Outline

Plagues to Pandemics: Our Struggle to Understand and Control Infectious Disease

Lecture 1: Introduction

- What is an infectious disease?
- Infectious agents
- Factors influencing the spread of infectious disease
- Early history of disease
- The plague

Lecture 2: Acquired immunity and vaccination

- Smallpox: its role in history
- How we develop immunity
- Discovery of vaccination
- Worldwide eradication of smallpox

Lecture 3: Discovery of germs, cholera and epidemiology

- Our understanding of germs and infectious agents
- Epidemiology: discovering infectious agents
- Cholera: its discovery, its impacts and transmission
- Typhoid

Lecture 4: Polio and the role of disease specific charities

- Polio: a disease of the rich
- Polio vaccine an American and a Canadian story
- The foundation of vaccine safety
- The role of disease specific foundations
- Re-emergence of polio

Lecture 5: Influenza and pandemics

- Influenza and the 1918 epidemic
- The influenza virus and how viruses make us ill
- Seasonal influenza and pandemic influenza
- Anti-viral treatment
- How vaccines are made

Lecture 6: Emerging and re-emerging diseases

- Neglected diseases: diseases of the developing world
- Ebola, dysentery/rotavirus, malaria, tuberculosis
- HIV and AIDS
- Potential pandemics MERS, Ebola, Zika