
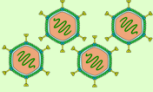
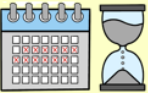




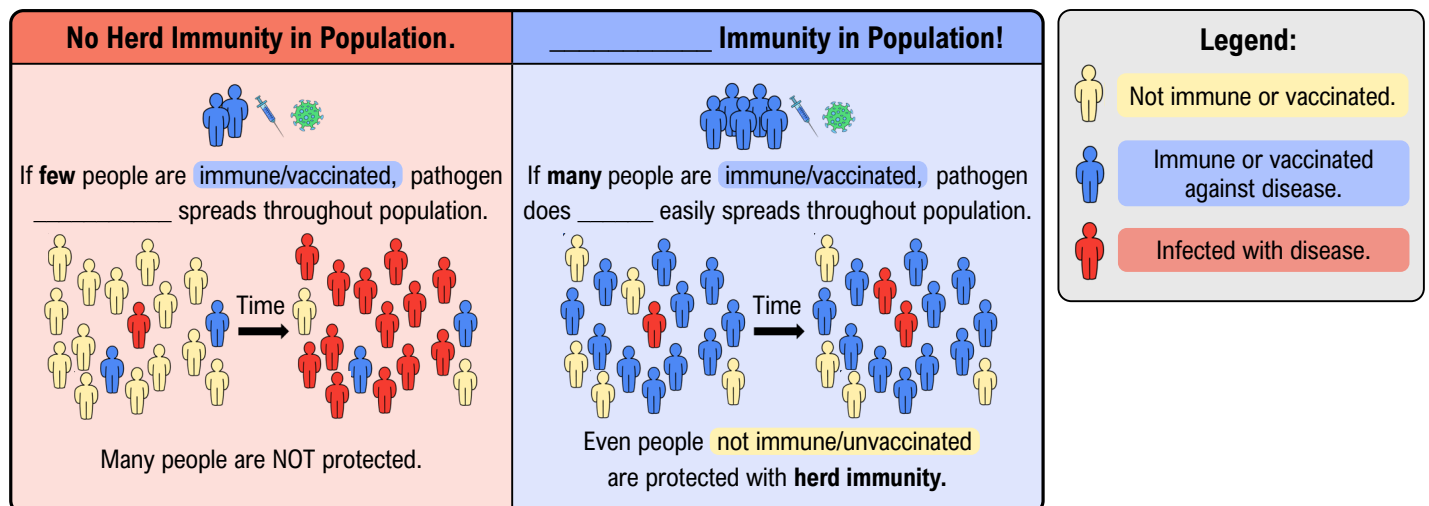
TOPIC: FACTORS INFLUENCING EPIDEMIOLOGY

- ◆ There are multiple factors that can influence the epidemiology of a disease:

Factors Influencing Epidemiology	
Host-Microbe Interactions (Outlined in another lesson)	The ability of pathogens to evade host _____. 
The Dose (Amount of Pathogen)	Smaller dose = _____ probability of infection 
Incubation Period	Longer incubation time = _____ likely to spread before symptoms appear 
Host Population	Includes health, gender, age, genetic inheritance, & _____ of host population. 
Surrounding Environment	Weather can determine which microbes can _____ & reproduce in certain regions. 

Herd Immunity

- ◆ **Herd Immunity:** when a sufficiently _____ % of a host population is immune to a disease.
 - Protects _____-immune individuals since there are not enough susceptible hosts for the pathogen to thrive.



- ◆ Some pathogens undergo antigenic variation to “_____” herd immunity & continue infecting hosts.
 - **Recall: Antigenic variation:** when pathogens _____ surface antigens to evade immune system.

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PRACTICE

Which of the following statements is **false**?

- a) The very young and very old are at greater risk of many infectious diseases.
- b) A high dose of a pathogen is more likely to cause disease than a low dose.
- c) Herd immunity occurs when a population takes great care not to spread the disease (e.g. hand-washing, self-isolation etc.).
- d) A disease with a long incubation period might spread throughout a population before the population notices.

PRACTICE

Which of the following statements about herd immunity is true?

- a) When herd immunity occurs, unvaccinated people become resistant to a disease.
- b) Herd immunity is when enough people are vaccinated against a disease so that it cannot easily spread.
- c) Herd immunity for any disease always requires >95% of a population to be vaccinated.
- d) All of the above are true.