CLASSIFICATION OF ZOONOSES

Classification of Zoonoses

Zoonoses can be classified in many ways, the logical and scientific basis of classification of zoonoses are as follows:

- On the basis of etiological agents
- Based on transmission cycle
- Based on reservoir hosts

On the basis of etiological agents

a. Bacterial

e.g. brucellosis, leptospirosis, listeriosis

b. Viral

e.g. rabies, Japanese encephalitis

c. Rickettsial and Chlamydial

e.g. Q fever, scrub typhus, ornithosis

d. Mycotic

e.g. dermatophytosis, cryptococcosis, histoplasmosis

e. Parasitic

e.g. toxoplasmosis, visceral larva migrans, hydatidosis

Based on transmission cycle

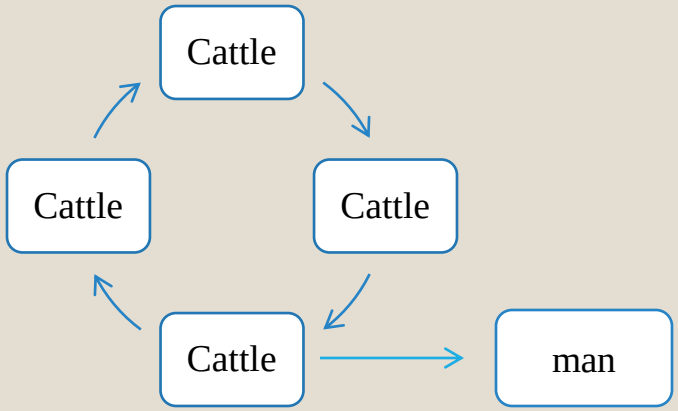
(Baesd on the type of life cycle of the infective organism)

1. **Direct zoonoses**:

These zoonotic diseases are perpetuated in nature by a single vertebrate species

- ✓ Infection is transmitted by direct contact- anthrax
- ✓ Indirectly through food -taeniasis, air (tuberculosis) etc.
- ✓ If a vector is involved in the transmission, there is **no development of pathogen in the vector** (mechanical transmission)

e.g. Anthrax, rabies, tuberculosis, scabies etc.



Based on transmission cycle

(Based on the type of life cycle of the infective organism)

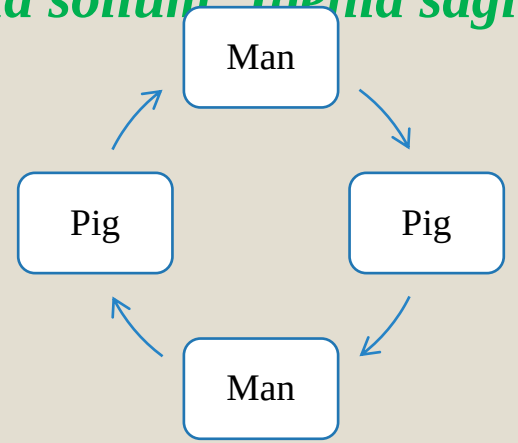
2. Cyclozoonoses

Require two or more vertebrate hosts to complete transmission cycle of an infectious agent

Classified into two sub types

(a) Obligatory cyclozoonoses

Man is **must** for completion of life cycle i.e. compulsory host. **e.g. *Taenia solium*, *Taenia saginata***



Based on transmission cycle

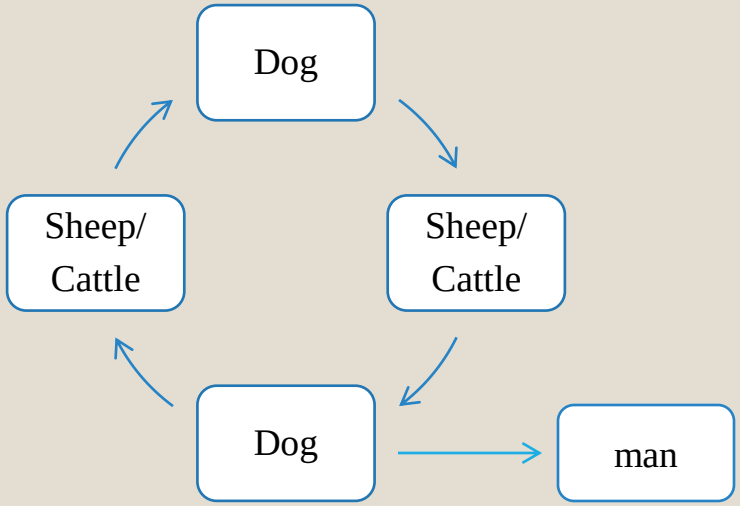
(Based on the type of life cycle of the infective organism)

(b) **Non-obligatory cyclozoonoses**

Man is **accidentally involved** in transmission cycle.

Many a times, these zoonoses form *cul-de-sac* in man

e.g. Hydatidosis (*Echinococcus granulosus*)



Based on transmission cycle

(Based on the type of life cycle of the infective organism)

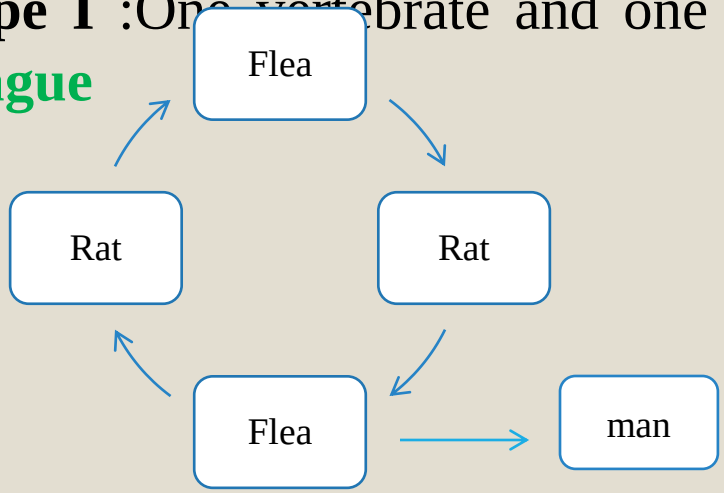
3. **Metazoonoses**

- ✓Both vertebrate and invertebrate species are involved in the transmission of an infectious agent
- ✓In invertebrate hosts, infectious agent may multiply, develop or remain dormant

Classified into: four subgroups

(a) Metazoonoses type I :One vertebrate and one invertebrate host.

e.g. Yellow fever, plague



(plague)

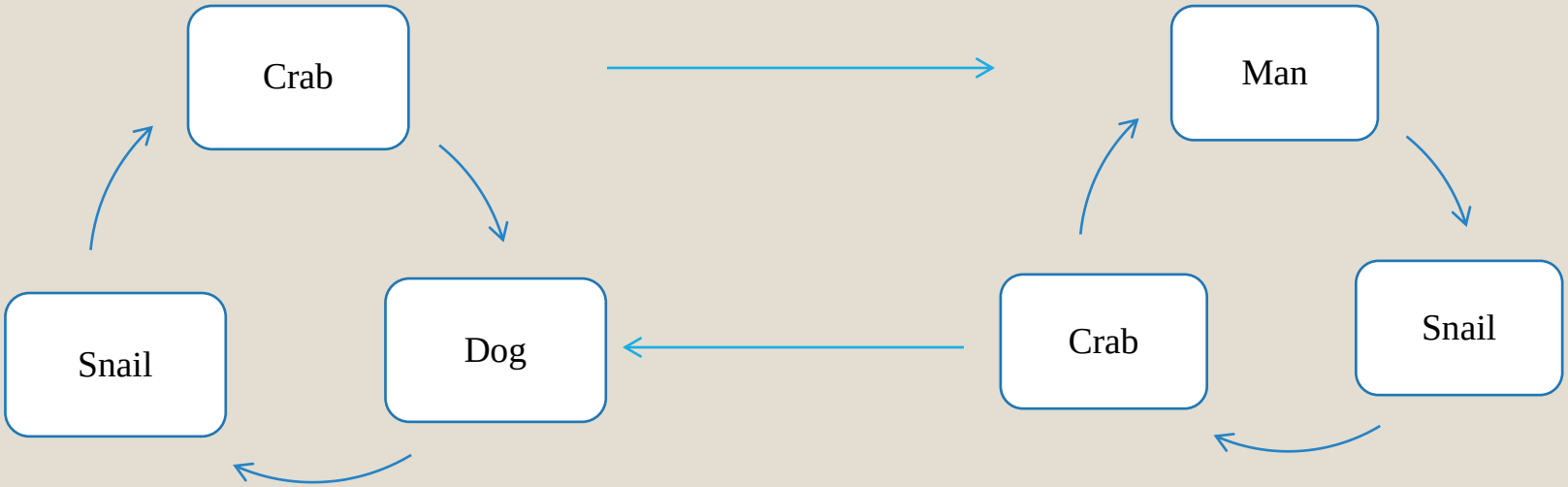
Based on transmission cycle

(Based on the type of life cycle of the infective organism)

(b) Metazoonoses type II

One vertebrate and two invertebrate hosts

e.g. Paragonimiasis



(Paragonimiasis)

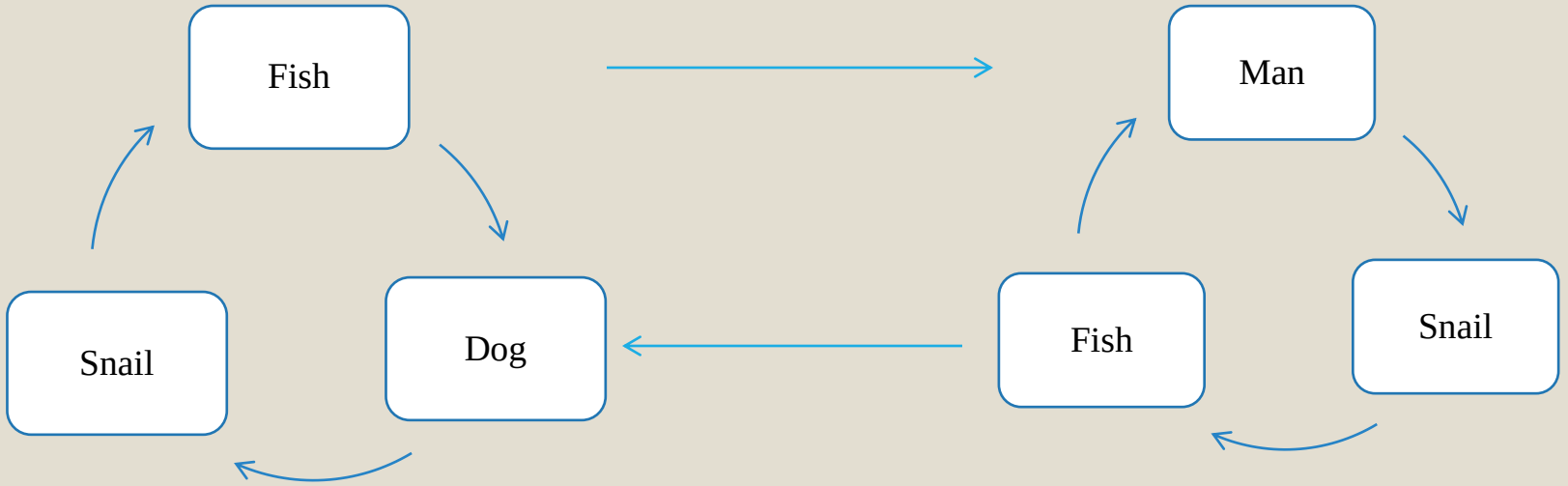
Based on transmission cycle

(Based on the type of life cycle of the infective organism)

(c) Metazoonoses type III

Two vertebrate and one invertebrate hosts

e.g. Clonorchiasis



(Clonorchiasis)

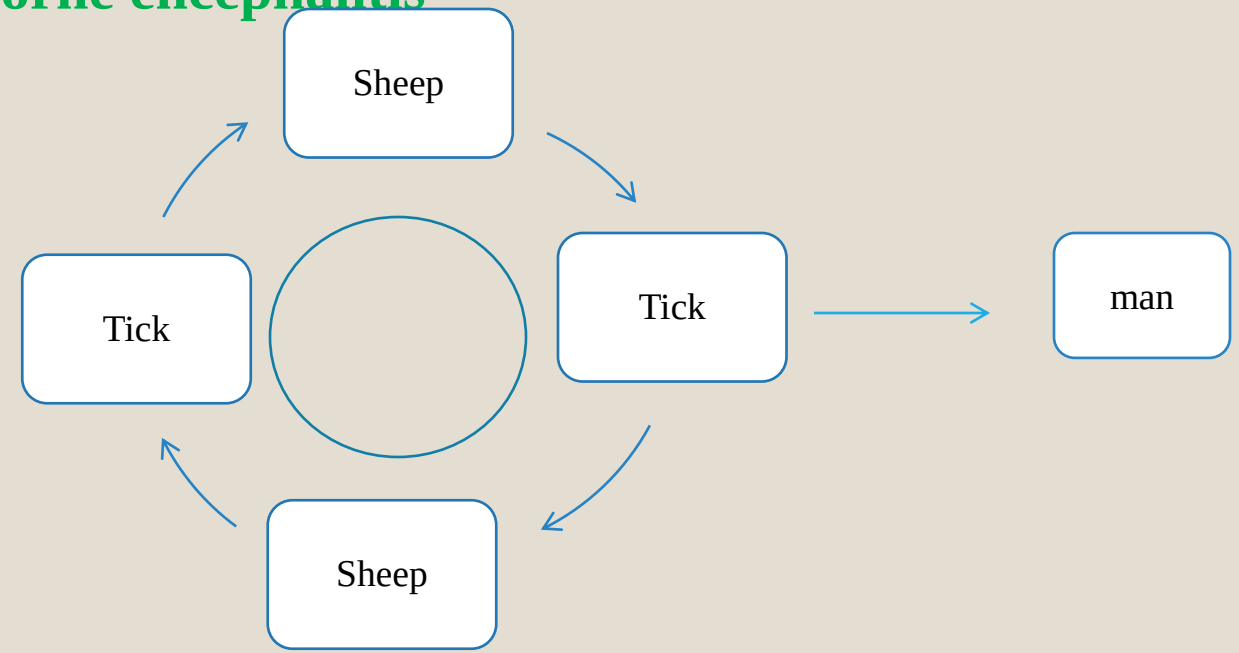
Based on transmission cycle

(Based on the type of life cycle of the infective organism)

(d) Metazoonoses type IV

Transovarian transmission

e.g. Tick-borne encephalitis



Based on transmission cycle

(Based on the type of life cycle of the infective organism)

4. **Saprozoonoses**

Require a **non-animate** substance for completion of life cycle in addition to vertebrate or invertebrate host

i.e. food, soil, clothing, water, grass or plants

✓An infectious agent may multiply, develop or propogate on inanimate site may serve as reservoir or source of an infectious agent

It is subdivided into 3 types:

a. Saproanthrapozoonoses

b. Saproamphixenoses

c. Saprometanthrapozoonoses

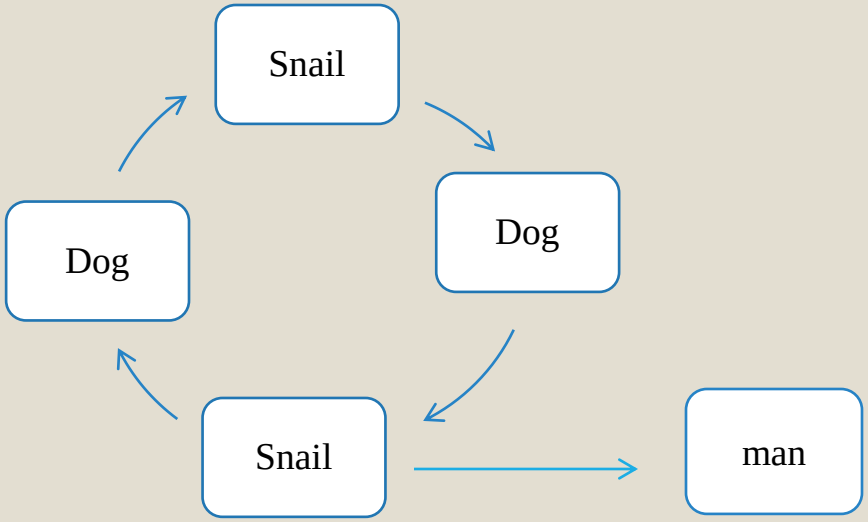
Based on transmission cycle

(Based on the type of life cycle of the infective organism)

a) Saproanthrapozoonoses

These diseases of animals are transmitted to human beings via **non-animate substance**.

e.g. Cutaneous larva migrans, Ancylostomiasis



(Cutaneous larva migrans)

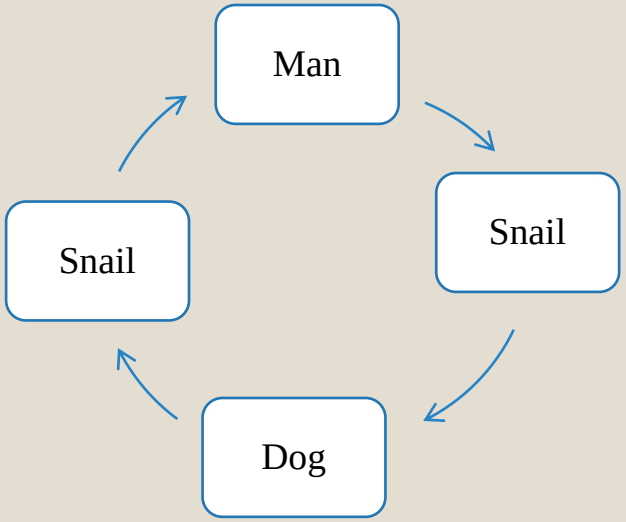
Based on transmission cycle

(Based on the type of life cycle of the infective organism)

(b) Saproamphixenoses

These diseases are equally shared in nature by man and animals but are transmitted through **inanimate objects**

e.g. Histoplasmosis, fungal infections



(Histoplasmosis)

Based on transmission cycle

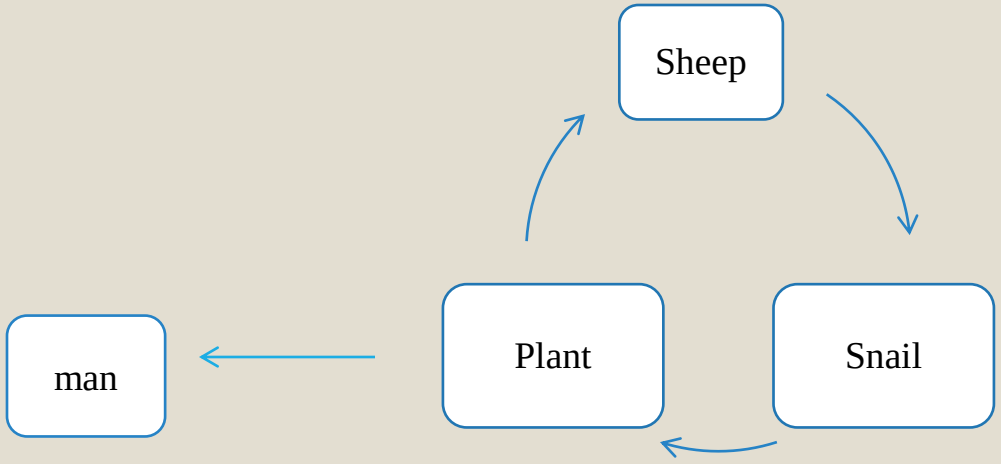
(Based on the type of life cycle of the infective organism)

(c) Saprometanthrapozoonoses

Require **vertebrate host**, **invertebrate host** and **inanimate object**

for completion of transmission cycle

e.g. Fascioliasis



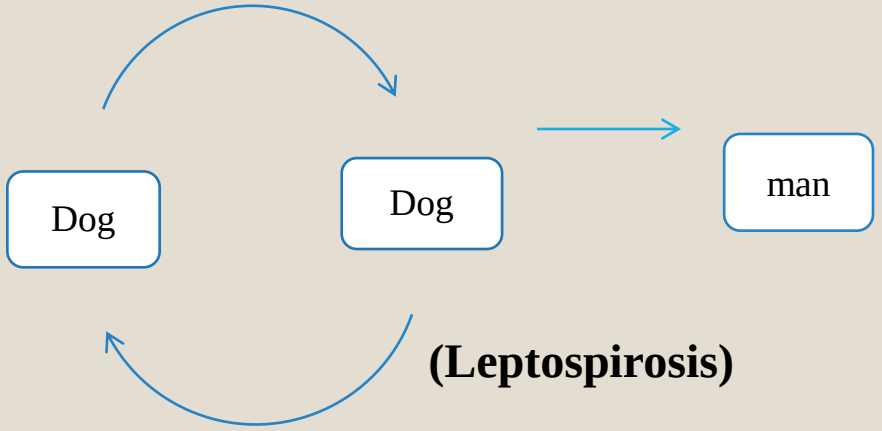
Based on reservoir hosts

a) Anthrapozoonoses

These are diseases of domestic and wild animals which occur in nature independent of man

- ✓ Human beings get infected from animals in unusual circumstances, through **occupational contact** or **food**
- ✓ Mostly man act as cul de sac

e.g. Leptospirosis, tularemia, Rift valley fever, hydatidosis, rabies



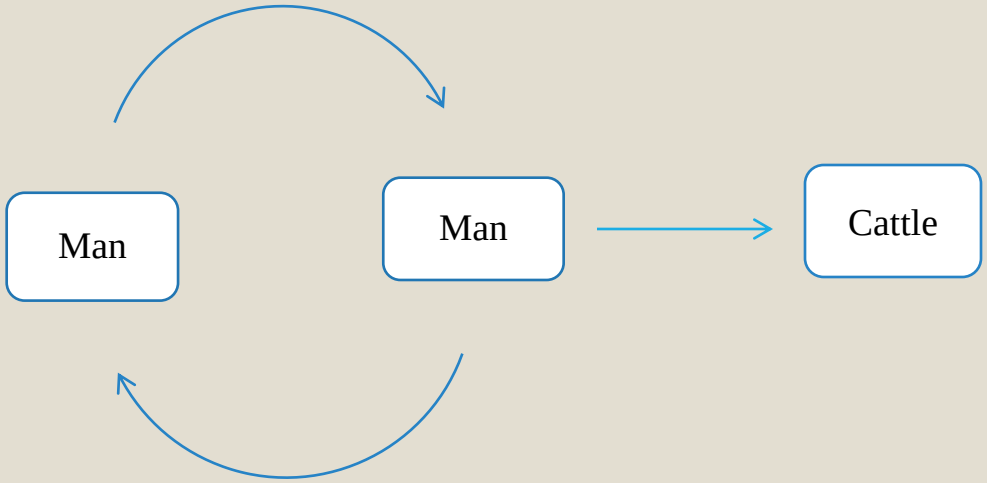
(Leptospirosis)

Based on reservoir hosts

b) Zooanthroponoses :

These are diseases which normally pass from man to othervertebrate animals.

e.g. Tuberculosis (Human type), amoebiasis, diptheria (Human type).



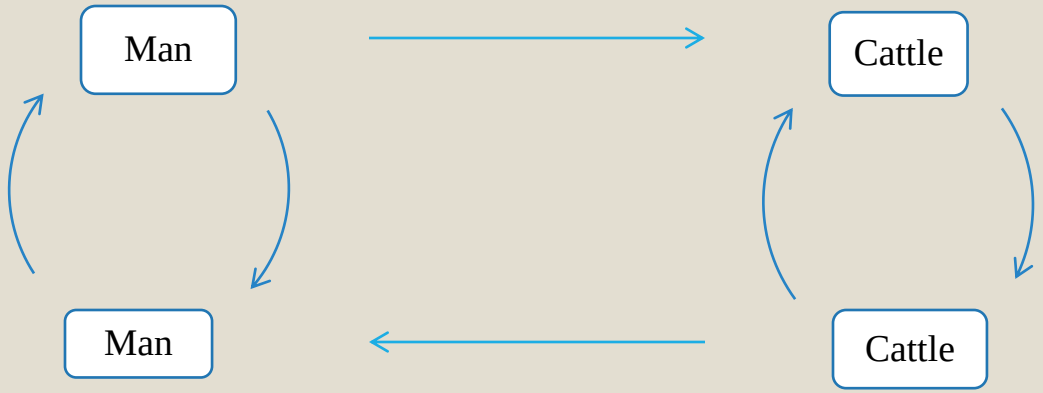
Tuberculosis (Human type)

Based on reservoir hosts

c) Amphixenoses

These are ubiquitous diseases for which man as well as vertebrate animals act as host. The agent can pass from man to animal and animal to man

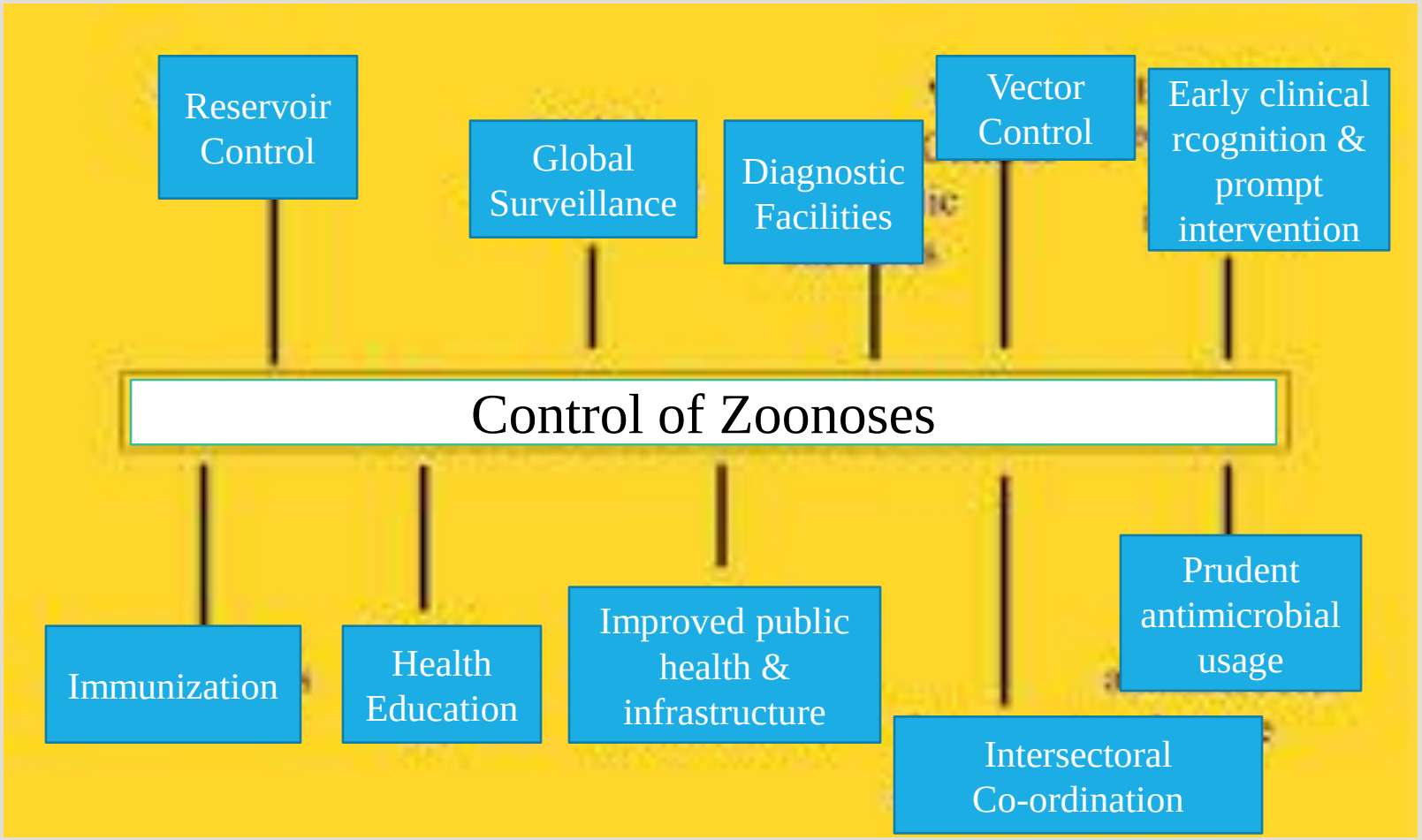
e.g. Streptococcosis, non-host specific salmonellosis, staphylococcosis



(Streptococcosis)

Management of Zoonoses

- The control of zoonoses involves the following steps -

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