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Seeing a problem from  
different angles  
Multidisciplinarity

# The one who has the shoe on, feels where it hurts.....

- For complex health problems, there is never «one size fits all»
- Biological features of response to risk and infectious agents, can often be dealt with by using:
  1. Biological research methods
  2. Trials where most of the parameters are easily defined
  3. Quantitative approaches

These methods may tell us why bacteria and virus are able to produce disease, and how bodies often respond to this.

# But this is not enough – people are different and live different lives

- They have different genders
- They have different bodies
- They have different BMI
- They have different genes
- They have different lifestyles
- They have different socioeconomic status
- They have different cultures
- They respond differently to interventions
- And so on

# Example: The HIV and STD epidemic, learning

Early in the HIV epidemic, medical people knew very little

## **We needed to know a lot:**

Who got it (homosexuals, young girls)?

How did they get it?(sexual acts, iv drug use)

What was the agent?(virus)

What was the disease mechanism?(immune suppression)

What could prevent this?(condom use, PMTCT, behavior change, ABC)

How could we treat this (fatal outcome for the time being, ARVs)?

How could we go about to change behavior?

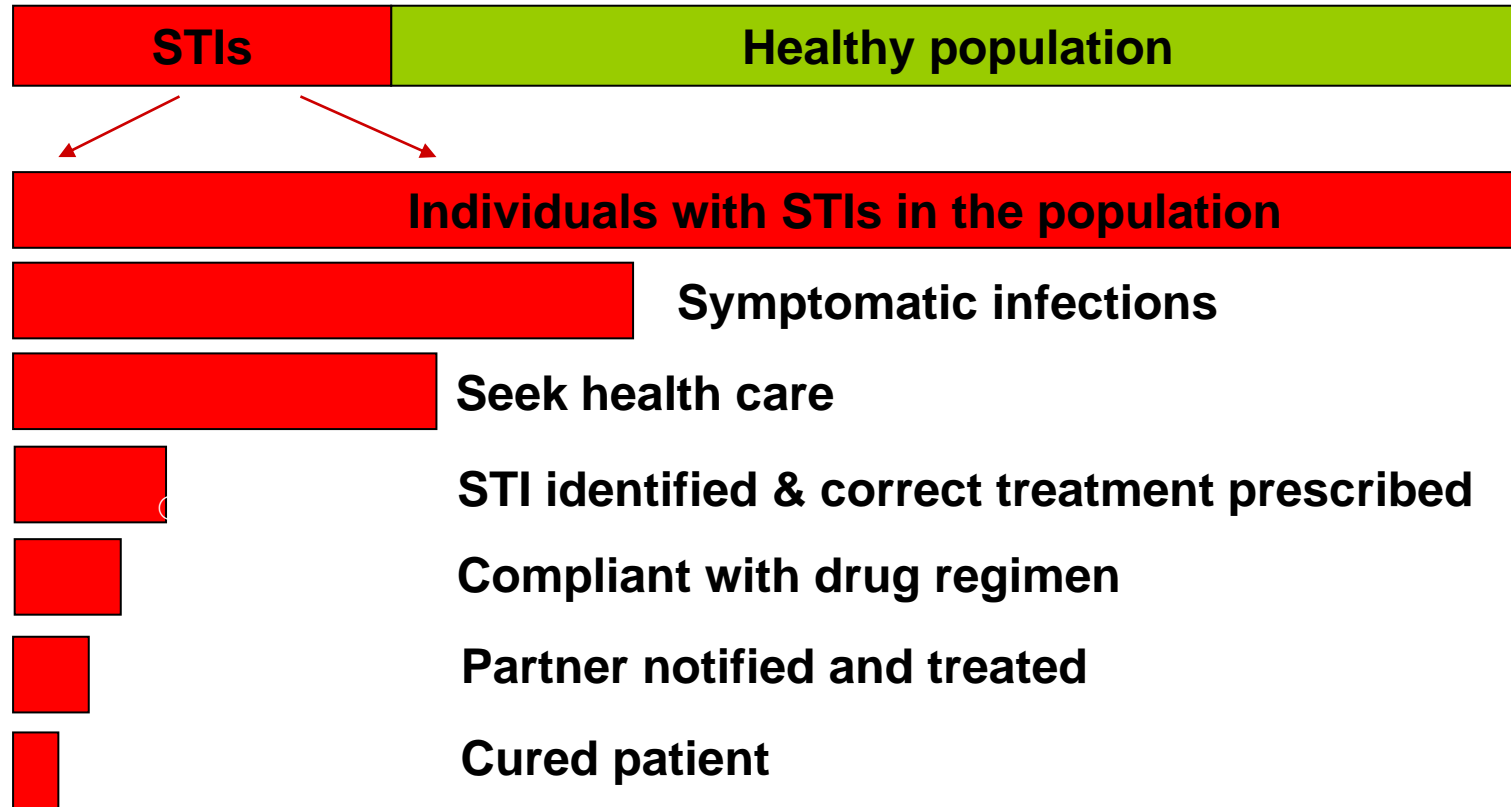
## Sexually transmitted infections were already known

- Virus
  - HIV/AIDS
  - HPV (genital warts)
  - Herpes genitalis
  - Viral hepatitis
  - Cytomegalovirus infection
  - Molluscum contagiosum
- Bacteria
  - Syphilis
  - Chlamydia
  - Gonorrhoea
  - Chancroid
  - Granuloma inguinale
- Others
  - Trichomoniasis

## Reproductive tract infections

- Bacterial vaginosis
- Vulvovaginal candidiasis

# Challenges in STI control



$$R_0 = \beta * C * D$$

- $\beta$  = Infectivity
- C = Sexual contacts
- D = Duration of infection

$R_0 < 1$ : eradication

$R_0 > 1$ : epidemic







# Prevention and control of STIs

- Prevent new infections
- Treat acute infections - and thus prevent complications and sequelae
- Reduce the risk of HIV transmission
- Interrupt the onward transmission

# Sexually transmitted infections

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# The response to all questions was to apply a variety of methods by a variety of researchers

- Epidemiologists
- Virologists
- Behavioral science (psychology, sociology)
- Cultural understanding (anthropology)
- Inside knowledge (user perspectives)
- Behavioral change scientists
- Clinical Care experts
- Pharmacists
- Statisticians/ survival analysts
- Economists
- Nutritionists

The challenge was so big that UN established a special unit for research on HIV/AIDS

UNAIDS 2020 | REFERENCE

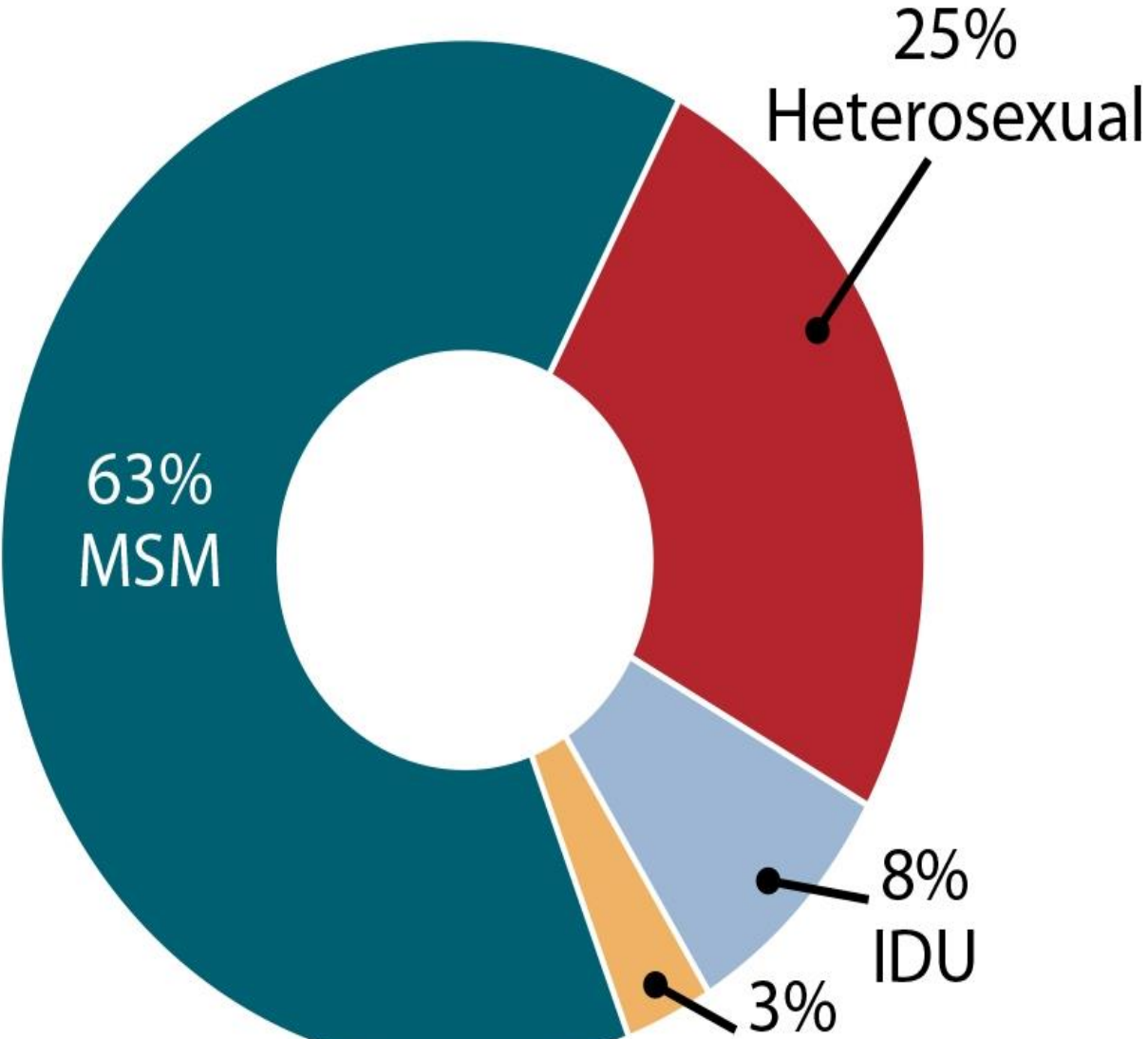
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2020



# Multidisciplinarity is not easy

- Because the training is often directed at getting very good at one method
- The idea is NOT to have lesser quality
- But to respect which part of the cake YOU can answer for
- Multidisciplinarity is to be good at what you know, and to be good at talking to others and listen to their perspective

**Figure 2: Estimated New HIV Infections, 2010, by Transmission Category**



# It is important

- To clarify what your method and viewpoint CAN contribute with
- Not what the «other» perspective cannot do
- It is not an either/or issue
- We need all disciplines to understand HIV/AIDS – and this huge effort has transformed the disease from being lethal to being chronic. We have changed both biology of HIV and behavior of people



What is your field of knowledge, and methodology, that can contribute to a bigger picture?