



มหาวิทยาลัยราชภัฏนครปฐม
Nakhon Pathom Rajabhat University

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CHAPTER 2

Natural of Diseases and Distribution

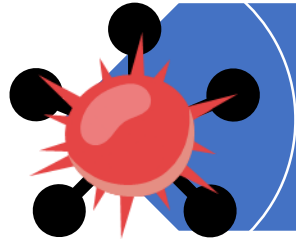
(ธรรมชาติการเกิดโรคและการกระจายของโรค)

Episode 2

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THE CONTENTS OF THIS CHAPTER



Web of causation of disease

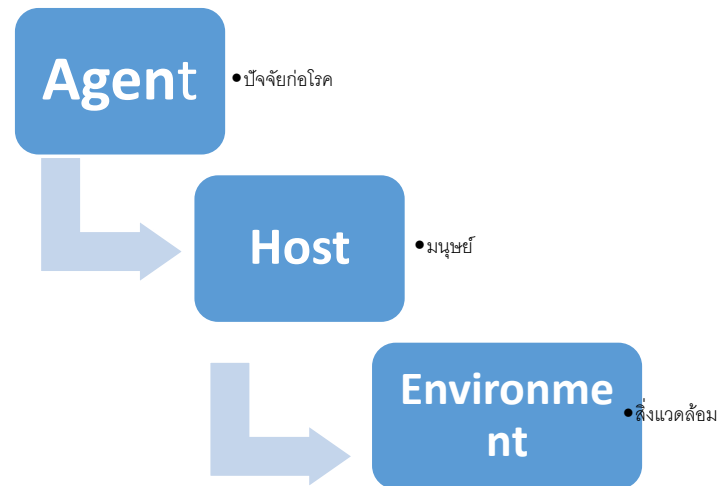


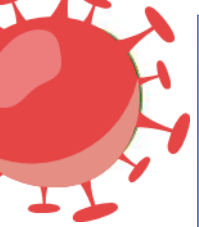
The occurrence of non-communicable diseases/ chronic diseases



Web of causation of disease

- Causation of disease: any disease is not caused by only one factor.



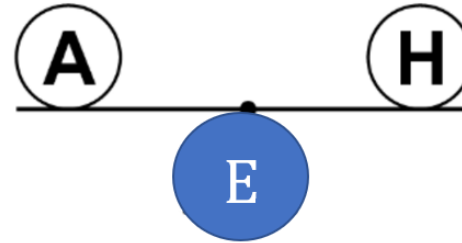


Epidemiologic triad (ปัจจัยสามทางวิทยาการระบาด)



Agent

• ปัจจัยก่อโรค



Host

• มนุษย์



Environment

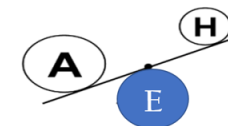
• สิ่งแวดล้อม



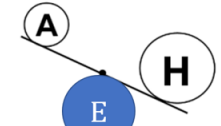
Pathogenesis Period

Agent Change

Host Change



Model 2

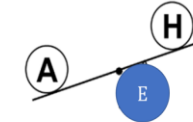


Model 3

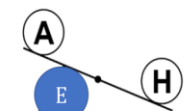
Pathogenesis Period

Environment Change facilitates agent spread

Environment Change alters host susceptibility



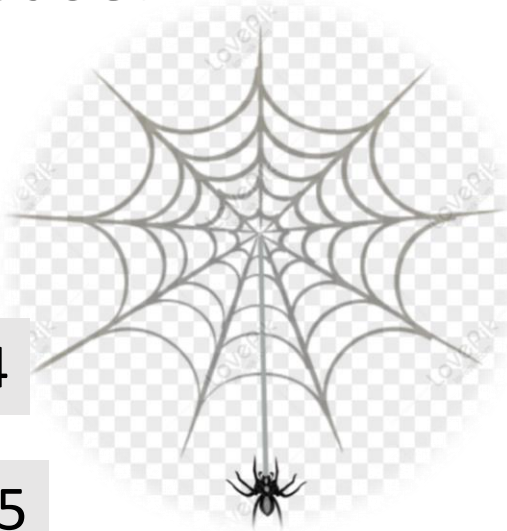
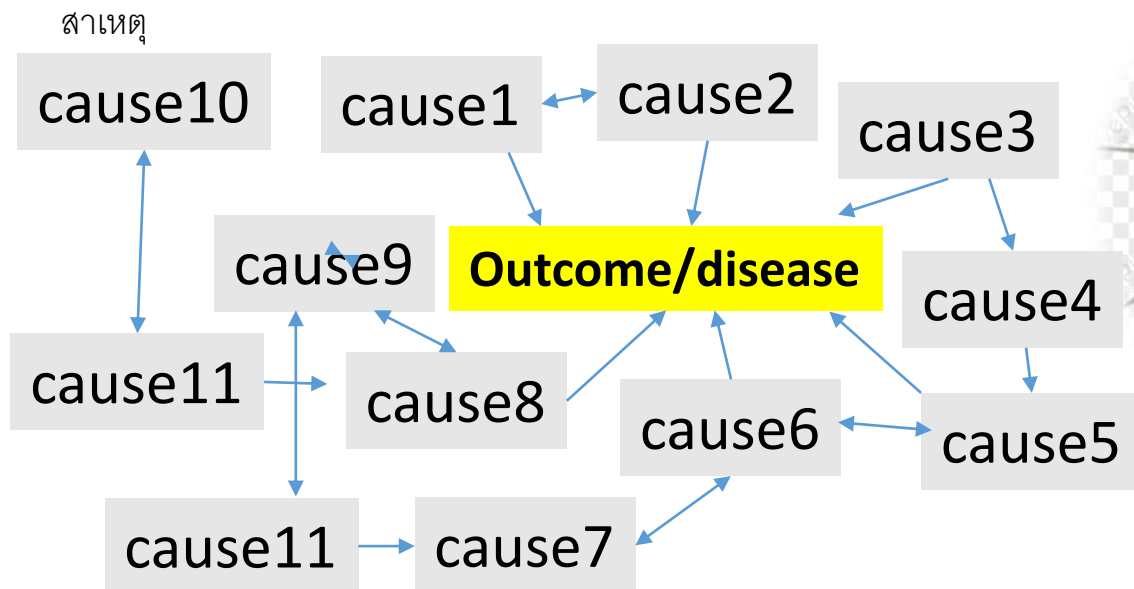
Model 4



Model 5

Web of causation of disease

- The concept of disease etiology is a "web of causation" which includes all the predisposing factors of any type and their complex relations with each other and with the disease.



Web of causation of disease

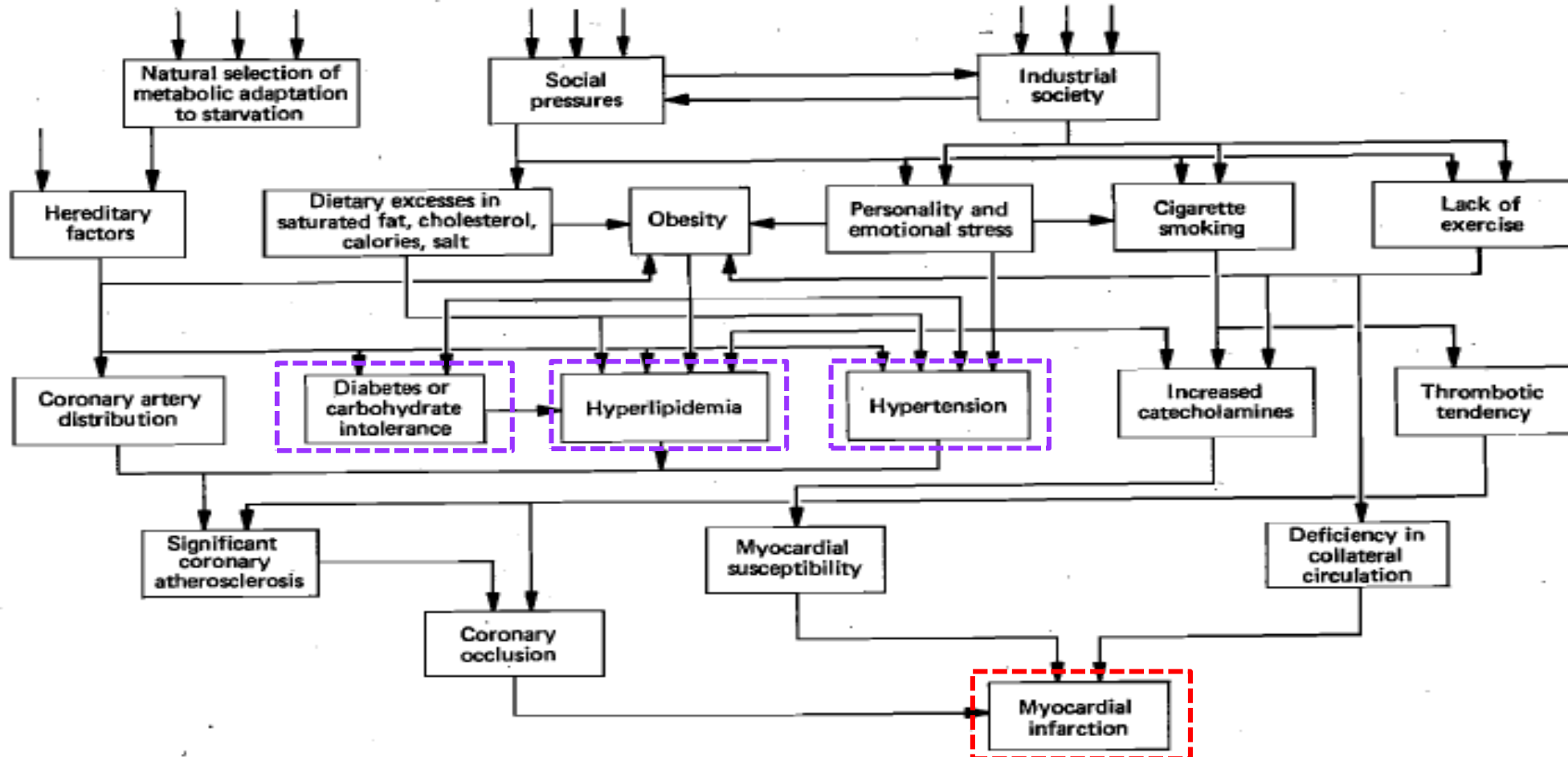


Figure 1-1 The web of causation for myocardial infarction: a current view.

Source: Friedman, D. G. (1974). Primer of Epidemiology. USA: A Blakiston publication. P.4..



The occurrence of non-communicable diseases OR **chronic diseases**

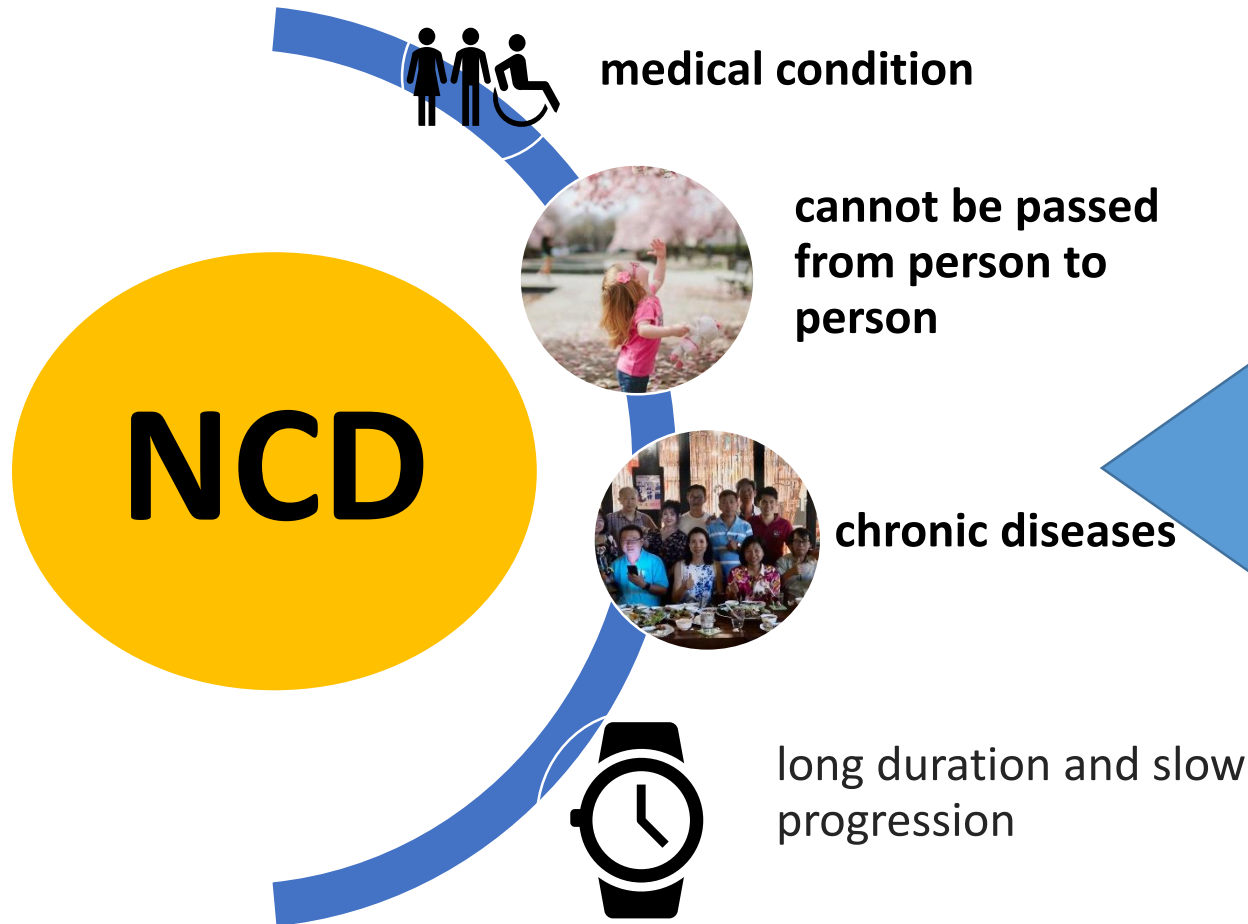


Non-communicable disease/Chronic diseases



Definition of non-communicable disease

for example



- **Cardiovascular diseases** (like heart attacks and stroke),
- **Cancer,**
- **Chronic respiratory diseases** (such as chronic obstructed pulmonary disease and asthma) and
- **Diabetes**
- **Hypertension**
- **etc**

The occurrence of non-communicable diseases/Chronic diseases

1. Non-modification

2. Modification

Determinants of disease

3. Physiological changes

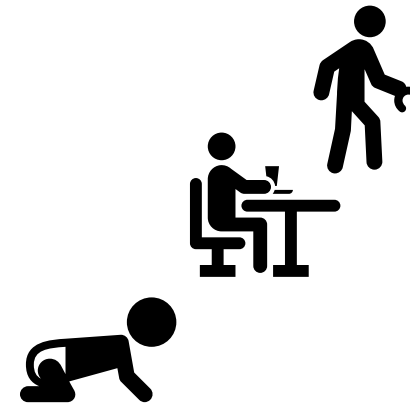
4. Social, Economic, Custom, and Political Factors

Determinants of disease

✓ Genetics

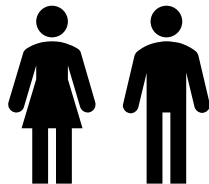


✓ Age



1. Non-modification

✓ Gender



Determinants of disease

2. Modification

❖ Tobacco consumption

❖ Drinking alcohol

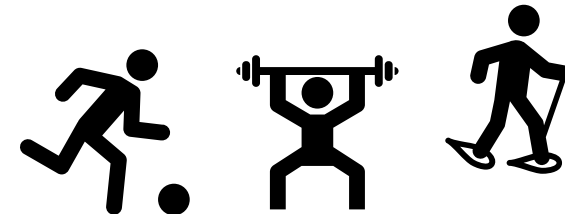


❖ Improper food intake

❖ Inadequate physical



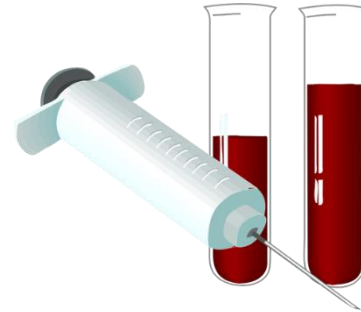
❖ Air pollution



Determinants of disease

3. Physiological changes

- Hyperlipidemia
- High blood pressure
- High blood sugar
- Overweight / Obesity



Determinants of disease

4. Social, Economic, Custom, and Political Factors

➤ **Globalization**

➤ **Urbanization**

➤ **Elderly society**

The occurrence of non-communicable diseases/Chronic diseases



1. Non-modification

- ✓ Genetics
- ✓ Age
- ✓ Gender

Determinants of disease

2. Modification

- ❖ Tobacco consumption
- ❖ Drinking alcohol
- ❖ Improper food intake
- ❖ Inadequate physical
- ❖ Air pollution

3. Physiological changes

- Hyperlipidemia
- High blood pressure
- High blood sugar
- Overweight / Obesity

4. Social, Economic, Custom, and Political Factors

➤ Globalization

➤ Urbanization

➤ Elderly society

Risk Factors of Disease: BEINGS Model

The acronym **BEINGS** can serve as a mnemonic device for the major categories of risk factors for disease

- **“B”**—BIOLOGIC AND BEHAVIORAL FACTORS
- **“E”**—ENVIRONMENTAL FACTORS
- **“I”**—IMMUNOLOGIC FACTORS such as chemotherapy of cancer and the long-term use of corticosteroids produce immunodeficiency
- **“N”**—NUTRITIONAL FACTORS
- **“G”**—GENETIC FACTORS
- **“S”**—SERVICES, SOCIAL FACTORS, AND SPIRITUAL FACTORS

From: Joann Elmore, Dorothea Wild, Heidi Nelson, David Katz. (2020). *Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health*. 5th Edition.

Philadelphia: Saunders, p5-7.

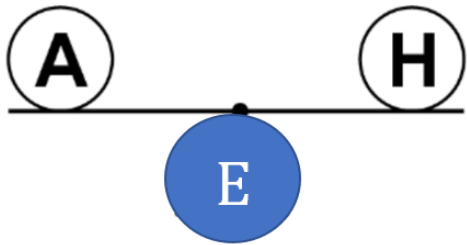


Natural History of NCD in Man

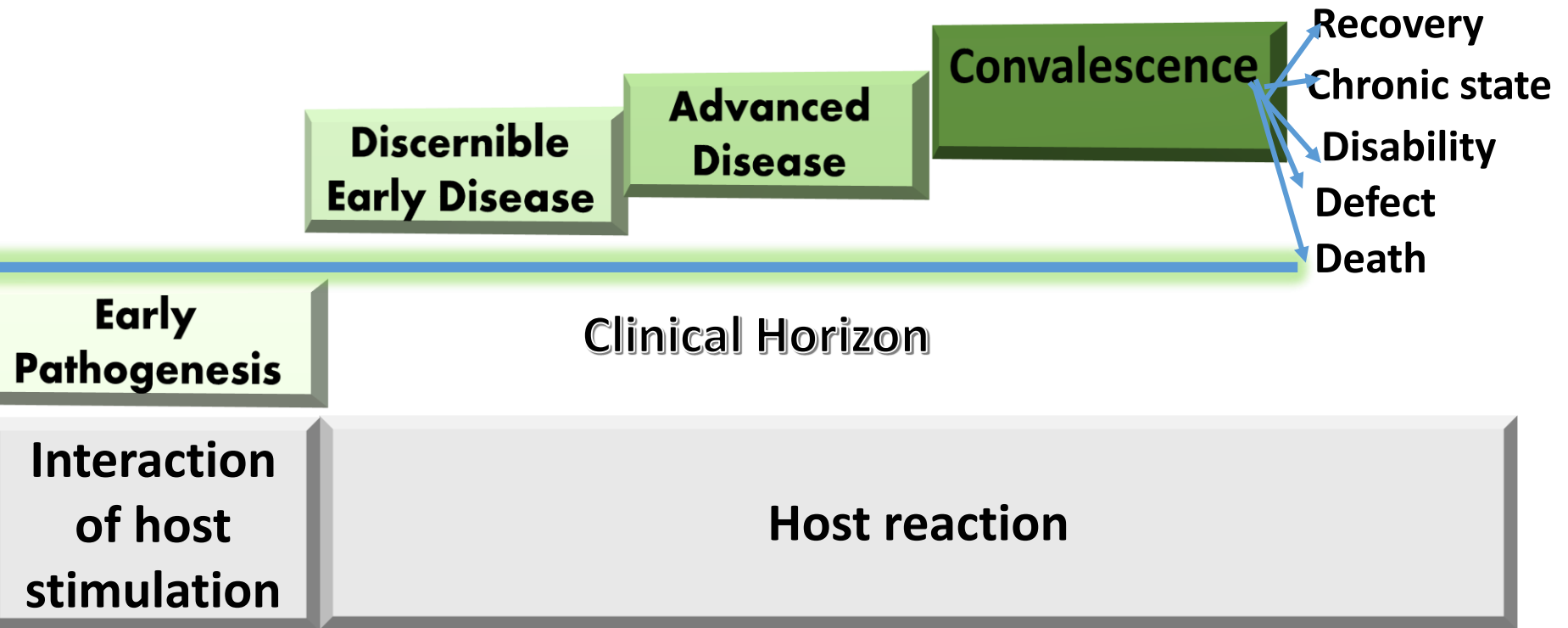
**Prepathogenesis
Period**

Pathogenesis Period

No-disease period

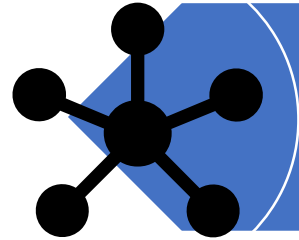


Factors that produce
disease stimulation



Source: Department of Epidemiology, Faculty of Public Health, Mahidol University, (2012). Learning Module PHEP

Summary



Web of causation of disease



The occurrence of non-communicable
diseases/ chronic diseases





Thank You for Your Attention



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to be continued

