

# Plagues and Pandemics, a Historical Perspective

## 1: The foundations

- Infectious agents
- Human migration, community growth and spread of disease
- Emergence and disappearance of a disease
  - Role of evolution
  - Exponential growth
- Case Study: Plague
  - The disease
  - Origin and geographic progress
  - Perceived cause and treatment
  - Outcomes
  - Plague today

## 2: Smallpox

- The disease
- Spread of smallpox
- Historic impacts
  - Alexander the Great
  - China
  - US revolution
- Smallpox eradication

## 3: Cholera

- The disease
- History of epidemiology
- Development of public health
- Carriers: Haiti, Typhoid Mary

## 3b: Ebola

- The disease
- Early history
- 2014 Epidemic

## 4: Immunity and Development of Vaccines

- The immune system
  - Function and overfunction
- History of vaccines: Pasteur & Koch
- How vaccines work
  - Types of vaccine
  - How we measure effectiveness

- Cowpox, shingles, HPV

## **5: Polio**

- The disease
- A first world epidemic: history
- Development of a vaccine
- Efforts to eradicate

## **6: Influenza**

- The disease
  - strains
- Spanish Flu pandemic
- Viral reproduction
- Zoonosis
- Vaccines
- Wrap up