



HARVARD
T.H. CHAN

SCHOOL OF PUBLIC HEALTH



STANLEY CENTER
FOR PSYCHIATRIC RESEARCH
AT BROAD INSTITUTE

Module 1: Introduction and Measures in Epidemiologic Studies

Part 2: Epidemiological Concepts

Bizu Gelaye, PhD, MPH
Departments of Epidemiology and Psychiatry
Harvard T.H. Chan School of Public Health and Harvard Medical School

Module 1: Introduction and Measures in Epidemiologic Studies

1. What is Epidemiology?
2. **Epidemiological Concepts**
3. Measures of Disease Occurrence
4. Measures of Association
5. Measures of Impact

Part 2: Epidemiological Concepts

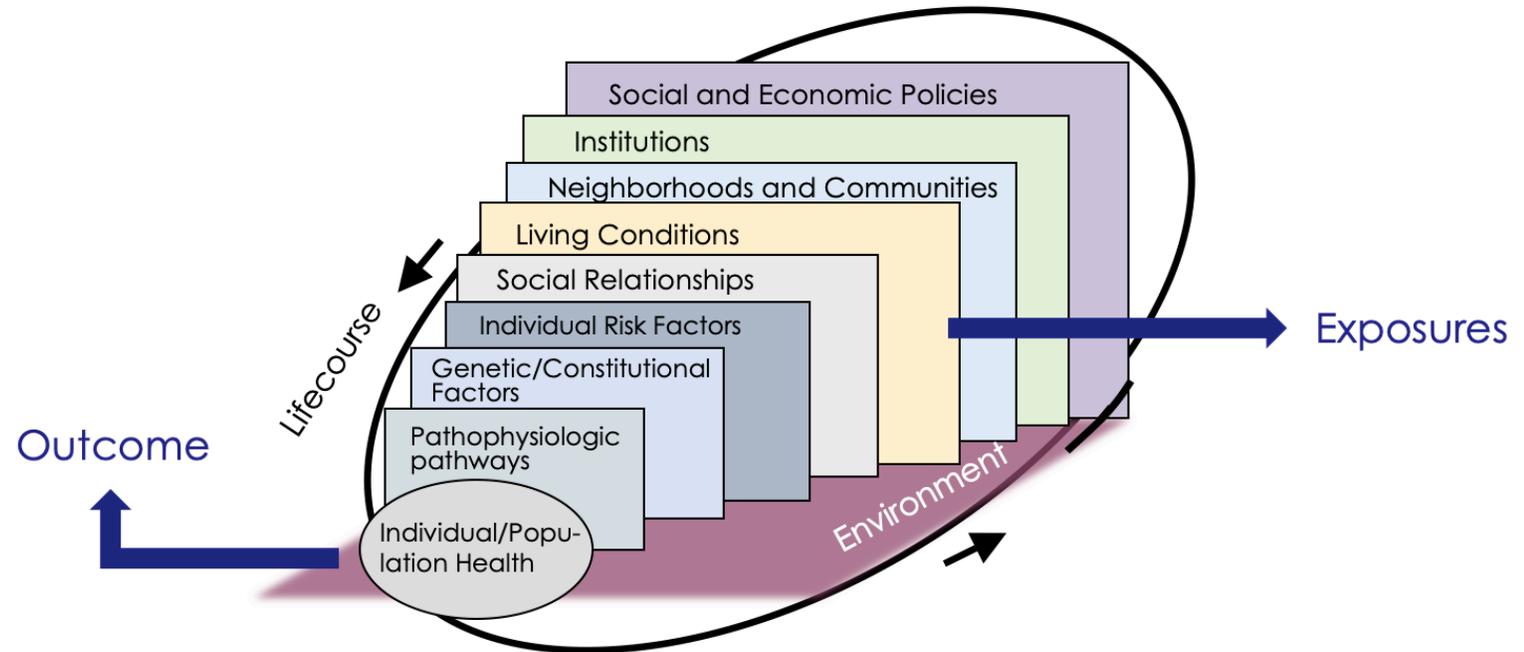
Learning objectives:

- Understand the basic terminologies in epidemiology: exposure, risk factor, outcome;
- Learn how to define a study population.

Terminology

What is an **exposure**?

- A possible cause of disease or outcome that is being investigated
- Can be particular environmental or genetic variants that denote individuals who may have a predisposition for an adverse health outcome



Terminology

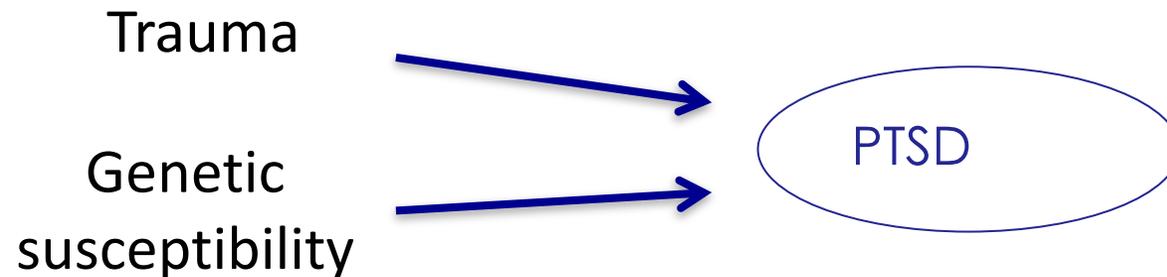
What is a **risk factor**?

- An exposure or other variable, either at an individual-level or population-level, that is associated with an **increased risk of the outcome**
- A risk factor might also be called a **determinant**, but it is **not necessarily causal**, even if there is an observed association with the outcome

Terminology

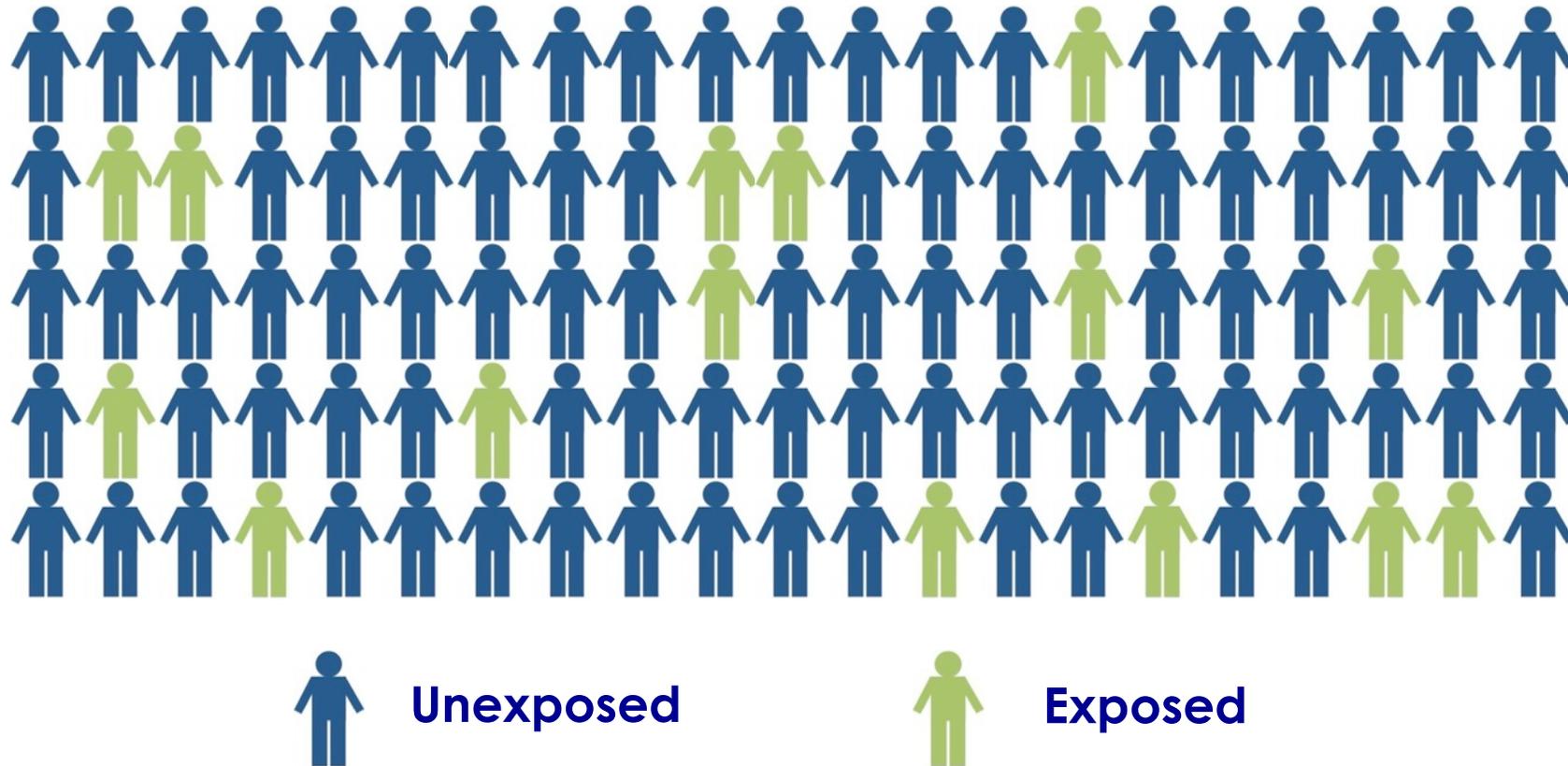
What is an **outcome**?

- The disease, event, or health related state that an epidemiologist is trying to understand or predict using potential risk factors
- Example: PTSD in the past 12 months



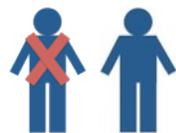
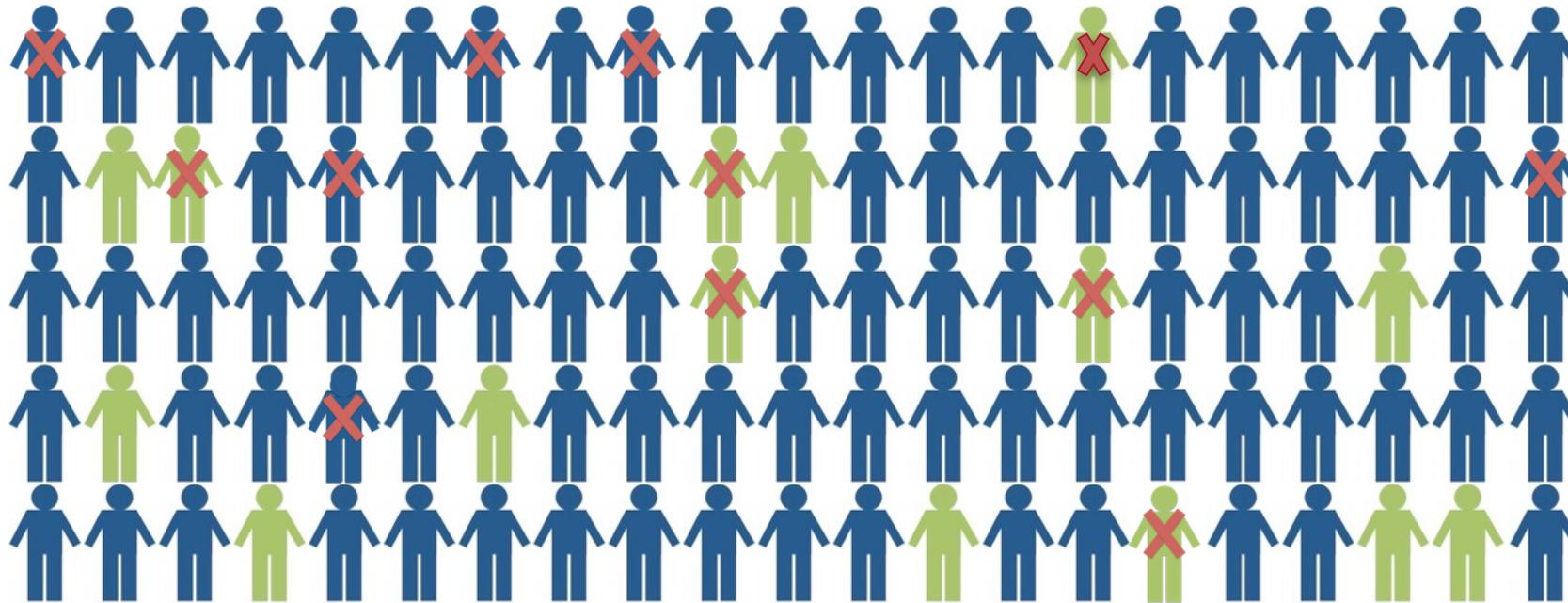
Defining a Study Population

Some people are exposed



Defining a Study Population

Both exposed and unexposed can have the outcome/disease



Unexposed

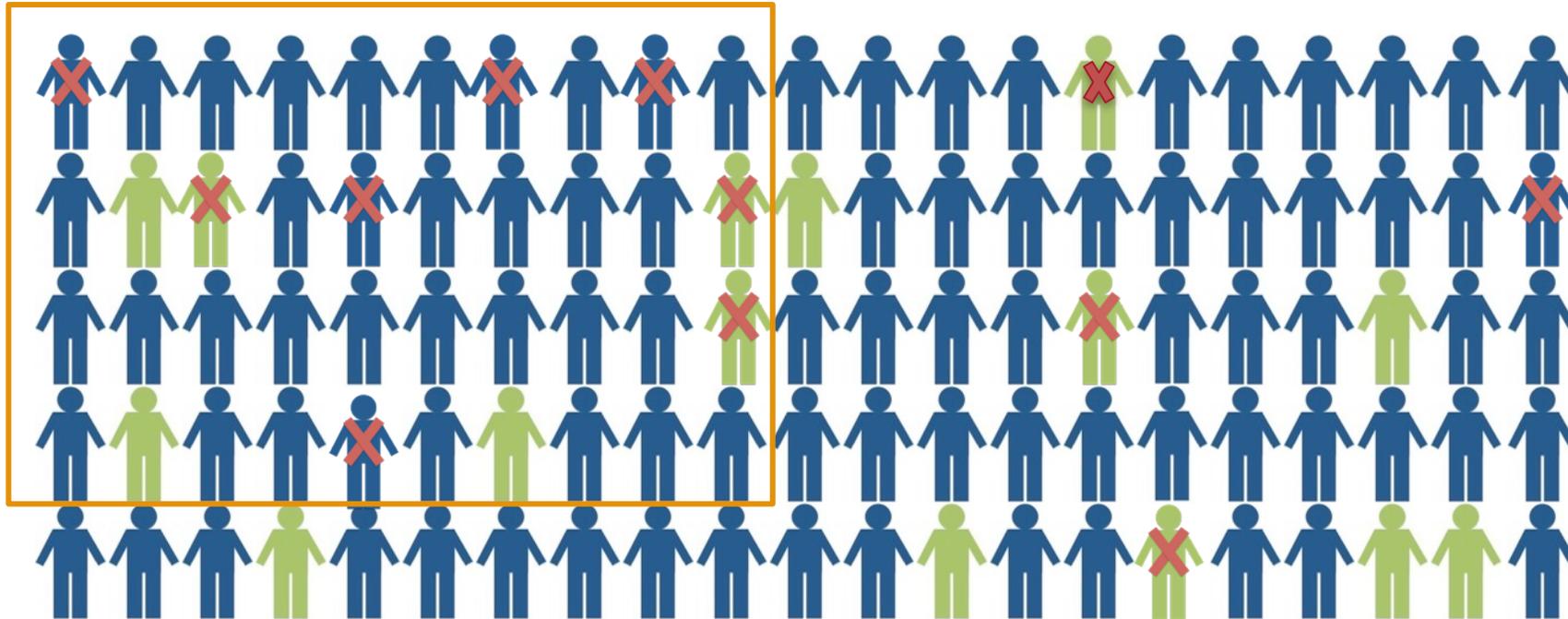


Exposed

Defining a Study Population

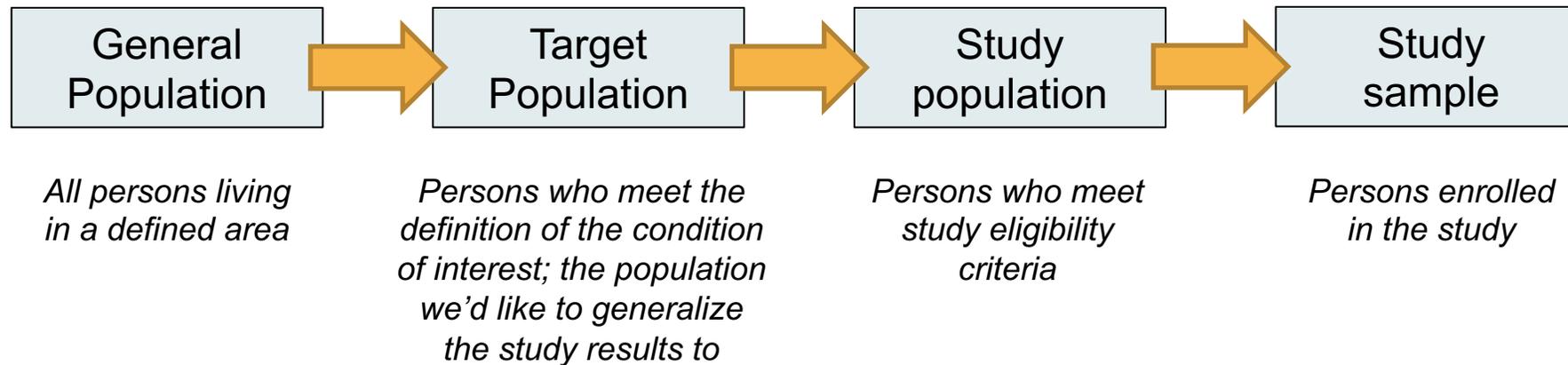
Study designs: How do we use all this information to study causes?

Take a
sample of the
population



Defining a Study Population

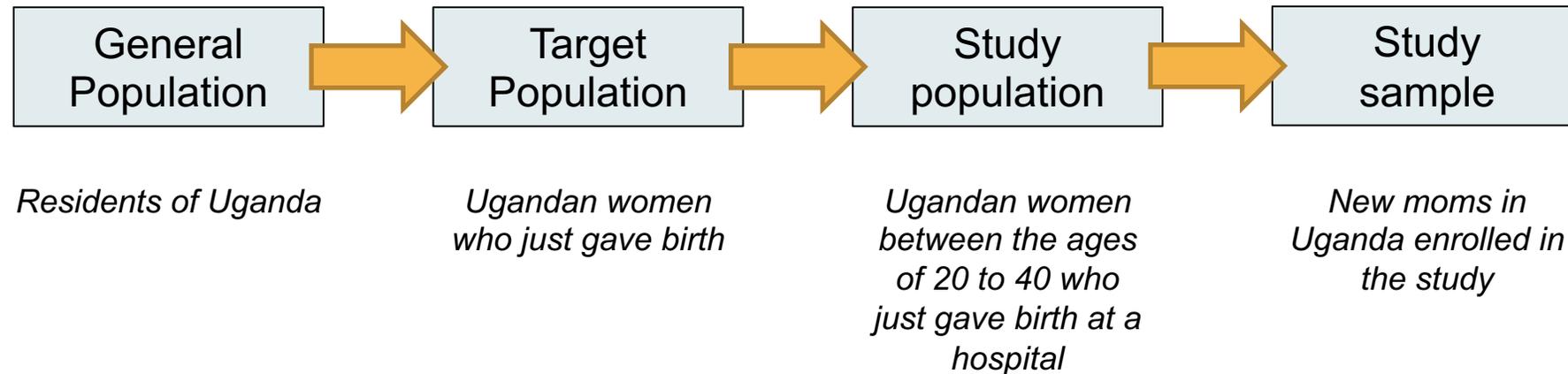
- The **study population** is a group of individuals taken from the general population based on a set of inclusion criteria



- The study population should be **clearly defined in advance** as this will impact study design, recruitment, analysis, and generalizability

Defining a Study Population

- Example: We're interested in the association between preterm birth and postpartum depression among Ugandan women.



Module 1: Introduction and Measures in Epidemiologic Studies

1. What is Epidemiology?
2. **Epidemiological Concepts**
3. Measures of Disease Occurrence
4. Measures of Association
5. Measures of Impact