

Epidemiology:

Applications to Boston EMA Planning Council



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Objective of Training:

1. **What is** Epidemiology?
2. What does it **do**?
3. What are the epidemiology **terms**?
4. What **kind of data** are collected?
5. How are **data used**?

1. What is Epidemiology?

“The study of **how disease is distributed** in populations, and of the factors that influence or determine this distribution.”

2. What Does Epidemiology **Do**?

- **Collects disease-related** data from the community.
- **Tracks** disease trends in the community.
- **Identifies** who is at the highest **risk** of being infected.
- Guides us in **developing** prevention and treatment programs.
- Helps us **evaluate** the effectiveness of prevention and treatment programs.
- Answers the **where, how, who, how many, when** of health related events.

4. **What** do we measure and why?

○ Disease **Incidence**

○ Disease **Prevalence**

○ **Demographic** information:

- Age
- Gender
- Race/Ethnicity

○ **Mode of infection** (e.g. IDU, MSM)

Incidence

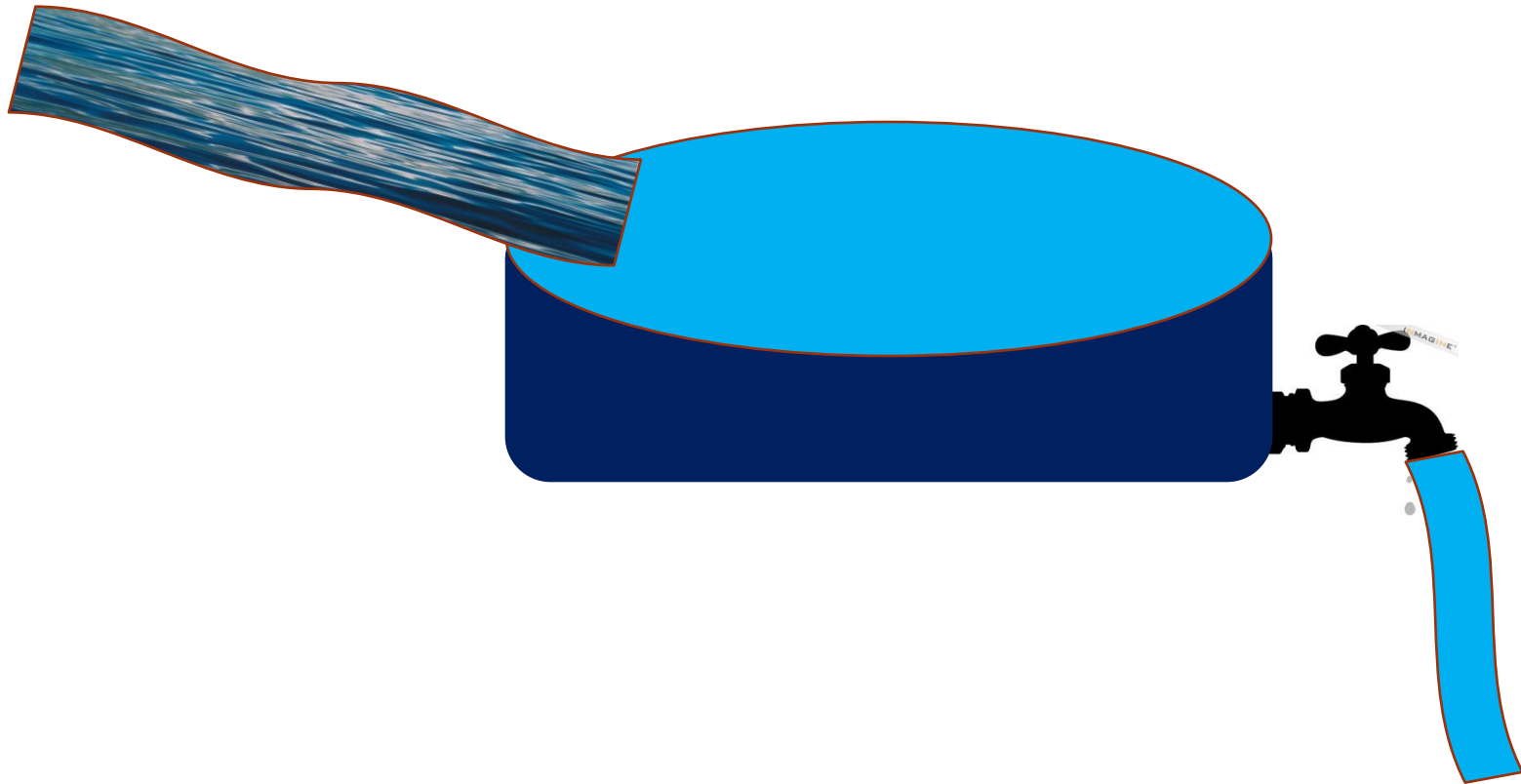
- The number of NEW cases of a disease during a specified period of time in a population at risk for developing the disease.

- Incidence is a measure of risk.

Prevalence

- The TOTAL (new + old) number of cases existing during a specific period of time in the population.
- Describes the current disease burden.
 - **Point Prevalence:** Prevalence of a disease at a point in time.
 - **Period Prevalence:** Prevalence of a disease during a specified period of time.

How Incidence and Prevalence Come Together



Surveillance

- Surveillance is the ongoing systematic collection, analysis and interpretation of health data for purposes of improving health and safety of the population.
- AIDS case surveillance was the primary system used to monitor trends in the epidemic in the 1980s and 1990s.

Demographic Information

- **Age** – to assess the age group most affected.
- **Gender** - to assess whether males and females are affected differently.
- **Race/Ethnicity** - to assess which race/ethnicity is more affected.
- **Geographic location** – to assess which area is most affected.

Mode of Infection

- Men who have sex with men (MSM)
- Intravenous Drug Users (IDU)
- MSM who are IDU
- Heterosexual sex
- Pediatric / Perinatal transmission
- Transfusion of blood and blood products
- No Identified Risk

5. **Why** Do We Measure All This?

○ **Understand** the current trends in disease.

○ **Assess** who is at risk.

A combination of these factors help us determine risk.

○ **Design** education, prevention and treatment programs specifically tailored for the high risk groups:

In culturally competent terms and in geographically accessible locations.

○ **Evaluate** the success of the existing programs.

How do we use Epidemiology...

- **Outcomes Reports (annual)**

Evaluates the effectiveness of Part A services on health and quality of life outcomes using an outcomes reporting form filled out by providers.

- **Voices of Experience (2003), JSI Consumer Study (2009)**

This documents the experiences of PLWH within the service system, their needs and barriers to care.

- **JSI clinical chart review (annual)**

For quality assurance of Part A funded clinical service providers.