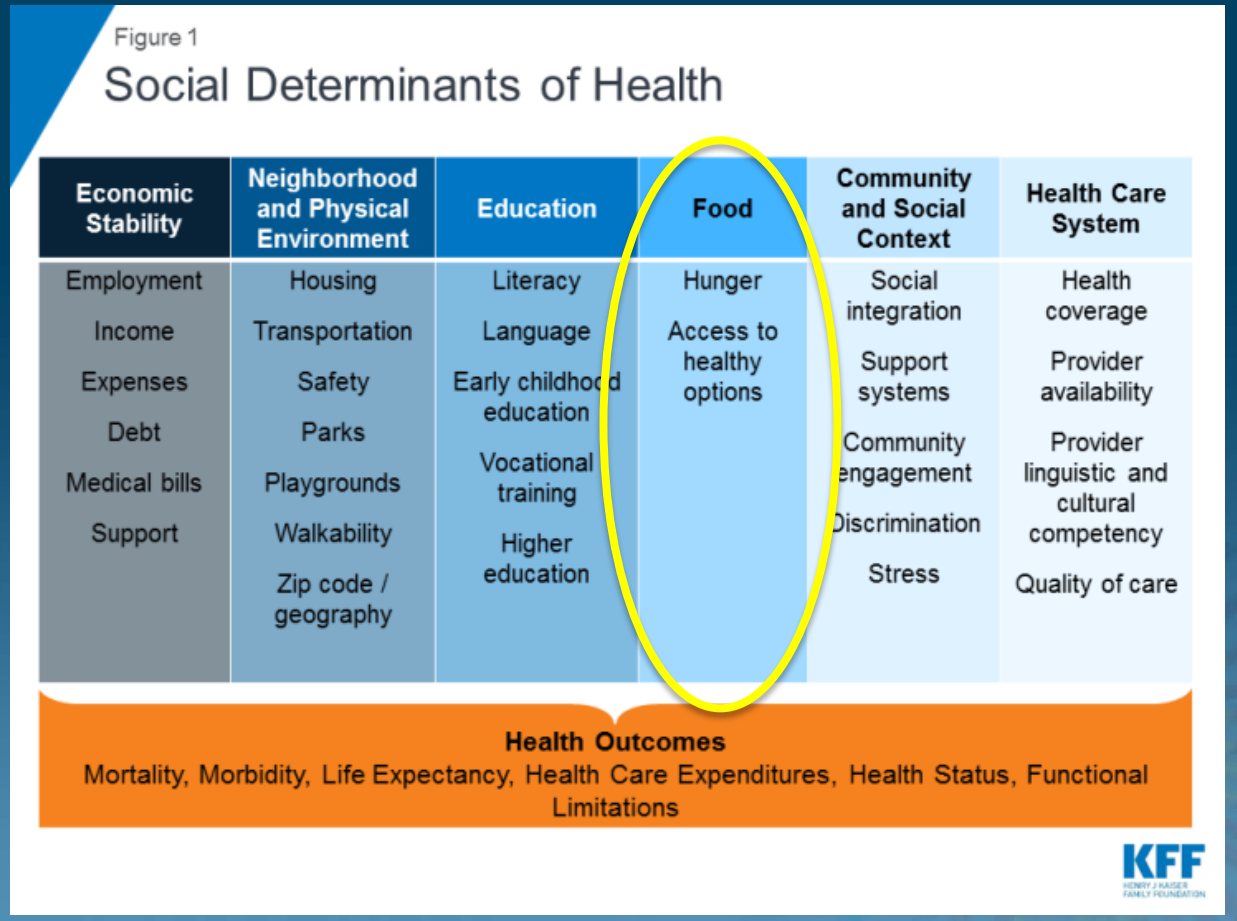
Source: https://www.ihs.gov/sites/newsroom/themes/responsive2017/display_objects/documents/factsheets/Disparities.pdf

How Do SDOH Impact Health and Diabetes?

- Direct Impacts
- Longer Term Impacts
  - Physiologic Impacts
  - Stress Response
- Epigenetics

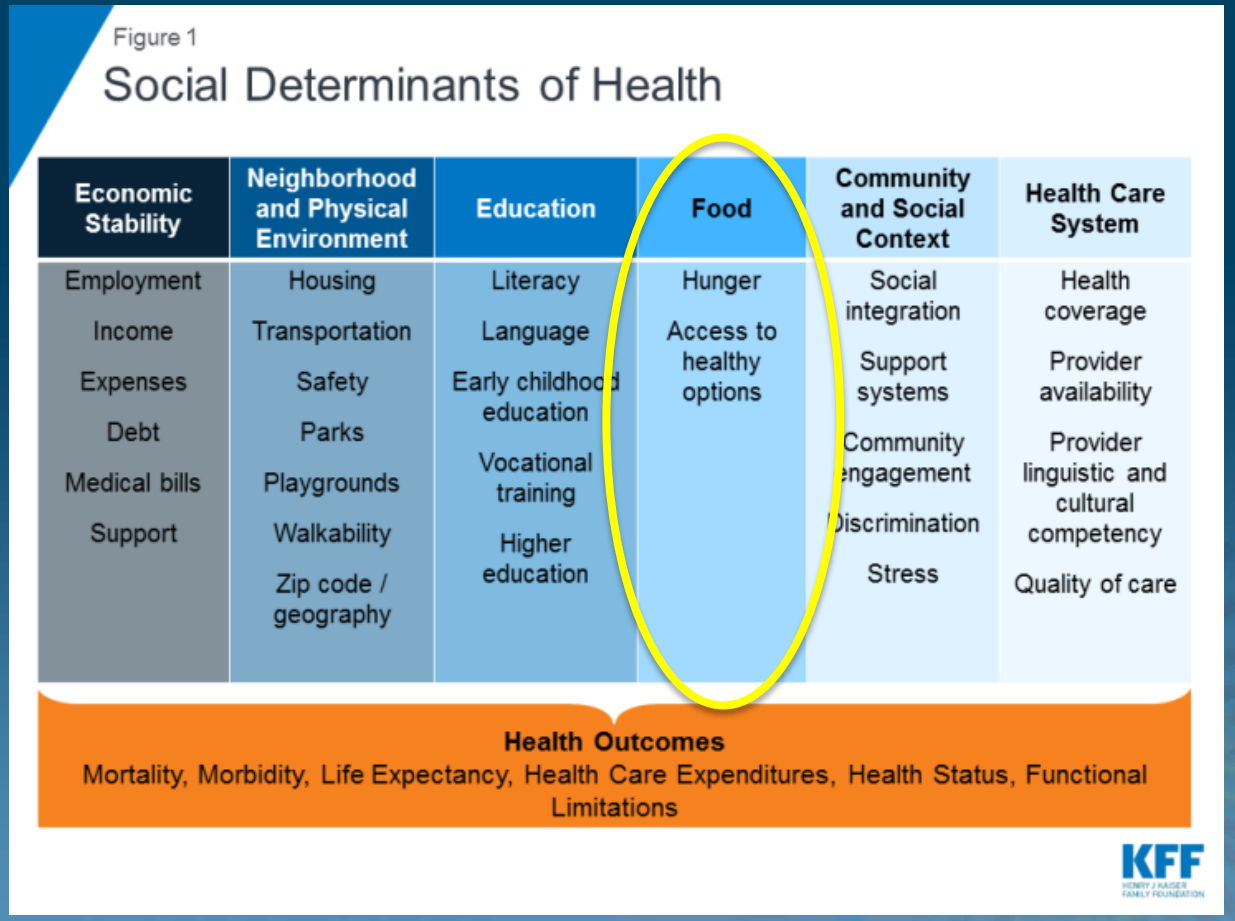
Direct Impacts—Food/Nutrition Insecurity

- Definition
  - Lacking "access to enough food for an active, healthy life for all household members. (USDA, 2016)
- Prevalence
  - Higher diabetes prevalence in food insecure households
    - J Nutr 2010; 140(2): 304–10.
  - Higher food insecurity prevalence amongst Medicaid-enrolled individuals with diabetes - 32%; 44% amongst insulin-dependent individuals with eye or kidney complications:
    - Diabetes Care 2021; 35: 193–195



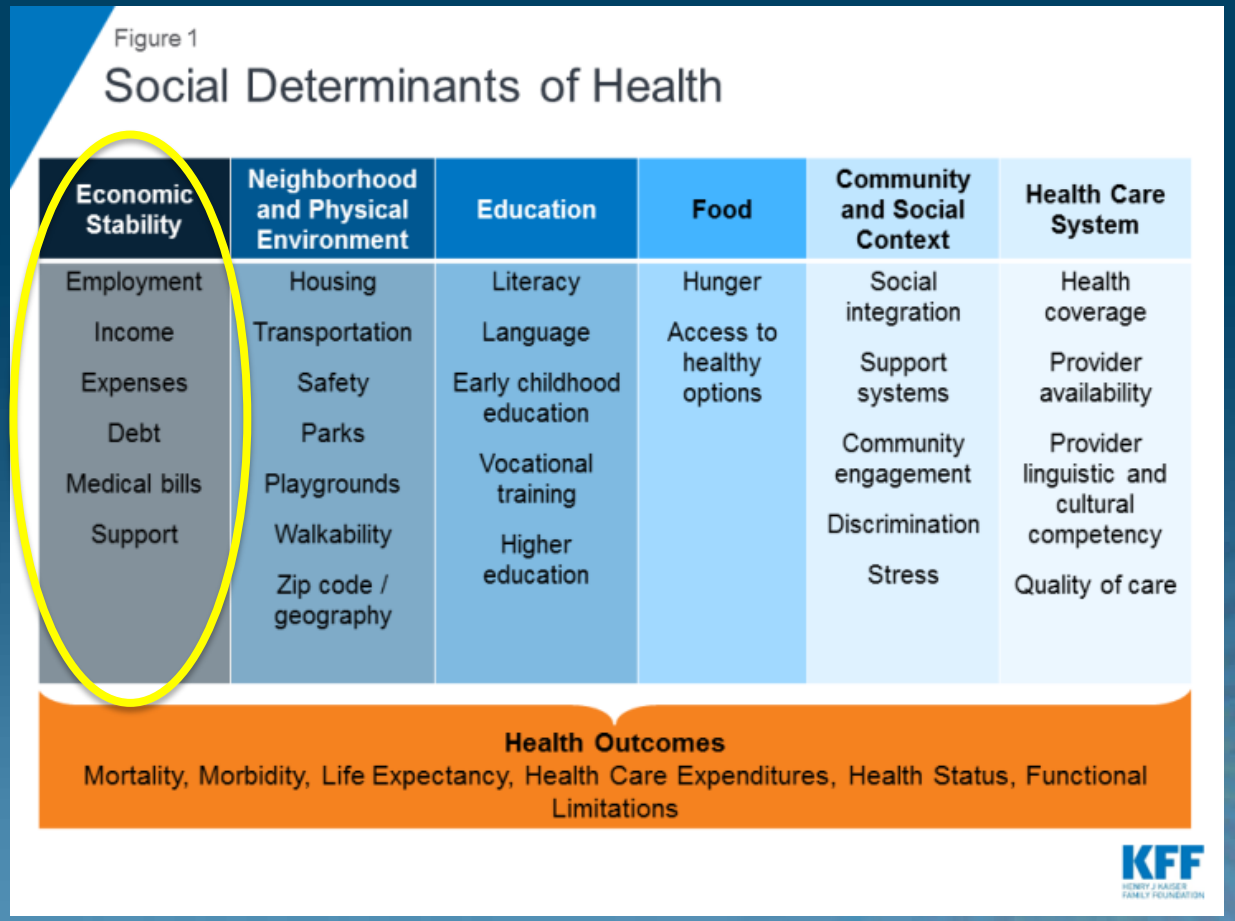
Direct Impacts—Food/Nutrition Insecurity

- 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
- Reliance on less expensive, energy-dense foods
  - Cureus. 2021; 13(3): e13841



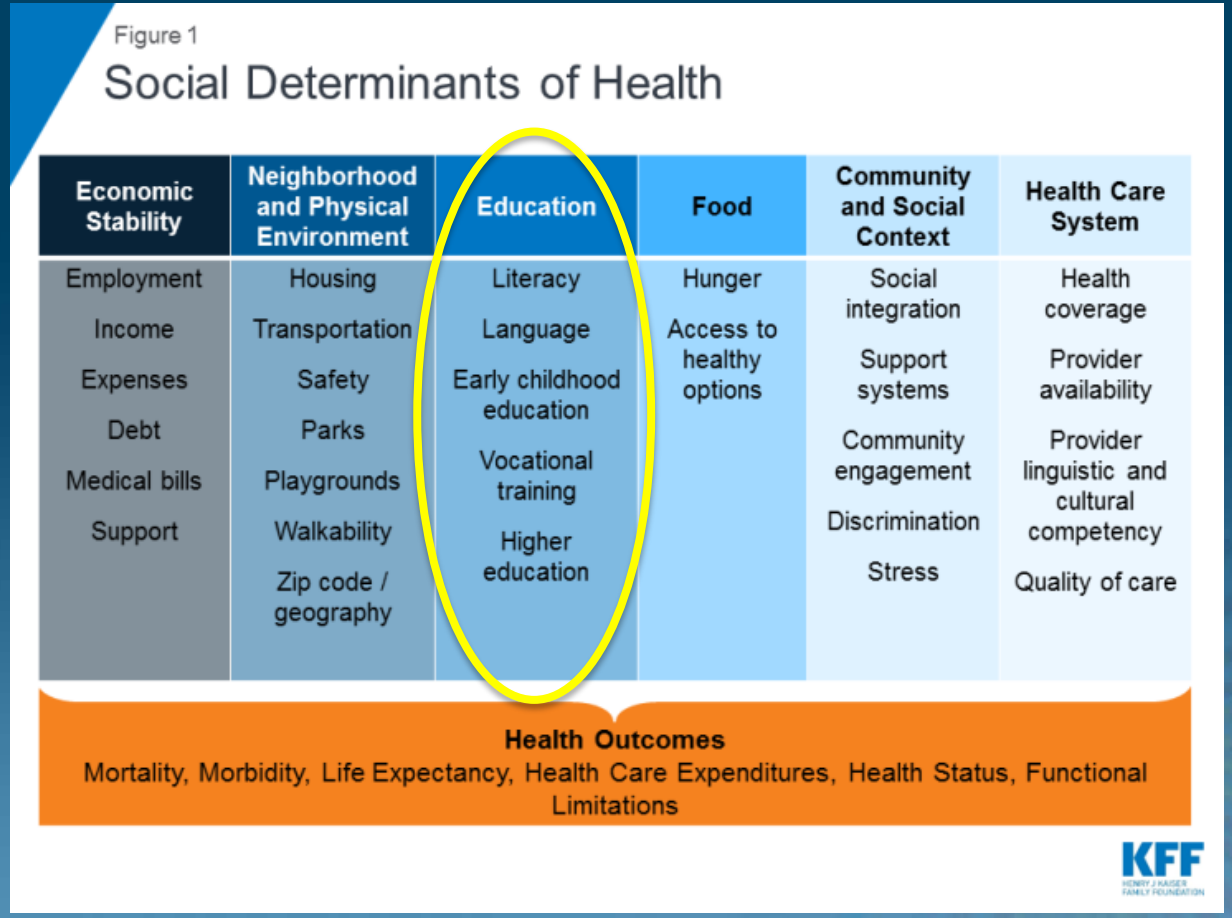
Direct Impacts—Economic Security

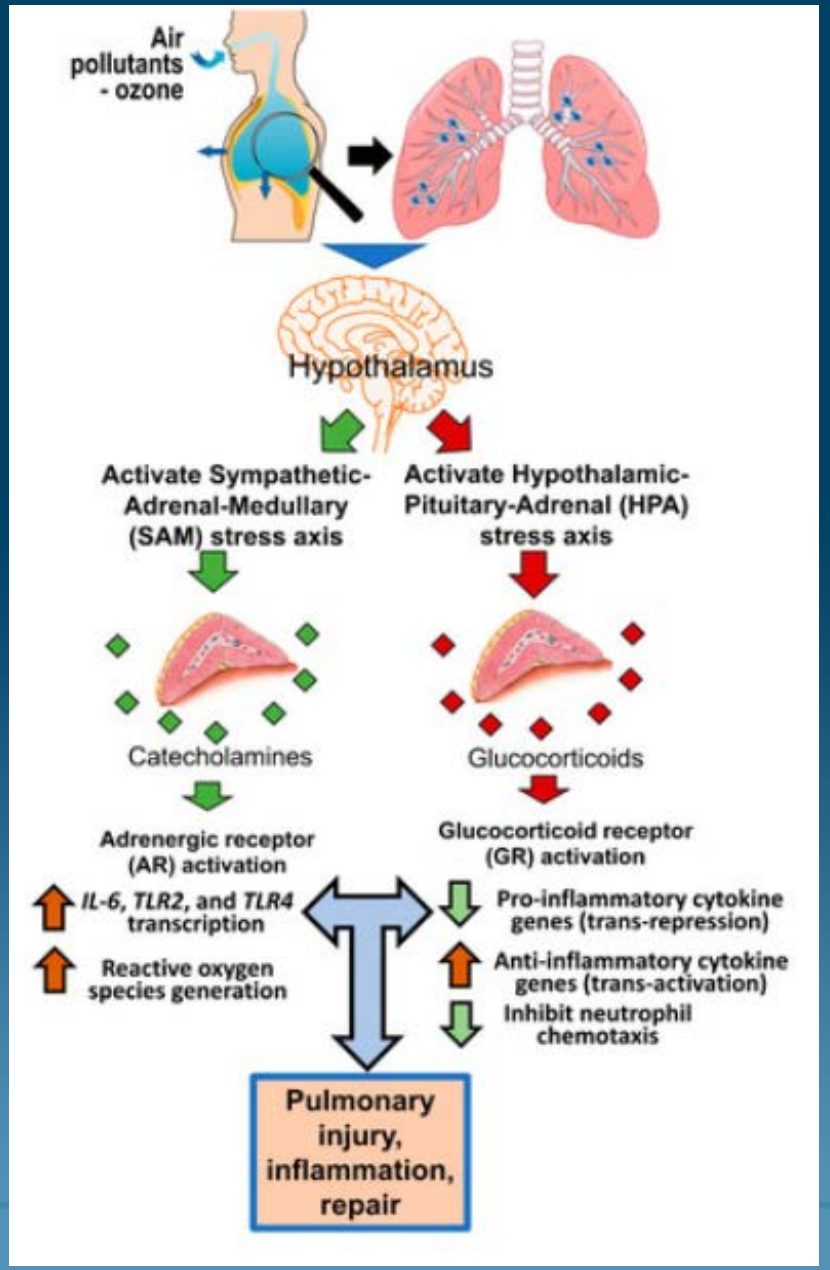
- Housing Insecurity
  - Influences diabetes management and care processes: less likely to have a physicians visit, A1c check, and eye exam
    - BMC Health Serv Res 2022; 13;22(1):61



Direct Impacts—Education

- 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.



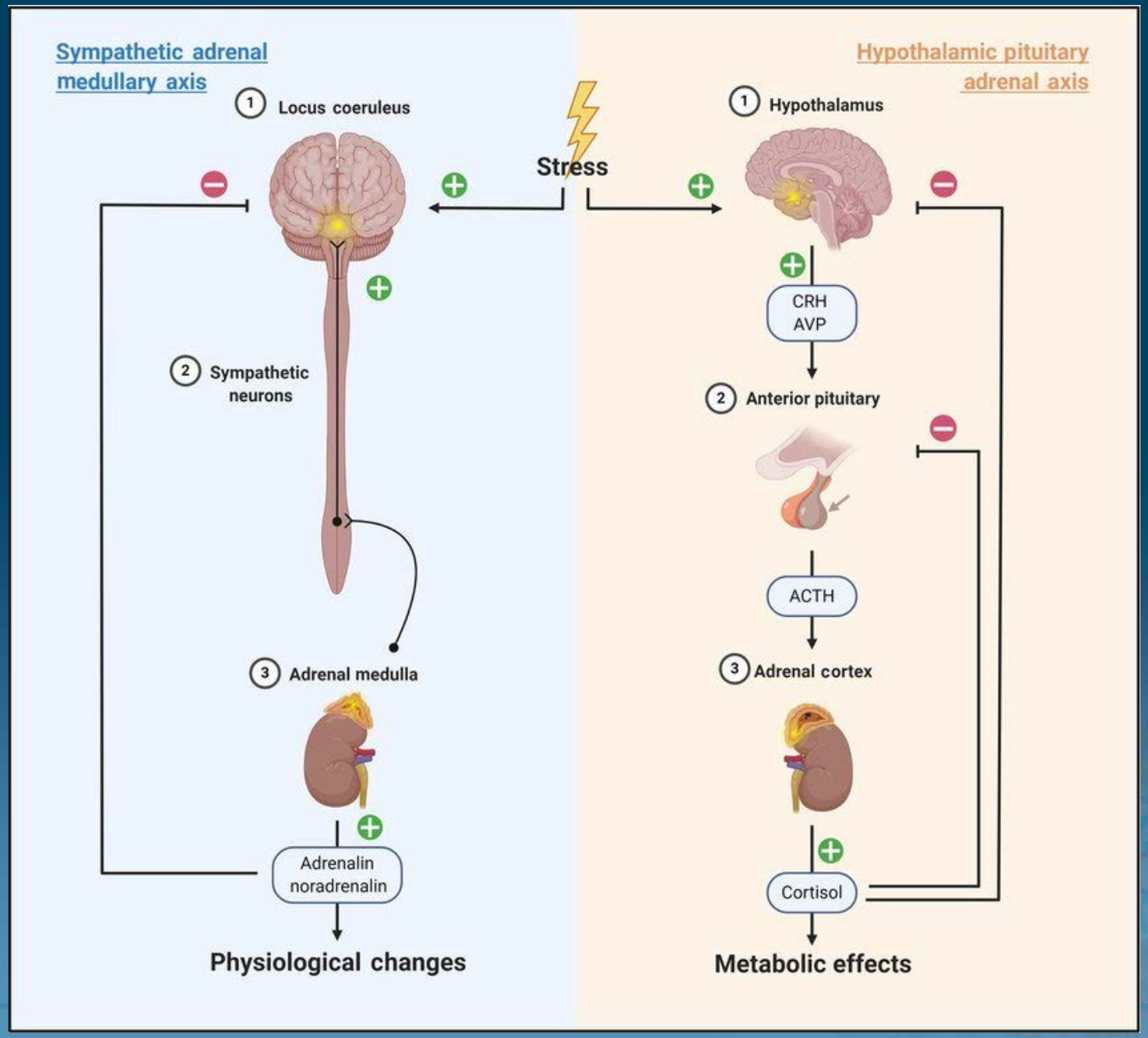


Source: Hodge, M., et al. (2021). Adrenergic and Glucocorticoid Receptors in the Pulmonary Health Effects of Air Pollution. *Toxics.* 9(6):132.

Stress and Physiologic Impacts

- Stress Response
- Chronic Stress
- Physiologic Impacts
- Toxic Stress

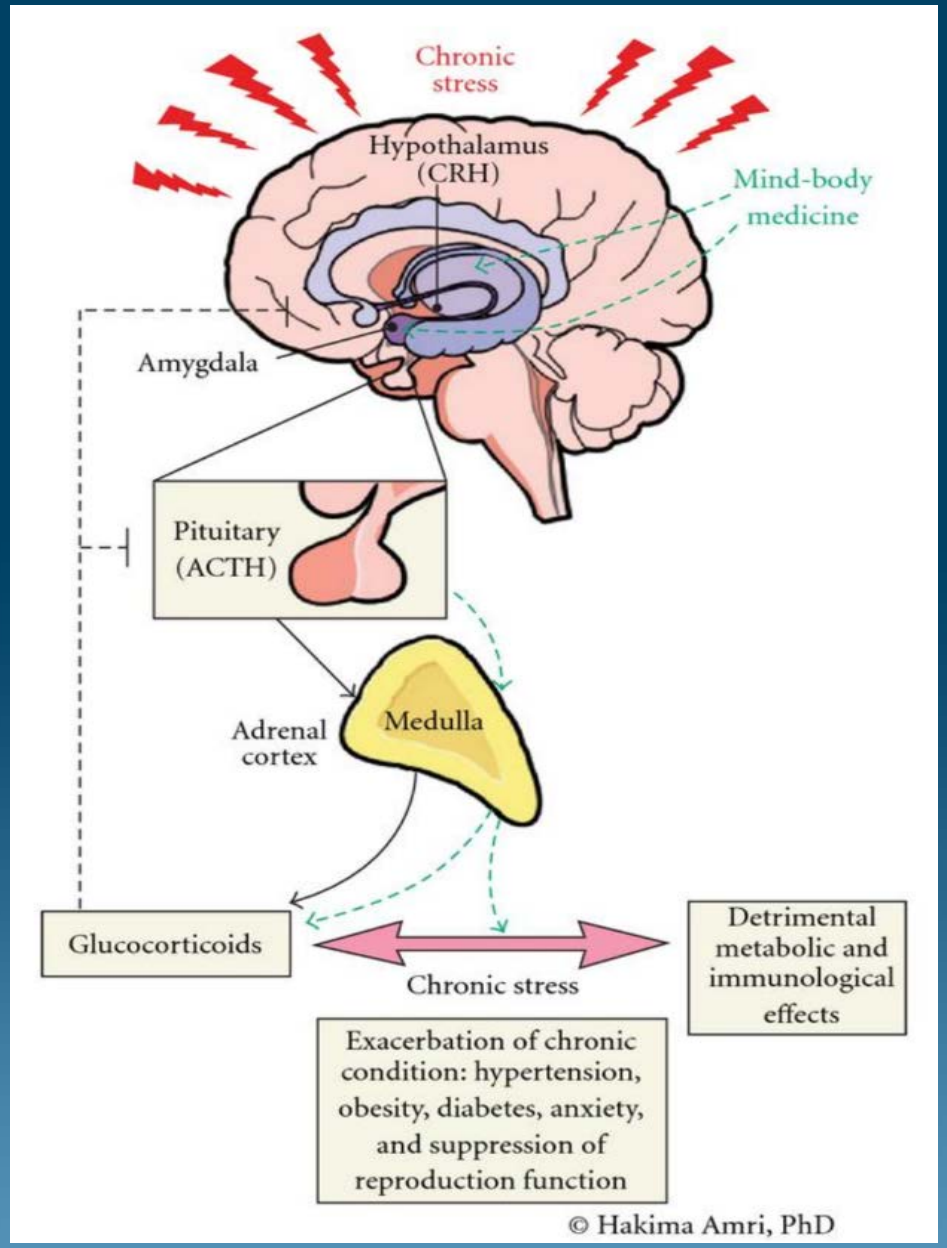
Stress Response



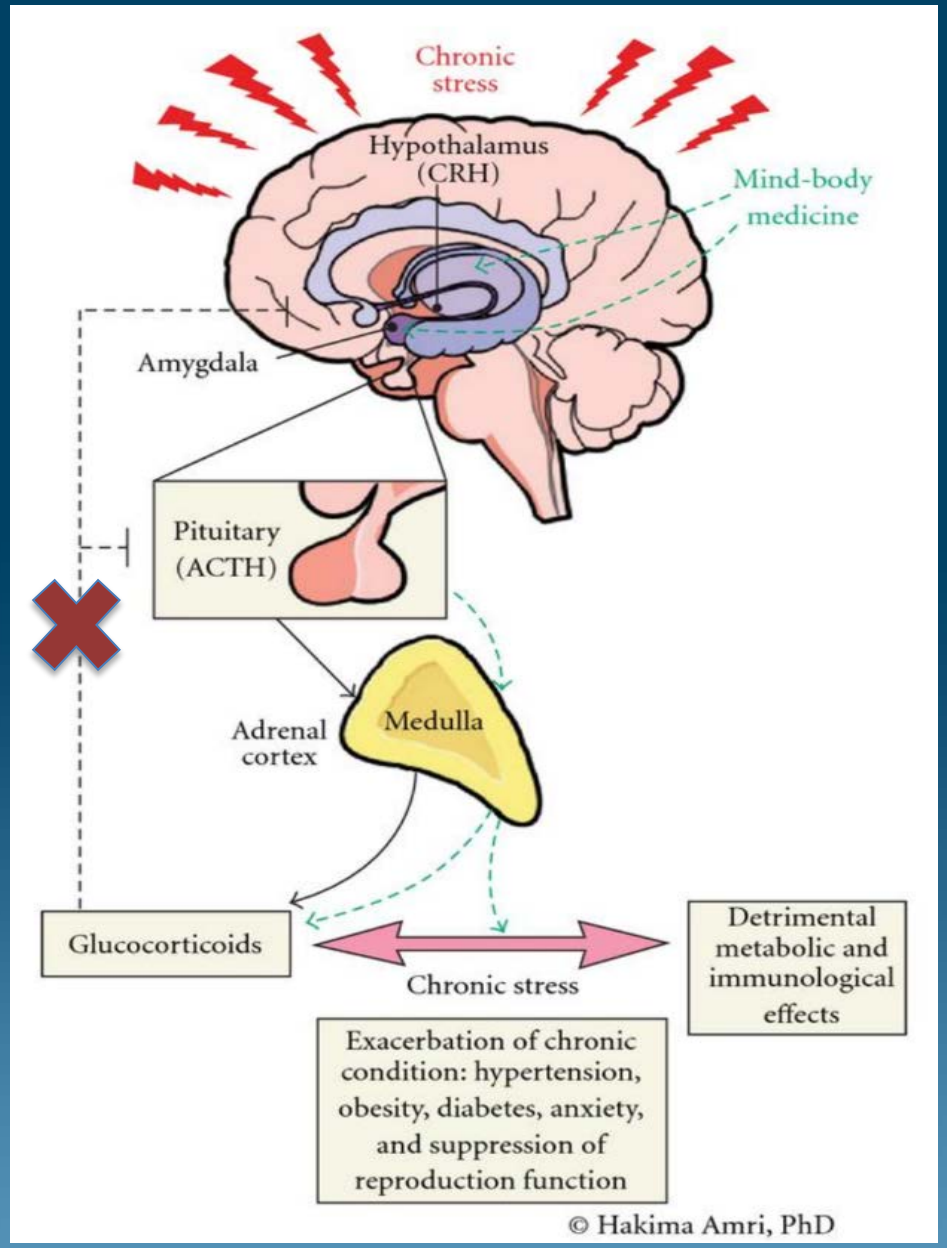
Source: Carlton, M., et al. (2021). A review of potential biomarkers for assessing physical and psychological trauma in paediatric burns. *Burns & Trauma*. 9. 10.1093/burnst/tkaa049.

Chronic 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.

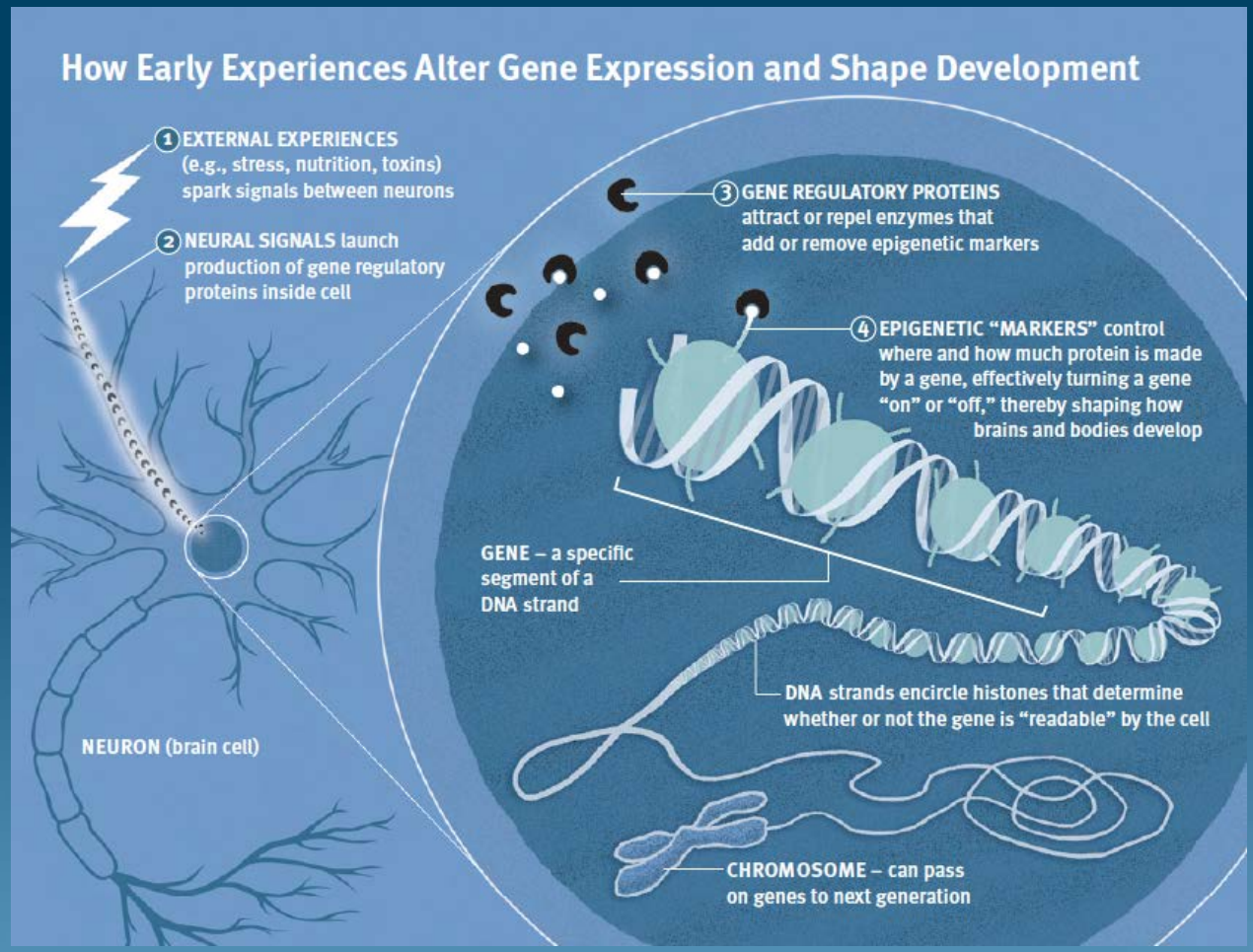


Source: Maclaughlin, B., et. al . Stress Biomarkers in Medical Students Participating in a Mind Body Medicine Skills Program. *Evidence-based complementary and alternative medicine* : eCAM. 2011. 950461. 10.1093/ecam/neq039



Source: Maclaughlin, B., et. al . Stress Biomarkers in Medical Students Participating in a Mind Body Medicine Skills Program. *Evidence-based complementary and alternative medicine* : eCAM. 2011. 950461. 10.1093/ecam/neq039

Epigenetics: Early Experiences Can Have Lifelong Consequences

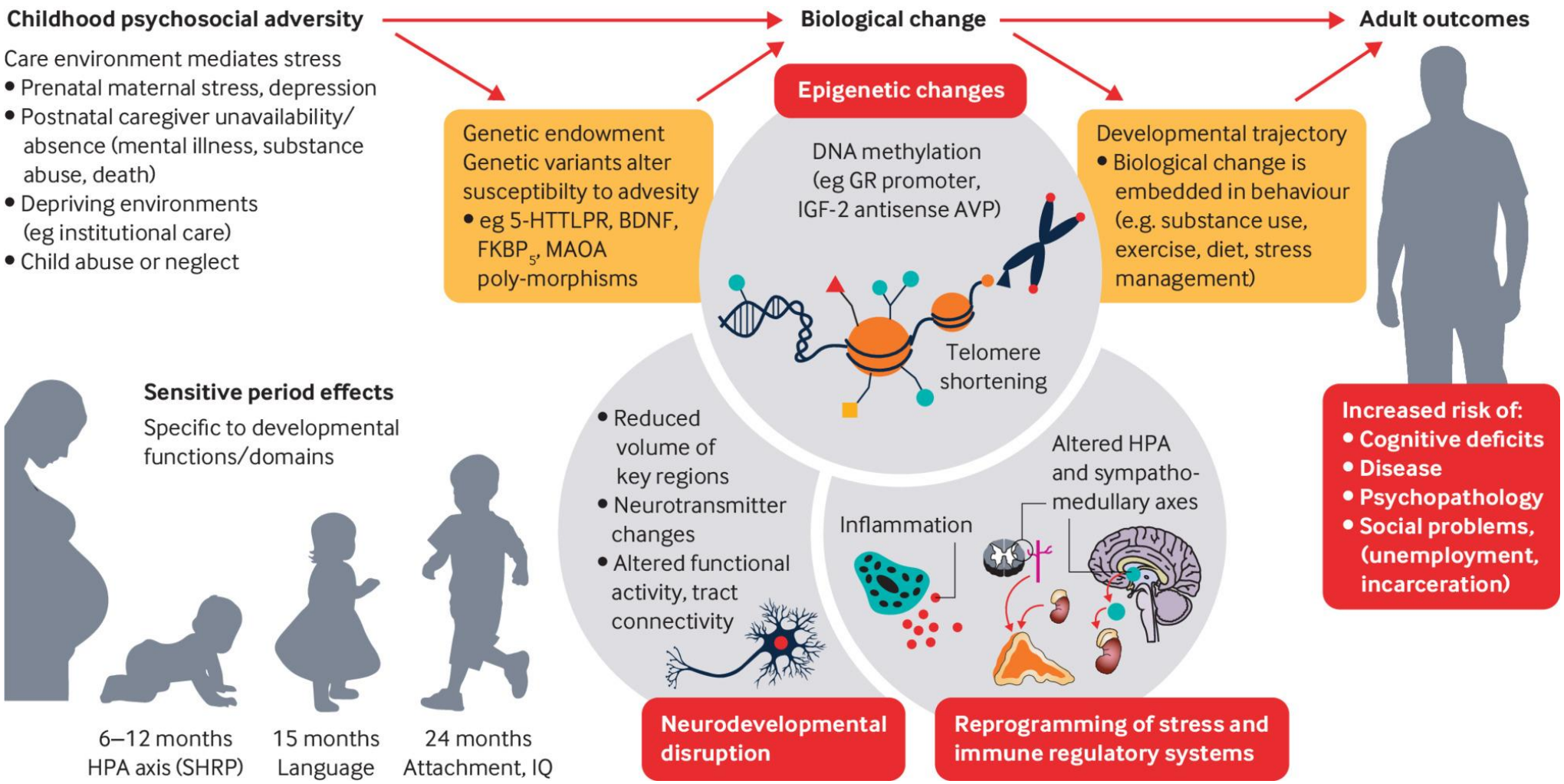


Source: https://developingchild.harvard.edu/science/deep-dives/gene-environment-interaction/; Illustration by Betsy Hayes. Credit: Center on the Developing Child

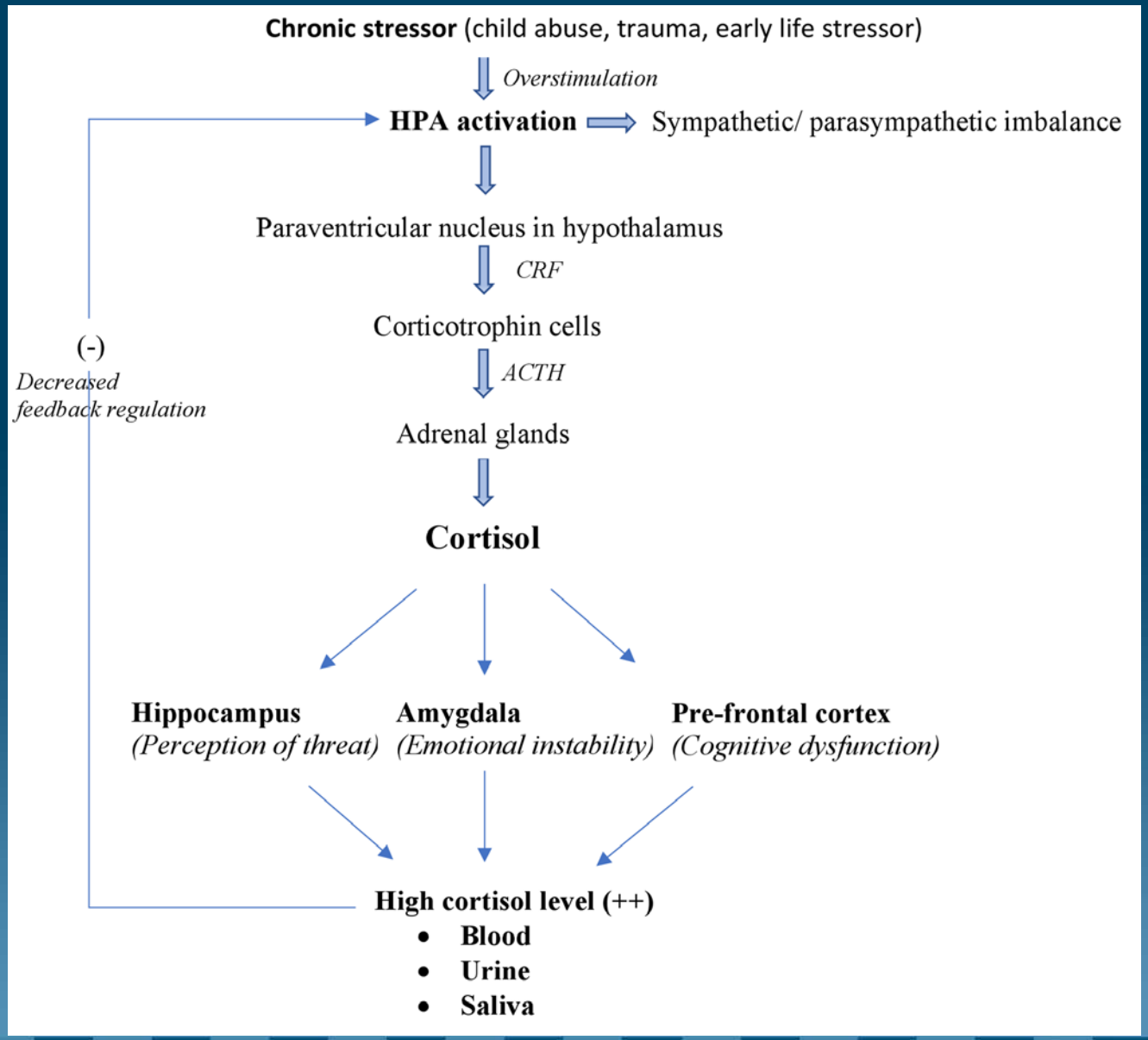
Toxic Stress

- "…can occur when a child experiences strong, frequent, and/or prolonged adversity—such as physical or emotional abuse, chronic neglect, caregiver substance abuse or mental illness, exposure to violence, and/or the accumulated burdens of family economic hardship—without adequate adult support. (Center on the Developing Child, 2014, Toxic Stress Response)

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



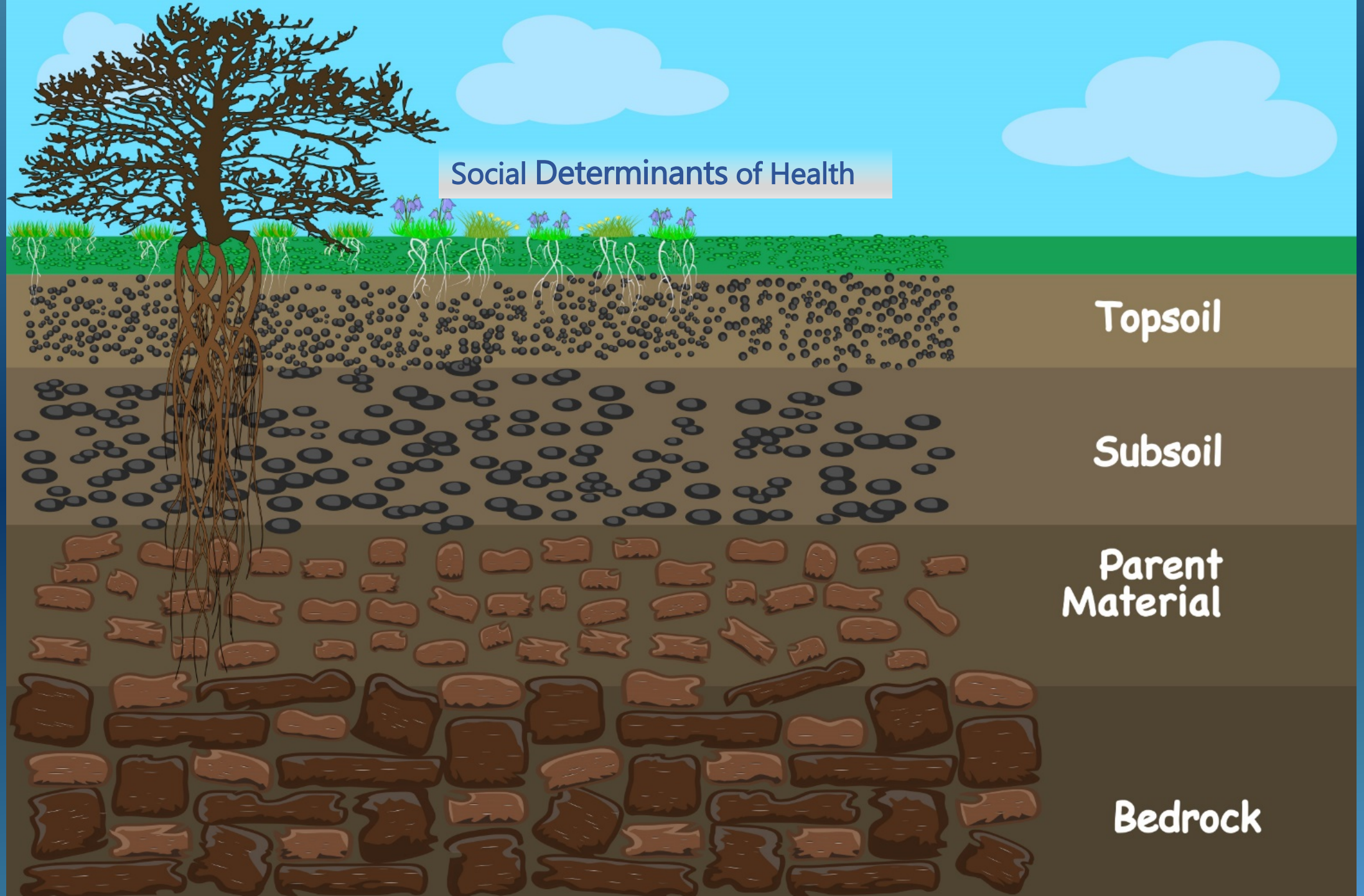
Charles A Nelson et al. BMJ 2020;371:bmj.m3048

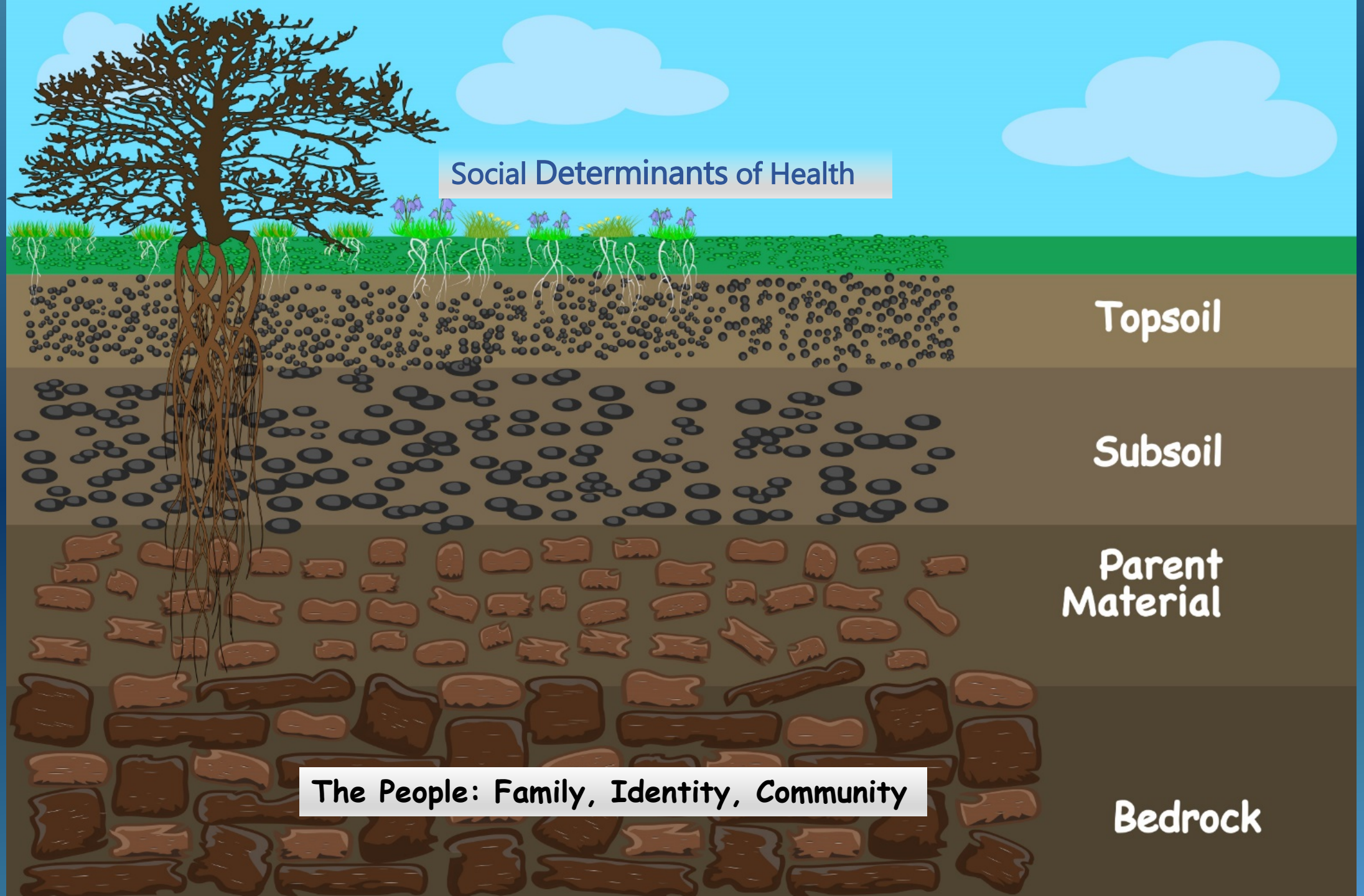


Mainali P., et. al. (July 30, 2020) From Child Abuse to Developing Borderline Personality Disorder Into Adulthood: Exploring the Neuromorphological and Epigenetic Pathway. *Cureus* 12(7): e9474. doi:10.7759/cureus.9474

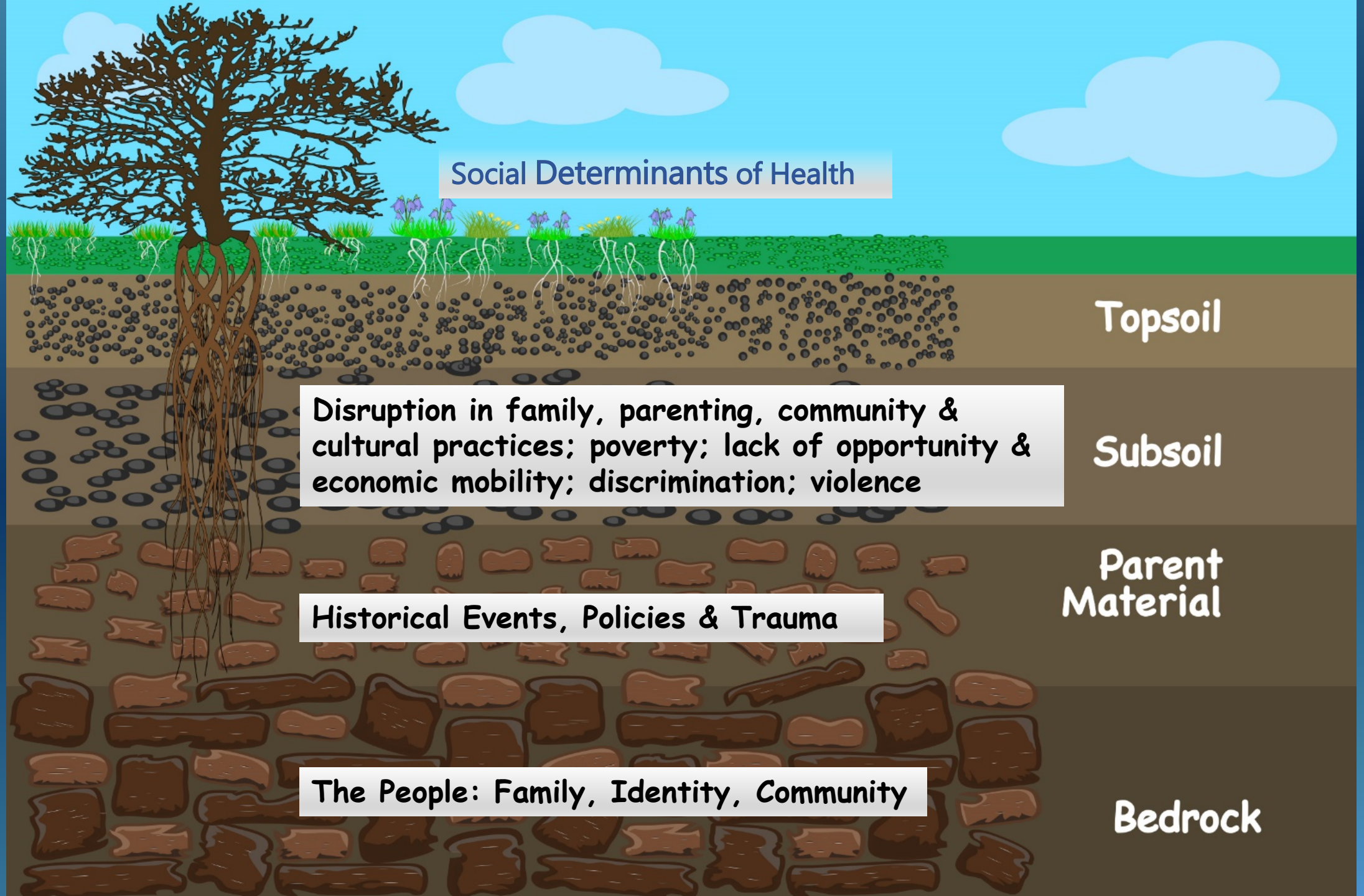
Historical Impacts

- 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
- Access to Health Care
  - Limited; funding challenges
- Social Cohesion/Belonging
  - Removal from family, community, and cultural practices integral to who we are as Native People
- Education
  - Boarding schools
  - Limited educational opportunities
- Food/Nutrition Security
  - Removal from traditional agriculture, hunting and gathering lands
  - Remote locations impact food availability and nutritional quality
  - Commodity foods
- Economic stability
  - Ability to work and provide for families historically restricted
  - Segregation policies impacted education and employment opportunities


Social Determinants of Health
Topsoil
Subsoil
Parent Material
Bedrock


Social Determinants of Health
Topsoil
Subsoil
Parent Material
Bedrock
The People: Family, Identity, Community


Social Determinants of Health
Topsoil
Subsoil
Parent Material
Historical Events, Policies & Trauma
The People: Family, Identity, Community
Bedrock


Social Determinants of Health
Topsoil
Disruption in family, parenting, community & cultural practices; poverty; lack of opportunity & economic mobility; discrimination; violence
Subsoil
Parent Material
Historical Events, Policies & Trauma
The People: Family, Identity, Community
Bedrock


Social Determinants of Health
Intergenerational Trauma: neglect, abuse, unhealthy/harmful coping strategies
Topsoil
Disruption in family, parenting, community & cultural practices; poverty; lack of opportunity & economic mobility; discrimination; violence
Subsoil
Historical Events, Policies & Trauma
Parent Material
The People: Family, Identity, Community
Bedrock


Depression
Anxiety
Diabetes
Obesity
Heart Disease
Cancer
Social Determinants of Health
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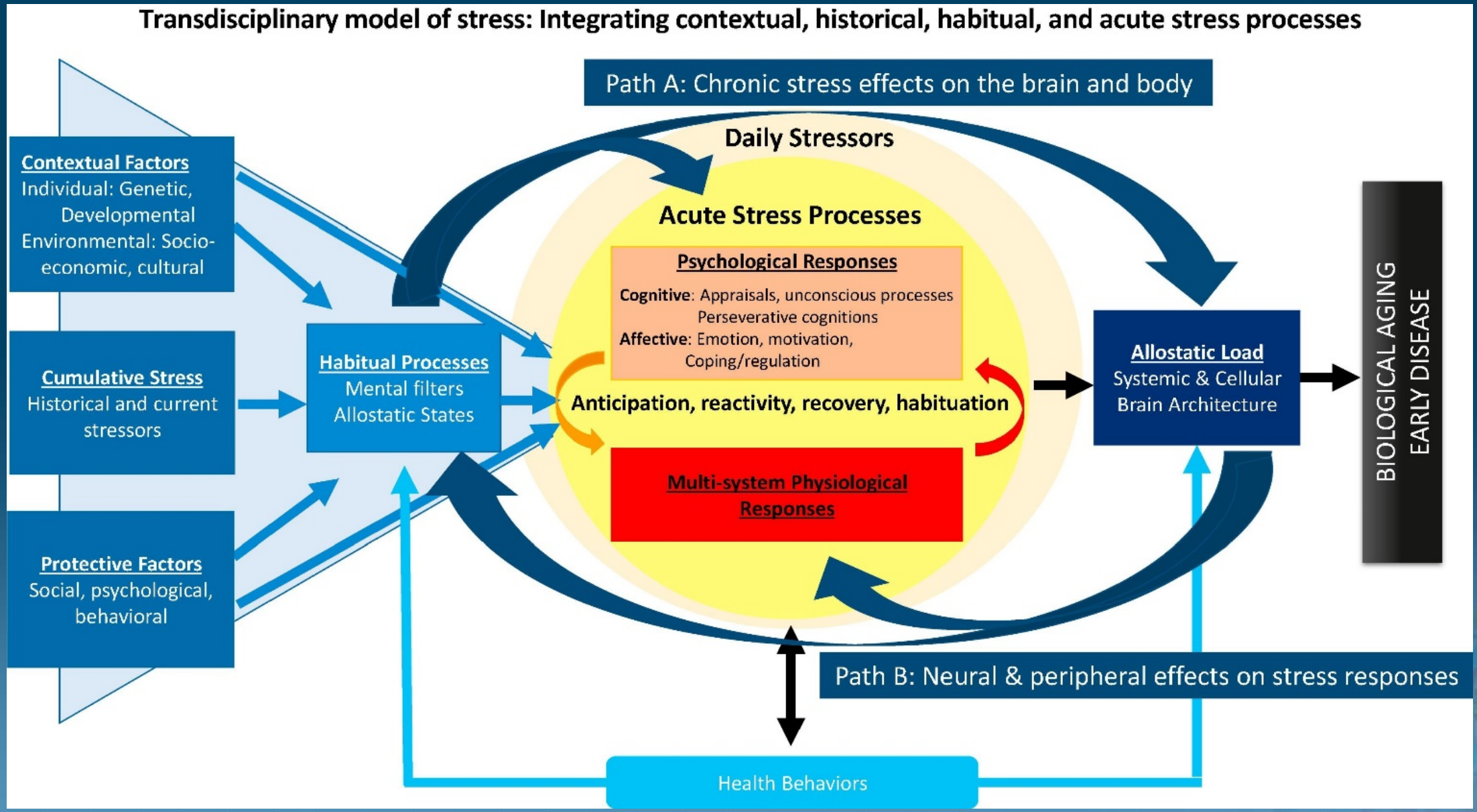

Source: https://www.stress-management.online/

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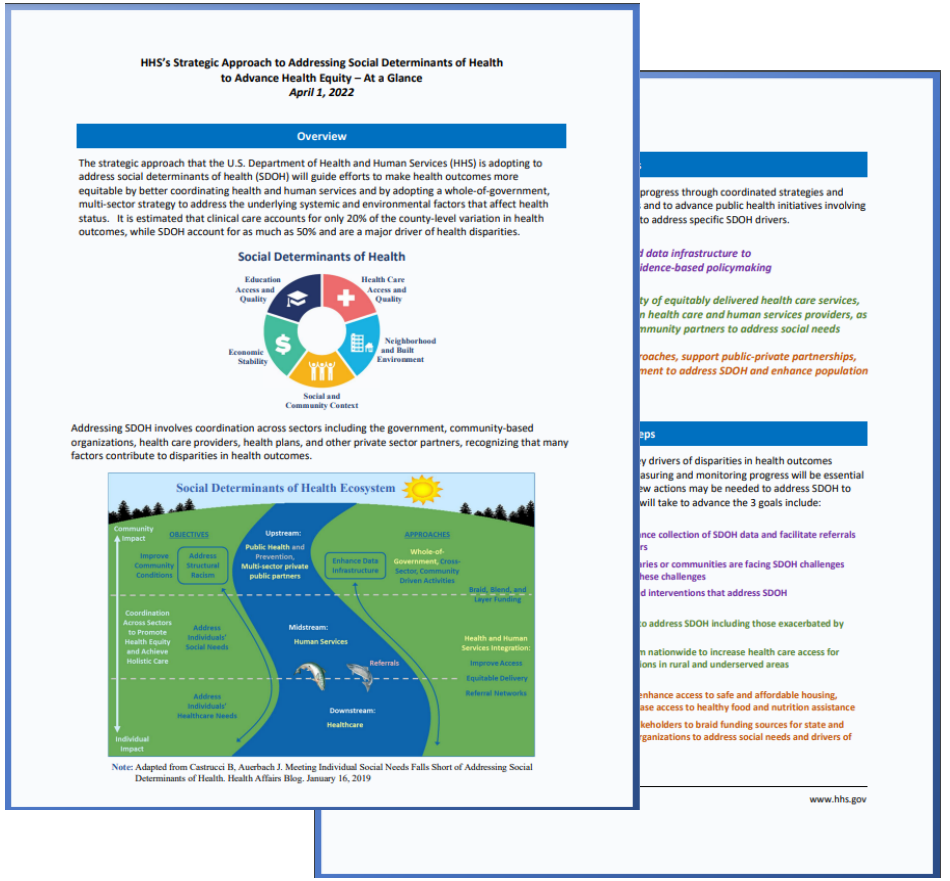
HHS Social Determinants Of Health Working Group

- HHS Working Group: 130+ members
  - 9 OpDivs (ACF, ACL, AHRQ, CDC, CMS, HRSA, IHS, NIH, SAMHSA)
  - 7 StaffDivs (ASFR, ASPE, ASPR, IOS, IEA, OASH, OCR, ONC)
  - Co-chaired by CMS OMH and ASPE
- Charge: Develop a strategic plan to make health outcomes more equitable through better integrating health and human services, with a particular focus on individuals and populations at high risk for adverse outcomes in government health and human service programs.

HHS Social Determinants Of Health Working Group

- HHS SDOH Action Plan
  - Released to HHS agencies on 3/31/2022
    - Action Plan at a Glance https://aspe.hhs.gov/topics/health-health-care/addressing-social-determinants-health-federal-programs
    - Journal of the American Medical Association (JAMA) Health Forum article JAMA Health Forum – Health Policy, Health Care Reform, Health Affairs | JAMA Health Forum | JAMA Network



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.

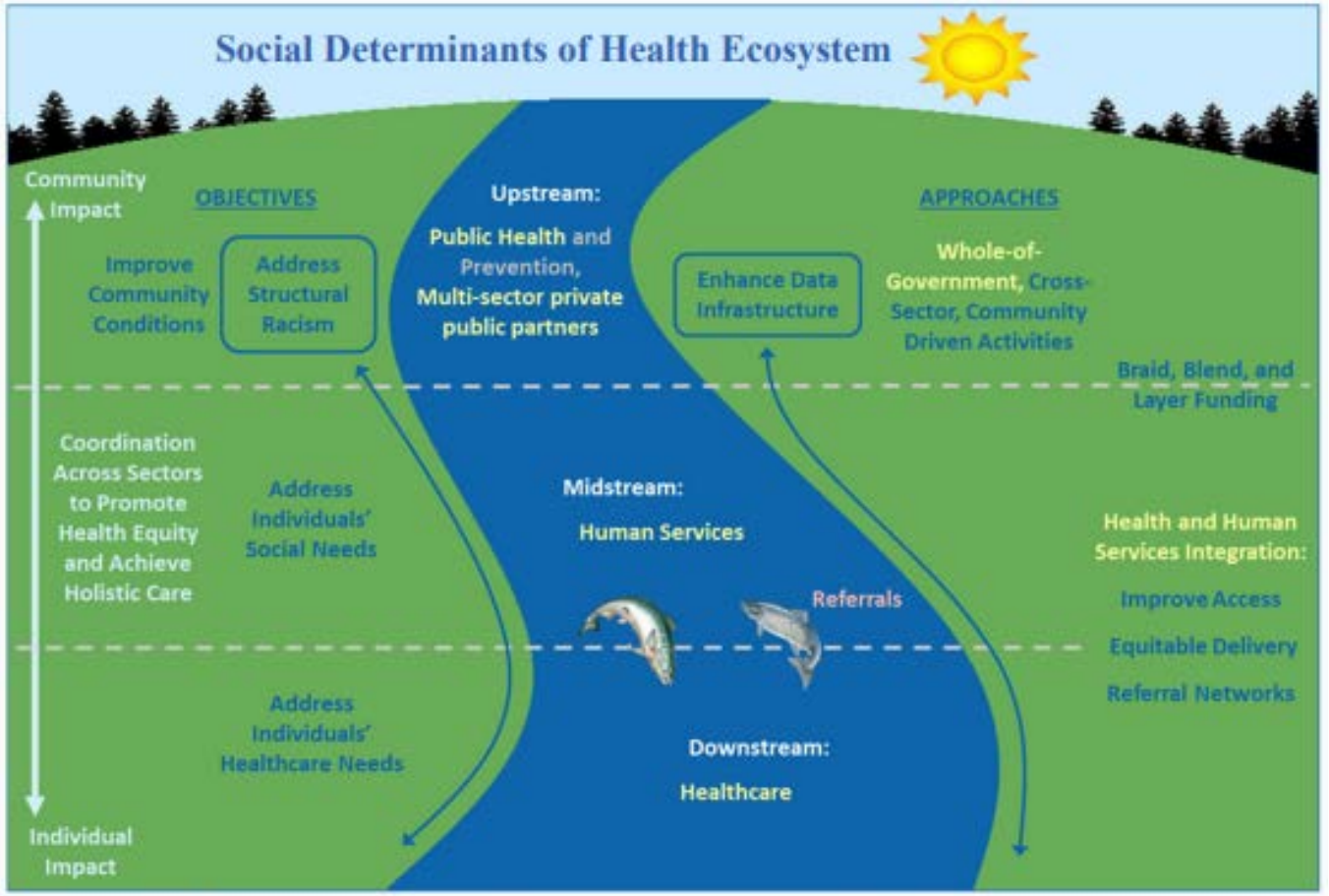
Social Determinants of Health

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

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

www.hhs.gov



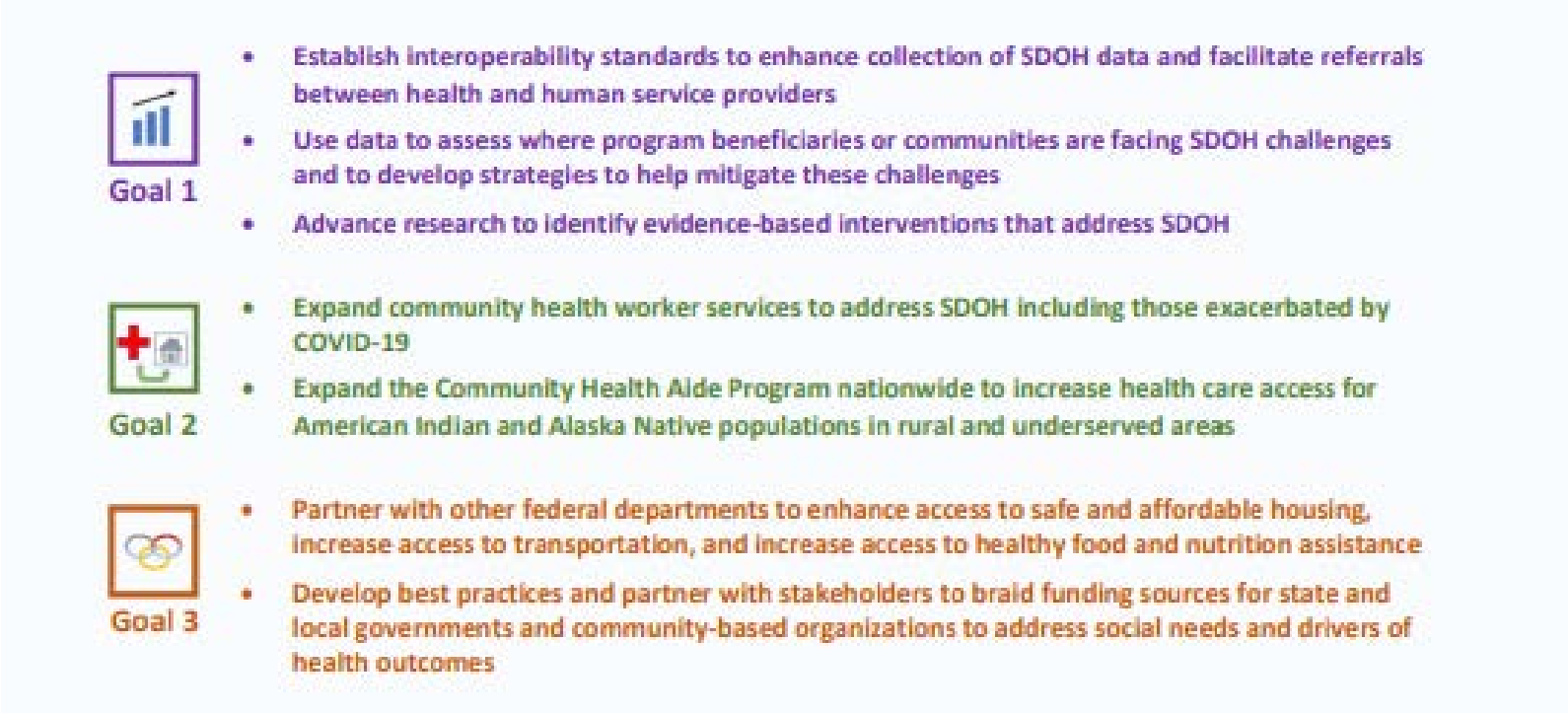
Note: Adapted from Castrucci B, Auerbach J. Meeting Individual Social Needs Falls Short of Addressing Social Determinants of Health. Health Affairs Blog. January 16, 2019

Goals

- The HHS strategic approach to SDOH will drive progress through the 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.

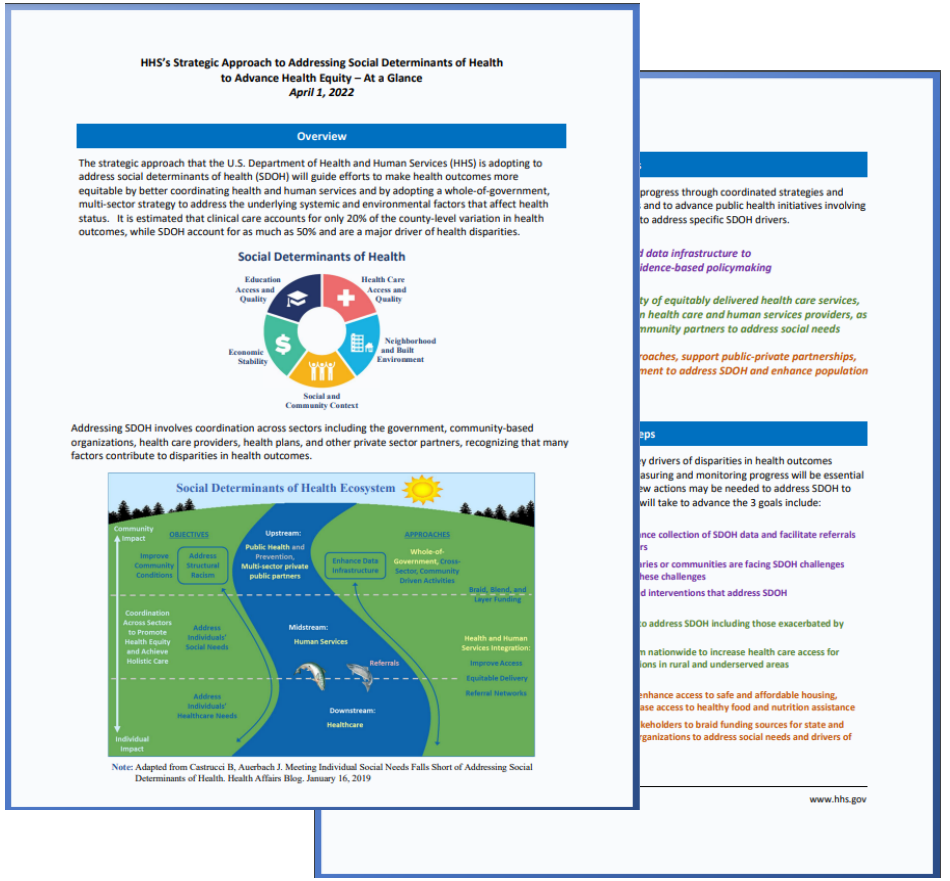
Next Steps

- HHS is ensuring that the actions we take will address key drivers of disparities in health outcomes among underserved and marginalized populations. Measuring and monitoring progress will be essential for HHS to assess what actions are working an what new actions may be needed to address SDOH to advance health equity. Examples of initial actions HHS will take to advance the 3 goals include:



HHS Social Determinants Of Health Working Group

- HHS SDOH Action Plan Implementation Phase:
  - 4 Affinity Groups
    1. Measurement and Data Collection
    2. Social Care and Referral and SDOH Interoperability
    3. Community and Peer Health Workers
    4. Health and Social Services Collaboration
- White House SDOH Interagency Policy Council (IPC) Convened January 2022



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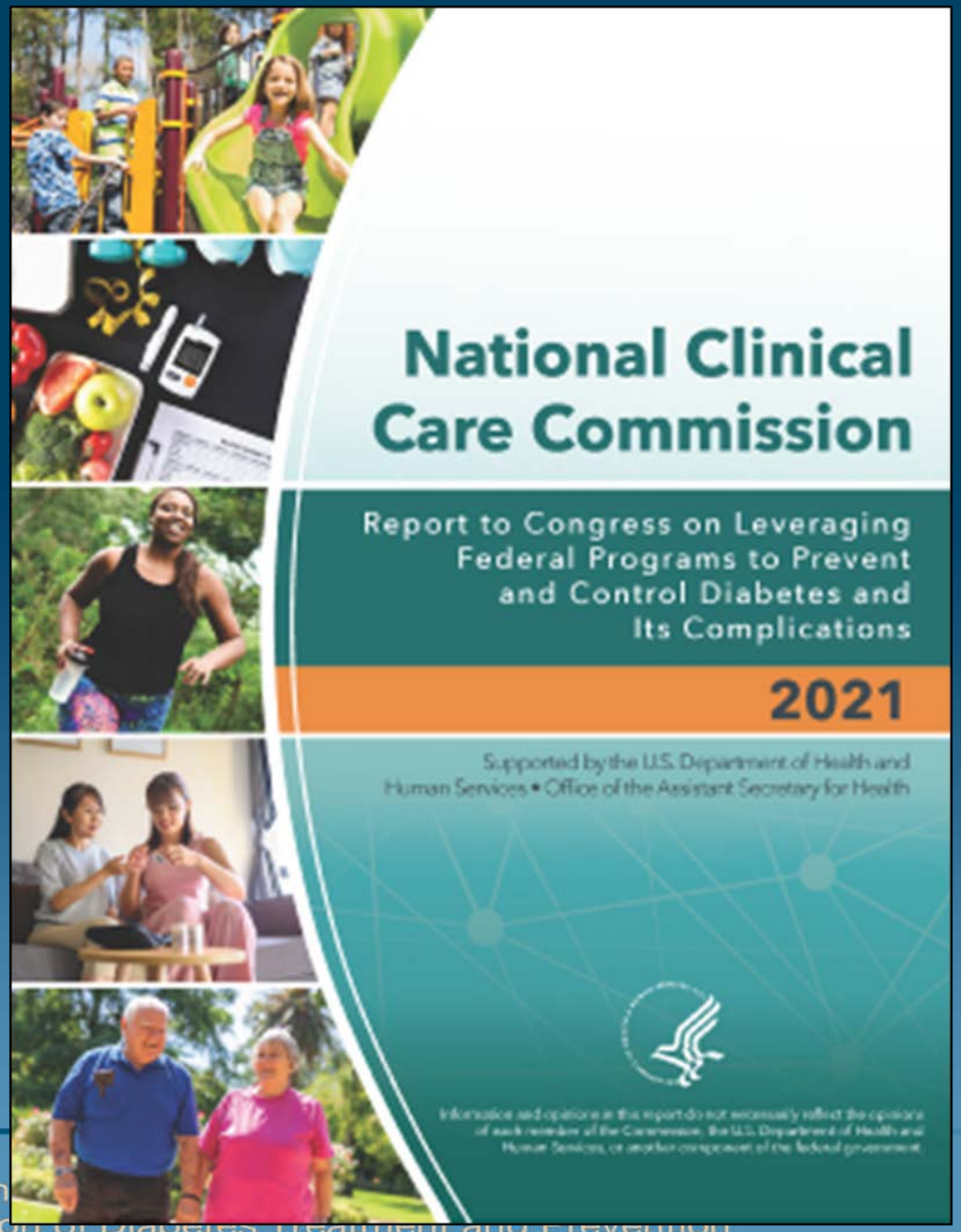
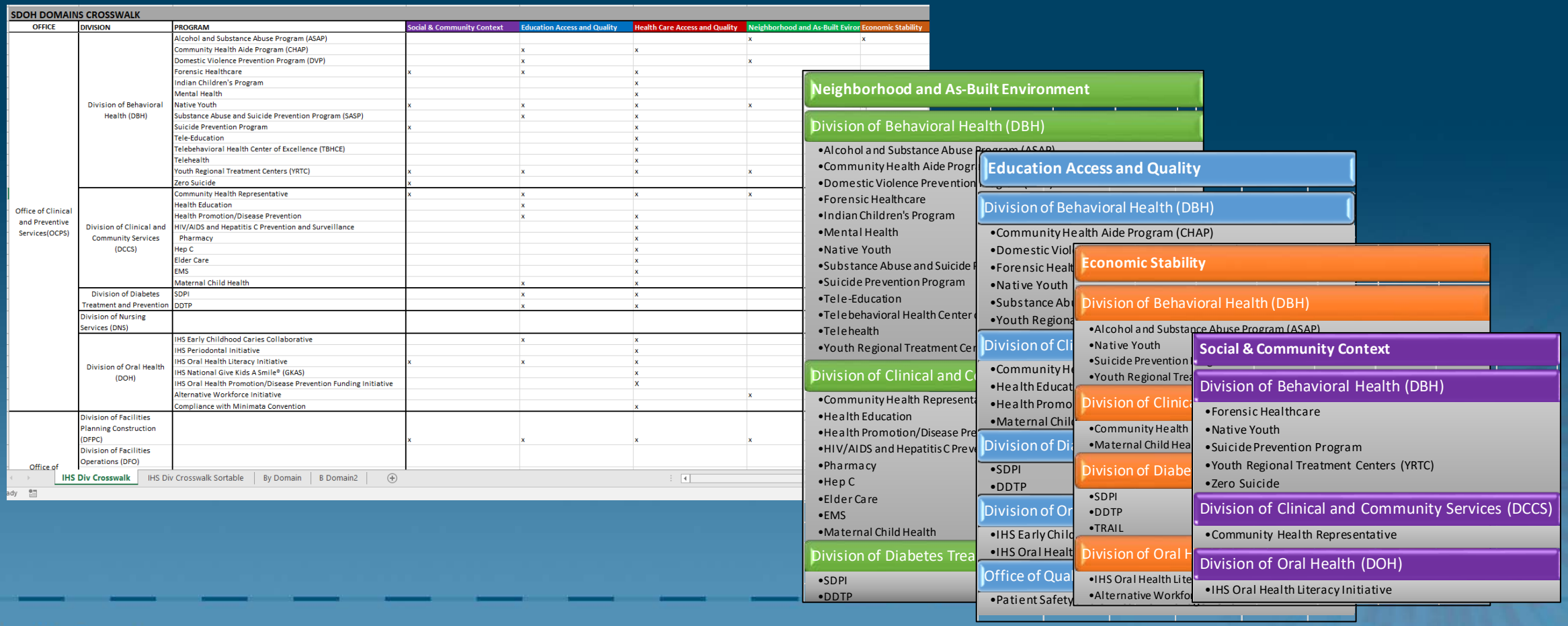


- Report is the first of its kind since the National Commission on Diabetes released “The Long-Range Plan to Combat Diabetes” in 1975
- Evidence-based recommendations to address:
  - (1) diabetes prevention and control in the general population;
  - (2) diabetes prevention in populations who are at high risk of developing type 2 diabetes; and
  - (3) treatment of diabetes and its complications.

IHS SDOH Planning

- Development of a proposed strategy
  - SDOH “Mapping”
  - Identifying Key Drivers
  - Understand Data & Information System Needs
  - Develop Model Framework for IHS
  - Strategy Proposal Development
  - Key Stakeholder Engagement

SDOH "Mapping"



SDOH DOMAINS CROSSWALK

OFFICE	DIVISION	PROGRAM	Social & Community Context	Education Access and Quality	Health Care Access and Quality	Neighborhood and As-Built Enviror	Economic Stability
Office of Clinical and Preventive Services(OCPS)	Division of Behavioral Health (DBH)	Alcohol and Substance Abuse Program (ASAP)				x	x
		Community Health Aide Program (CHAP)		x	x		
		Domestic Violence Prevention Program (DVP)		x		x	
		Forensic Healthcare	x	x	x		
		Indian Children's Program			x		
		Mental Health			x		
		Native Youth	x	x	x	x	
		Substance Abuse and Suicide Prevention Program (SASP)		x	x		
		Suicide Prevention Program	x		x		
		Tele-Education			x		
		Telebehavioral Health Center of Excellence (TBHCE)			x		
		Telehealth			x		
		Youth Regional Treatment Centers (YRTC)	x	x	x	x	
		Zero Suicide	x				
	Division of Clinical and Community Services (DCCS)	Community Health Representative	x	x	x	x	
		Health Education		x			
		Health Promotion/Disease Prevention		x	x		
		HIV/AIDS and Hepatitis C Prevention and Surveillance			x		
		Pharmacy			x		
		Hep C			x		
		Elder Care			x		
		EMS			x		
		Maternal Child Health		x	x		
	Division of Diabetes Treatment and Prevention	SDPI		x	x		
		DDTP		x	x		
	Division of Nursing Services (DNS)						
	Division of Oral Health (DOH)	IHS Early Childhood Caries Collaborative		x	x		
		IHS Periodontal Initiative			x		
		IHS Oral Health Literacy Initiative	x	x	x		
		IHS National Give Kids A Smile® (GKAS)			x		
		IHS Oral Health Promotion/Disease Prevention Funding Initiative			X		
		Alternative Workforce Initiative				x	
		Compliance with Minimata Convention			x		
Office of	Division of Facilities Planning Construction (DFPC)		x	x	x	x	
	Division of Facilities Operations (DFO)						

IHS Div Crosswalk | IHS Div Crosswalk Sortable | By Domain | B Domain2

Neighborhood and As-Built Environment

Division of Behavioral Health (DBH)

- Alcohol and Substance Abuse Program (ASAP)
- Community Health Aide Program
- Domestic Violence Prevention
- Forensic Healthcare
- Indian Children's Program
- Mental Health
- Native Youth
- Substance Abuse and Suicide
- Suicide Prevention Program
- Tele-Education
- Telebehavioral Health Center
- Telehealth
- Youth Regional Treatment Cer

Division of Clinical and C

- Community Health Representa
- Health Education
- Health Promotion/Disease Pre
- HIV/AIDS and Hepatitis C Prev
- Pharmacy
- Hep C
- Elder Care
- EMS
- Maternal Child Health

Division of Diabetes Trea

- SDPI
- DDTP

Education Access and Quality

Division of Behavioral Health (DBH)

- Community Health Aide Program (CHAP)
- Domestic Viol
- Forensic Healt
- Native Youth
- Substance Abu
- Youth Regiona

Division of Cli

- Community He
- Health Educat
- Health Promo
- Maternal Chil

Division of Di

- SDPI
- DDTP

Division of Or

- IHS Early Child
- IHS Oral Healt

Office of Qual

- Patient Safety

Economic Stability

Division of Behavioral Health (DBH)

- Alcohol and Substance Abuse Program (ASAP)
- Native Youth
- Suicide Prevention
- Youth Regional Trea

Division of Clinic

- Community Health
- Maternal Child Hea

Division of Diabe

- SDPI
- DDTP
- TRAIL

Division of Oral H

- IHS Oral Health Lite
- Alternative Workfo

Social & Community Context

Division of Behavioral Health (DBH)

- Forensic Healthcare
- Native Youth
- Suicide Prevention Program
- Youth Regional Treatment Centers (YRTC)
- Zero Suicide

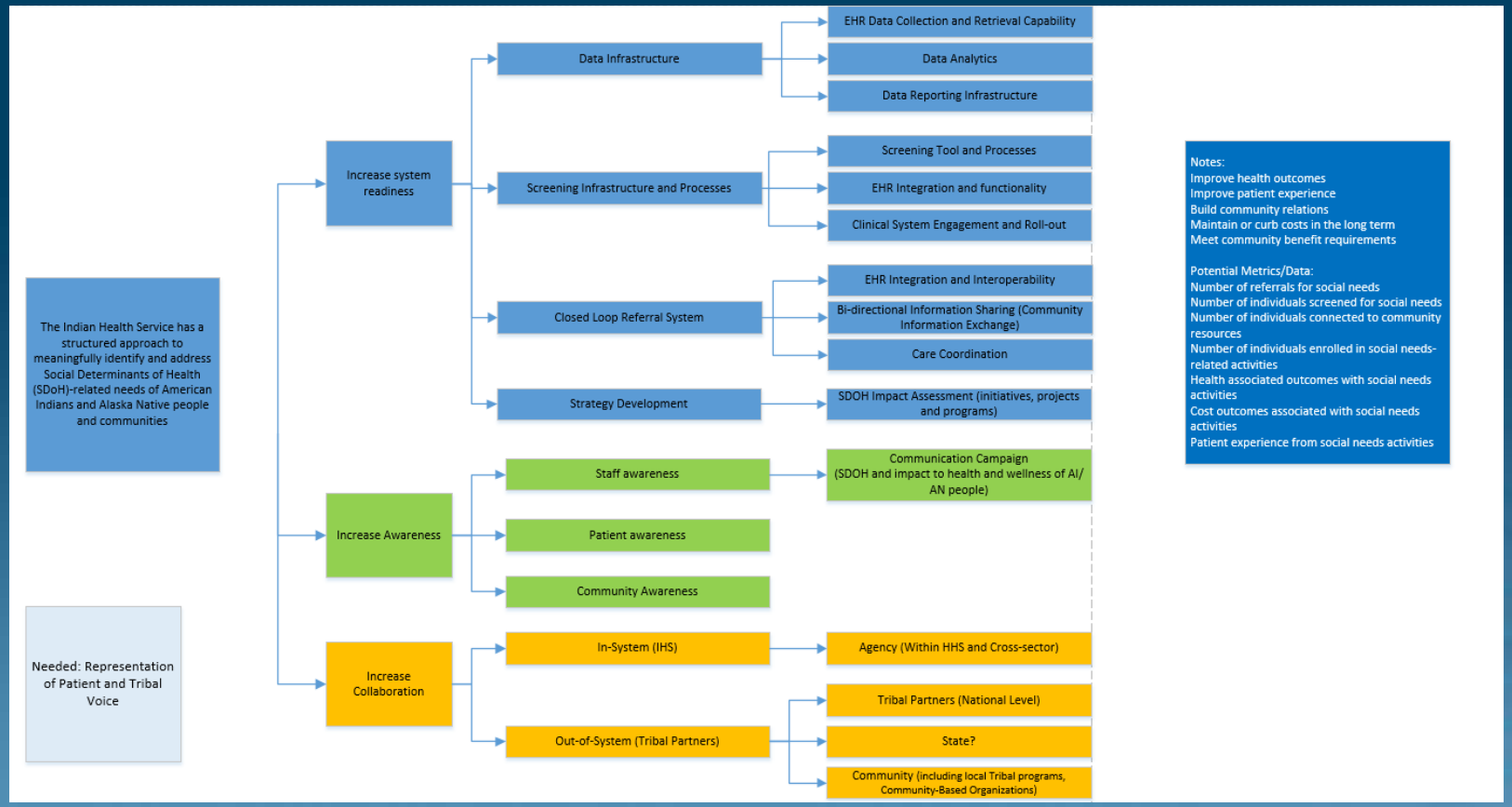
Division of Clinical and Community Services (DCCS)

- Community Health Representative

Division of Oral Health (DOH)

- IHS Oral Health Literacy Initiative

Understanding the Drivers



Intersections

- Trauma-informed care
- Food Insecurity Workgroup
- Maternal Health Initiative
- Electronic Health Record
- Primary Care Redesign
- Geriatric Care

Háw’aa/ Gunalchéesh/Thank you