

Principle of

Disease Prevention and Health Promotion

Krongporn Ongprasert, MD

Community Medicine Department, Faculty of Medicine Chiang Mai University

2018

Out line

- Disease prevention
- Health promotion

Disease prevention

Definition

- A range of activities to prevent the onset of disease or to reduce or ameliorate its effects.
- Prevention is categorized as
 - : Primary level
 - : Secondary level
 - : Tertiary level
 - : Quaternary level

Primary prevention

Primary prevention

- to avoid the onset of ill health through the detection of high risk groups and provision of care.

Example

: Immunization

: Health education in childhood injury prevention

Example 1 : Primary prevention / Immunization

Immunization

Vaccine

- Vaccines are medicines that boost the immune system's, mainly infectious agents.
- Cancer preventive vaccines target infectious agents that cause or contribute to the development of cancer.

: Hepatitis B vaccine



: Human papillomavirus vaccine

Hepatitis B vaccine

- Since 1992, Hepatitis B vaccine was covered in Expanded Program on Immunization (EPI) in Thailand.
- In 2004, their impact on children under age five was **decreased number of carrier form 5.4% to 0.5%**
- Of the **three million** chronically infected people in 2015, 60% were **older than 45 years.**

Periconceptional nutrition

Folic acid

- Neural tube defects (NTDs) are severe birth defects, occurring in 0.5 to 2 per 1000 pregnancies.
- the defects arise from failure of embryonic neural tube closure by the fourth week of pregnancy
- **Periconceptional folate intake can prevent about 70% of NTDs.**

Secondary prevention

Secondary prevention

- to change health damaging behaviour to shorten episode of illness and prevent the progression of ill health

Example

: Screening (early detection)

: Case finding programs

Screening in well baby clinic

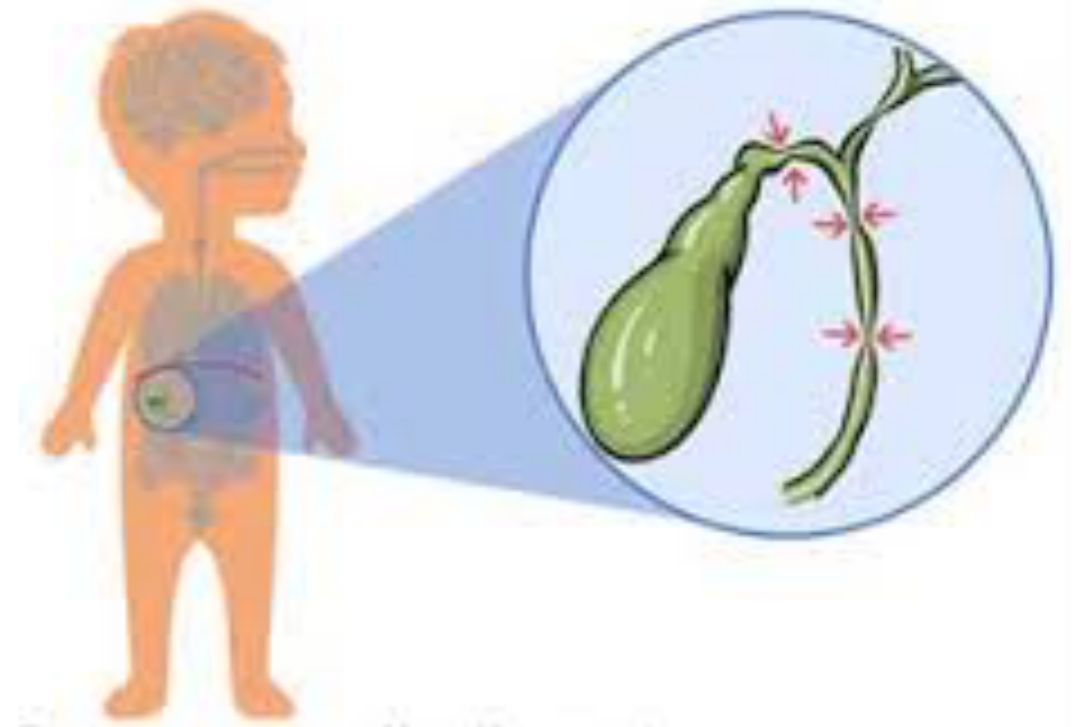
Recommendations for Preventive Pediatric Health Care

- History taking/ Physical examination
- Growth monitoring
- Sensory screening (Vision / Hearing)*
- Developmental / Behavioural screening*
- Screening for disease (e.g. hypothyroid, anaemia)*

Stool color cards

Biliary Atresia

- BA is characterized by obliteration or discontinuity of the extrahepatic biliary system, resulting in obstruction to bile flow.
- Incidence in Thailand
: about 1 per 5,000-15,000 birth.
- Diagnosis test : Cholangiogram



Biliary Atresia

- Treatment

: Kasai operation

: Average age at the time of surgery was 90 days of age, **54.4% had liver fibrosis** at the time of surgery.

Example 2 : Secondary prevention / Stool color cards

- Primary care physicians early case identify by stool color cards.
- Typically is present by the age of 30 days in biliary atresia.

Tertiary prevention

Tertiary prevention

- to limit disability or complications arising from a chronic or irreversible condition and enhance quality of life

Example

: Rehabilitation therapy

: Palliative care

Rehabilitation therapy

- Physical therapy to help your strength, mobility and fitness.
- Occupational therapy to help you with your daily activities.

Palliative Care

- An approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness.
- Through the prevention and relief of suffering by early identification, assessment and treatment of pain and other problems, physical, psychosocial and spiritual

Quaternary prevention

Quaternary prevention

- to prevent, decrease and/or alleviate the harm caused by **health activities**
- to identify patients at risk of overmedicalisation and protect them

“ First, do no harm ”

Example 1 : Quaternary prevention / avoid unnecessary check ups

Examination/Test	Executive	Executive with Stress Test	Comprehensive (Over 40)	Holistic 55-69 †	Holistic 70 + † Holistic 80 + †
Approximate time to complete program	3-4 hours	3-4 hours	4-5 hours	5-8 hours	6-8 hours
Vital Signs and Physical Examination	*	*	*	*	*
Blood Tests					
• Complete Blood Count (CBC)	*	*	*	*	*
• Fasting Blood Sugar	*	*	*	*	*
• Hb A1 C			*	*	*
• Lipid (Fat) Profile					
* Cholesterol, HDL and Triglyceride	*	*	*	*	*
* Cholesterol/HDL ratio	*	*	*	*	*
* LDL Cholesterol	*	*	*	*	*
• Creat * Uric acid	*	*	*	*	*
• Kidney Function Panel					
* Creatinine	*	*	*	*	*
* BUN			*	*	*
• Liver Function Panel					
* SGOT (AST) and SGPT (ALT)	*	*	*	*	*
* Alkaline Phosphatase (ALP)	*	*	*	*	*
* Total Bilirubin, Albumin, Globulin			*	*	*
* Direct bilirubin, Total protein			*	*	*
* Gamma GT (GGT)			*	*	*
• Thyroid Panel *TSH and Free T4			*	*	*
• Hepatitis Screening					
* HBsAg and HBsAb			*	*	*
* Anti HCV			*	*	*
• Tumor Markers					
* CEA for GI Cancer			*	*	*
* AFP for Liver Cancer			*	*	*
* PSA for Prostate Cancer			(Male only)	(Male only)	(Male only)
Urine examination	*	*	*	*	*
Stool Examination with Occult Blood	*	*	*	*	*
Electrocardiogram (ECG)	*	*	*	*	*
Exercise Stress Test (EST)		*	(Male only)	(Male only)	
Chest X-Ray	*	*	*	*	*
Ultrasound Whole Abdomen	*	*	*	*	*
Digital Mammogram with Ultrasound Breast			(female over 40)	(female only)	(female under 50)
Pap Smear and Pelvic Exam	(female only)		(female only)	(female only)	
Vitamin B12				**	*
Z5-Cit-Vitamin D3/25 by LC-MS/MS				*	*
Electrolytes - Sodium, Potassium					*
Calcium				*	*
Bone Density L-Spine & Hip				(female only)	*
Ankle Brachial Index (ABI)				*	*
Microalbuminuria				*	*
Eye Exam (Acuity and Tonometry) in Health Screening Center			*		
Dilated Eye Exam (Acuity, Tonometry, OCT, Retinal) in Eye Center				*	*

Example 2 : Quaternary prevention / voiding to use of invalidated therapeutic modalities.

Lipohypertrophy

- is an important insulin injection site reaction
- Quaternary prevention is avoiding to use of invalidated therapeutic modalities.

Quaternary prevention

Example

: avoid the pharmacological treatment of unnecessary primary prevention

: prevention of false positives laboratory test

: avoid the overdiagnosis and overtreatment

Preventive medicine

Preventive medicine

- Preventive medicine specialist works with large population groups as well as with individual patients to promote health and understand the risks of disease, injury, disability and death.

อนุมัติและวุฒิบัตร สาขาเวชศาสตร์ป้องกัน

: อาชีวเวชศาสตร์ (Occupational Medicine)

: ระบาดวิทยา (Epidemiology)

: เวชศาสตร์การบิน (Aviation Medicine)

: เวชศาสตร์ป้องกันคลินิก (Clinical Preventive Medicine)

: สาธารณสุขศาสตร์ (Public Health)

: สุขภาพจิตชุมชน (Community Mental Health)

Health promotion

Health promotion

- A range of activities and intervention to enable people to take greater control over their health.
- Requires a close co-operation of sectors beyond health services which influence health.

Making the healthy
choice the easier choice.

Health promotion

- The Ottawa charter for health promotion remains one of the most influential policy documents in history of health promotion.
- It established the fundamental guiding principles and values of health promotion and described five key action areas



World Health Organization

WHO Regional Offices

WHO African Region

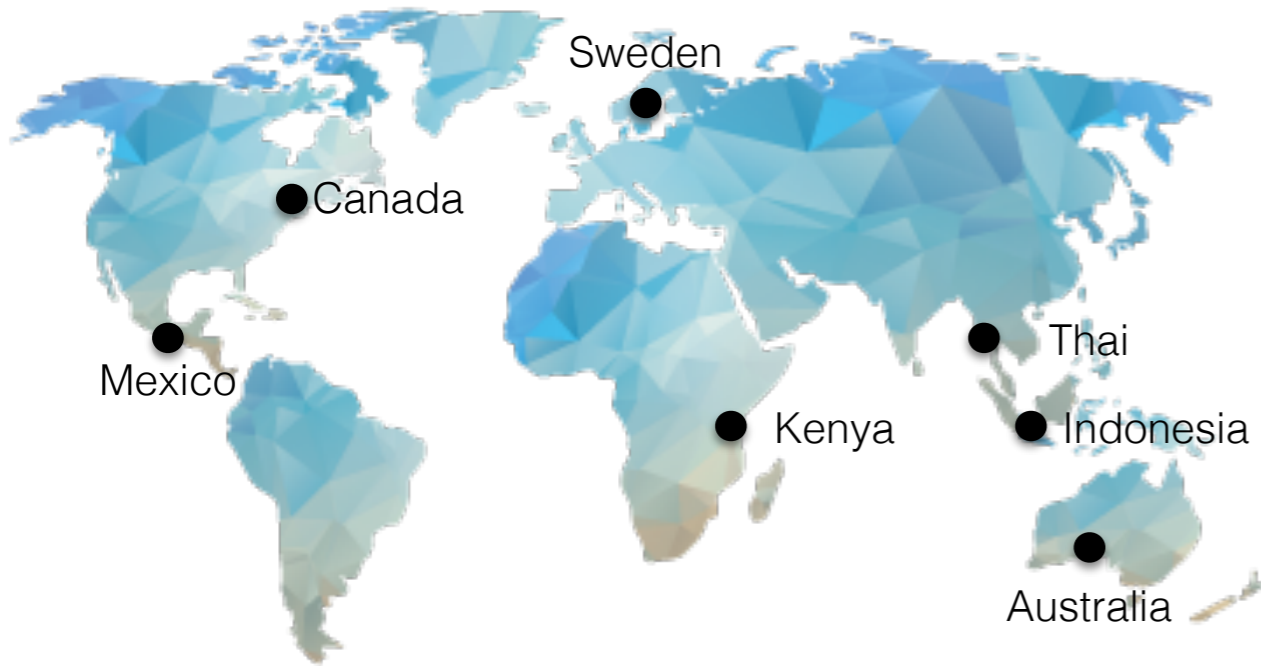
WHO Region of the Americas

WHO South-East Asia Region

WHO European Region

WHO Eastern Mediterranean Region

WHO Western Pacific Region



	1986, Ottawa Canada*
	1988, australia
	1991, Sweden
	1997, Indonesia
	2000, Mexico
	2005, Bangkok Thailand*
	2009, Kenya

Basic health promotion strategies Ottawa charter, WHO 1986

Five key action

1. Build healthy public policy สร้างนโยบายสาธารณะเพื่อสุขภาพ
2. Re-orient health services ปรับระบบบริการสุขภาพ
3. Create supportive environments สร้างสิ่งแวดล้อมที่เอื้อต่อสุขภาพ
4. Strengthen community action เสริมสร้างกิจกรรมชุมชนให้เข้มแข็ง
5. Develop personal skills พัฒนาทักษะส่วนบุคคล

Build healthy public policy

สร้างนโยบายสาธารณะเพื่อสุขภาพ

- to describe the role of the **leader** (government, community leader) increasing the conditions that support health system.
- to make a clear policy for put health agenda in all sectors and all levels.

Re-orient health services

ปรับระบบบริการสุขภาพ

- to balance between **prevention and treatment**
- to balance between population health outcome and individual health, **health services** play a major role.

Create supportive environments

สร้างสิ่งแวดล้อมที่เอื้อต่อสุขภาพ

- to create environments offer people protection from factors that can threaten good health as well as creating supportive and health promoting environments.

Strengthen community action

เสริมสร้างกิจกรรมชุมชนให้เข้มแข็ง

- to empower a community, build their ownership and control of their own endeavours and destinies.

Develop personal skills

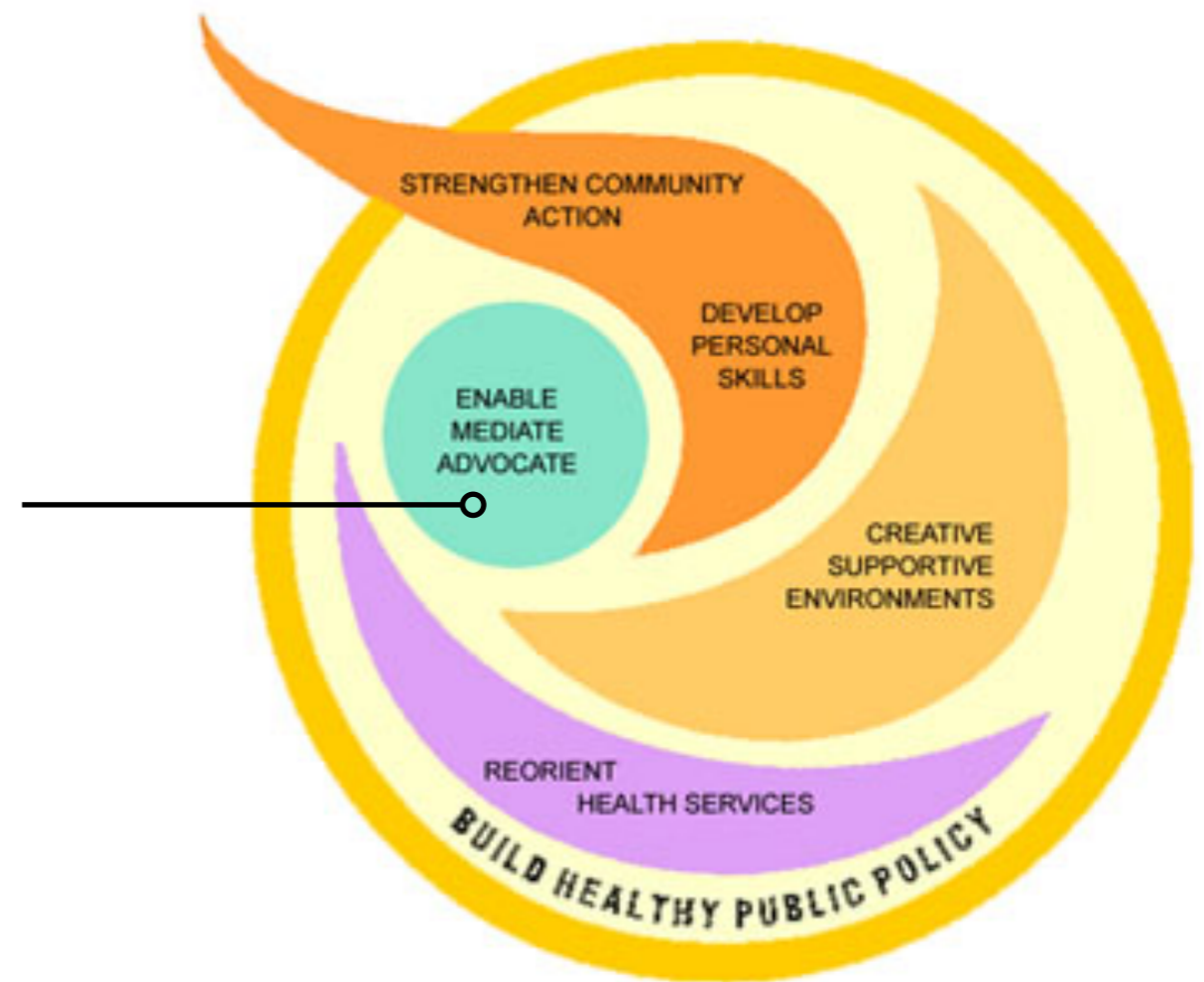
พัฒนาทักษะส่วนบุคคล

- to increase the options available to people to exercise more control over their own health and over their environments, and to make choices conducive to health.

Basic health promotion strategies Ottawa charter, WHO 1986

Three basic HP strategies

- Enable เพิ่มความสามารถ
- Mediate การไกล่เกลี่ยต่อรอง
- Advocate สร้างกระแส



Basic health promotion strategies Ottawa charter, DM

Five key action

1. Build healthy public policy : รัฐขึ้นภาษีเครื่องดื่มน้ำตาลสูง / ผู้นำชุมชนออกนโยบายสนับสนุนร้านค้า ในการขายของสุขภาพ
2. Re-orient health services : จนท.สาธารณสุข เพิ่มการทำกิจกรรม ในการคัดกรองผู้มีความเสี่ยง และให้ความช่วยเหลือ ในการป้องกัน
3. Create supportive environments : จัดร้านค้า ให้มีมุมอาหารสำหรับผู้ป่วยเบาหวาน
4. Strengthen community action : ผู้ป่วยเบาหวานที่คุมระดับน้ำตาลได้ดี เป็นแกนนำ ในการทำกิจกรรมเพื่อ ให้คน ในชุมชนเข้าใจ และเรียนรู้การปฏิบัติตัว ในการควบคุมน้ำตาล
5. Develop personal skills : พัฒนาทักษะส่วนบุคคล จนท.สาธารณสุขสอนวิธีการอ่านฉลากโภชนาการเป็นรายบุคคลกับผู้ป่วย

Basic health promotion strategies Ottawa charter, Obesity

Five key action

1. Build healthy public policy : ผอ.รร. ออกนโยบายเพิ่มเวลาเล่นกิจกรรมกลางแจ้ง
2. Re-orient health services : จนท.สาธารณสุข สนใจการเข้าไปให้ความรู้/ความร่วมมือในการควบคุม และลดน้ำหนักภายใน รร.
3. Create supportive environments : มีอุปกรณ์ และสถานที่ที่เหมาะสมในการให้เด็กได้ออกแรง เช่น ทางเดินมา รร ที่ปลอดภัย, สนามเด็กเล่นที่มีเครื่องเล่นเพียงพอ
4. Strengthen community action : พ่อแม่ ผู้ปกครอง ร่วมตัวกันจัดกิจกรรม ที่มีการสนับสนุนการลดน้ำหนัก เช่น ร่วมตัวกดดันไม่ให้ รร. อนุญาต การขายของที่มีผลเสียต่อสุขภาพภายใน รร.
5. Develop personal skills : สอนให้เด็กเลือกทานอาหารได้เหมาะสม

TAKE HOME
MESSAGE

Disease prevention

- A range of activities to prevent the onset of disease or to reduce or ameliorate its effects.
- Prevention is categorized as
 - : Primary level
 - : Secondary level
 - : Tertiary level
 - : Quaternary level

Health promotion

Healthy People



Encourage individuals to adopt health behaviours



Making the healthy choice the easier choice



Build healthy
public policy

Re-orient
health
services

Strengthen
community
action

Create
supportive
environments

Develop
personal
skills