



Understanding Location within Health Equity



How does location influence health equity?

Chat in groups for 2-5 minutes.

Objectives

- Members should be able to understand location in the context of health and health equity
- Members should be able to understand historical impacts on location and their interactions with medicine today.
- Members should be able identify examples and the impact of location and environment on patient outcomes.

DEFINITIONS

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EQUITY



Place-based Inequity

Definition:

Inequity regarding healthcare access and health disparities due to the area in which one lives.



Redlining

Definition:

The discriminatory practice of denying mortgages and loans to residents of certain neighborhoods, often those with high populations of minorities.

- Healthcare deserts
- Proximity to highways and industrial sites
- Often gerrymandered



Gentrification

Definition:

“The process of transition from lower incomes to higher incomes, associated with an increase in residents’ educational achievements and increase in housing costs.” (Acolin et. al, 2024).

- Gentrification can often impact other identities beyond SES, such as race where the transition forces minorities out of locations.

A vertical decorative border on the left side of the slide, consisting of a repeating pattern of teal-colored, stylized leaf or feather shapes outlined in white, set against a dark teal background.

Rural Decline

Definition:

The economic stagnation and depopulation of rural areas that leads to disrepair of infrastructures, outmigration, and aging populations.

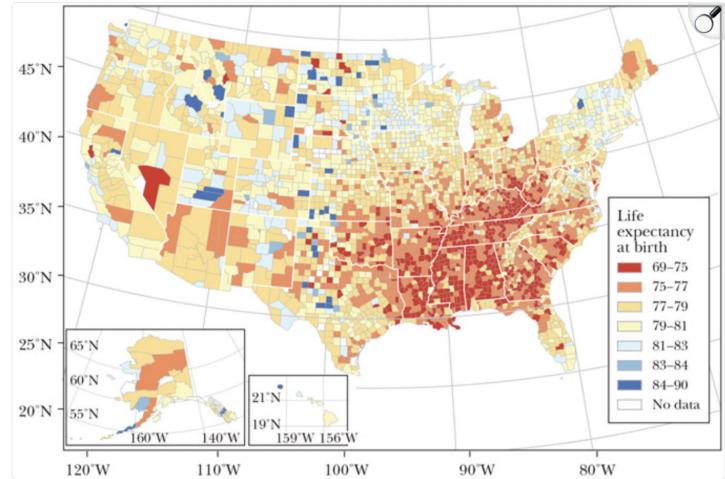
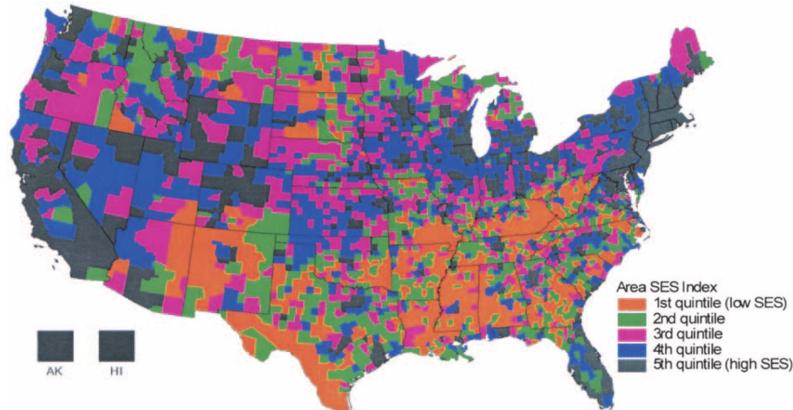
HEALTH IMPACTS

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Life Expectancy

1. SES data by county (Singh). 2. Life-expectancy at birth by county (Deryugina).



Life expectancy is more than 10 years greater on average among the top 1% of counties in the U.S. in comparison to the bottom 1% of counties by economic indicators (Deryugina).



Life Expectancy

(Dervugina)

The Relationship between County-Level Life Expectancy and Local Characteristics

County characteristic	Mean [standard deviation]	Ordinary least squares coefficient (standard error)	R ²
<i>A: Health and environmental characteristics</i>			
Percent smoking	21.29 [4.05]	-0.36 (0.02)	0.462
Percent obese	20.10 [4.12]	-0.34 (0.02)	0.423
Percent exercising	74.74 [5.44]	0.23 (0.02)	0.341
Physicians per 1,000 capita	2.77 [1.94]	0.28 (0.05)	0.060
PM _{2.5} concentrations	10.38 [1.94]	-0.24 (0.08)	0.049
Hospital beds per 1,000 capita	3.40 [2.55]	-0.18 (0.03)	0.044
Hot days/year (90°F+)	2.21 [8.59]	-0.01 (0.01)	0.001
	0.78 [0.06]	0.95 (1.71)	0.001

PM_{2.5} is a key measure of air quality (particles with less than 2.5 micrometer diameter). Air quality can explain 4.9% of the variance in life expectancy data.



Life Expectancy

(Deryugina)

B: Economic characteristics

Median home values (\$1,000s)

	Mean [standard deviation]	Ordinary least squares coefficient (standard error)	R ²
Median home values (\$1,000s)	128.87 [65.91]	0.02 (0.00)	0.490
Income per capita (\$1,000s)	21.63 [5.28]	0.24 (0.01)	0.344
Poverty rate, 65+	0.10 [0.04]	-20.97 (3.36)	0.181
Upward income mobility (from p25)	-0.03 [0.41]	1.88 (0.34)	0.0124
Urban population share	0.79 [0.25]	2.47 (0.33)	0.081
Crime rate per 1,000	7.62 [3.49]	-0.14 (0.03)	0.052
Local gov. spending per capita	2.51 [1.06]	0.46 (0.15)	0.050
Upward income mobility (from p75)	-0.03 [0.23]	-1.63 (0.60)	0.029
Social capital index	-0.46 [1.11]	0.25 (0.11)	0.016
Income segregation	0.07 [0.03]	6.61 (2.87)	0.011

- Median home values and income per capita explain the percentage variance in life expectancy data by 49.0% and 34.4%, respectively.
- A naive regression approach to studying the effects of location on life expectancy relies only on basic health and economic characteristics.



Rural Medicine

From 2010-2022 CDC mortality data:

- Rural populations are more likely to pass away from the five leading causes of death (*heart disease, cancer, unintentional injuries, chronic lower respiratory disease, stroke*)
- $\frac{1}{5}$ of the U.S. population lives in rural areas



Rural Medicine



Scan for a tool showing death rates by heart disease, cancer, unintentional injuries, chronic lower respiratory disease, stroke in rural areas versus urban areas.



Rural Medicine

Biggest factors influencing rural health disparities

- Older age relative to urban populations
- Higher rates of smoking
- Higher rates of poverty
- Less access to medical resources



Rural Medicine

Inpatient care



Alcohol or drug misuse treatment



Distance in miles between patient and hospital...



...before closure (2012)



...after closure (2018)

Source: GAO analysis of data from the Department of Health and Human Services and North Carolina Rural Health Research Program; GAO (illustrations). | GAO-21-93



Rural Medicine

General rural health disparities:

- 17% of the rural population lacks access to broadband internet (1% for urban)
- Can inhibit telehealth efforts
- Lack of specialties: by 2030, the supply of OB/GYNs is projected to only meet roughly 50% of the need in rural areas (GAO).
- 20% of the population lives in rural areas, but only 9% of physicians serve rural areas.



Gentrification & Health

Stayers in gentrified areas experience improvements in health outcomes, such as 2-4% decrease in likelihood of living in Medically Underserved Areas (Acolin et. al, 2024).

However, the effect most often is a form of structural racism. Black and Hispanic residents in one study experienced:

- Increased social deprivation despite living in gentrifying areas
- Reduced life expectancy in their neighborhoods
- Less improvement in air quality compared to other groups (Black residents specifically)
- Effects were more pronounced in majority people-of-color neighborhoods



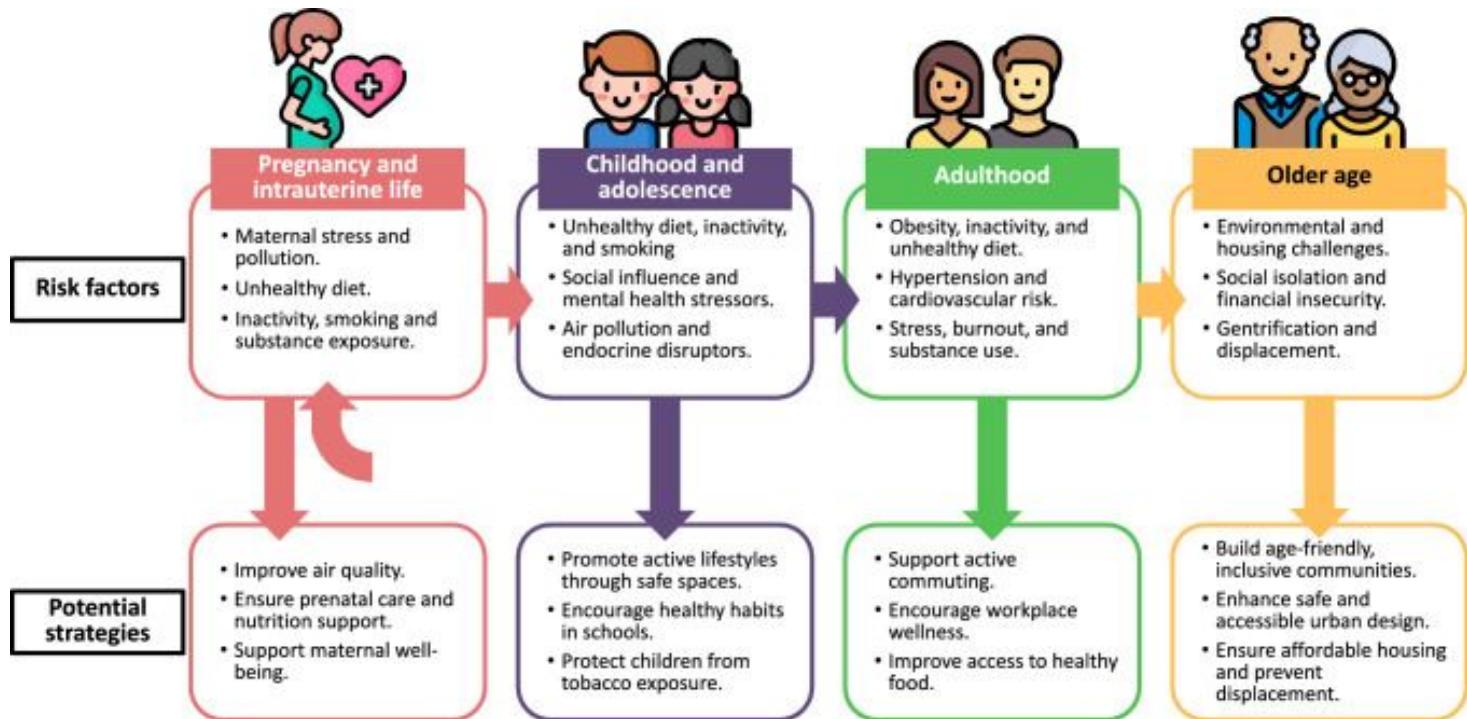
Urban Health Impacts

- Rapid urban growth tends to neglect low and middle-income countries due to lack of infrastructure and hazardous conditions
- Urbanization can drive certain poor health factors
 - Obesity environment
 - Sedentary lifestyle
 - Air pollution
 - Inadequate sleep
 - Overcrowding
- Urban settings can exacerbate negative effects of SODH
 - disadvantaged groups can face an earlier onset of chronic diseases and higher rates of multimorbidity



Urban Health Impacts

Risk factors and potential solutions



ACTIVITY: Kahoot!

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CASE STUDY

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The Situation:

We are observing a neighborhood in East Harlem that has a population with high rates of poverty, high premature mortality, and is 95% a racial minority [34.5% Latinx, 31.0% Black, 29.6% Asian] (Dannefer 2022).

- As we have seen with SODH, “neighborhood conditions are recognized as a key driver of health disparities in the United States” (Dannefer 2022).
- Racist policies such as redlining and housing restrictions has caused segregation of people of color into less desirable neighborhoods
 - A practice of building interstate highways through neighborhoods of color, affecting housing, residents and social conditions
- “Heat island effects” from being in an incredibly urban area with less green space and contributing to negative climate effects in the area

What is happening here?

- Reduced access to public and private investments.
- Poor housing quality, limited access to social services and a healthy physical environment
- This all contribute to poorer health outcomes for this community

**What may be a way to
ameliorate this issue?**

“Resident Experiences With A Place-Based Collaboration to Address Health and Social Inequities: A Survey of Visitors to the East Harlem Neighborhood Health Action Center” (Dannefer, et al.)

- NYC Dept. of Health and Mental Hygiene created the East Harlem Neighborhood Health Action Center (EHNHAC) in 2016
 - Offers programs focusing on mental and behavioral health, environmental education, nutrition education for women, early parenting, and more
- Goal of the study: gain an understanding of satisfaction among community members who visit the center
- Most respondents who spoke both English and Spanish or just Spanish at home frequently saw a health care provider in East Harlem; those who spoke Chinese at home did not
- Learned about the EHNHAC via word of mouth or referral
- Reviews were positive regarding friendliness of staff; many visitors anticipated returning
- Areas of improvement:
 - More Chinese-speaking healthcare providers
 - English classes, cooking classes
 - Programs that are tailored to different age groups

**So, why are we discussing
location in the context of
health equity?**

Why is understanding this important?

- Location are not discussed often enough in terms of health equity, access, and influence on health
- Location represent a large number of social determinants of health. Determinants such as geography/zip code, access to healthy options, safety, provider availability and more are all significant effector of health that relate directly to location and environment
- Within location health equity contexts are historical and systemic factors that put specific populations already at risk.
- Understanding all of these systemic factors can enable use to target the most vulnerable populations and areas that need the most support
- Many location based factors that hurt equitable practices are closely tied to other identities such as race.

Current Policies and Progress

- New clinic being opened in Far Rockaway, NY designed to bridge gaps in healthcare. Far Rockaway is known for being a location with limited healthcare access (*Mayor Adams..., 2025*).
- Urban renewal projects and housing/rental vouchers have shown to present positive health outcomes (*Osypuk, 2015*).

Works Cited

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