

1. Concepts of communicable diseases

1.1 What are communicable diseases?

Communicable diseases refer to diseases that can be transmitted and make people ill. They are caused by infective agents (pathogens), that invade the body or release toxins to cause damages to normal body cells and their functions. In severe cases, they may lead to death.

1.2 Chain of infection: infective agent – source of infection – mode of transmission – host

Besides the infective agent, there are three crucial factors for the spread of communicable diseases, namely the source of infection, the mode of transmission and the host—the so-called “chain of infection”.

1.2.1 Infective agents

Infective agents are micro-organisms (e.g. bacteria, viruses, fungi and parasite) that will cause an infection.

1.2.2 Source of infection

This refers to any environment, in which infective agents can live, parasitise and breed. It includes human (e.g. patients, carriers and people with latent infections), livestock, insects and soil. The source of infection will normally form the basis for infective agents to infect humans.

1.2.3 Mode of transmission

This refers to the method of transfer by which the infective agent moves or is carried from one place to another.

Mode of transmission	Process	Examples of communicable diseases
Contact transmission	Through direct body contact with the infected persons, e.g. playing together with direct skin contacts; or indirect through contact with objects contaminated by infective agents, e.g. sharing towels, combs and clothes	<ul style="list-style-type: none"> • Hand, foot and mouth disease • Acute conjunctivitis • Head lice • Scabies • Chickenpox[#]
Droplet transmission	Inhale or contact of droplets expelled from the sick during sneezing, coughing, spitting and speaking, or through subsequent touching of mucous membranes of the mouth, nose and the eyes, etc with hands contaminated with infective agents	<ul style="list-style-type: none"> • Influenza • Common cold • Acute bronchiolitis • Pneumonia • Severe acute respiratory syndrome (SARS) • Scarlet fever
Air-borne transmission	The infective agents float in the air for some time and enter the body through the respiratory tract	<ul style="list-style-type: none"> • Chickenpox[#] • Measles • Pulmonary tuberculosis
Food-borne / water-borne transmission	Through ingestion of contaminated food or water, or use of contaminated eating utensils	<ul style="list-style-type: none"> • Viral gastroenteritis • Food poisoning • Cholera • Bacillary dysentery • Hepatitis A • Hepatitis E
Vector-borne transmission	Through vectors, usually insects. The infective agents parasitise and breed in the bodies of the insects.	<p>Mosquito-borne</p> <ul style="list-style-type: none"> • Dengue fever • Malaria • Japanese encephalitis
Blood / body fluid transmission	Through blood transfusion, tattooing, ear piercing or sexual intercourse	<ul style="list-style-type: none"> • Hepatitis B • Acquired immunodeficiency syndrome (AIDS)
Congenital infection	From the pregnant mother to the foetus	<ul style="list-style-type: none"> • Congenital rubella syndrome

[#]Some communicable diseases have more than one mode of transmissions (e.g. chickenpox).

1.2.4 Host

Hosts refer to the susceptible population. Some people are more prone to infection and become hosts. For instance, young children and patients with chronic diseases are more susceptible to infection because of weakened body immunity.

1.3 Why are schools/centres* more vulnerable to outbreaks of communicable diseases?

Schools/centres are gathering places where children learn and play. Some children may be too young to take proper personal care. As such, communicable diseases can easily spread through close person-to-person contact. The source of infection can be children, staff and parents. Person-to-person contact may lead to cross-infection, i.e. the transmission of infective agents from one person to another. For example, a member of staff who fails to wash hands after caring for a sick child before making contact with another child, he/she may spread the infective agents from that child to the next child he/she cares for.

1.4 Principles of control of communicable diseases

As mentioned above, there are four factors crucial to the spread of communicable diseases. They include the infective agent, the source of infection, the mode of transmission and the host. Hence, the control of the spread of communicable diseases should focus on controlling all these four factors so as to break the chain of infection.

Factors of transmission	Control measures
Infective agents	<ul style="list-style-type: none">• Disinfection to kill the infective agents
Source of infection	<ul style="list-style-type: none">• Early detection, isolation and treatment of patients• Removal of breeding sites
Mode of transmission	<ul style="list-style-type: none">• Maintenance of good environmental, personal and food hygiene• Adoption of infection control measures appropriate to the different modes of transmission
Host (susceptible population)	<ul style="list-style-type: none">• Building up personal immunity by immunisation and healthy lifestyles

1.5 What are statutory notifiable communicable diseases?

Some communicable diseases are highly infectious and cause severe sequelae to such an extent that they threaten human lives and affect the economy. If there are proper precautionary or control measures in place, the disaster posed by these communicable diseases can be averted. The evolution of outbreaks of communicable diseases and their management vary to a certain extent with different countries or regions, where the types of communicable diseases occur and the living environment are different. To safeguard public health and safety, every country or region has legislation stipulating certain communicable diseases as statutory notifiable diseases that warrant special precautions, and policies are developed to prevent outbreaks and contain their spread.

In Hong Kong, there are 47 statutory notifiable communicable diseases under the Prevention and Control of Disease Ordinance ([Appendix 1](#)). Attending doctors should report to the Central Notification Office (CENO), Centre for Health Protection (CHP) of the Department of Health if such cases are noted.

Furthermore, the persons-in-charge of schools are encouraged to report suspected outbreak of communicable diseases to the CHP with the form attached in [Appendix 2](#). They are also required to report to the respective offices of the Social Welfare Department (SWD) or the Education Bureau (EDB). ([Appendices 3 and 4](#))

*Schools/centres will be used to refer to schools, kindergartens, kindergartens-cum-child care centres and child care centres in this set of guidelines.