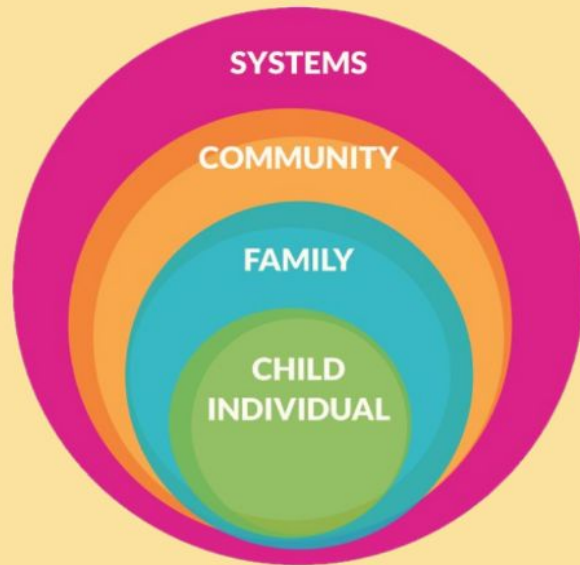A Brief Introduction to

Public Data for

Public Health

Bringing public health perspectives into your DataJam projects

Yunge Xiao, DataJam mentor 2022
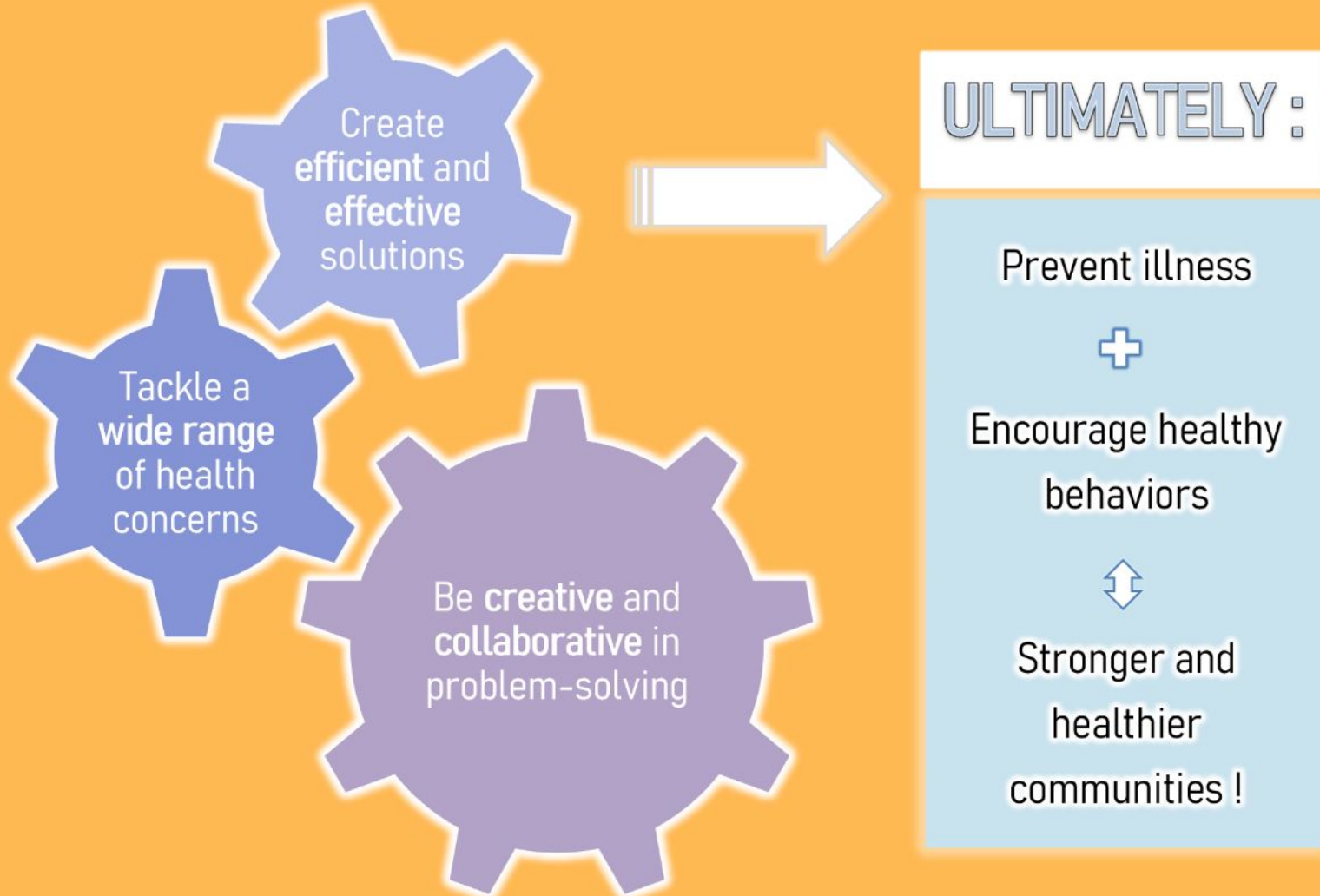
Public Health is...
"the science of protecting and improving the health of people and their communities" (CDC).

- SYSTEMS
- COMMUNITY
- FAMILY
- CHILD INDIVIDUAL

➢ It is **population-centered**: concerned with people's communities, and their place in local, national, and global contexts.

➢ It is **multidisciplinary**: relies on knowledge from a broad range of disciplines including sociology, psychology, statistics, biology, law, and more.

➢ It is **holistic**: seeks to provide the *maximum* benefit, for the *largest* number of people, in *greatest* need.

PUBLIC HEATH APPROACH ≠ MEDICAL MODEL

Both strive to improve peoples' health...

Public Health

- ❖ Assumes well-being is a result of one's inadequate social and/or physical environment.

- ❖ Believes increasing access to resources can prevent health problems.

- ❖ Is system-oriented.

Medical Model

- ❖ Assumes well-being is a result of one's conditions, disease, and/or trauma.

- ❖ Believes that modern medicine can "fix" health problems.

- ❖ Is individual-oriented.
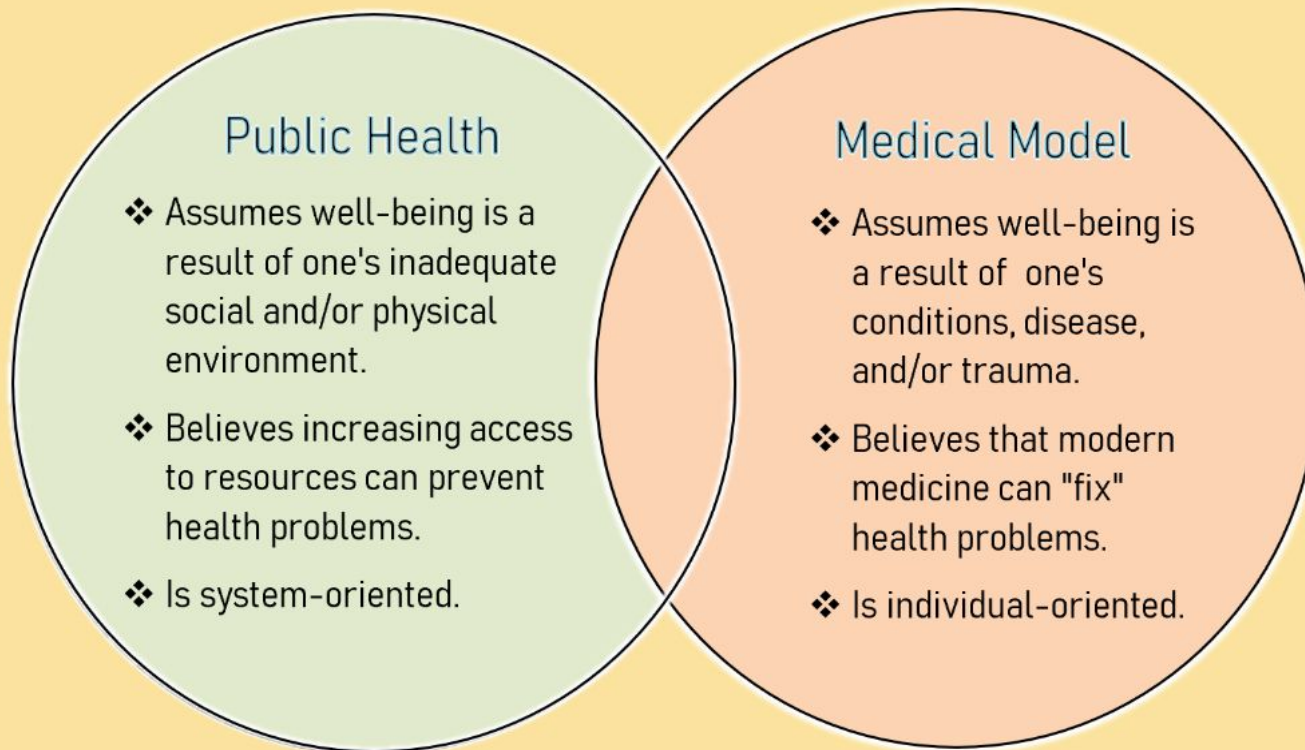
...but **differ** in their approaches and solutions.

Public Health for Social Justice

Social justice refers to the idea that everyone deserves equal economic, political and social **rights** and **opportunities** (San Diego Foundation).

Public health scientists believe all individuals should have equal opportunities to achieve adequate health and well-being.

Public health focuses on **which** communities are in greatest need and **how** to best address these needs.

Food for Thought: Equity versus Equality.

Equality

Equity

*In the "equality" image, all people are given the **same** bike, while in the "equity" image, each person's bike is different and better meets their **unique** needs. Public health takes an **equity approach**.*

Social Determinants of Health

To create long-term and equitable solutions, public health scientists identify the **root causes** underlying unfavorable health outcomes.

The **Social Determinants of Health** (SDOH) describe the quality of where people are born, live, learn, work, play, worship, and age.

Public health scientists are interested in how **accessibility** to SDOH affect various health, performance, and quality-of-life **outcomes and risks**.

Often, a **lack** of accessibility to SDOH lead to **worsened** health and well-being.

$ Economic Stability

Social and Community Context

Education Access and Quality

Health Care and Quality

Neighborhood and Built Environment

5 Social Determinants of Health

It is important to understand that the SDOH categories are all interrelated.

EXAMPLE OF HOW TO INCORPORATE A PUBLIC HEALTH PERSPECTIVE INTO YOUR DATAJAM PROJECT

Question: Is supermarket access correlated with obesity rates where I live?

1. Public Health Perspective

Access to supermarkets means access to nutrition and healthy food. Obesity is a chronic health concern related to eating unhealthy food.

2. Findings

Are there any interesting correlations? If so, you want to be sensitive in how you explain them.

3. Report

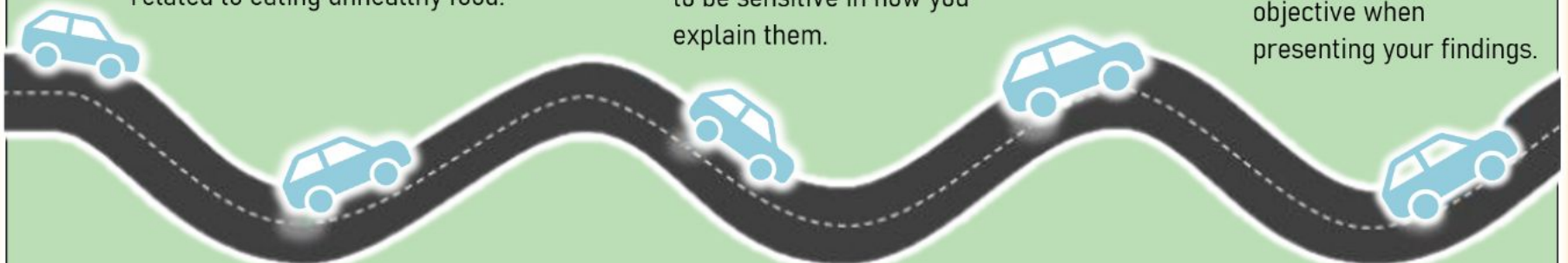Be accurate and objective when presenting your findings.

5. Analysis

Explore how socioeconomic variables, i.e. poverty rate, correlate with supermarket access and obesity.

You might also look at demographic factors like age, sex, and race.

4. Correlation, not Causation

Remember that strong correlations doesn't mean that one variable causes the other.

Helpful Data Resources

For US Data:

US Census Data: demographics, socioeconomic outcomes, and more

US Government Open Data: miscellaneous

National Center for Education Statistics: educational outcomes

For Global Data:

World Health Organization: world health statistics

UNICEF: youth and sustainable development data

World Bank: global development

For Random, "Current Events", Political Data:

FiveThirtyEight

Kaggle

For Geographic Data:

Open Arc GIS: lots of interactive maps

References

https://www.cdc.gov/violenceprevention/about/publichealthapproach.html

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https://www.sdfoundation.org/news-events/sdf-news/what-is-social-justice/

https://www.pghdataworks.org/resources

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https://data.worldbank.org/

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