

Understanding and Addressing Social Determinants of Health



MNORN
Dr. Heidi Orstad DNP, RN, PHN, CCM

Your future is limitless.SM

Meet the speaker



Dr. Heidi Orstad DNP, RN, PHN, CCM

President MNORN

Clinical Consultant Marsh McLennan



Dr. Orstad holds a Doctorate in Nursing and Certificate in Healthcare Design and has been in practice for over 30 years. While practicing in pediatrics, perinatal care, community health, hospice and geriatrics, Dr. Orstad encountered patients and families living in scarcity on a routine basis. As such, as a leader in case management, population management and product design made it a point to focus on care and resource equity. Her Doctoral project focused on Food Insecurity in children and families at an inner city family nurturing center, and she speaks regionally and nationally on topics that matter to employers, employees and their families, including the impact of mental wellbeing and social determinants of health.

Nurse as a Data Story Teller- Insight Communicator

1 Data Collection



2 Data Preparation



3 Data Visualization



4 Data Analysis



5 Data Storytelling



www.effective-datastorytelling.com

Agenda

- ✂ Social Determinants of Health
- 👤 Impact on health
- 🔔 Show me the data!
- 👤 Innovation
- 📺 Putting it all together
- 👤 Minnesota healthcare SDOH exemplars



**“ANYONE WHO HAS
EVER STRUGGLED WITH
POVERTY KNOWS HOW
EXTREMELY EXPENSIVE
IT IS TO BE POOR.”**

- James Baldwin

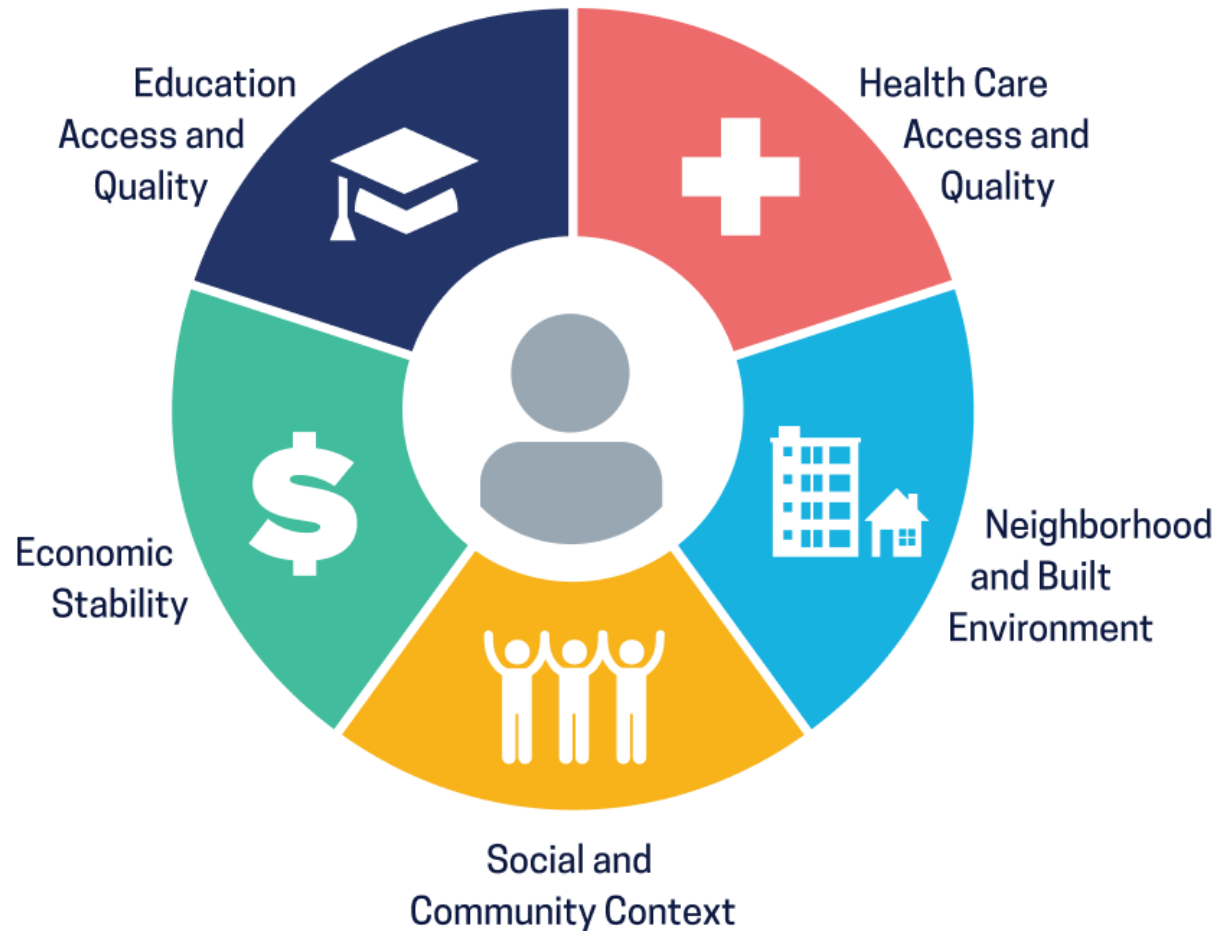
Nobody Knows My Name, 1961





Social Determinants of Health

WHO Model: Social Determinants of Health (SDOH)



The conditions in the environments 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

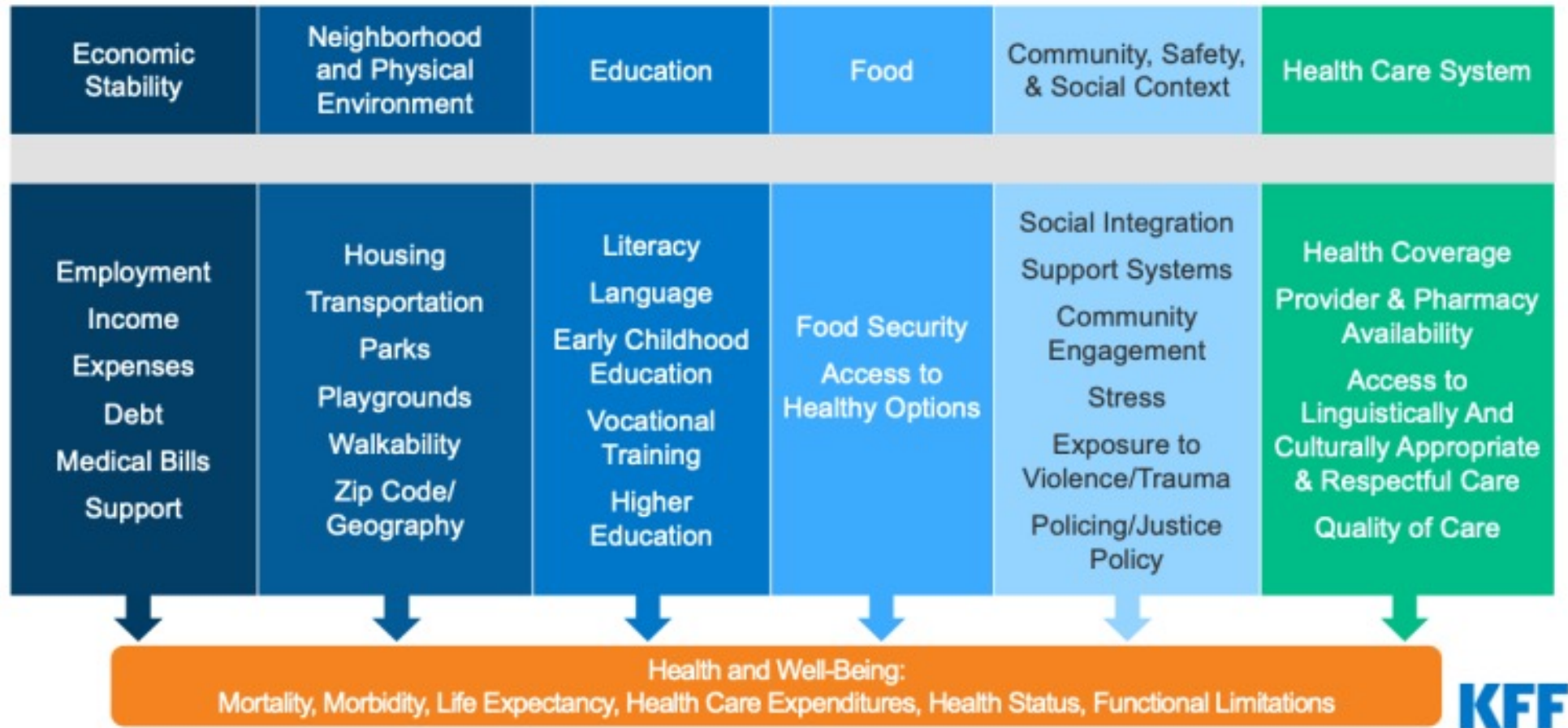
Healthy People 2030 Goal:

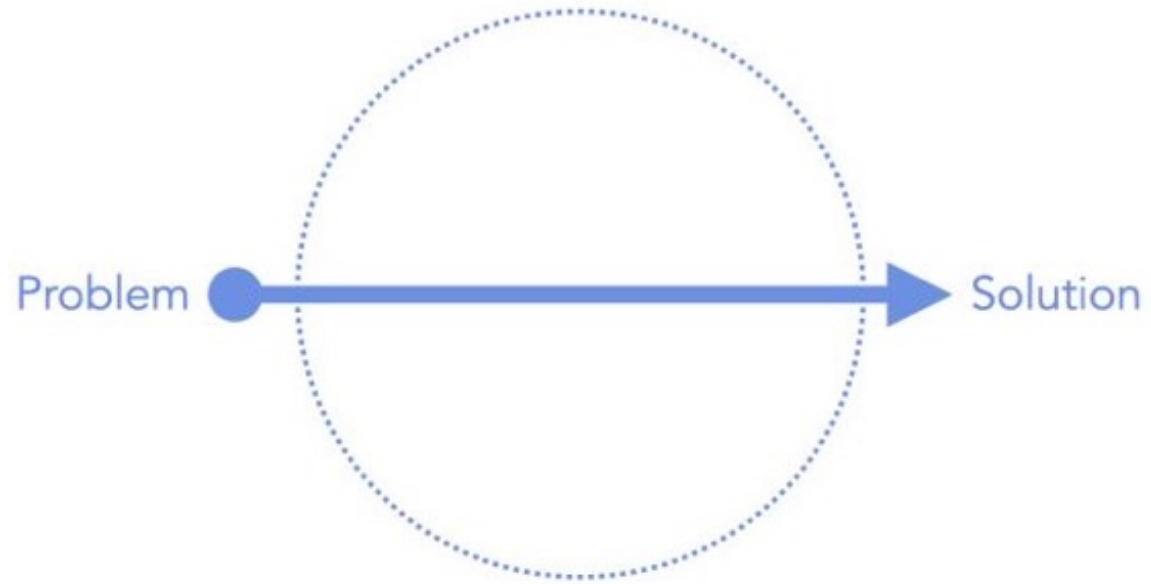
Create social, physical, and economic environments that promote attaining the full potential for health and well-being for all.

[Social Determinants of Health - Healthy People 2030 | health.gov](https://www.health.gov/health/determinants)

Kaiser Family Foundation (KFF) model: SDOH

[KFF](#)

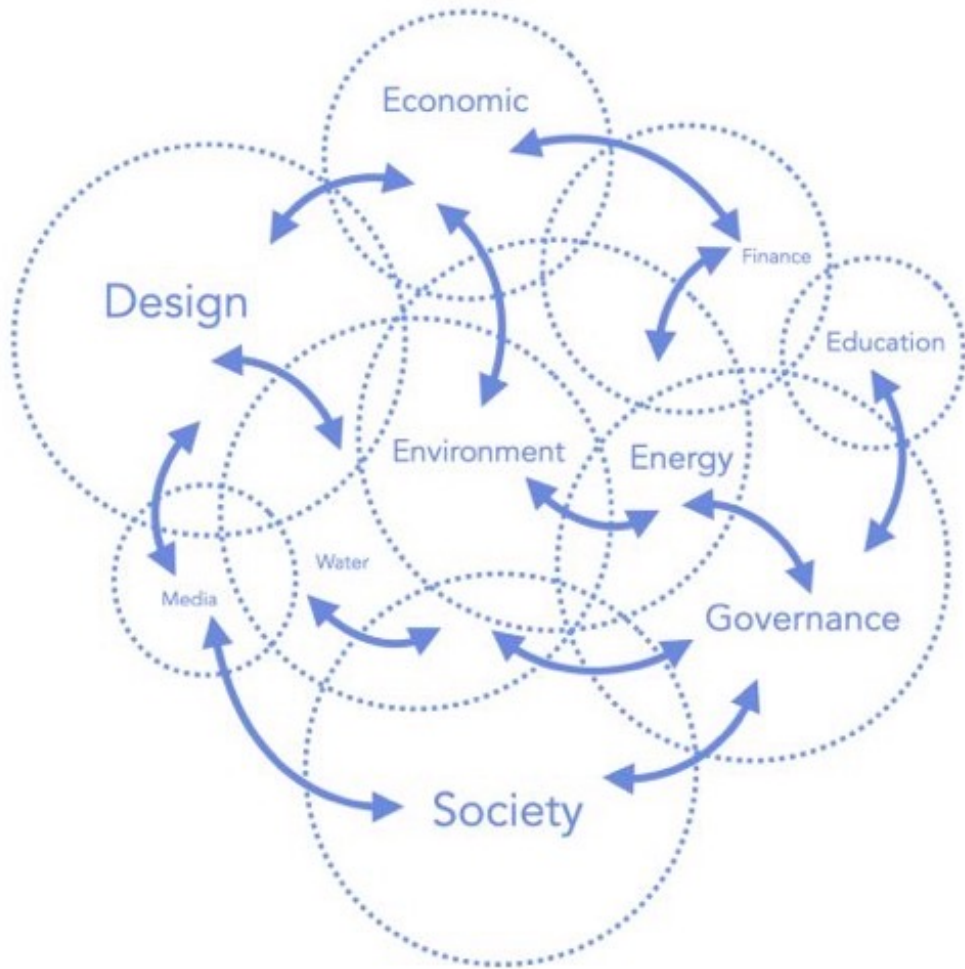




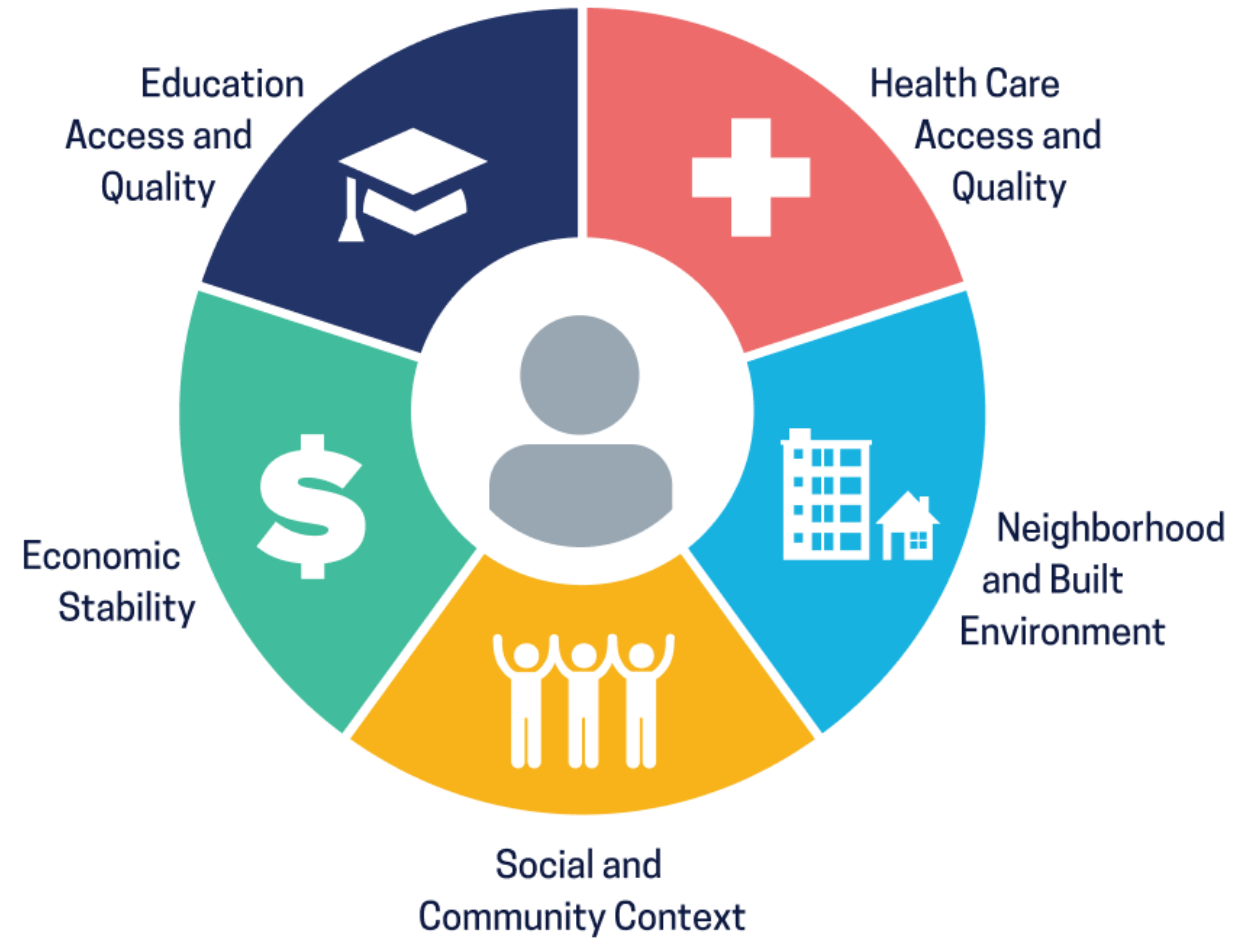
Tame Problems



Strep Throat - Antibiotics



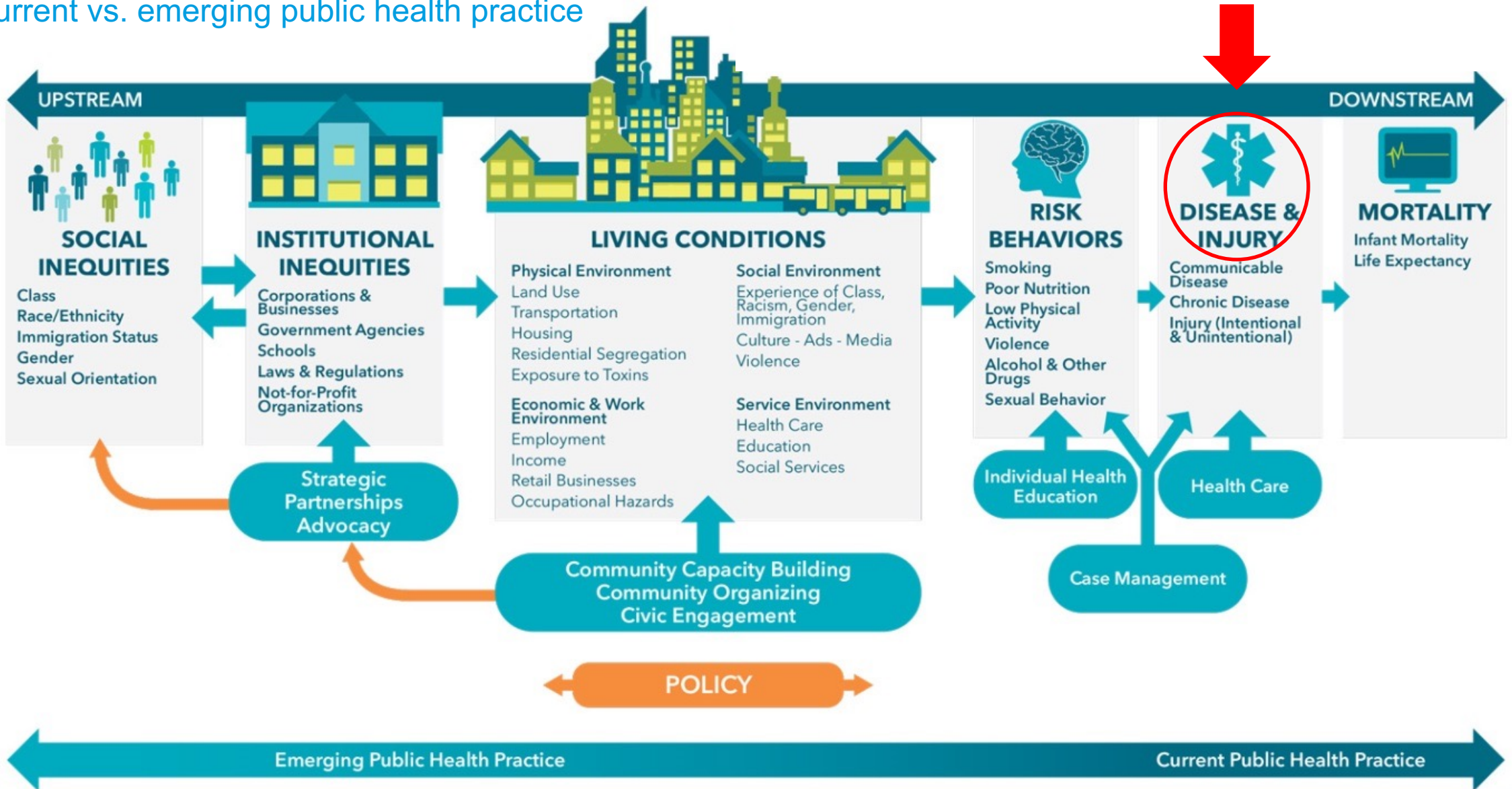
Wicked Problems



Where to start?

A public health framework for reducing health inequities

Current vs. emerging public health practice



<https://www.aafp.org/about/policies/all/social-determinants-health-family-medicine.html>

“It is not stress that kills us, it is our reaction to it”

Stressed

Increased Cardiac Output

Increased available blood glucose

Enhanced immune function

Growth of neurons in hippocampus and prefrontal cortex

“It is not stress that kills us, it is our reaction to it”

Stressed

Increased Cardiac Output

Increased available blood glucose

Enhanced immune function

Growth of neurons in hippocampus and prefrontal cortex

Stressed Out

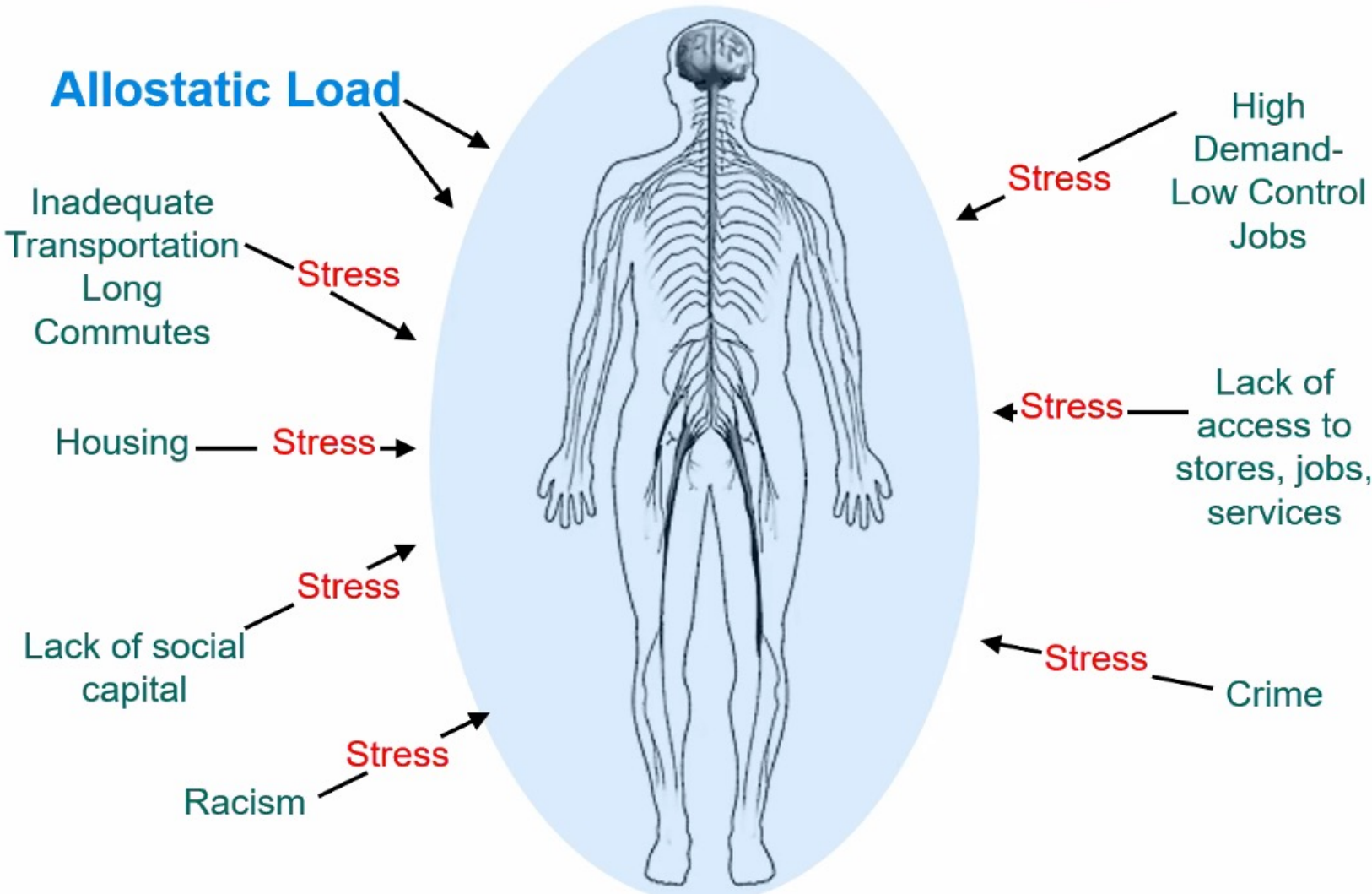
Hypertension and cardiovascular disease

Glucose intolerance and insulin resistance

Infection and inflammation

Atrophy and death of neurons in hippocampus and prefrontal cortex

When the external becomes internal

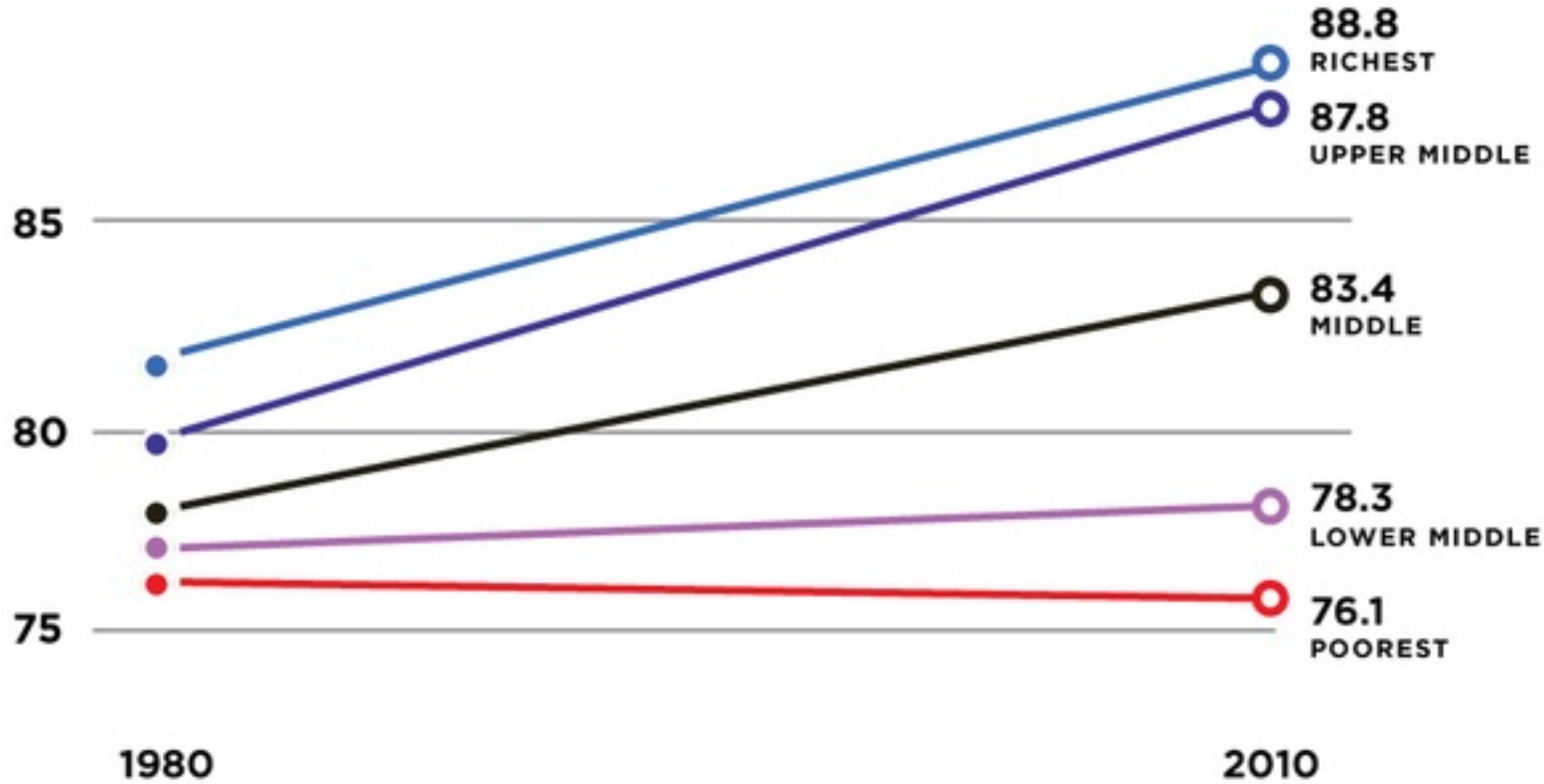


People with high demand and low control jobs and lack of access to amenities experience stress and a cascade of cortisol which leads to glucose intolerance.

This leads to inflammation and may lead to atrophy and cell death in area of executive functioning, causing people to focus on the short term vs. the long term.

Dr. Tony Iton, Health is Political. Lecture. St. Thomas University. 2021

Life expectancy by income

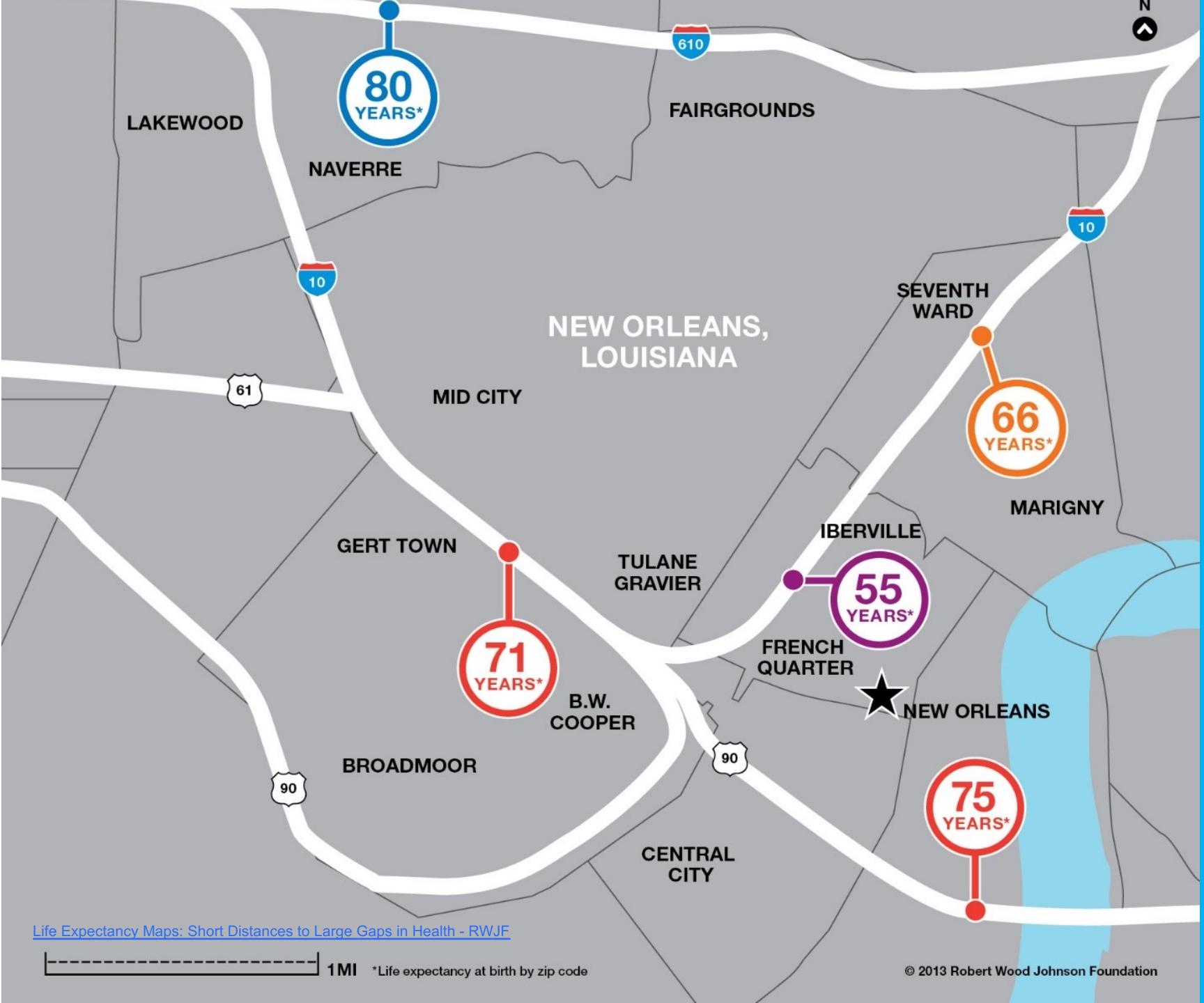


12yr

Gap in life expectancy
By income

*Those with lowest incomes
did not have a longer life
expectancy over time*

National Academies of Science, Engineering and Medicine. Men born between 1930-1960; AAFP Position Paper: Advancing Health Equity by Addressing the SDoH in Family Medicine



25yr

Gap in life expectancy
by zip-code

*Life Expectancy by Zip Code
Robert Wood Johnson Foundation*

[Life Expectancy Maps: Short Distances to Large Gaps in Health - RWJF](#)

1 MI *Life expectancy at birth by zip code

© 2013 Robert Wood Johnson Foundation

Consequences of unmitigated social risk

Food Insecurity



Poorer health

Stunted development

Increased absenteeism at work and school

Transportation Insecurity



Increased Absenteeism

Unmet healthcare needs

Increased ER use

Inaccessibility to Healthcare



Higher cost of care

Increased ER use

Unmanaged chronic illness

Chronic condition with Social Risk



Higher cost PMPM

Increased ER use

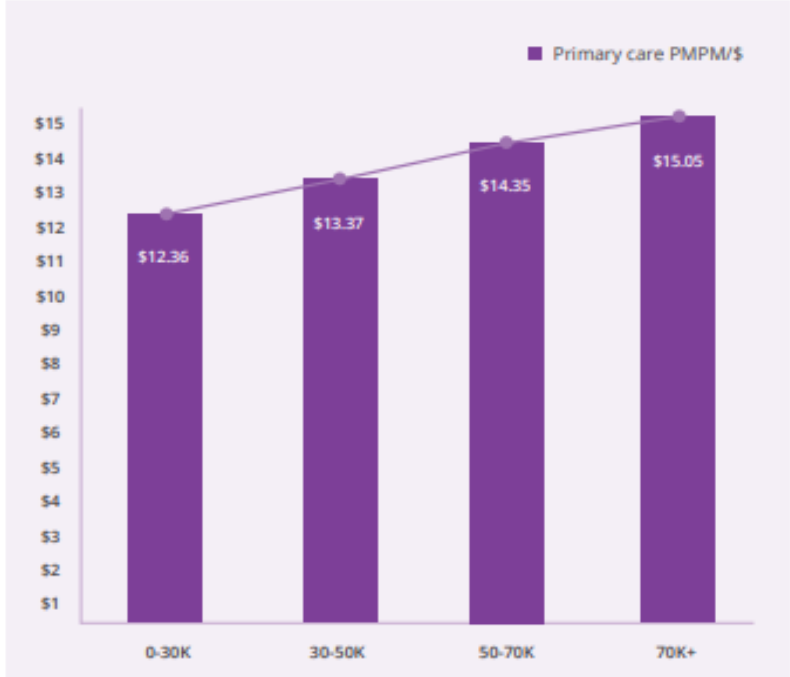
Increased risk for comorbid mental illness

Site-of-care decisions by wage

More ER per 1k*



Less PCP per 1k*

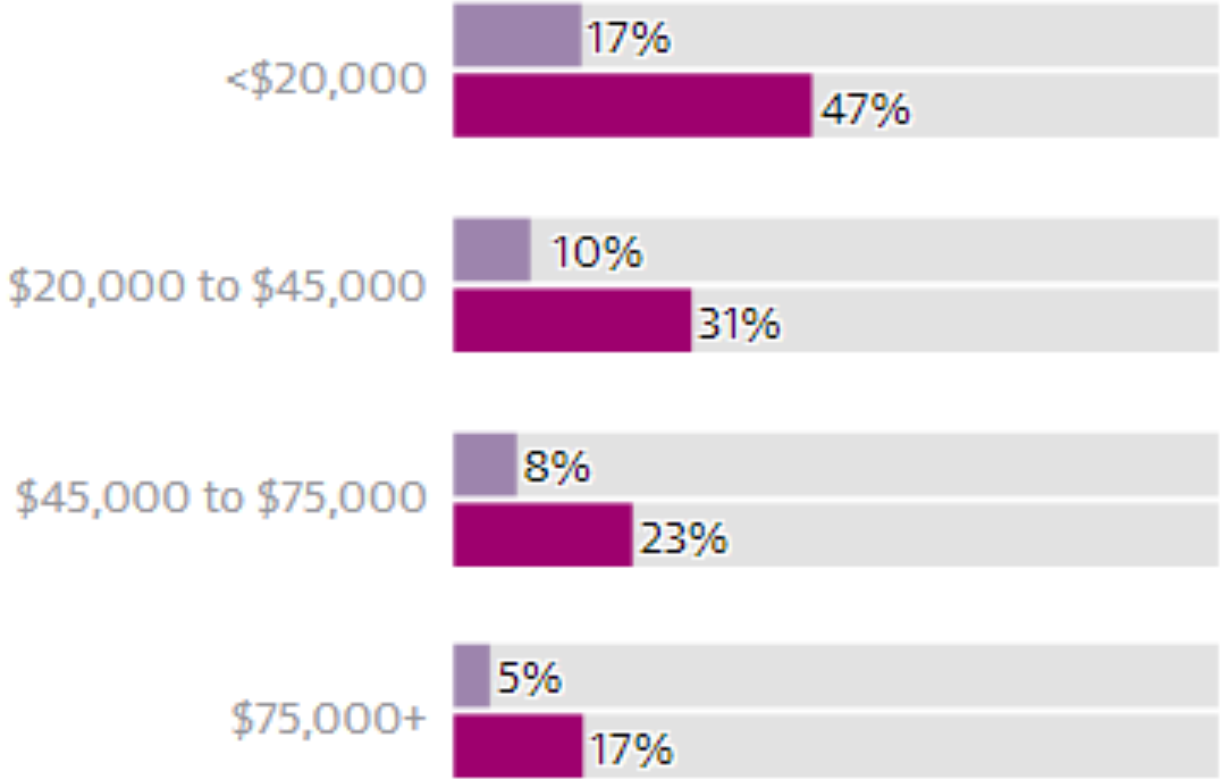


* Among low wage earners



Depression symptoms by wage

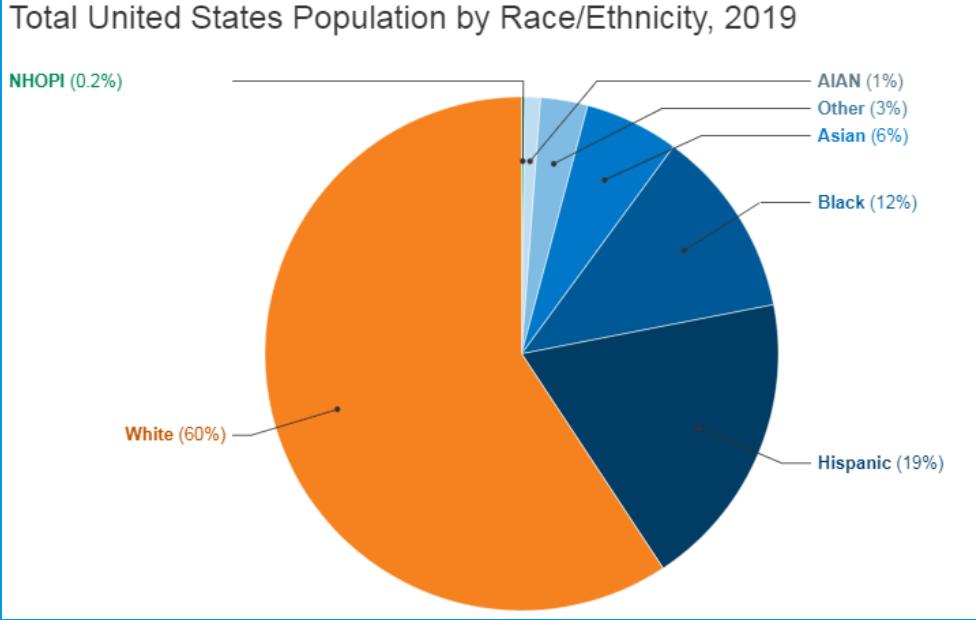
■ Before pandemic ■ One month into the pandemic



Guardian graphic. Source: Prevalence of Depression Symptoms in US Adults Before and During the COVID-19 Pandemic by Ettman et al.



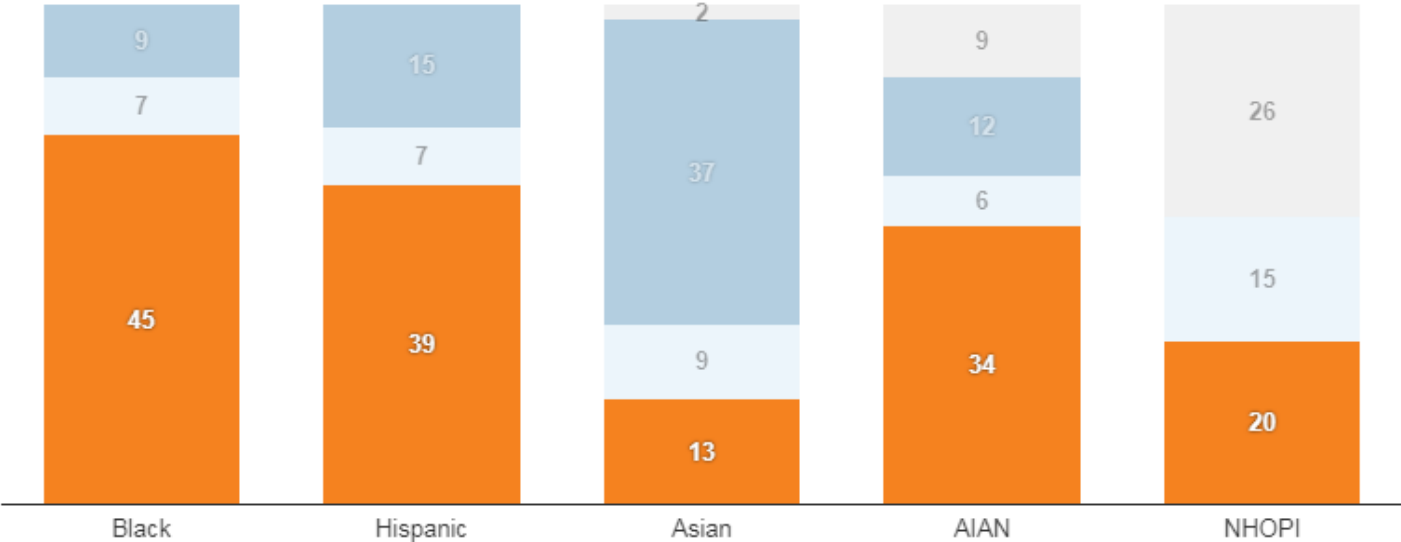
Health Inequity by Race



Health and Health Care among People of Color Compared to White People

NUMBER OF MEASURES FOR WHICH GROUP FARED BETTER, THE SAME, OR WORSE COMPARED TO WHITE PEOPLE:

Worse No difference Better No data



NOTE: Measures are for the most recent year for which data are available. "Better" or "Worse" indicates a statistically significant difference from White people at the $p < 0.05$ level. No difference indicates no statistically significant difference. "Data limitation" indicates no separate data for a racial/ethnic group, insufficient data for a reliable estimate, or comparisons not possible due to overlapping samples. AIAN refers to American Indian or Alaska Native. NHOPI refers to Native Hawaiian or Other Pacific Islander. Persons of Hispanic origin may be of any race but are categorized as Hispanic for this analysis; other groups are non-Hispanic.

PNG





**Some is not a number.
Soon is not a time.**

– Don Berwick





Show us the data!


Measurement matters

Only 40% of health factors are reported in medical data

Health Outcomes

- + Mortality
- + Morbidity
- + Life Expectancy
- + Health Care Expenditures
- + Health Status
- + Functional Limitations

Health Outcomes Driving Factors

	Clinical Interventions	10%
	Genetics	30%







Yet 60% of health is driven by non-clinical factors

Health Outcomes

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Health Outcomes Driving Factors


	Clinical Interventions	10%
	Genetics	30%
	Social Factors	20%
	Personal Behaviors	40%

 healthscape.com

Over 60% of health and longevity is driven by non-clinical factors

 Economic Stability

 Neighborhood & Physical Environment

 Education

 Access to Food

 Community & Social Factors

Getting the data...The Gravity Project

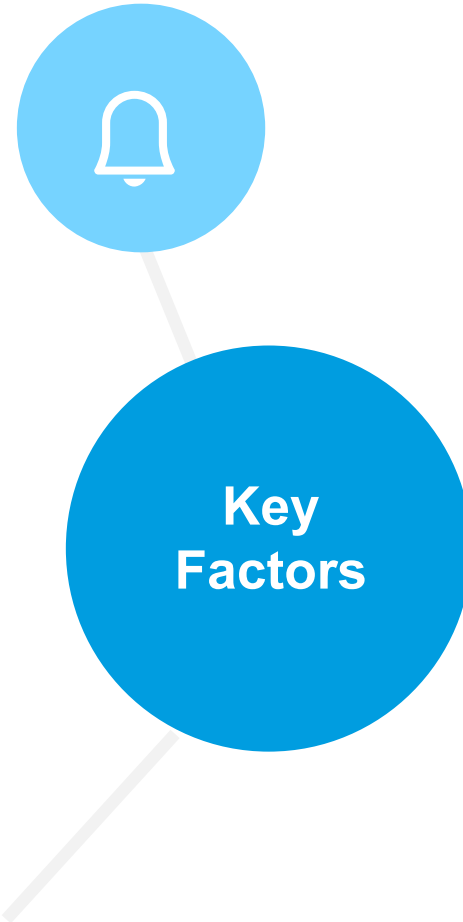
Goal: Identify data elements and value sets to represent social determinants of health data documented in EHRs. [Link](#)

Social Risk ICD-10 codes exist

Persons with potential health hazards related to socioeconomic and psychosocial circumstances.

ICD =-10-CM Code Range Z55-Z65

Missing from most medical claims-2022



Getting the data...The Gravity Project

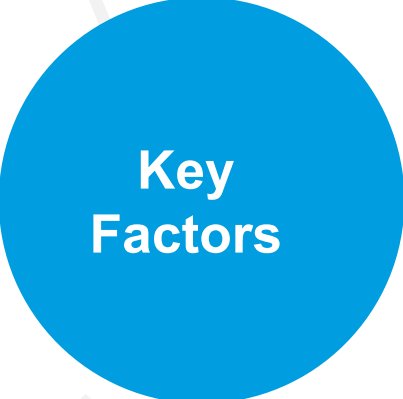
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Missing from most medical claims-2022



Standardized Assessments exist

'Screen all members for unmet food, housing, and transportation needs'.-HEDIS 2023

Missing from most medical claims-2022



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Relevant Interventions exist

'Document whether an intervention was performed for identified social risk needs.'

HEDIS 2023

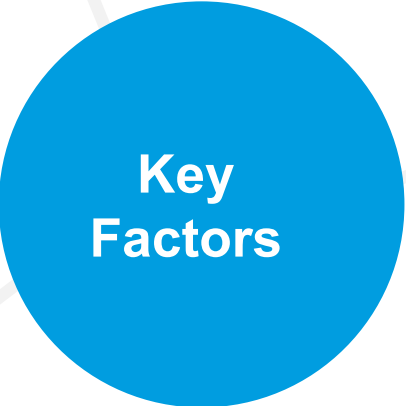
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Standardized Assessments exist

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Missing from most medical claims-2022



Member Sensitivity

Some members are concerned social risk data could be spread to 'the wrong people'. Sensitivity is key.



it matters what you ask
about suffering

it matters what you ask
about suffering

**SDoH screening questions
accurately predict future
homeless**

[SDOH Screening Questions Accurately Predict Future Homelessness \(patientengagementhit.com\)](https://patientengagementhit.com)

it matters what you ask
about suffering

**Two SDoH screening
questions accurately predict
future homeless**

[SDOH Screening Questions Accurately Predict Future Homelessness \(patientengagementhit.com\)](https://patientengagementhit.com)

**SDoH screening questions
accurately predict food
insecurity**

[The Hunger Vital Sign: A New Standard of Care for Preventive Health - Children's HealthWatch \(childrenshealthwatch.org\)](https://childrenshealthwatch.org)

Employer example: Many locations, but MN employees had:

🇺🇸 Highest Medical Costs
PMPM

📊 Highest rate of Hypertension
per 1K

📊 Highest rate of Behavioral
Health Care per 1K

📊 Highest rate of Diabetes
per 1K





* text to explain. ** text to explain

As clinical consultant, already receive clinical data

Health Outcomes

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Need to understand the impact of SDoH using publicly available data

Uncovered relevant SDoH data sets

Health Outcomes

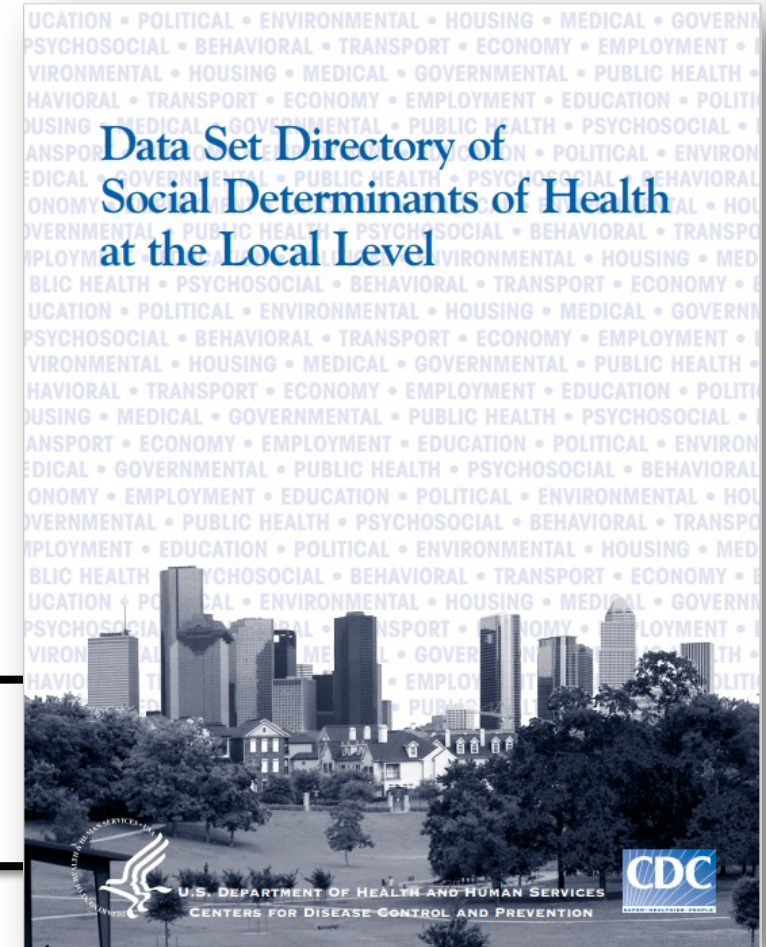
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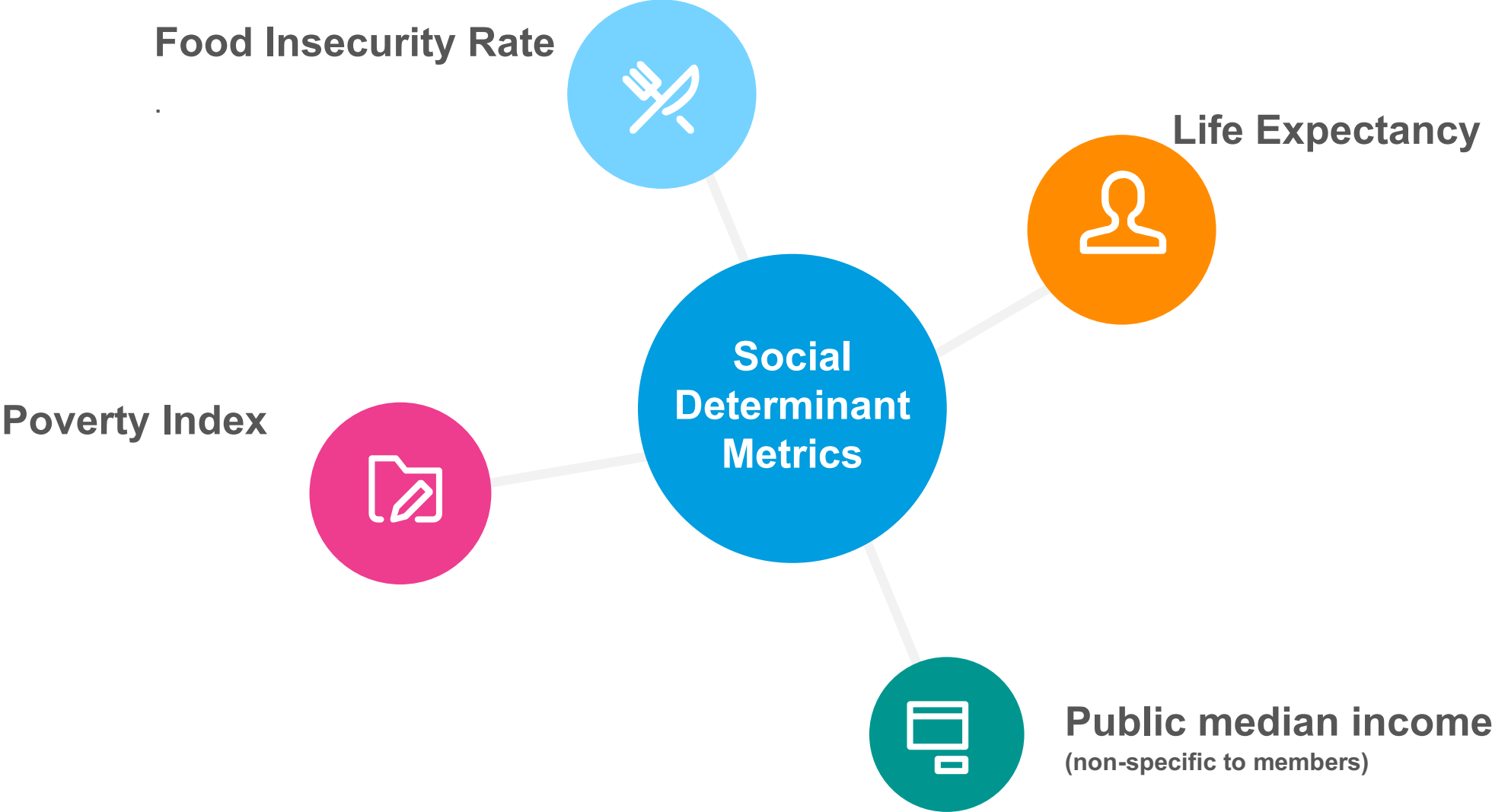
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Economic Research Service
U.S. DEPARTMENT OF AGRICULTURE



Determined following metrics by zipcode for MN members



[Life Expectancy Data Viz \(cdc.gov\)](#); [SDA ERS - Food Security in the United States](#); [Life Expectancy Data Viz \(cdc.gov\)](#); [Poverty \(usda.gov\)](#)



Question 1: Does Minnesota have elevated social risks at the STATE level when compared to the other employer State locations?

– MMA RN





Question 1: Does Minnesota have elevated social risks at the STATE level when compared to the other employer locations?

– MMA RN



The answer is a resounding No

Study SDoH metrics by state level

Metric	Minnesota	South Dakota	North Dakota	Kansas	Nebraska
Food Insecurity*	3.3	4.8	4.7	6.2	4.7
Poverty Index*	8.3	11.6	10.2	10.6	9.2
Public median income	\$75K	\$61K	\$64K	\$63K	\$64K
Life expectancy	81	79	80	78	79

Minnesota scored lowest for risk at a state level



Question 2: Are there some Minnesota counties that have elevated social risks where members work and live?

– MMA RN





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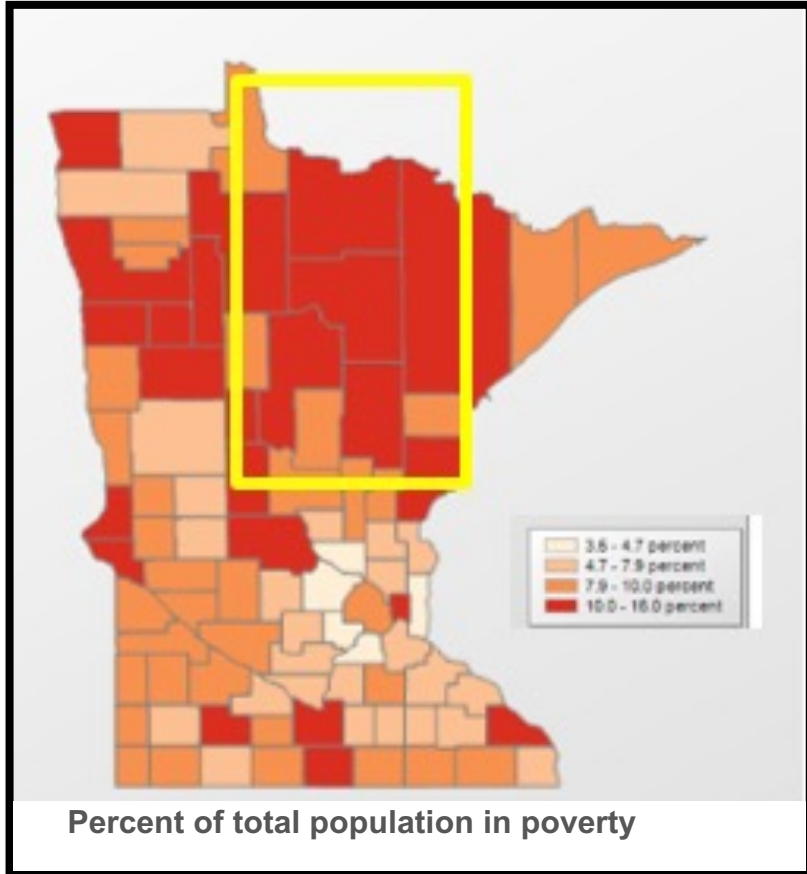
– MMA RN



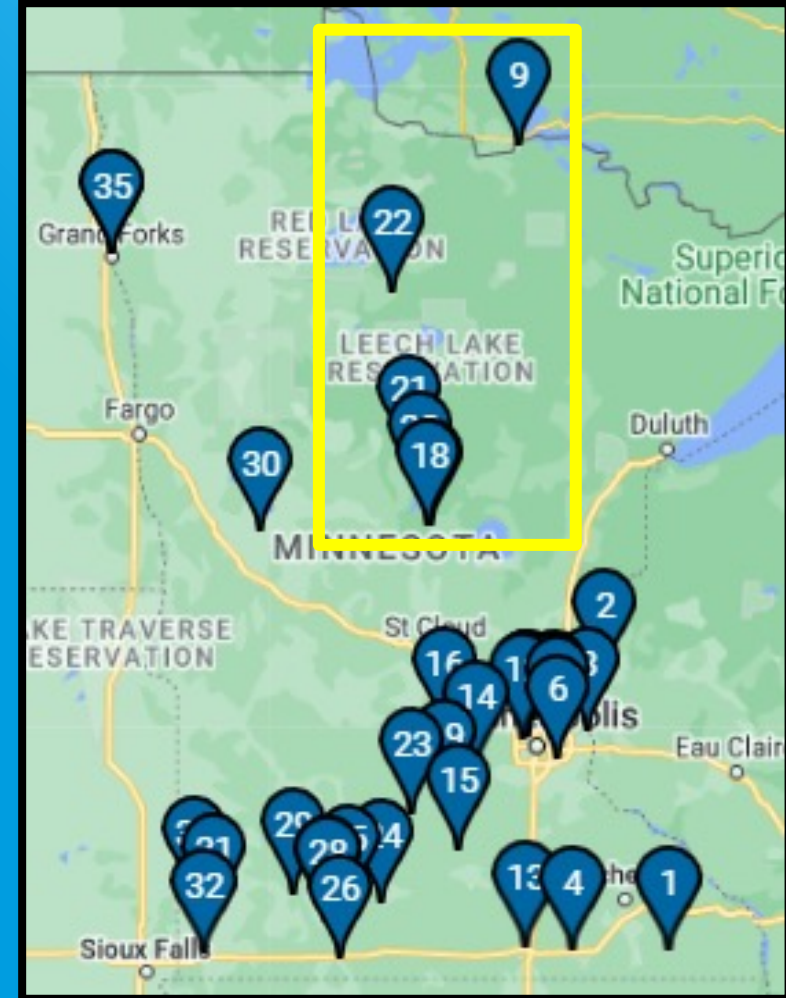
The answer is a resounding YES

Significant poverty in some MN locations

Populations in poverty



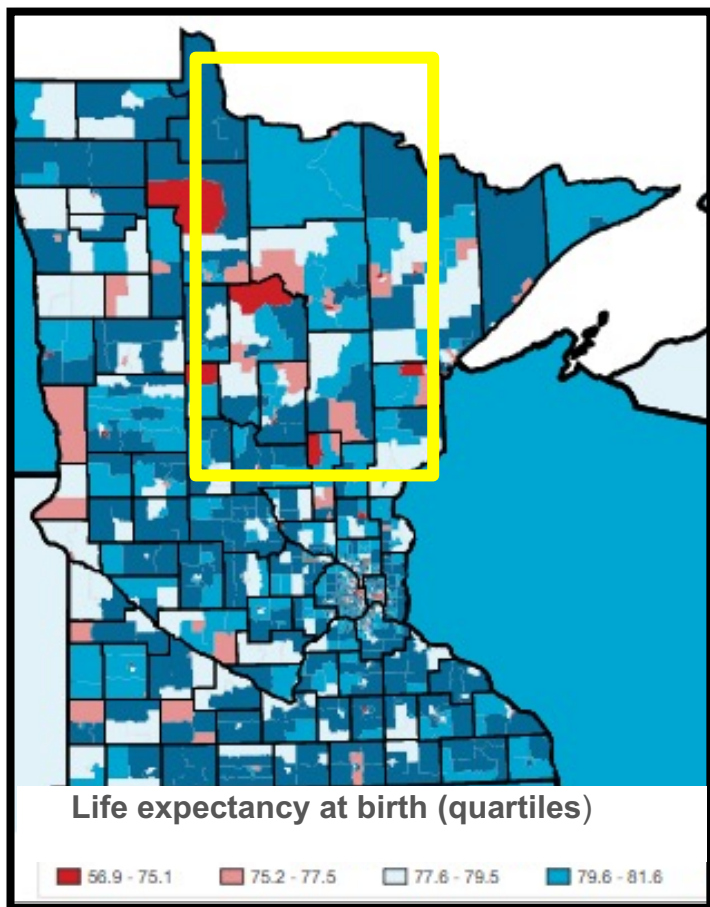
Employer Minnesota Locations



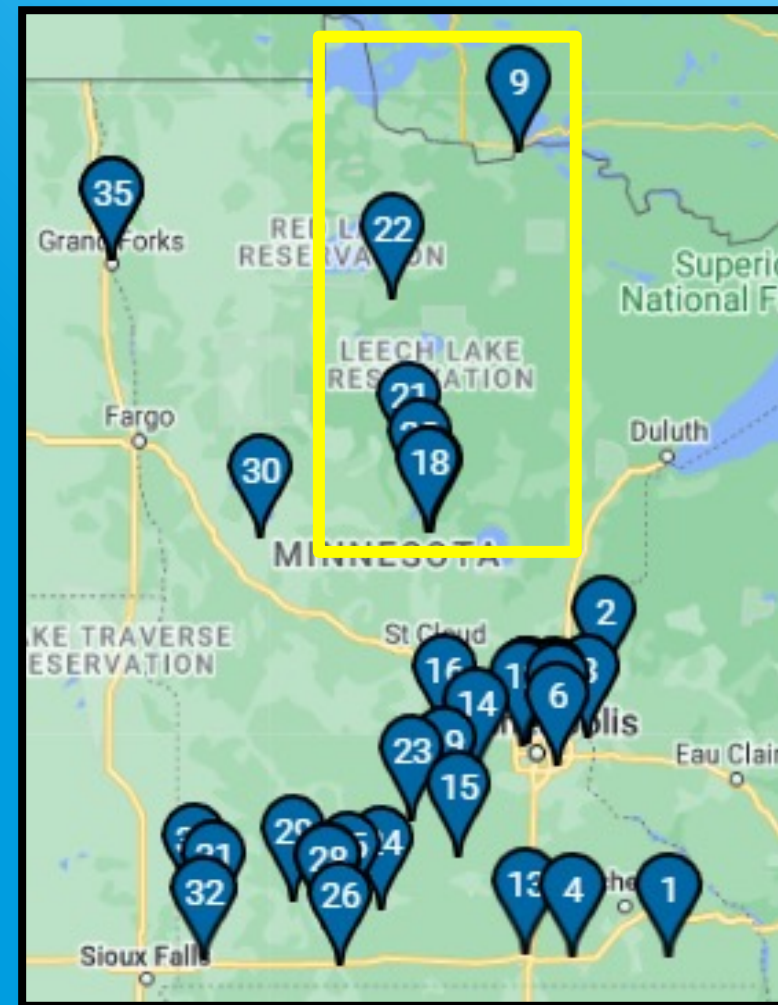
[Poverty \(usda.gov\)](http://usda.gov)

Lower life expectancy in some MN locations

Lower Life Expectancy



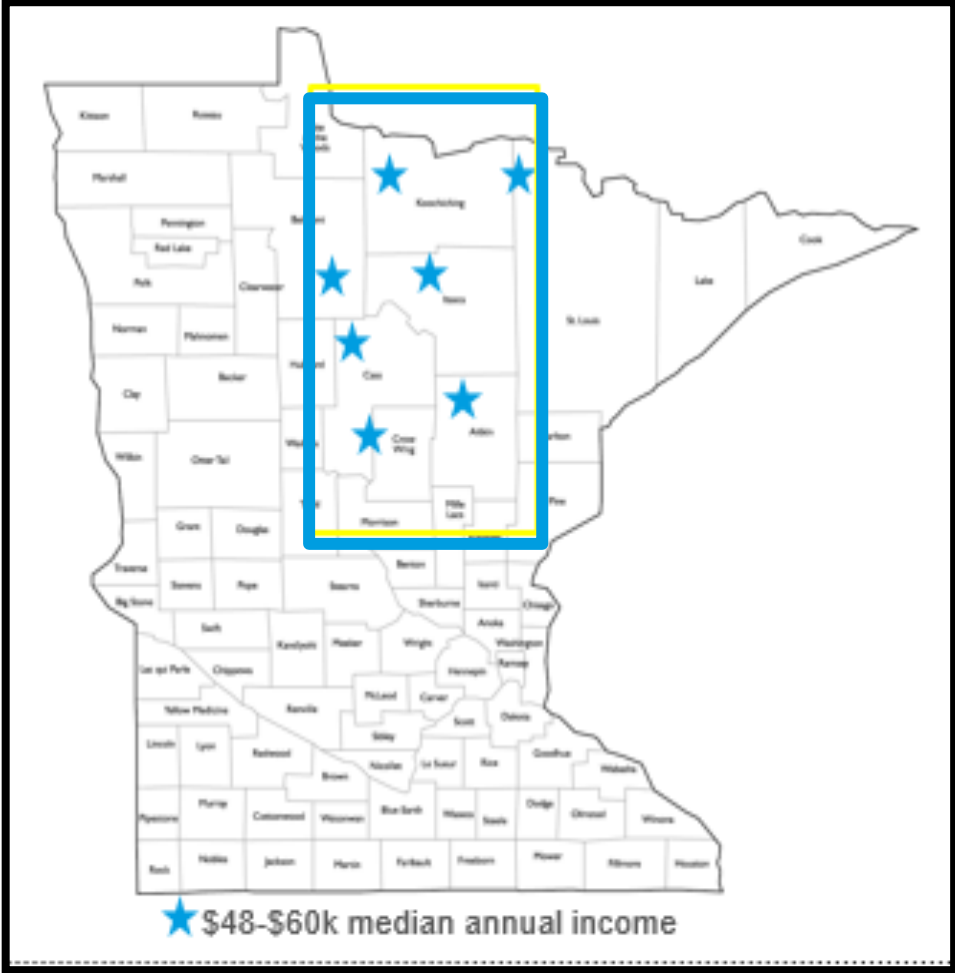
Employer Minnesota Locations



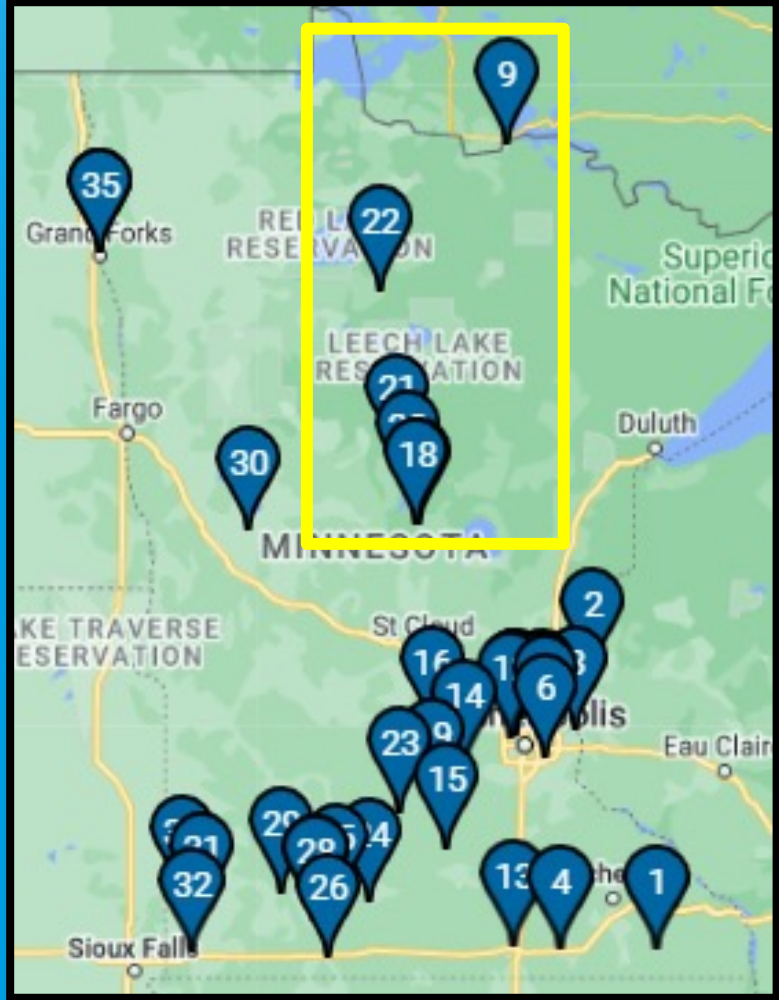
[Life Expectancy Data Viz \(cdc.gov\)](https://www.cdc.gov/data/vis/life-expectancy)

Low median incomes in some MN locations

Low median income



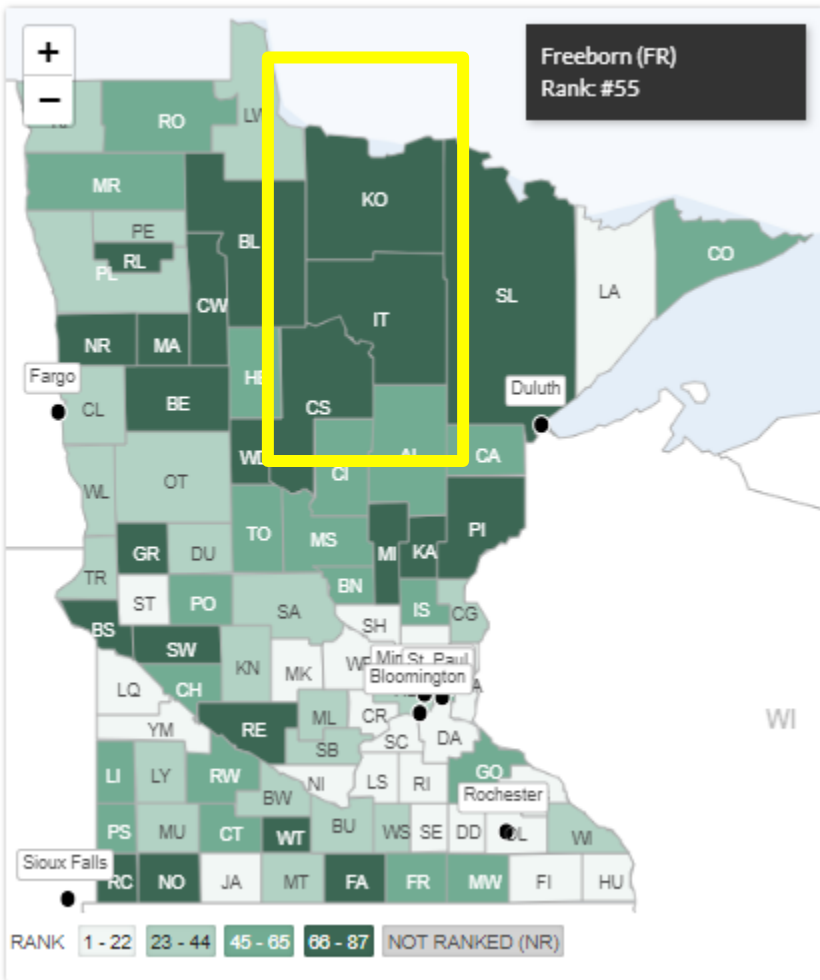
Employer Minnesota Locations



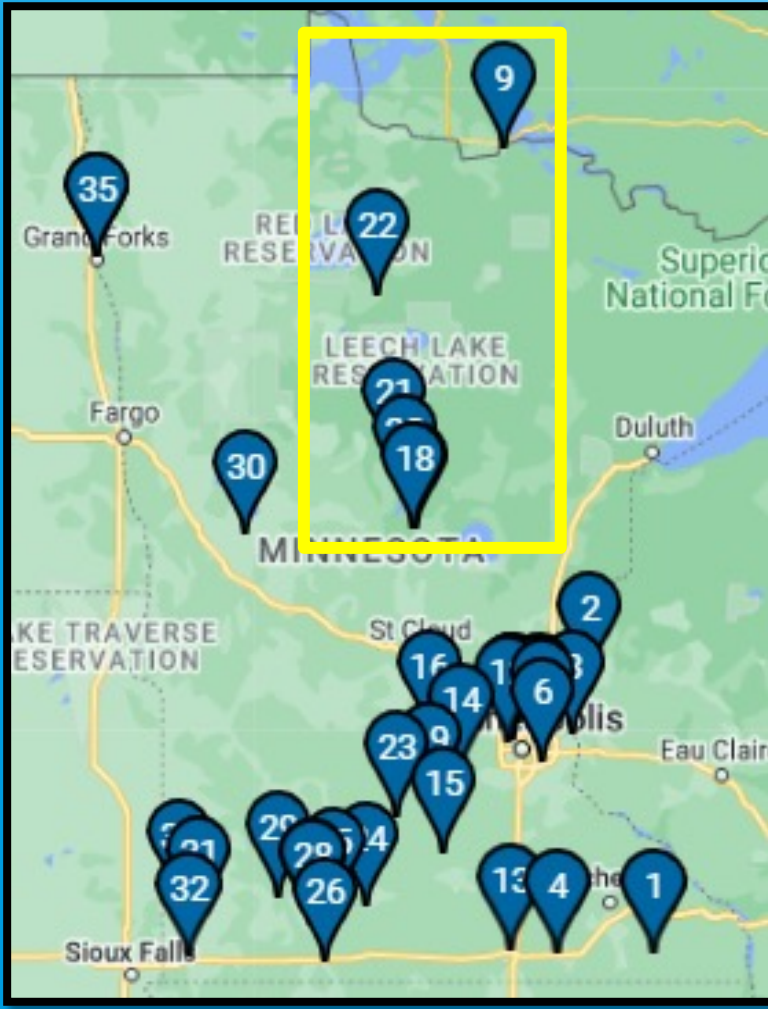
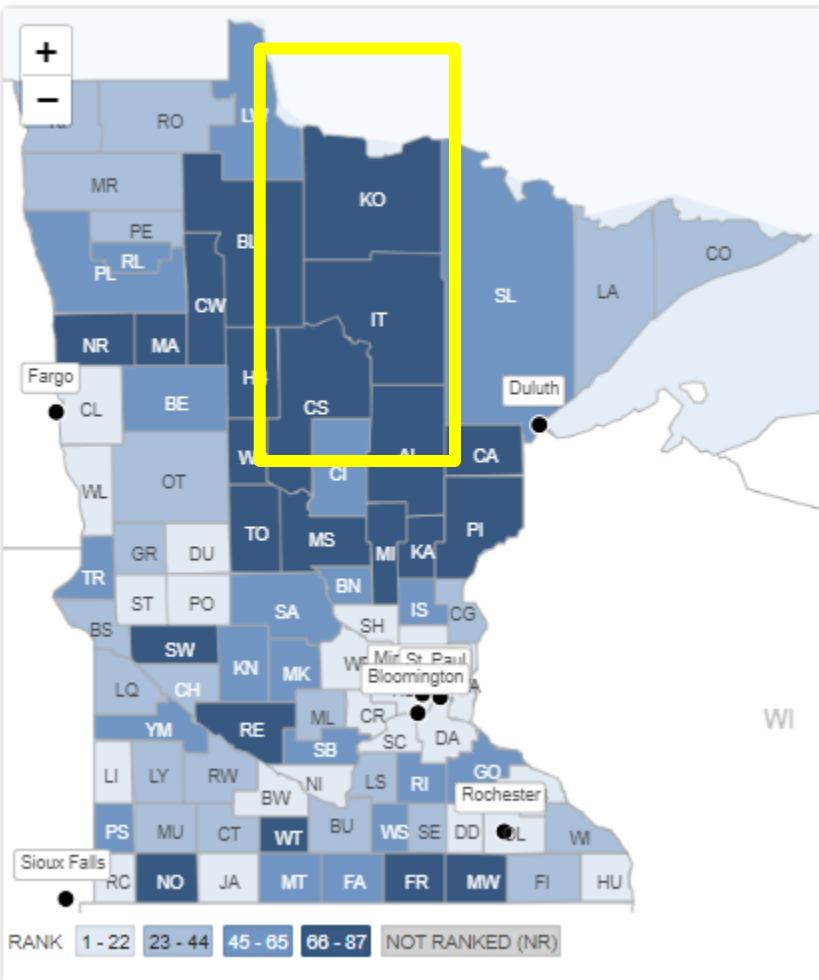
Lower County Health in some MN locations

Employer Minnesota Locations

Overall Rankings in Health Outcomes



Overall Rankings in Health Factors





Question 3: Is there a correlation found between the prevalence of chronic illness and exposure to elevated social risk in the same MN counties?



– MMA RN



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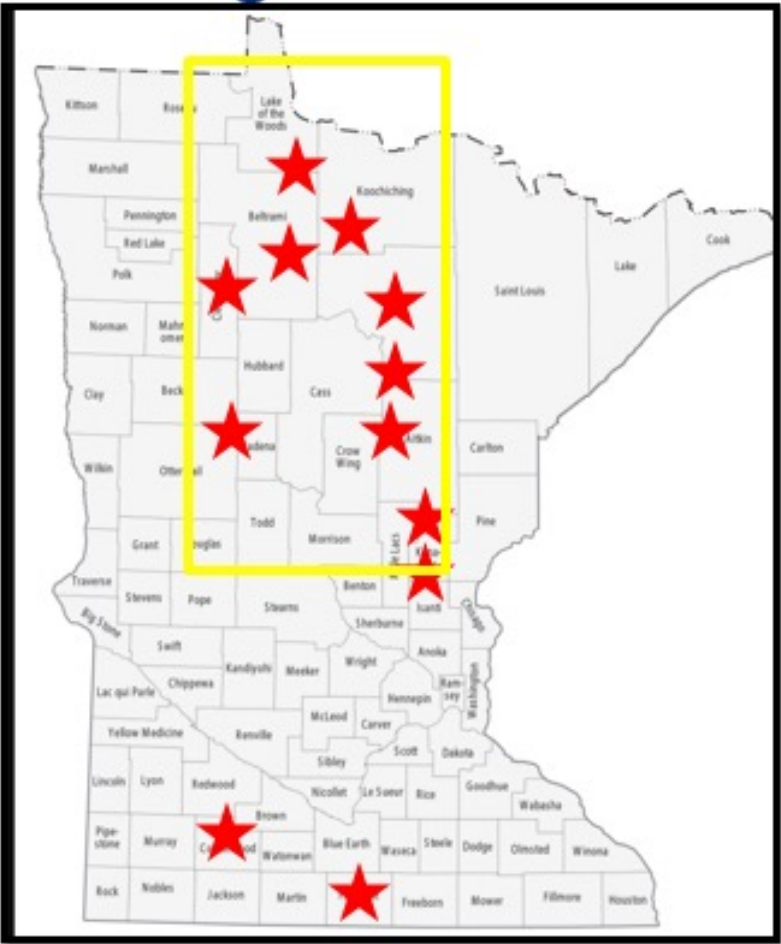
– MMA RN

The answer is again a resounding YES

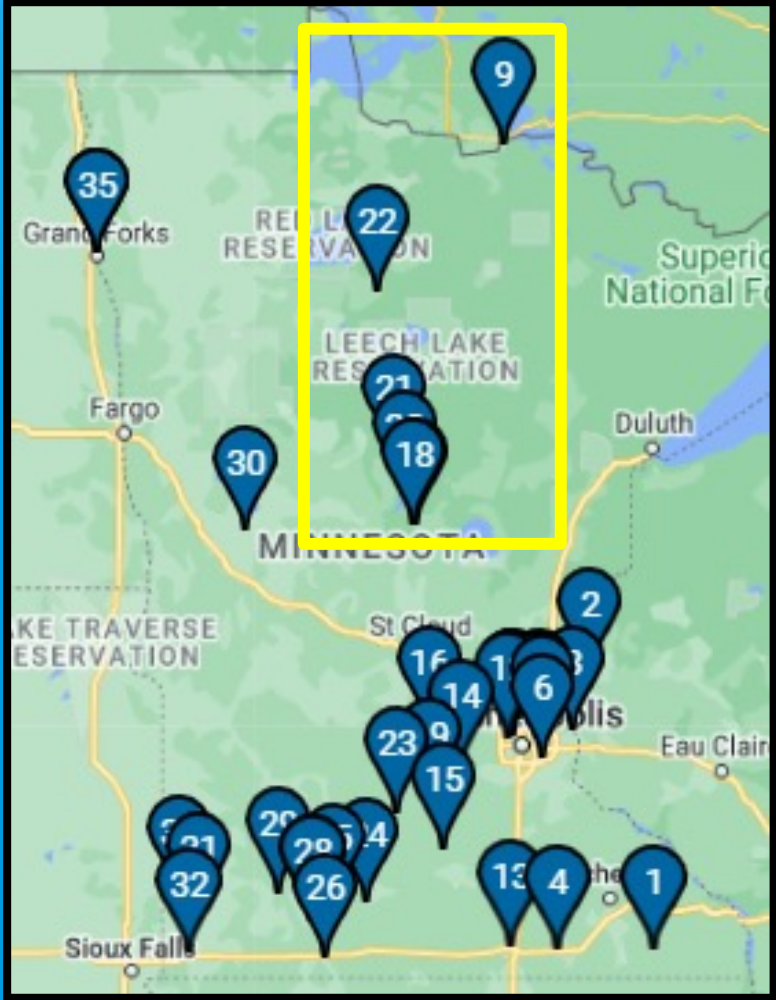
Strong correlation between the prevalence of chronic illness and county social risk

On average, 44% of employer members have a Chronic Diagnosis (440 per 1k).

In the counties with a red star, the **Chronic Illness rate is double the employer norm**★



Employer Minnesota Locations



*Per 1k, 800-1000 members had a chronic illness



Strategies to mitigate social risks



A person's health is only minimally affected by the health care that they're receiving.



Maslow's hierarchy of needs applied to workplace

If people live with scarcity, they cannot focus on their work.

**Maslow's
Hierarchy
of Needs**



Self Actualization

Esteem

Love / Belonging

Safety

Physiological Needs

High performer

**Employee's
Hierarchy of
Needs**



Meaningful work
relationships

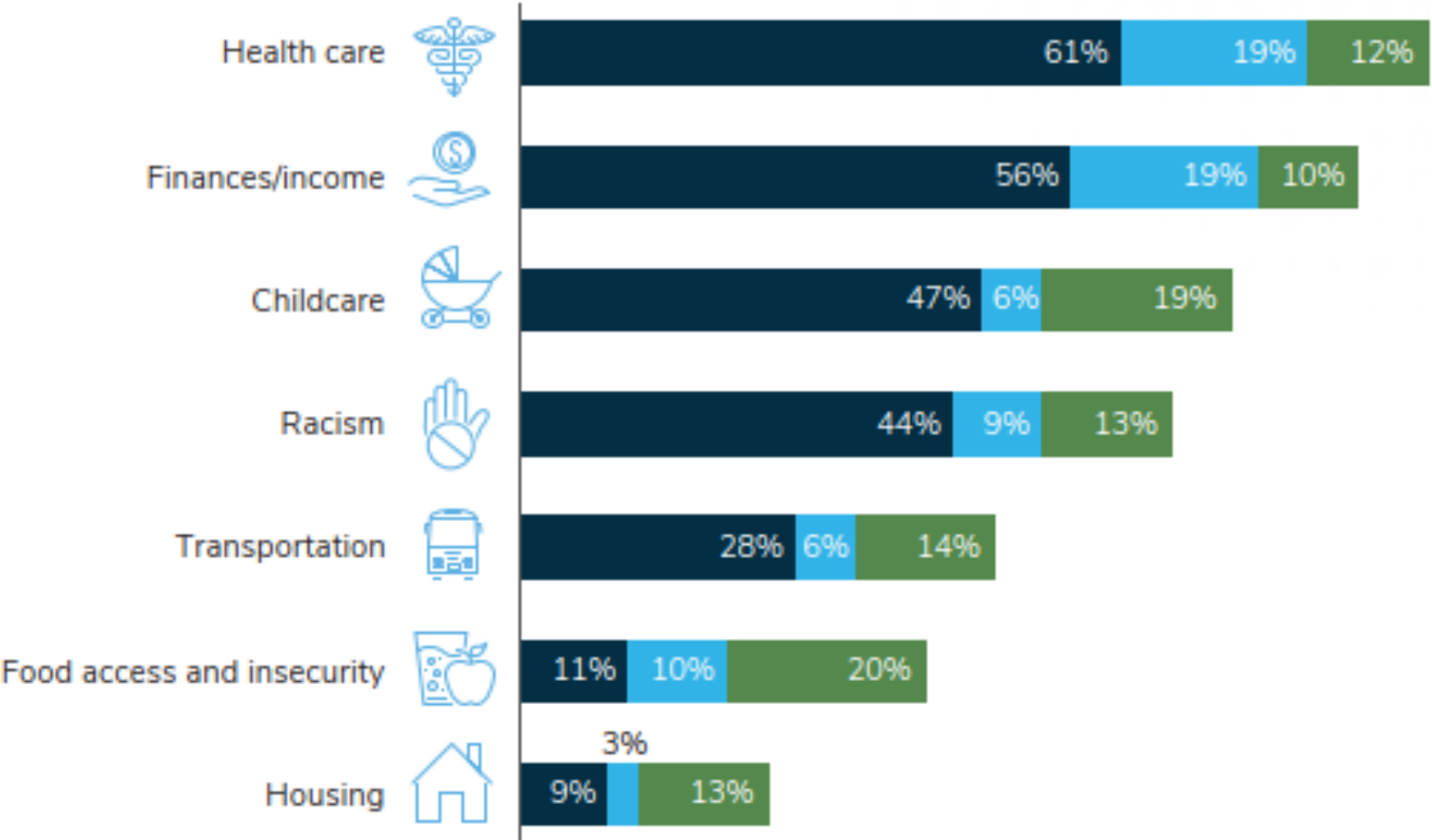
Job security and safety

Basic needs

Scarcity

Employers: SDoH strategy 2022-2025

● Already addressing in 2022
 ● Will be addressing in 2023
 ● Considering for 2024/2025



Employers are setting their sights on social determinants of health, especially racism, childcare, transportation and food insecurity...

Health care and finances/income will be addressed by 80% and 75% of employers, respectively, by 2023.

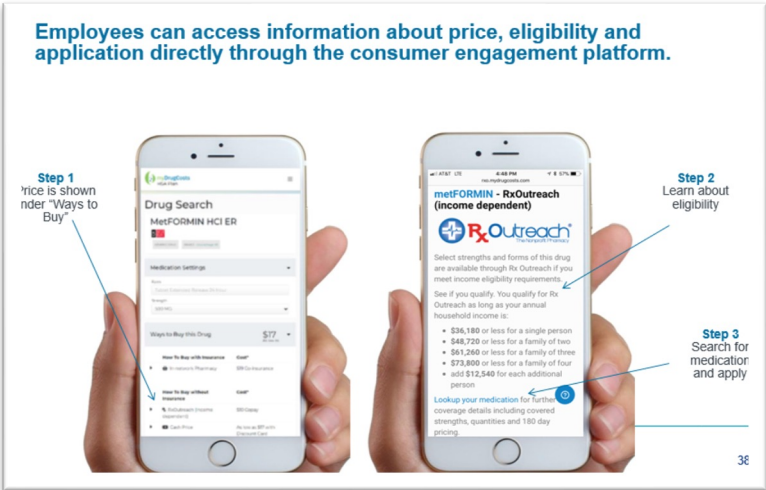
-Business Group on Health August 2022

Rx Outreach as Resource

Publicly available pharmacy assistance program

How it Helps Benefit Eligible Employees

- ▶ Many medications through the program are less expensive than the employee’s copay (see real examples below)
- ▶ Additional tool for finding the lowest price medications for those on HSA and co-insurance plans
- ▶ PLUS the cash model lends itself to employer savings
 - When benefit eligible employees utilize the program, the employer saves the portion that would have been plan paid



2022 Household Income Guidelines

Patients Qualify for Rx Outreach at or below 400% FPL

The following table indicates the income limit for the Rx Outreach program. Individuals qualify if they have a household income of 400% Federal Poverty Level or below. Additionally, individuals can qualify regardless of age or insurance status.

2022 HHS Poverty Guidelines*		48 Contiguous States and D.C.	Alaska	Hawaii
Persons in Family Unit	100% of FPL*	400% of FPL	400% of FPL	400% of FPL
1	\$13,590	\$54,360	\$67,960	\$62,520
2	\$18,310	\$73,240	\$91,560	\$84,240
3	\$23,030	\$92,120	\$115,160	\$105,960
4	\$27,750	\$111,000	\$132,520	\$127,680
5	\$32,470	\$129,880	\$162,360	\$149,400
6	\$37,190	\$148,760	\$185,960	\$171,120
7	\$41,910	\$167,640	\$209,560	\$192,840
8	\$46,630	\$186,520	\$231,160	\$214,560
For each additional person	\$4,720	\$18,880	\$23,600	\$21,710

*100% FPL IS THE ESTABLISHED 2022 POVERTY GUIDELINES ISSUED BY THE DEPARTMENT OF HEALTH & HUMAN SERVICES FOR THE 48 CONTIGUOUS STATES & D.C. For Alaska, increase the appropriate FPL number by multiplying by 1.25 For Hawaii, increase the appropriate FPL number by multiplying by 1.15

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 Rx Outreach, Inc. / P. O. Box 66536 / St. Louis, MO 63166-6536 / 888-RXO-1234 / www.rxoutreach.org



Findhelp was built in 2010 to offer an easier way to find social services and to connect to them directly and electronically. Findhelp has since built the largest network of free and reduced-cost programs in every ZIP Code across the United States — this includes federal, state, county, municipal, and local resources in the biggest cities and smallest towns.

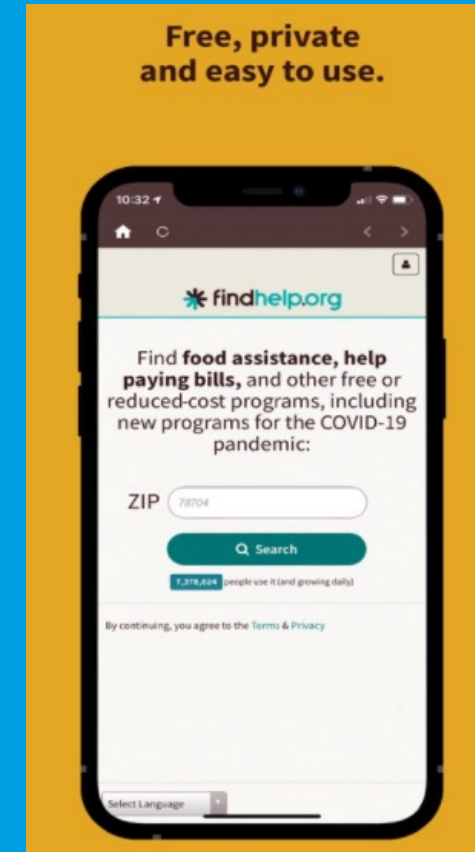
42,000+
ZIP Codes

9,000,000+
Users

OUR MISSION
We connect all people in need and the programs that serve them (with dignity and ease).

SEEKERS FIRST, ALWAYS
The Seeker, or person in need navigating for social services, comes first above all else at findhelp. We're protective of Seekers and take extraordinary measures to ensure that their interests are served in every aspect of our business.

WE SUPPORT NONPROFITS
We provide free intake and screening tools for nonprofits and social care providers to encourage them to receive vetted referrals from people seeking help on our network. We have a Community Engagement team that provides free resources and training to help nonprofits succeed.



Benefits for low income families



Child Care and Development Fund

Provides assistance to low-income families who need childcare due to work, work-related training and/or attending school.



State Children's Health Insurance Program

Partnership between the Federal and State Governments that provides health coverage to uninsured children whose families earn too much to qualify for Medicaid but too little to afford private coverage



Food Stamp Program

Provides benefits to low-income people that they can use to buy food



Earned Income Tax Credit (EITC)

Offers federal income tax credit for low-income families and working individuals



Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)

WIC serves about half of all infants born in the United States through child's fifth birthday



Minnesota Healthcare Exemplars

Ecumen: The Hillock – Affordable Living for Seniors



- 100 total affordable units reserved for seniors 55+ earning between 30% and 60% of Hennepin County area median income
- 11 units reserved for Veterans through a VASH waiver with additional support, case management, and care coordination with the VA
- 4 units reserved for Hennepin County homeless seniors with additional housing and social service support
- On site service coordinator (social worker/community health worker) to connect to resources, services, and providers.
- Onsite health clinic for primary provider ([Southside Community Health Services](#)) and rotating providers)
- Hiawatha/Longfellow Neighborhood at 4440 Snelling Ave, Minneapolis

Southside Community Health Services is a FQHC and will establish a satellite staffed provider clinic at The Hillock in 2023



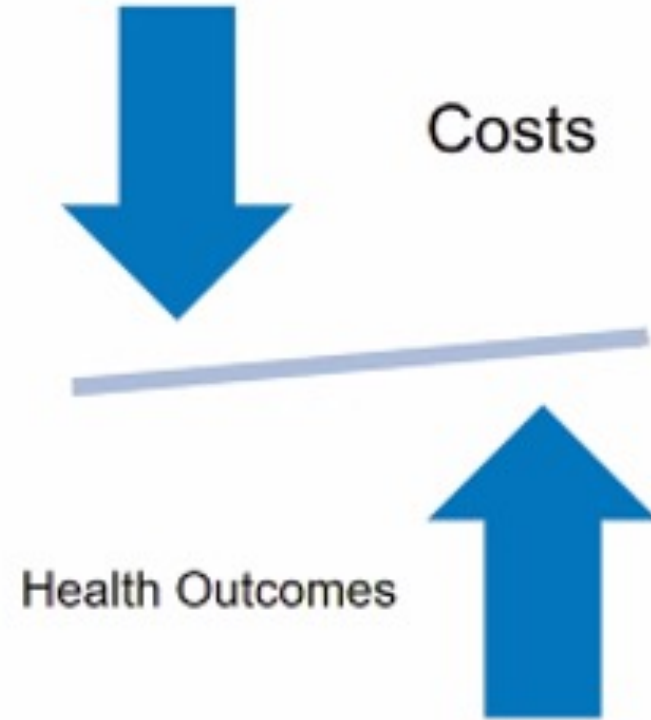
Hennepin Health

Develop System Solutions



Sample Outcomes

- Emergency Room Diversion -9%, -45%
- Housing Initiative -55% ER, -72% Inpt
- Employment Initiative -60%
- Access Clinic Initiative -32%
- Chronic Inebriates, Diversion Team- -50%
- Withdrawal Management – projected >-60%



Fairview addressing health disparities through hub

[M Health Fairview to address health disparities through new hub - KSTP.com Eyewitness News](https://www.kstp.com/story/news/health/2021/07/26/m-health-fairview-address-health-disparities-through-new-hub/7041175002/)



Former St. Joseph's Hospital: Fairview's Community Health and Wellness Hub.

Six bi-lingual and multicultural cultural brokers served more than 165 clients through 3,444 visits during 2021.

The Hub will have a health clinic, mental health and addiction services, and adult day programs.

Also operates a culturally specific meal distribution service and pop-up food shelves.

Cancer Legal Helpline: Medical Legal Partnership

Available at no cost to any cancer patient in MN

We help clients with their cancer-related legal issues: disability, employment, estate planning, financial, and insurance issues.

- Our services are open to anyone in Minnesota in need, regardless of cancer type, stage, county, age, or income.
- Our services are always free and confidential (note: free estate planning is based on income guidelines).
- Most of our clients need just one or two calls with our lawyers to answer their questions.
- For those who need more legal care, we may be able to help, or we may connect them with one of our 75+ volunteer lawyers throughout the state.
- If we're not the right place to help, we connect them with other organizations and resources.

We also provide legal information, education, and outreach services throughout Minnesota.

[Overview : What We Do : Cancer Legal Care](#)

Cancer causes financial devastation and has an incredible impact on health care decision-making and quality of life. A recent study found 42 percent of newly diagnosed cancer patients over 50 will deplete their life savings within two years of diagnosis. At CLC, we see this stark reality in our clients' lives each day. Behind the statistics is an individual or a family in crisis. Financial toxicity and the stress it brings can be as life-threatening as the cancer itself.

CANCER'S FINANCIAL TOXICITY IS BEHIND THE LEGAL ISSUES WE HELP OUR CLIENTS RESOLVE:



Children's Health Watch

[MN-Brief-final-rev2-single-1.pdf \(childrenshealthwatch.org\)](#)

Summary of Findings

Compared to young children in food-secure Minnesota families, young children in food-insecure Minnesota families:

1. Are at greater risk of poor health
2. Have mothers who are more likely to be in poor health and to experience depressive symptoms
3. Are at greater risk of being overweight if not receiving SNAP

Recommended Public Policy Solutions

1. Continue to modernize and simplify Minnesota's SNAP application process
2. Support public policies that increase access to nutritious, healthy foods
3. Universally screen for food insecurity in healthcare settings and make appropriate referrals for timely intervention

SERIES - HUNGER: A NEW VITAL SIGN

Food Security Protects Minnesota Children's Health

At every healthcare visit, a child's vital signs are recorded to quickly gauge how his/her body is functioning. Just as measuring body temperature, heart rate, and blood pressure can help reveal how sick or hurt a child is, finding out through two simple questions¹ if the patient's family has trouble affording enough food every month can help clinicians provide better care and reduce children's risk of poor nutrition, developmental delays, or hospitalization.

Close monitoring of health during the first three years of life is important because these years are a critical time of brain and body growth for a child and form the foundation for future health and academic and social ability. Unfortunately, families with young children are also those at highest risk of **food insecurity**: lack of access to sufficient food to lead active, healthy lives. One in five U.S. families with children under six years old are food insecure.¹ Children's HealthWatch research shows when young children experience food insecurity, they are at increased risk of poor health and developmental delays.² Further, food-insecure mothers are at increased risk for depression and stress which, in turn, impacts parenting—compounding the risk for children's development to be delayed.

In Minnesota, 228,324 families (10.6 percent) are food insecure.³ Between 2000 and 2012, visits to food pantries in the state increased by 166 percent, to over 3 million visits annually.⁴ In Hennepin County, 11.8 percent of the population, and 14.4 percent of families with children, are food insecure.⁵



"It's hard to be healthy when you're hungry"

Dr. Jon Pryor
CEO, Hennepin County
Medical Center

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 CHILDREN'S HealthWatch
www.childrenshealthwatch.org

Children's HealthWatch is a nonpartisan network of pediatricians, public health researchers, and policy and child health experts that conduct primary research to inform public policies that

⁽¹⁾ "Within the past 12 months we worried whether our food would run out before we got money to buy more" and

Sanford Health embedding Findhelp.org in EMR

Search and connect to support. Financial assistance, food pantries, medical care, and other free or reduced-cost **help starts here:**

ZIP

55337

Search

CONNECT

SANFORD
HEALTH

If you or someone you know is in crisis, call or text 988 to reach the [Suicide and Crisis Lifeline](#), chat with them online via their website, or text HOME to 741741 (multiple languages available). If this is an emergency, call 911.

Conversation

Share a story about a time when a patient's experience with scarcity or poverty directly affected their health and how you or your care system enlisted community resources.

How did SDOH impact their health?

How did you know to engage the resource?

Is that resource sustainable?



Employer Example: University of Michigan



University of Michigan's strategy to address SDoH among staff

The University of Michigan's Health and Wellbeing program

Trends: Low wage earners

- 16% less preventive services
- 78% more ER

Strategy: Meet basic needs:

- Food insecurity
- Economic instability.



Direct Assistance:

- Emergency Hardship grants
- Scholarships- Classes (exercise etc)



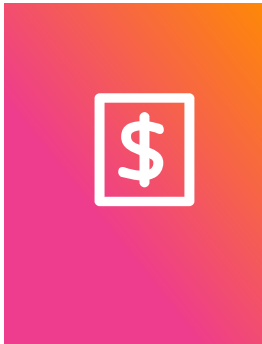
Resource Coach:

- Help with housing, food insecurity, public assistance, or budget crisis



Food Insecurity:

- Farmers market token giveaway
- Food-sharing cupboards,
- Food assistance program assist

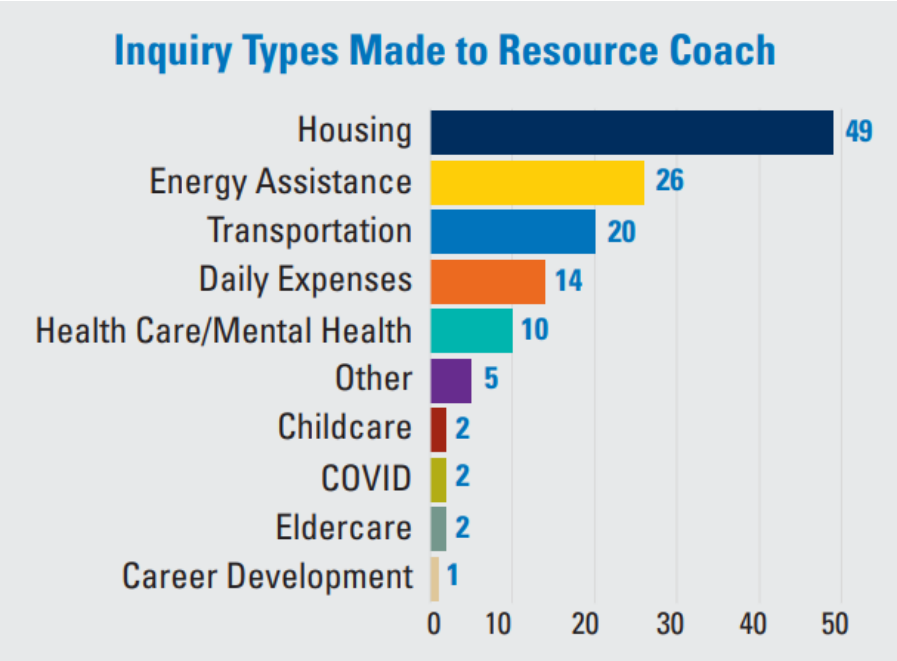


DEI training:

- All Mhealthy team members are engaged in continuous training

University of Michigan's Progress

Results from the 2021 Mhealthy Annual Report



Direct Assistance:

- **\$55,560** awarded in grants to **51** employees



Embedded Resource Coach:

- **455** referrals
- **60** mini grants awarded (**\$14K**)



Food Insecurity:

- **\$4724** worth of food to stock 9 cupboards

Nurse Family Partnership

- Nurses make prenatal and postnatal visits to pregnant women.
- Nurses enhance parents' economic self-sufficiency by addressing vision for future, subsequent pregnancies, educational and job opportunities.
- Three randomized control trials (Elmira, NY; Memphis, TN; Denver, CO)
- Improved prenatal behaviors, pregnancy outcomes, maternal employment, relationships with partner.
- Reduces child abuse and neglect, subsequent pregnancies, welfare and food stamp use
- \$17,000 return to society for each family served

SDOH Resources: HIMSS

[Social Determinants of Health | HIMSS](#)

[Relationship Between Social Care and Medical Care](#)

[Impact on Individual Health, Community Health and Population Health](#)

[Social Determinants of Health Data and Information Standardization and Use](#)

[Infrastructure Standards](#)

[Social Determinants of Health Assessment](#)

[Workflow Considerations](#)

[Cross-Sector Stakeholder Considerations](#)

[The Impact on ROI of Healthcare Systems](#)

[Equitable Access to Broadband and Technology](#)

[U.S. Policies and Initiatives](#)

[HIMSS Public Policy Principles and Considerations](#)

[Global Policies and Initiatives](#)



**Thank
You!**

Heidi Orstad, DNP