



**HARVARD**  
**T.H. CHAN**

SCHOOL OF PUBLIC HEALTH



STANLEY CENTER  
FOR PSYCHIATRIC RESEARCH  
AT BROAD INSTITUTE

# Module 1: Introduction and Measures in Epidemiologic Studies

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## Part 2: Epidemiological Concepts

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# Module 1: Introduction and Measures in Epidemiologic Studies

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

# Part 2: Epidemiological Concepts

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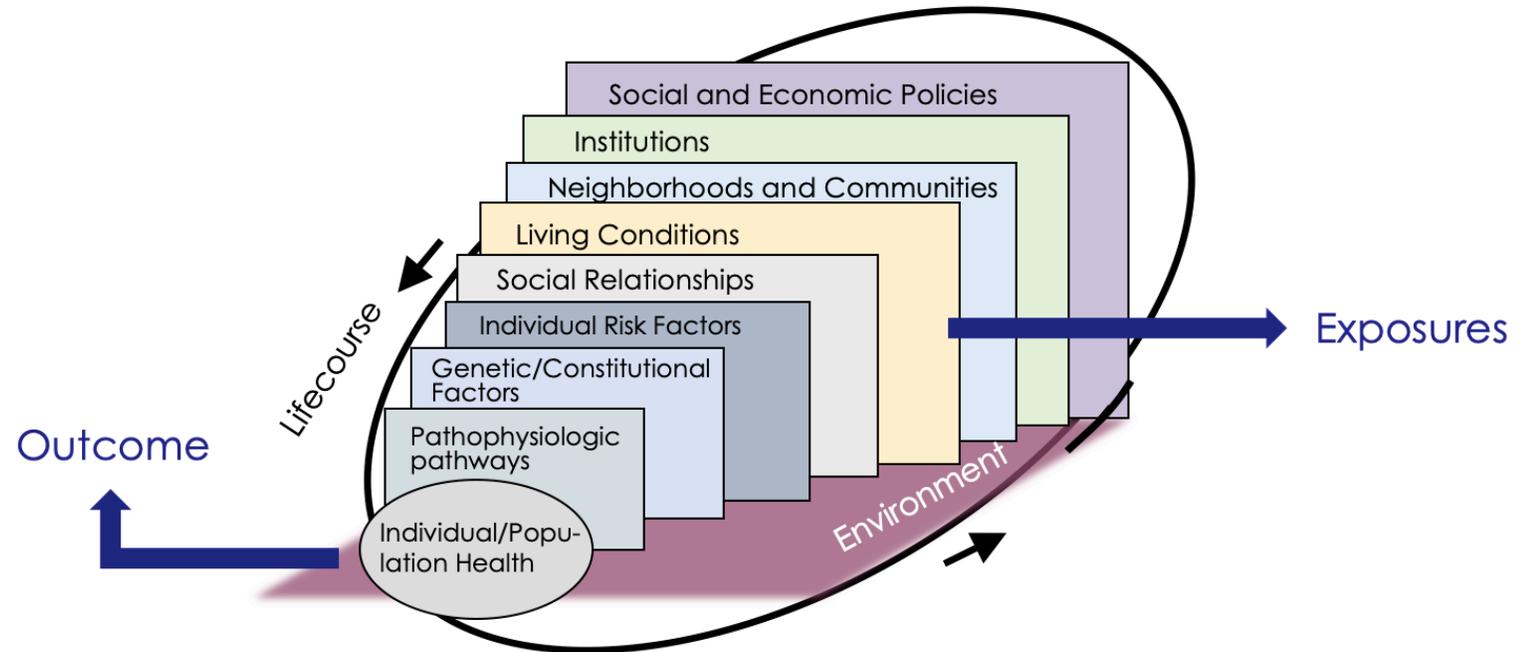
## Learning objectives:

- 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

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## What is a **risk factor**?

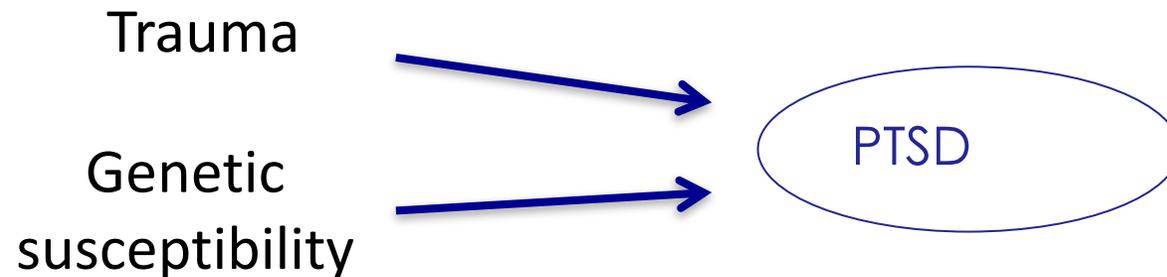
- An exposure or other variable, either at an individual-level or population-level, that is associated with an **increased risk of the outcome**
- A risk factor might also be called a **determinant**, but it is **not necessarily causal**, even if there is an observed association with the outcome

# Terminology

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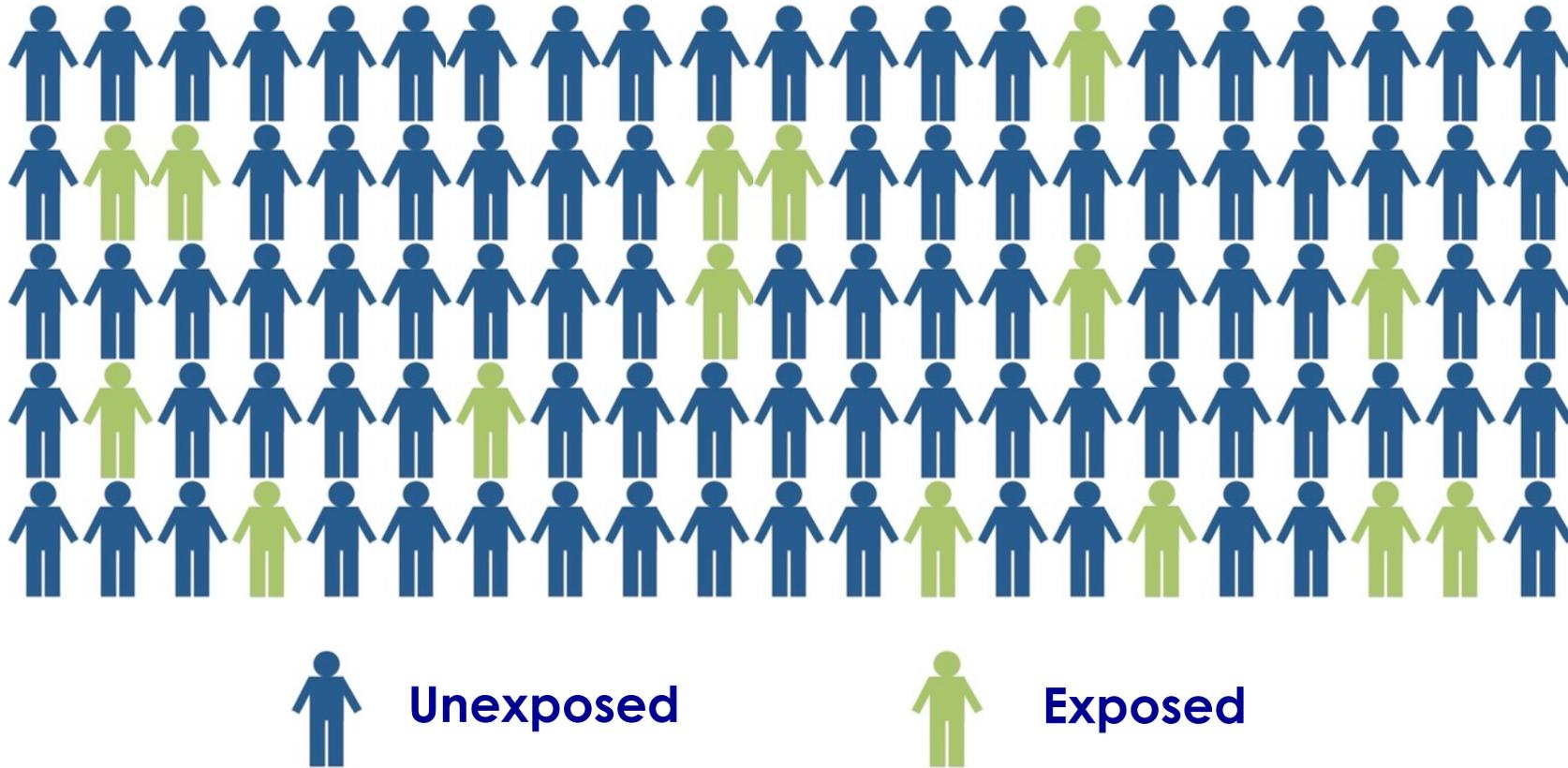
## What is an **outcome**?

- 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



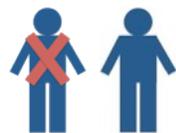
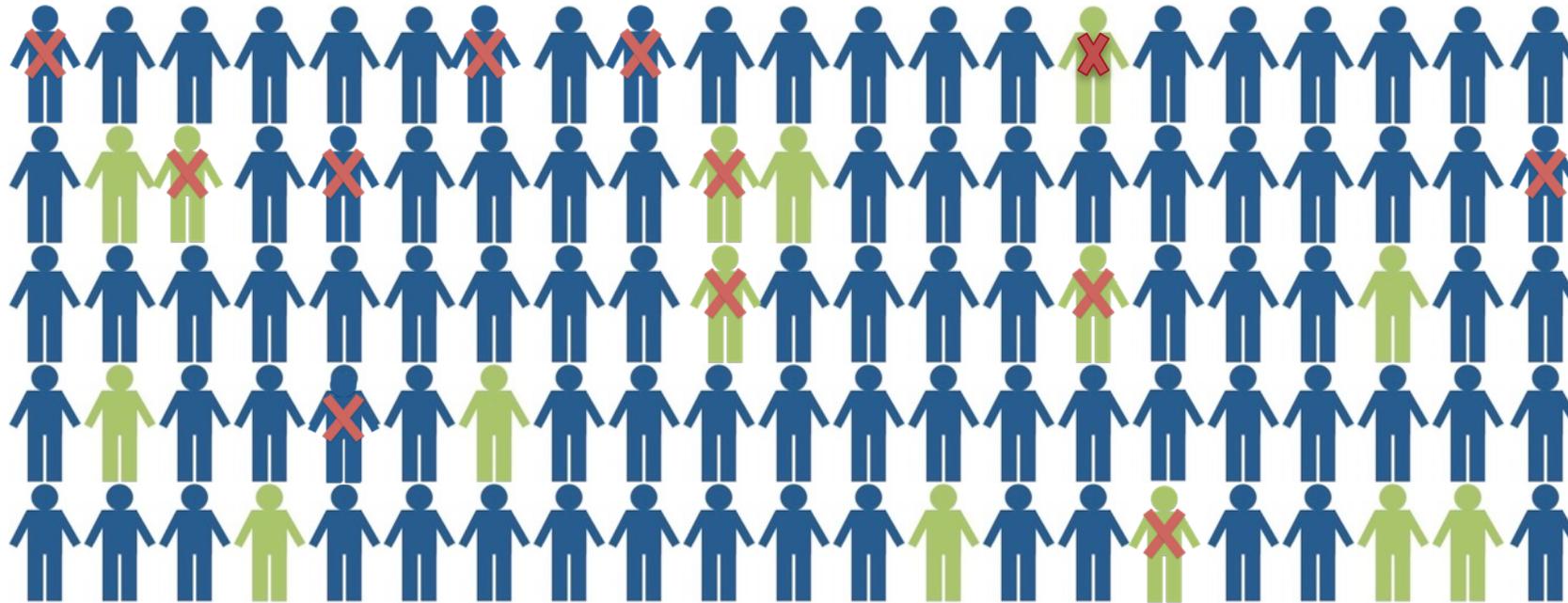
# Defining a Study Population

Some people are exposed



# Defining a Study Population

Both exposed and unexposed can have the outcome/disease



Unexposed

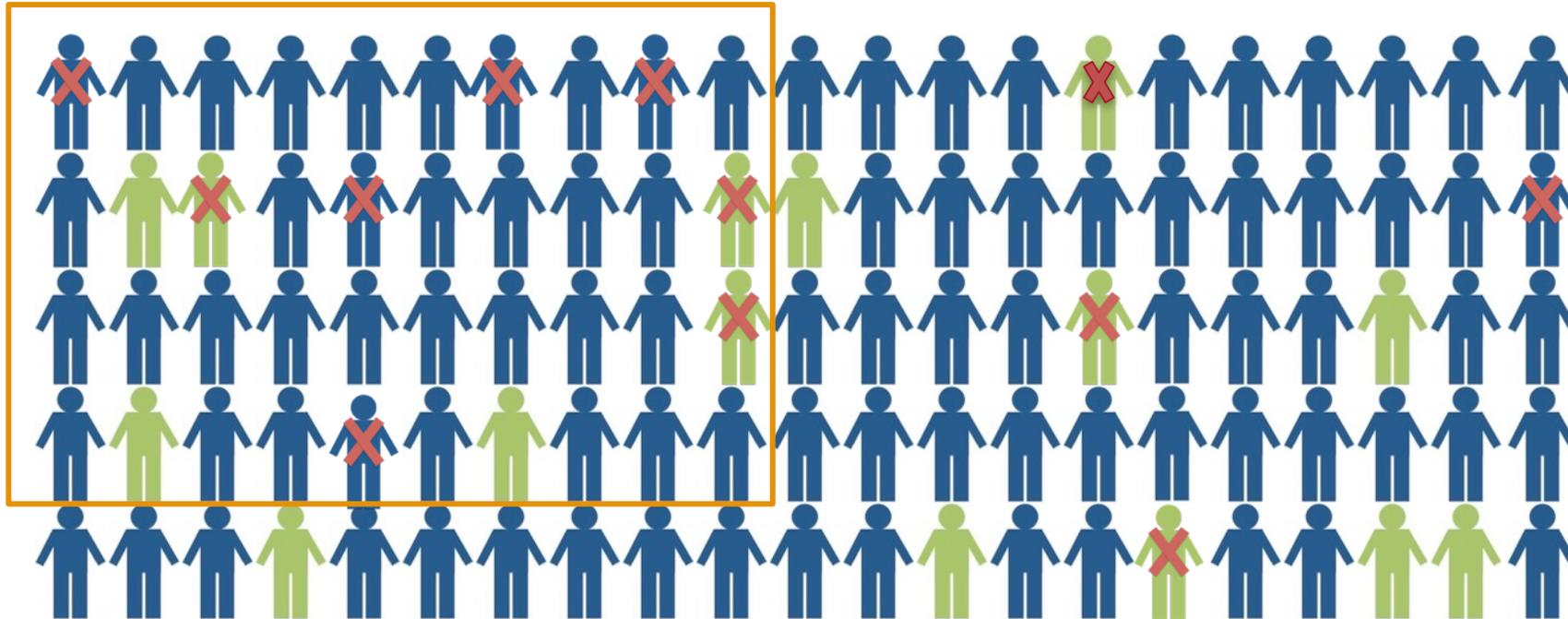


Exposed

# Defining a Study Population

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

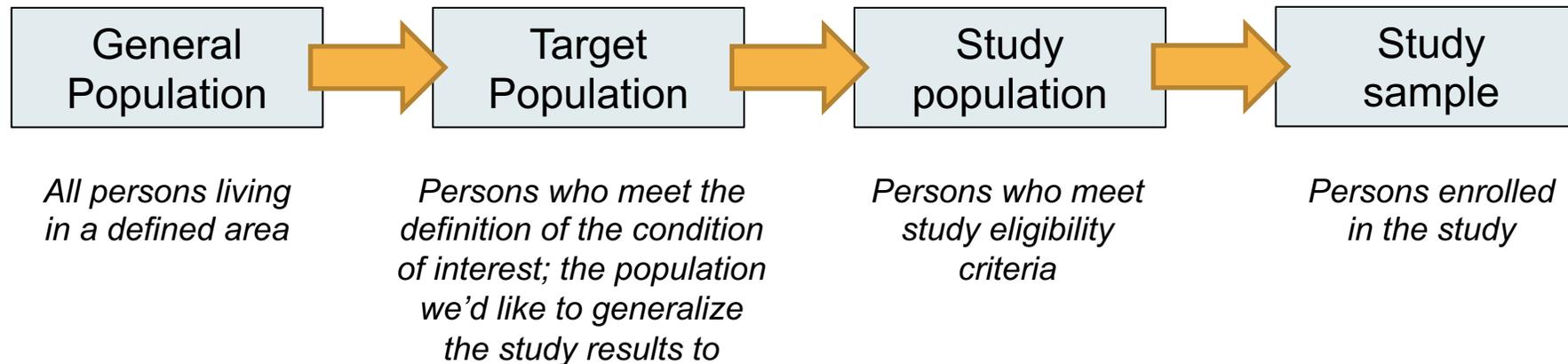
Take a  
sample of the  
population



# Defining a Study Population

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

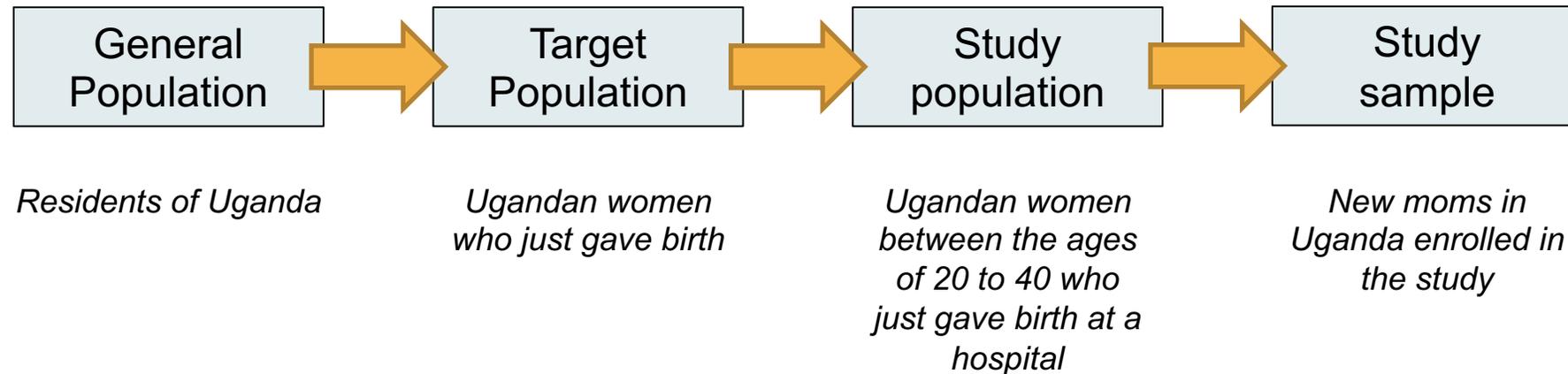


- The study population should be **clearly defined in advance** as this will impact study design, recruitment, analysis, and generalizability

# Defining a Study Population

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



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