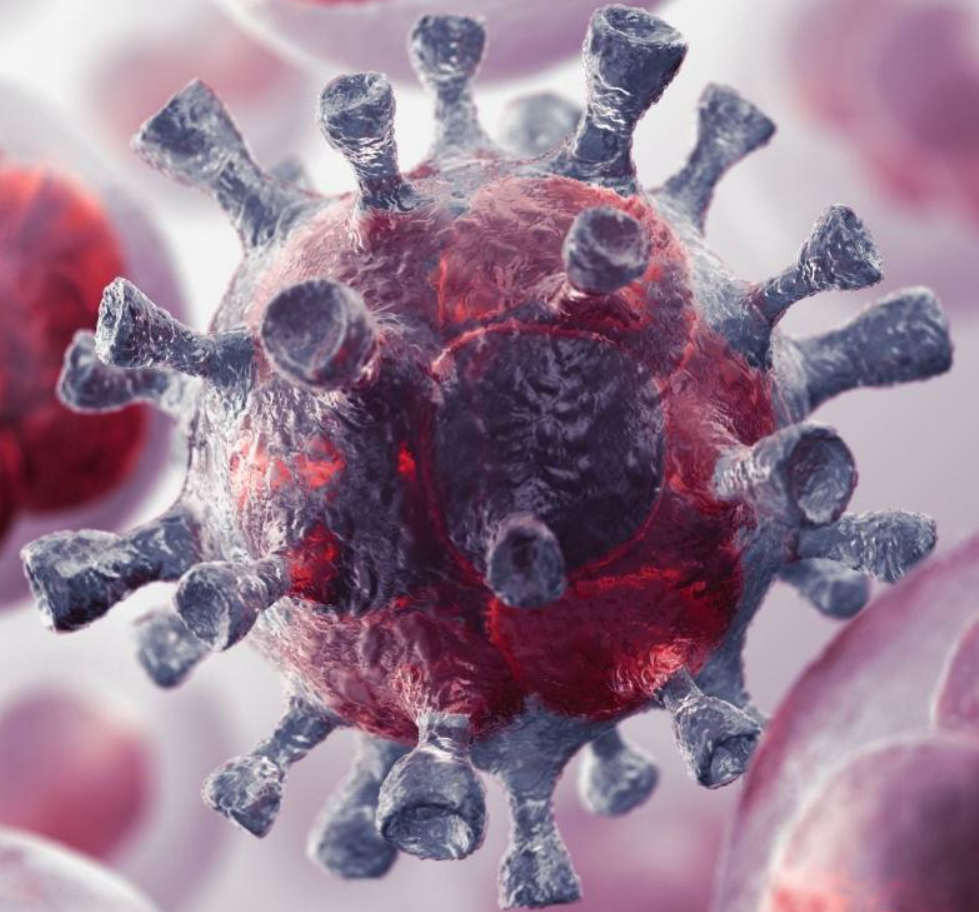


Infection in Movies and TV: Finding the Fact Within the Fiction

Professor Elaine Cloutman-
Green



BIOMEDICAL SCIENTIST

DON'T OPEN THE DOORS

INFECTIONS IN FILMS

AN OCCASIONAL FILM REVIEW

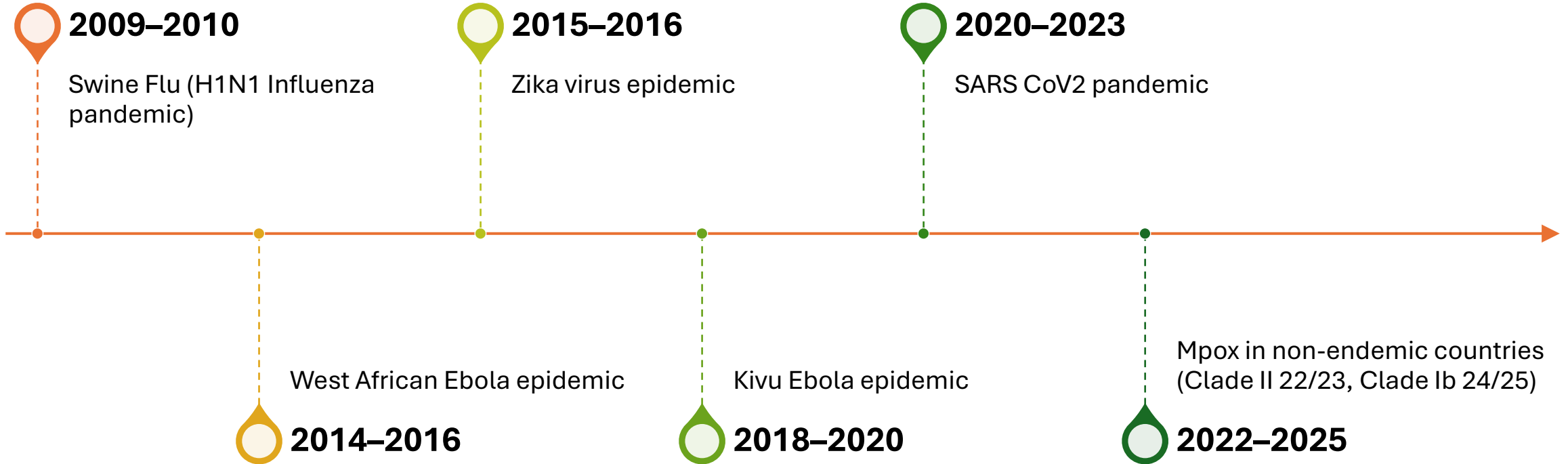


Girlymicro

Girlymicro on tour - The one where Mr and Dr Girlymicro have a rand...

GIRLYMICRO - Scientist changing the world one swab at a time

Public Health Emergencies of International Concern

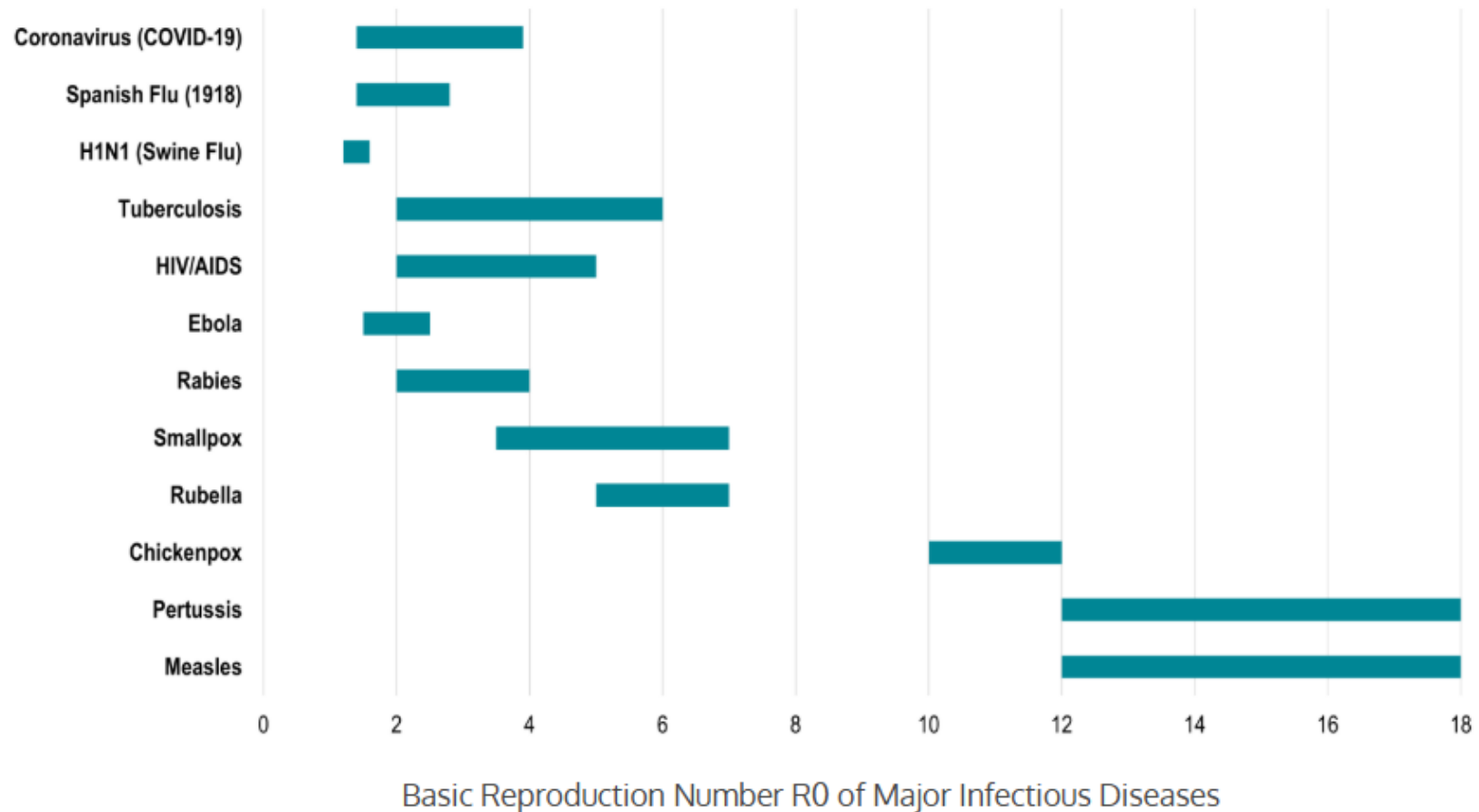


SMALLPOX - 2



Basic Reproduction Number (R0) of Major Infectious Diseases

All Organisms
are Not Equal



Source: CDC and WHO.

What's the difference?

Endemic, epidemic and pandemic explained.



Epidemic or Outbreak

Disease occurrence among a population that is more than what is expected in a given time and place, usually a sudden increase



Pandemic

An epidemic that spreads across regions

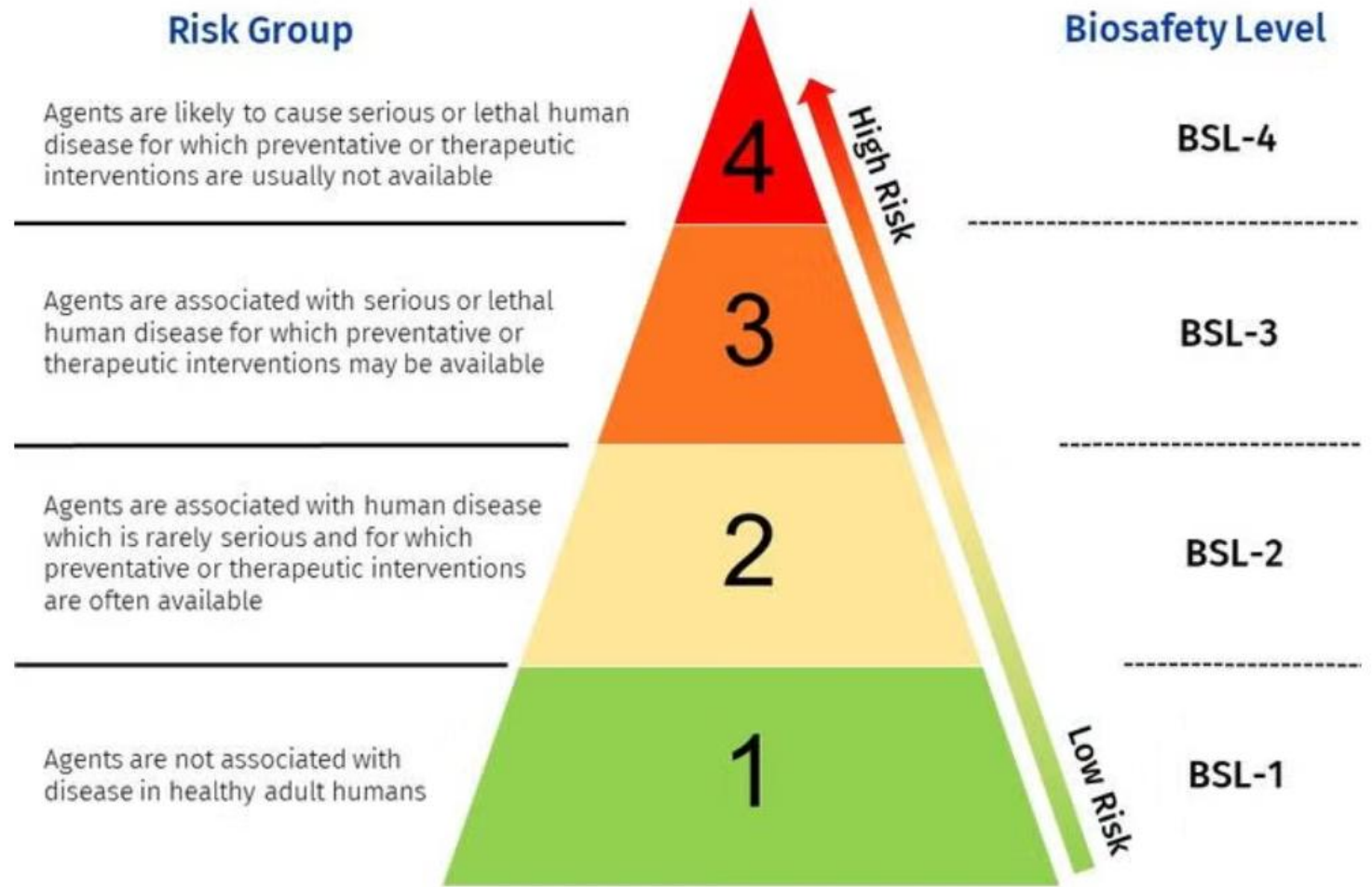


Endemic

A disease or condition present among a population at all times

Source: Centers for Disease Control and Prevention (CDC)

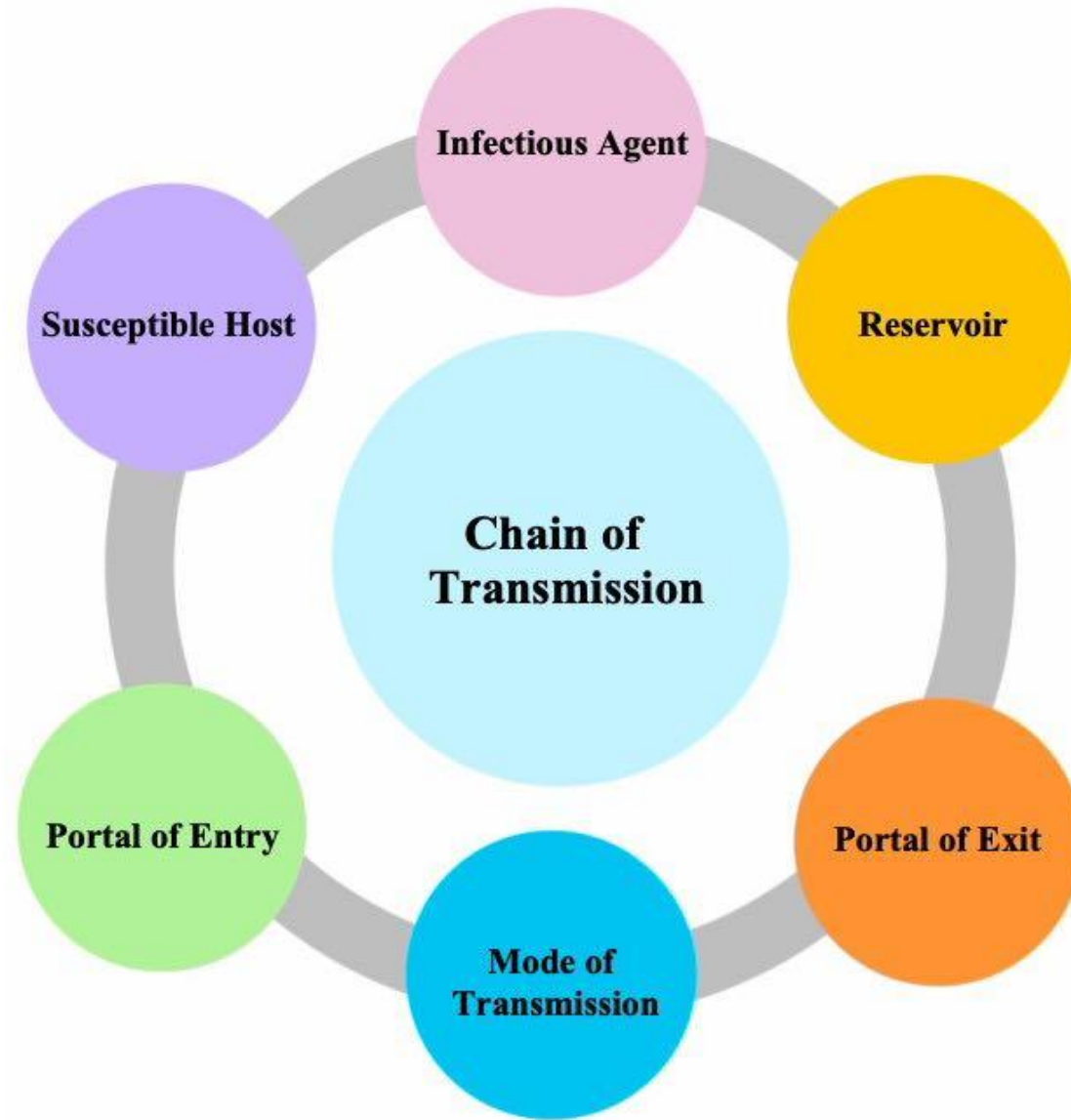
All Organisms are Not Equal

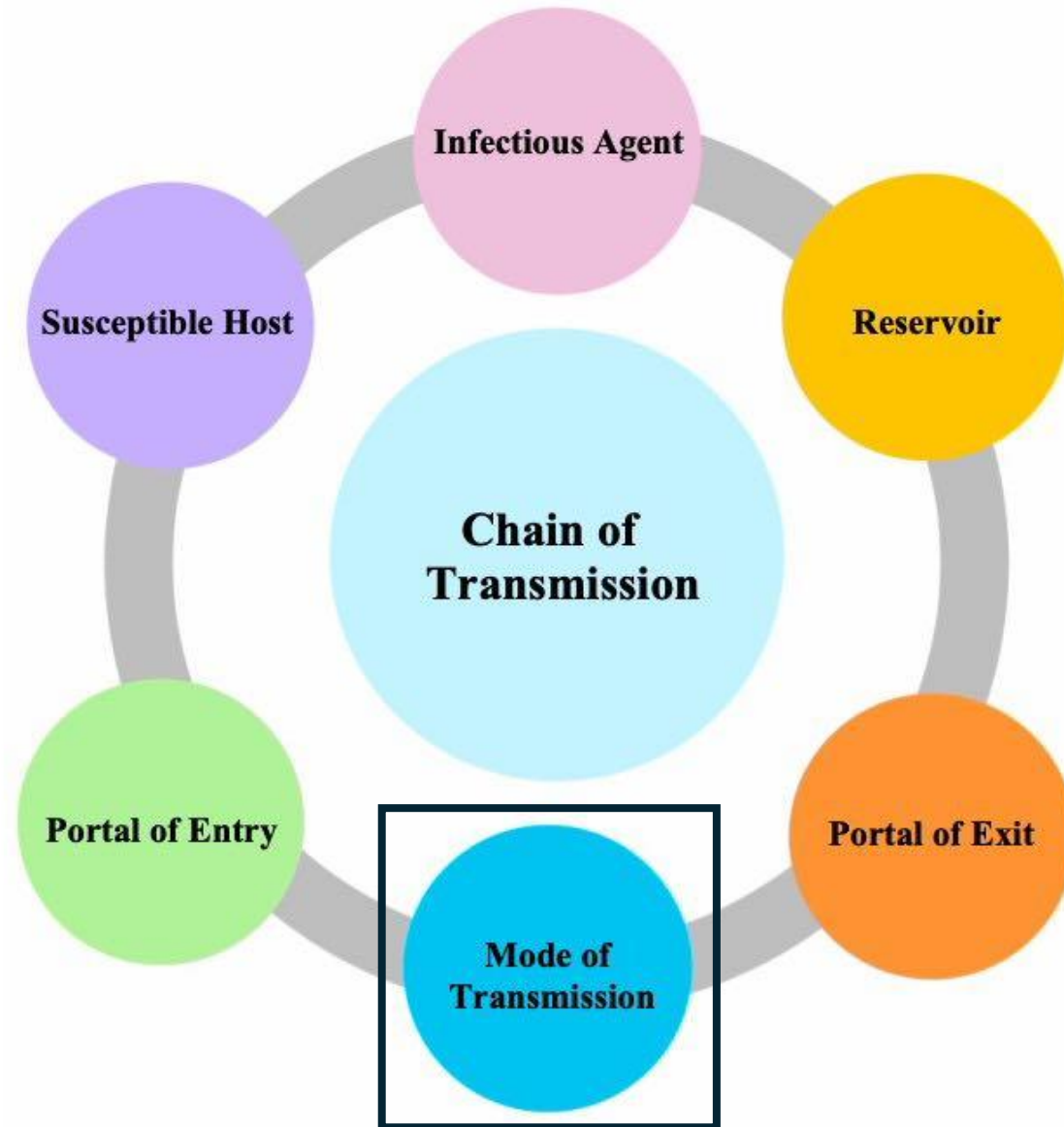




RULE #31

**CHECK THE
BACK SEAT**





Modes of Transmission

Contact

- Direct (skin-to-skin, blood and body fluids)
- Indirect (fomites – contact with surfaces)

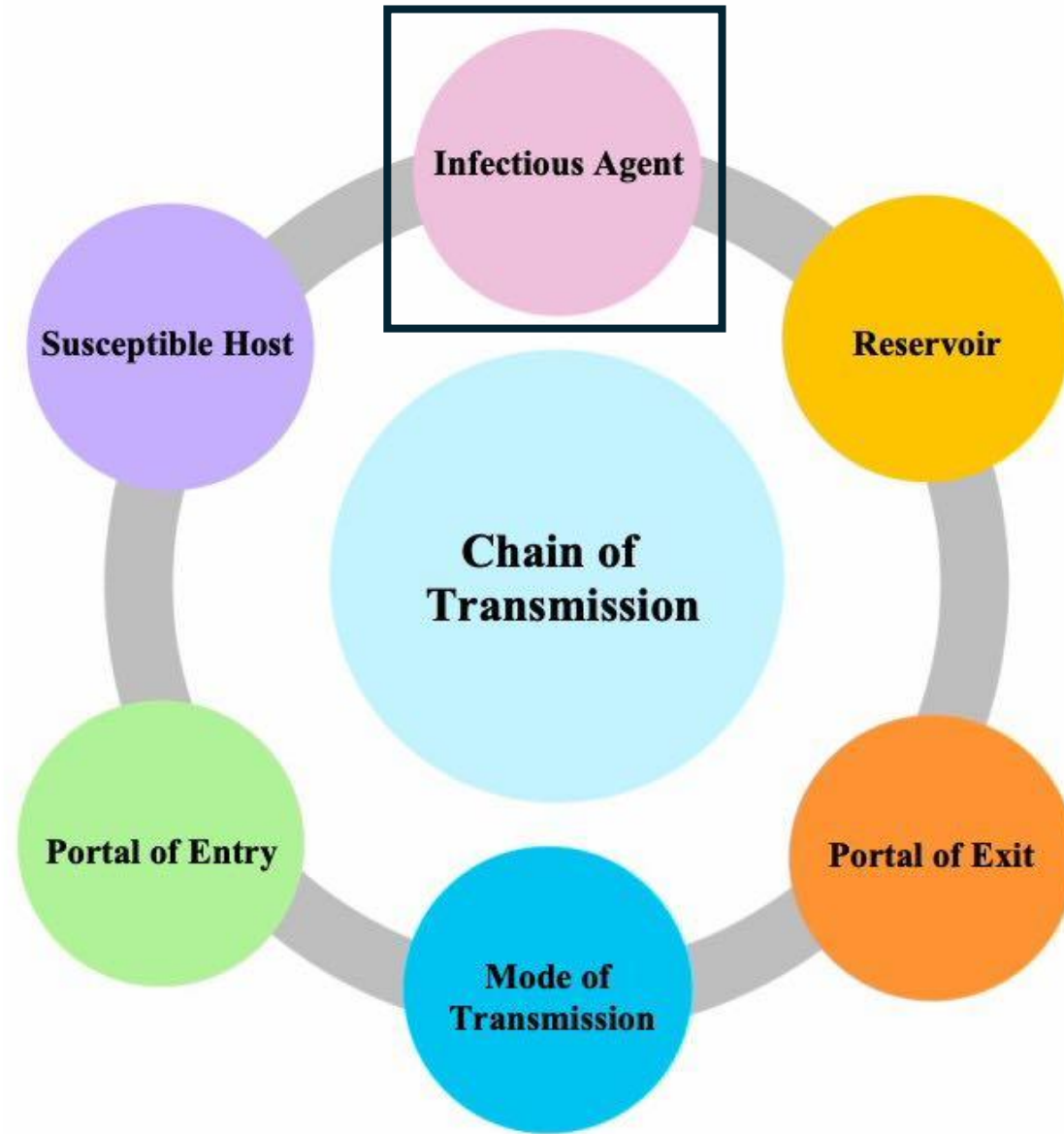
Respiratory droplets
(coughing, speaking)

Airborne (particle
suspension)

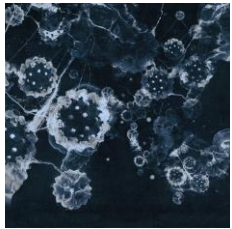
Ingestion
(contaminated
food/water)

Vector-borne
(insects)

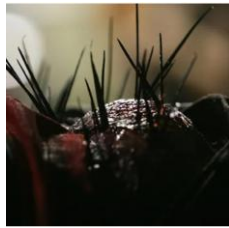
Vertical (mother to
child during
pregnancy, labour,
breast feeding)



Infectious Agents



Viral



Fungal



Parasite



Bacterial

SPOILER

ALERT!



Rise of The Planet of the Apes (Simian Virus ALZ-113)



The Girl with All the Gifts (*Ophiocordyceps unilateralis*)



The Strain (Crimson Worm similar to *Dirofilaria immitis*)



The Thing (unnamed bacteria)

Risk Assessment

- Routes of
transmission

- Patient loads

- Environmental
persistence

- Infectious dose

-
Colonised/infectious
state

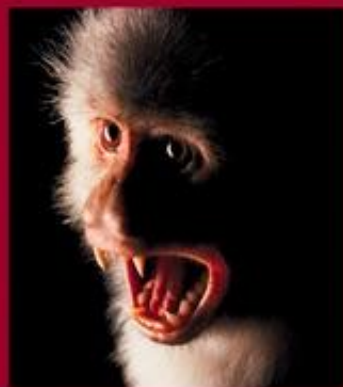
- Patient
susceptibility

- Timing of infection
(community vs
hospital acquired)

- Endogenous vs
exogenous

- Surveillance

- Clinical (active vs symptom lead)
- Environmental



OUTBREAK

Defining an Outbreak

Linked Cases: An incident where **2 or more people** affected by the same infectious disease are linked by time, place, or a common exposure.

Greater than Expected Rate: Where the rate of infection is higher than the usual "background rate" expected for that specific place and time

Single Cases of High-Consequence Disease: A single confirmed case of rare or severe diseases like **polio, rabies, botulism, diphtheria,** or **viral haemorrhagic fever.**

Outbreak Stages



OUTBREAK INITIATION



EARLY OUTBREAK



LATE OUTBREAK



Alien (Outbreak Initiation)



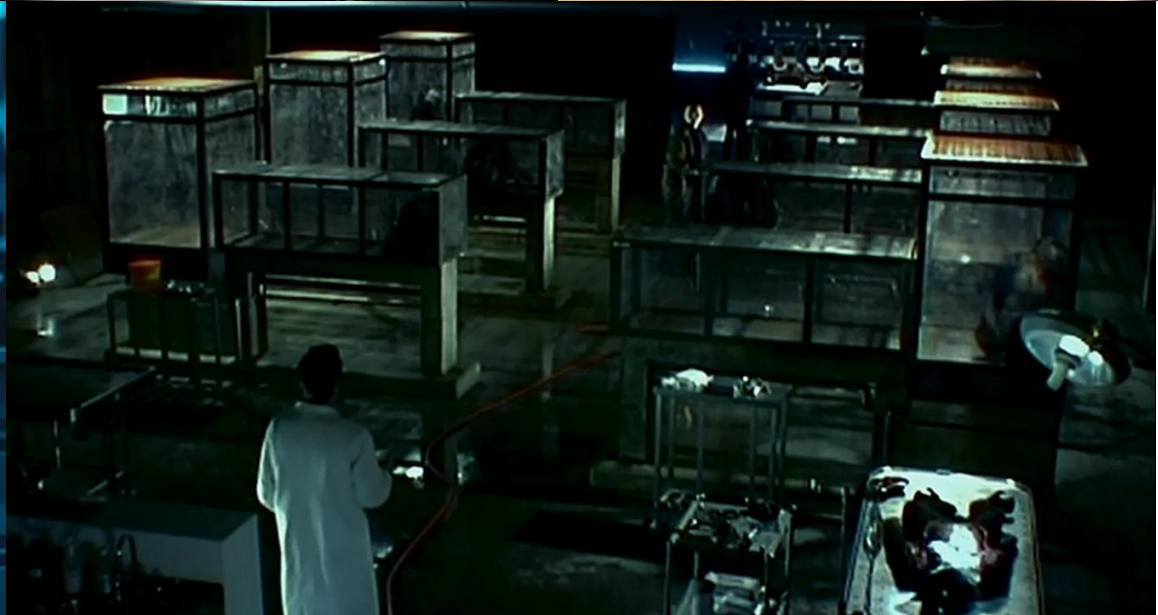
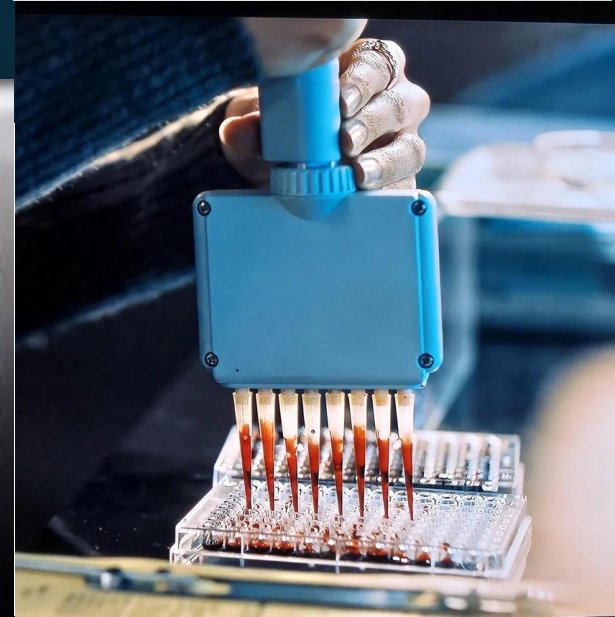
28 Days Later (Early Outbreak)



The Last of Us (Late Outbreak)



Science House of Horrors



Top Tips for Survival

Know

- Know the rules

Break

- Break the chain

Sort

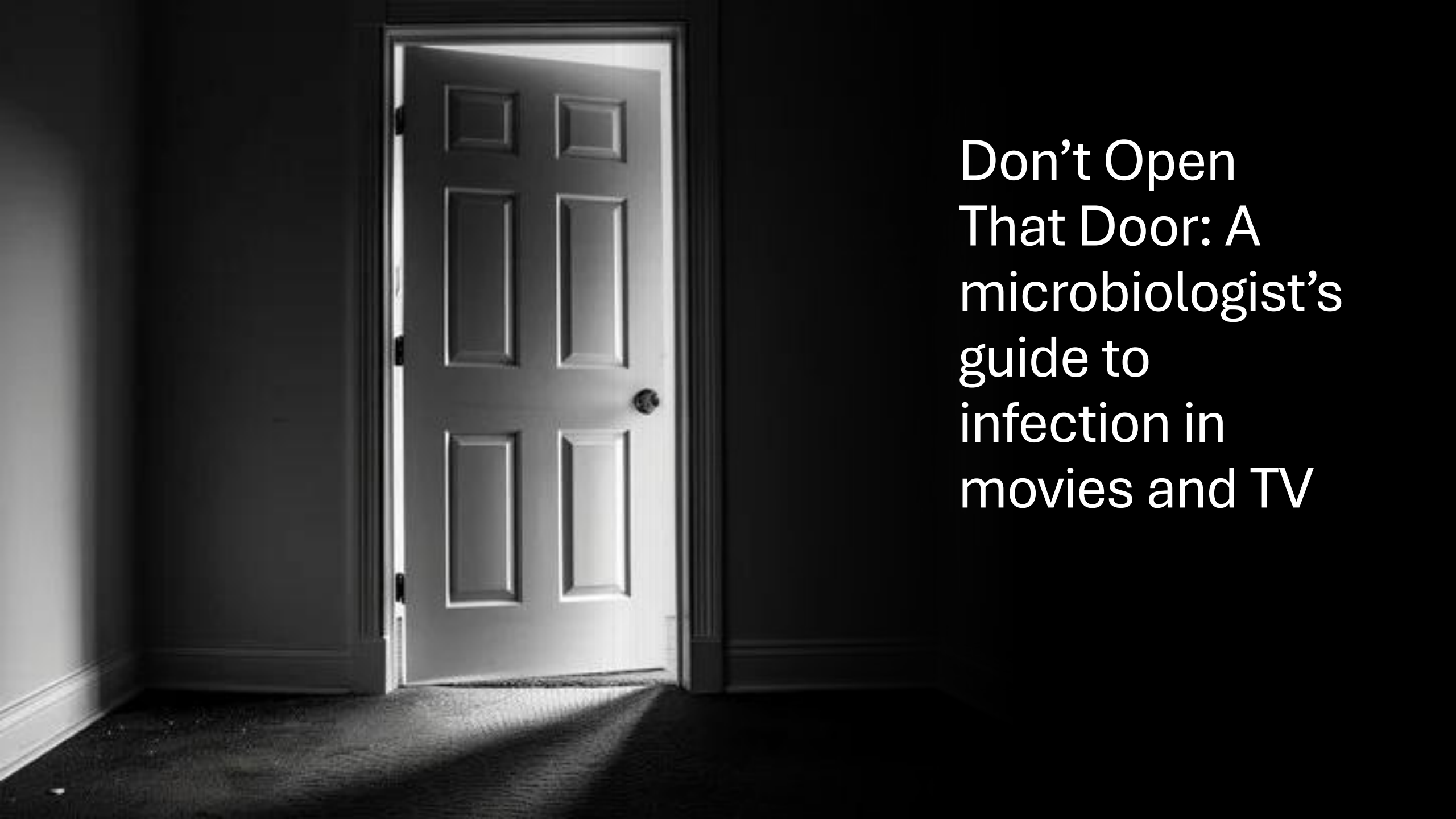
- Sort the rumour from the facts

Limit

- Limit your exposure

Prepare

- Prepare what you need to make it through



Don't Open
That Door: A
microbiologist's
guide to
infection in
movies and TV