

# Health Technology Assessment and Healthcare Delivery in Asia: Experiences from Thailand

Pritaporn Kingkaew,  
B.Pharm, M.Sc (Health Economics)

Health Intervention and Technology Assessment Program

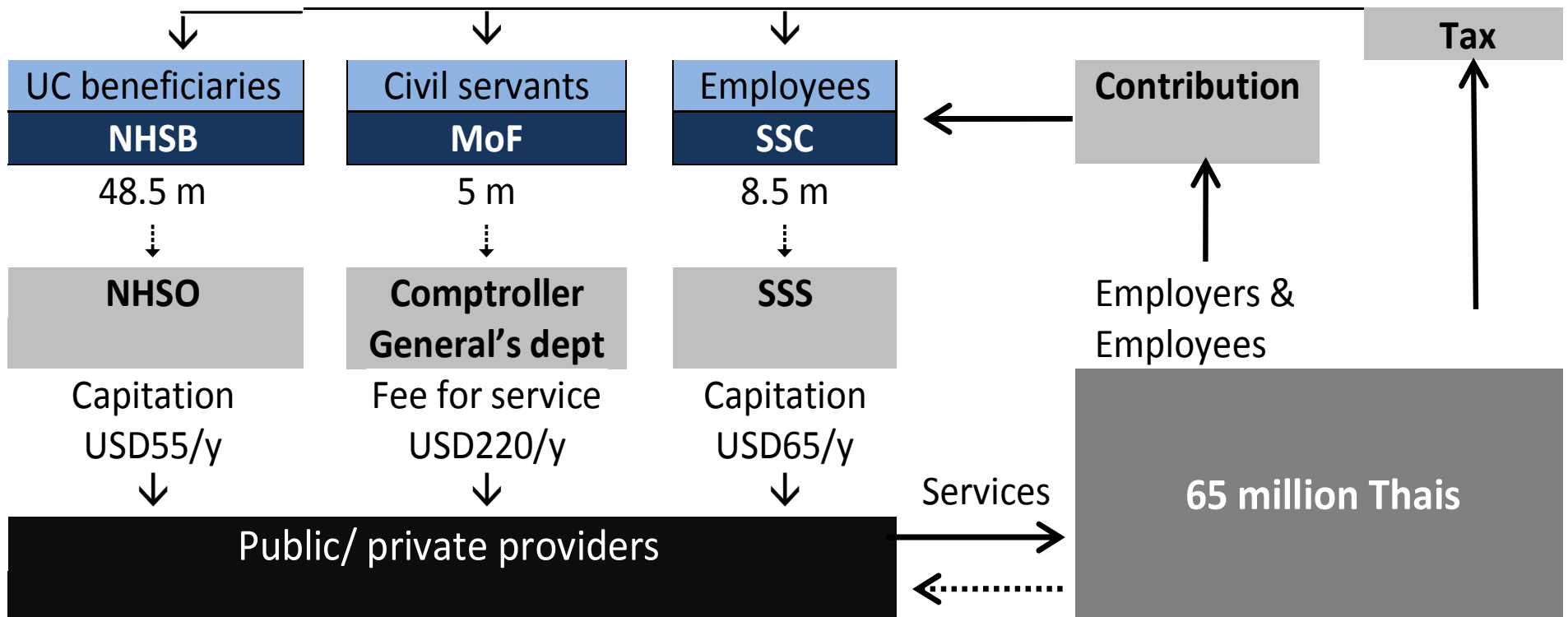


# History of Thai Healthcare System



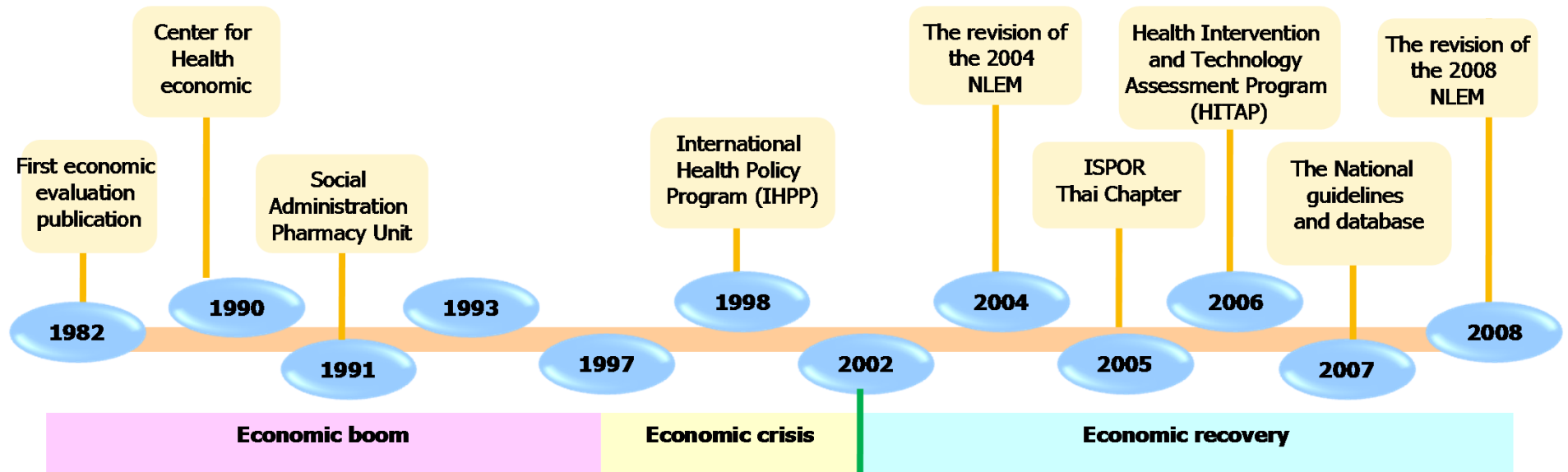
- Population: 65 million
- Universal health insurance coverage established in 2002
- Three insurance schemes
  - Universal Coverage Scheme (76%)
  - Social Security Scheme (16%)
  - Civil Servants Medical Benefit Scheme for civil servants (8%)
- Health expenditure: 5% of GDP (Public 70%)

# Health Benefit Schemes in Thailand



**Note:** Both UC and SSS also introduced vertical programs for certain services and UC introduced DRG in the case of inpatient services

# Milestones on HTA development in Thailand, 1982-2008



## Economic boom

- over investment in high-tech and expensive health technology
- poor distribution and inequity of access

## Economic crisis

- the need for cost containment and efficiency in health care system
- increase burden of public health sector

## Economic recovery

- Universal coverage policy → rights to access, resource constraints
- Strong civil society → evidence based policy decision, transparent

# Early experience of Thai UC scheme

- ‘30 Baht-Cure-all-disease-scheme” - promise of treating all diseases!!!
- Negative list approach, saying no to ARV, renal dialysis, organ transplantation etc.
- Under-utilization of essential health services
  - Incentive to contain health care cost due to prepaid capitation for ambulatory care and case-mix for inpatient services
- Social pressure to improve essential health service utilization



## Early experience of (not using HTA for) benefit package development

- Sub-committee of development of benefit package and service delivery (chaired by senior decision makers of MOPH and included professional and patient representatives)
  - Too many interventions being considered with various quality of supporting evidence
  - No systematic process—*those who 'shout the loudest' get the most out of the system*

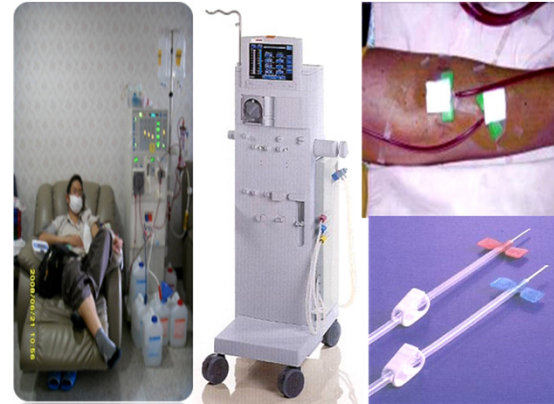


# Using HTA to inform coverage decision

- Renal dialysis



HD

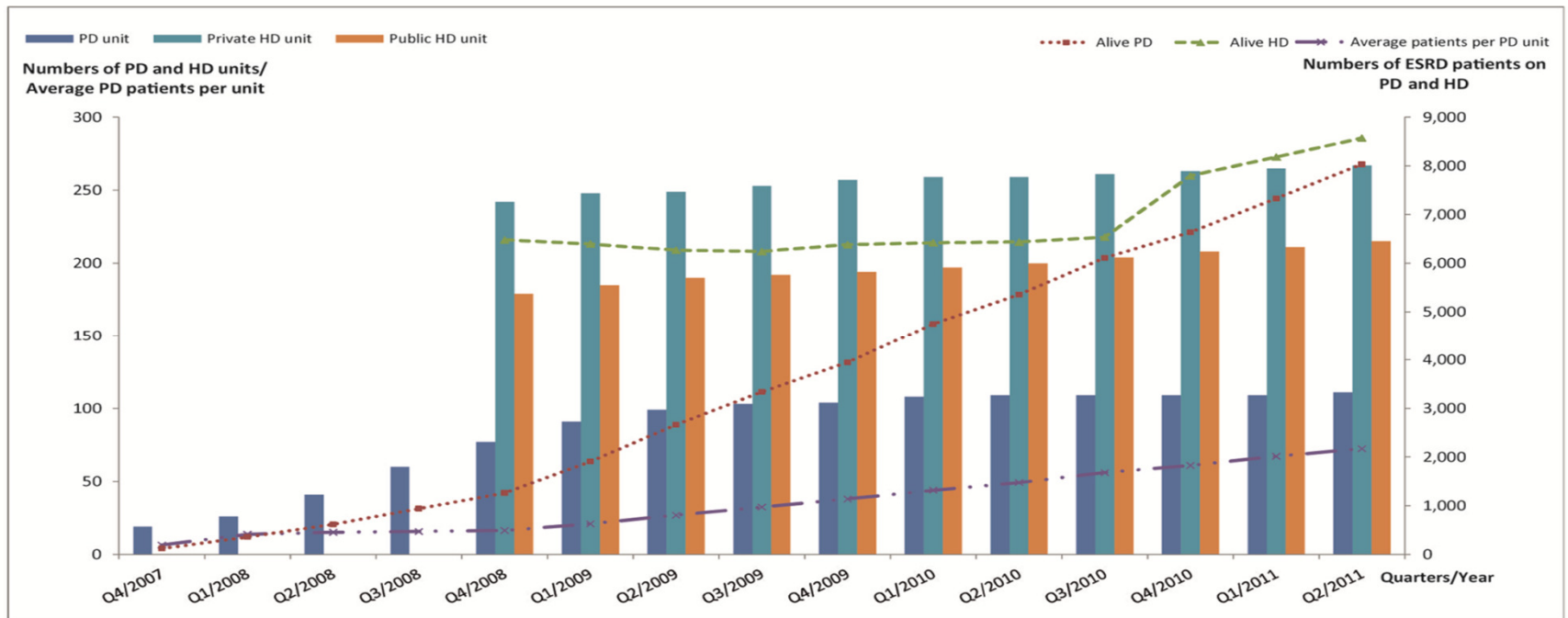


PD



### Economic Evaluation of Palliative Management versus Peritoneal Dialysis and Hemodialysis for End-Stage Renal Disease: Evidence for Coverage Decisions in Thailand

- Neither HD nor PD is cost-effective in Thailand (5-6 times of per capita GDP)
- PD-first policy seems to be more efficient than HD especially in societal and patient’s viewpoint
- The NHSO decided to introduce “PD-first policy”



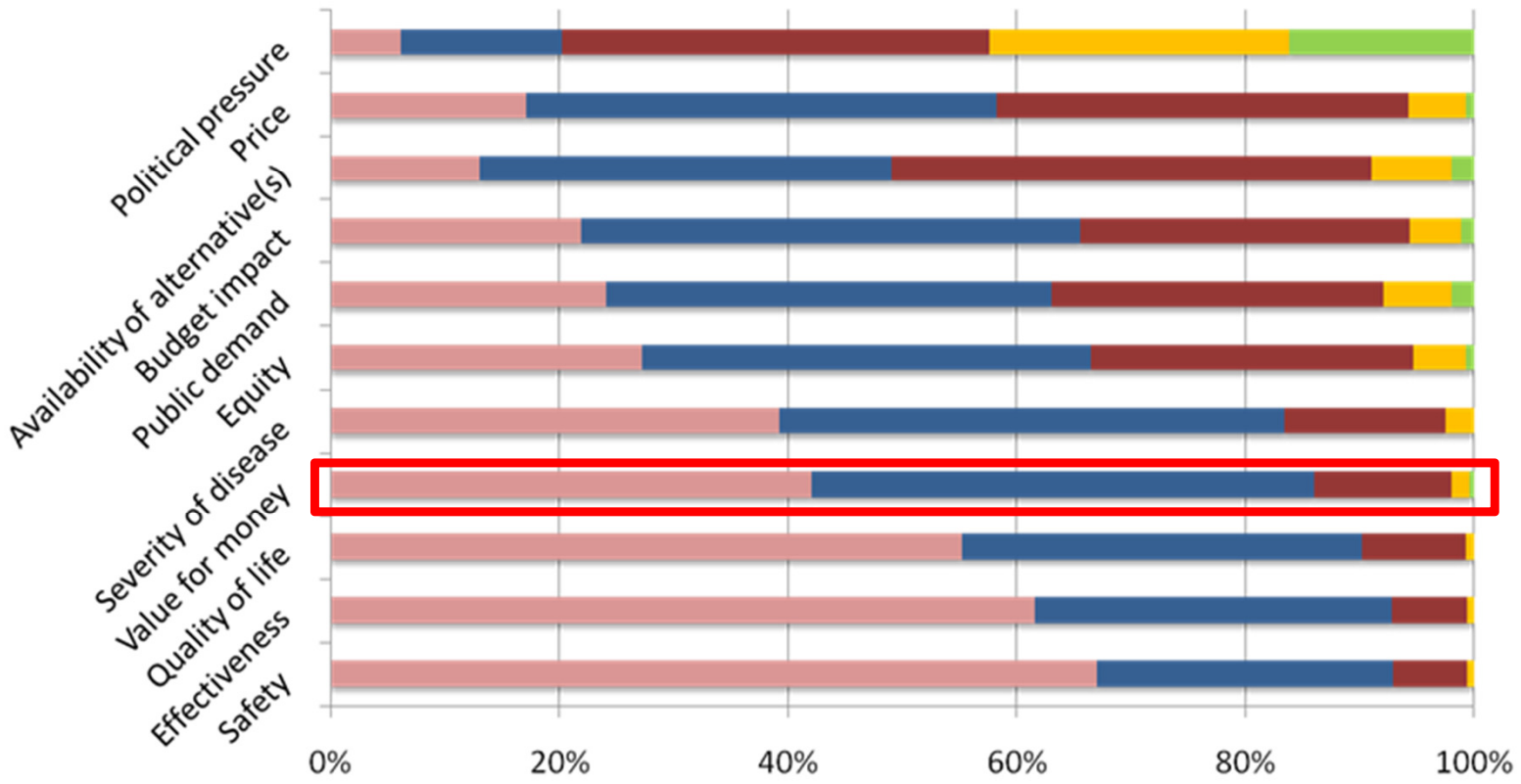
ESRD=end stage renal disease,PD=peritoneal dialysis, HD=hemodialysis

Source: Fund for kidney disease, National Health Security Office



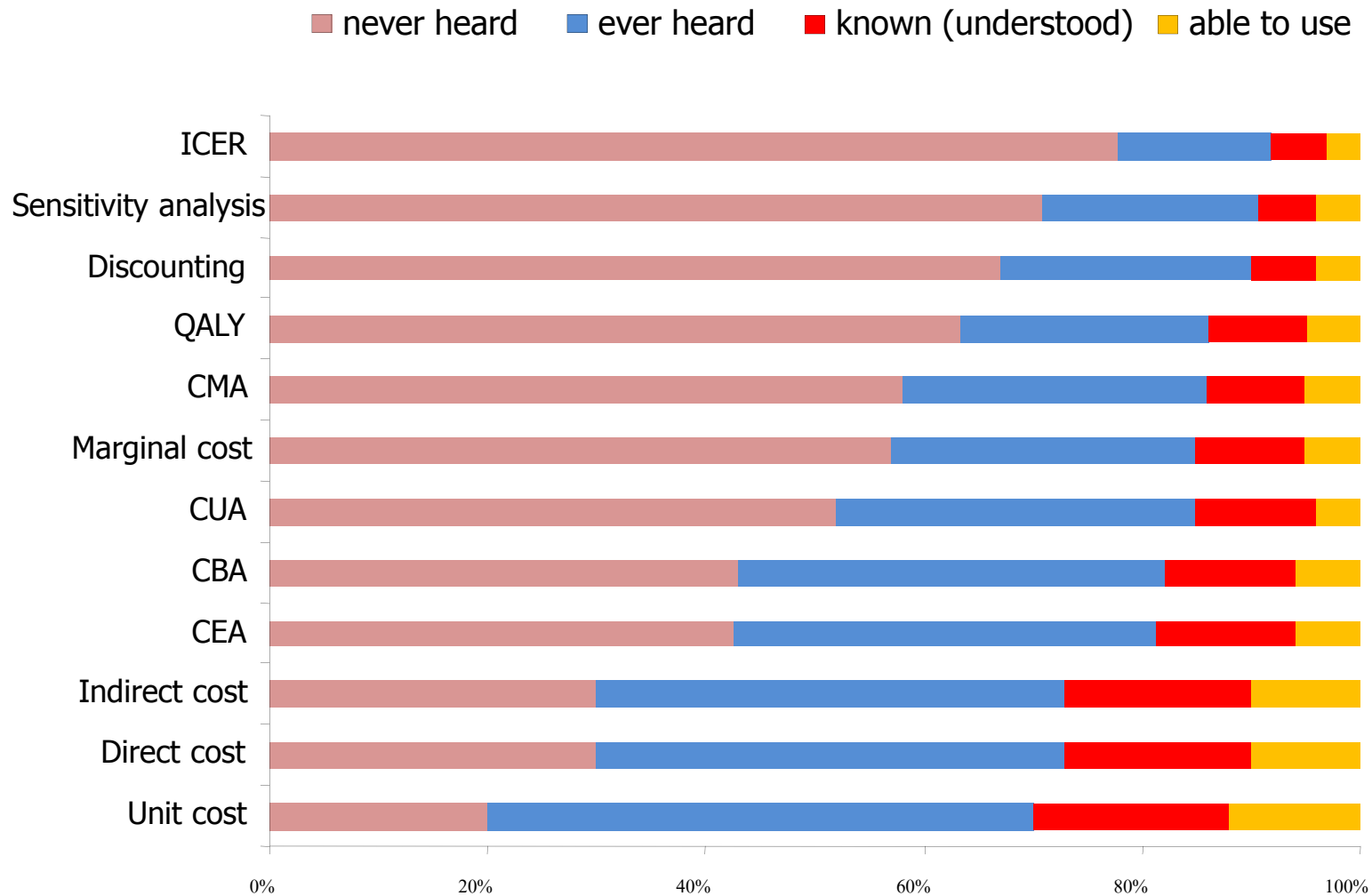
# Factors influencing decision making about health technology adoption determined by Thai decision makers in 2007 survey (N=450)

very important   important   fairly important   less important   least important



Chaikledkaew U, Lertpitakpong C, Teerawattananon Y, Thavorncharoensap M, Tangcharoensathien V. The current capacity and future development of economic evaluation for policy decision-making: a survey among researchers and decision-makers in Thailand. Value Health. 2009 Nov-Dec;12 Suppl 3:S31-5.

## Knowledge of selected technical terms used in HTA among Thai decision makers in 2007 survey (N=450)



Chaikledkaew U, Lertpitakpong C, Teerawattananon Y, Thavorncharoensap M, Tangcharoensathien V. The current capacity and future development of economic evaluation for policy decision-making: a survey among researchers and decision-makers in Thailand. Value Health. 2009 Nov-Dec;12 Suppl 3:S31-5.

# Health Intervention and Technology Assessment Program (HITAP): A semi-autonomous, non-profit research institute established in 2007

### Program (HITAP)

- An associate organisation with the Bureau of Health Policy and Strategy, MoPH

### Foundation (HITAF)

- Autonomous Health Intervention and Technology Assessment Foundation

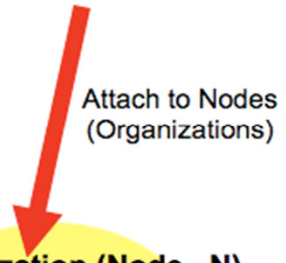


## 'INNE' model

- ### Enabling environment (E)
- Institutional context
  - Sociopolitical context
  - Economical context
  - Environmental context

### Individual capacity (I)

- 'heart based' recruitment
- Pre-post doc HP/HS researches
- Education in linked internat institutes
- Roles in national/international fora
- Incentives: non-financial/financial

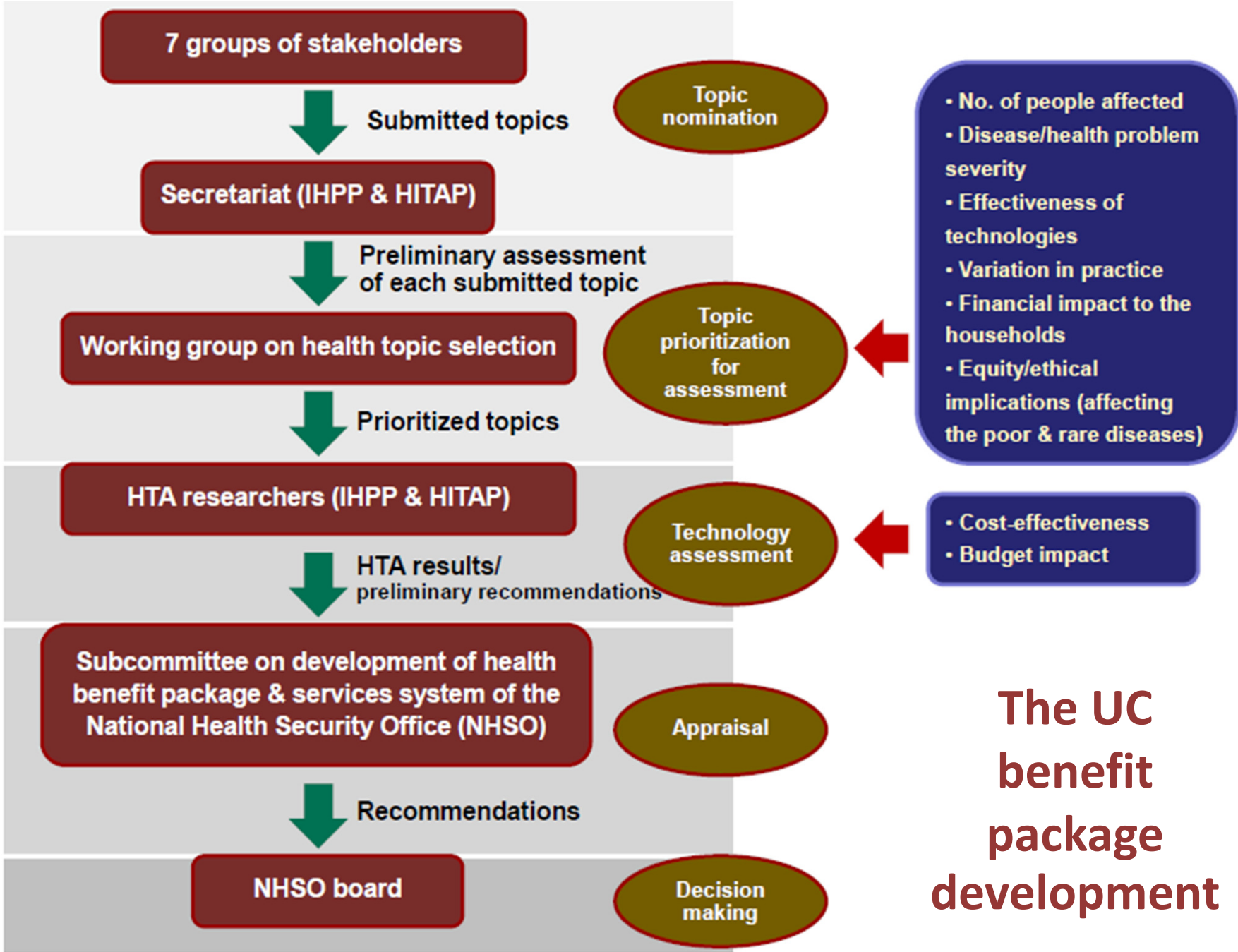


- ### Organization (Node -N)
- HSRI – IHPP, HAI, HITAP, HIRI, HISO,
  - National Health Security Office
  - Thai Health Promotion Foundation
  - National Health Commission Office - NHA
  - Ministry of Public Health
  - Universities, other research institutes



## Developing a more systematic approach

- The UC benefit package development
- The development of the National List of Essential Medicines (NLEM): the Health Economic working group





## Economic evaluation of providing adult diapers

## Feasibility and effectiveness of reflective error screening by teachers for children aged 3-6 years

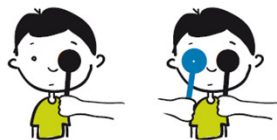
**คู่มือการตรวจคัดกรองระดับการเห็น**  
ในเด็กระดับชั้นอนุบาล  
และชั้นประถมศึกษา

**กรณีที่ 2** หากสามารถอ่านภาพได้มากกว่าครึ่งหนึ่ง เช่น 3 ใน 5 ภาพ หรือ 4 ใน 5 ภาพ ให้ลงจำนวนภาพที่อ่านได้เป็น**ค่าลบของระยะเวลาที่ปรากฏในแถวที่อ่านภาพได้**

ตัวอย่างการอ่าน E Chart กรณีที่ 2	การลงบันทึกผล
<b>E W E E</b> (ระยะที่ปรากฏท้ายแถว) 20/40	20/40
2.1 <b>E W E E M</b> (ระยะที่ปรากฏท้ายแถว) 20/30	20/30-1
2.2 <b>E W E E E</b> (ระยะที่ปรากฏท้ายแถว) 20/30	20/30-2

หมายเหตุ: / แทนภาพที่อ่านได้ X แทนภาพที่อ่านไม่ได้

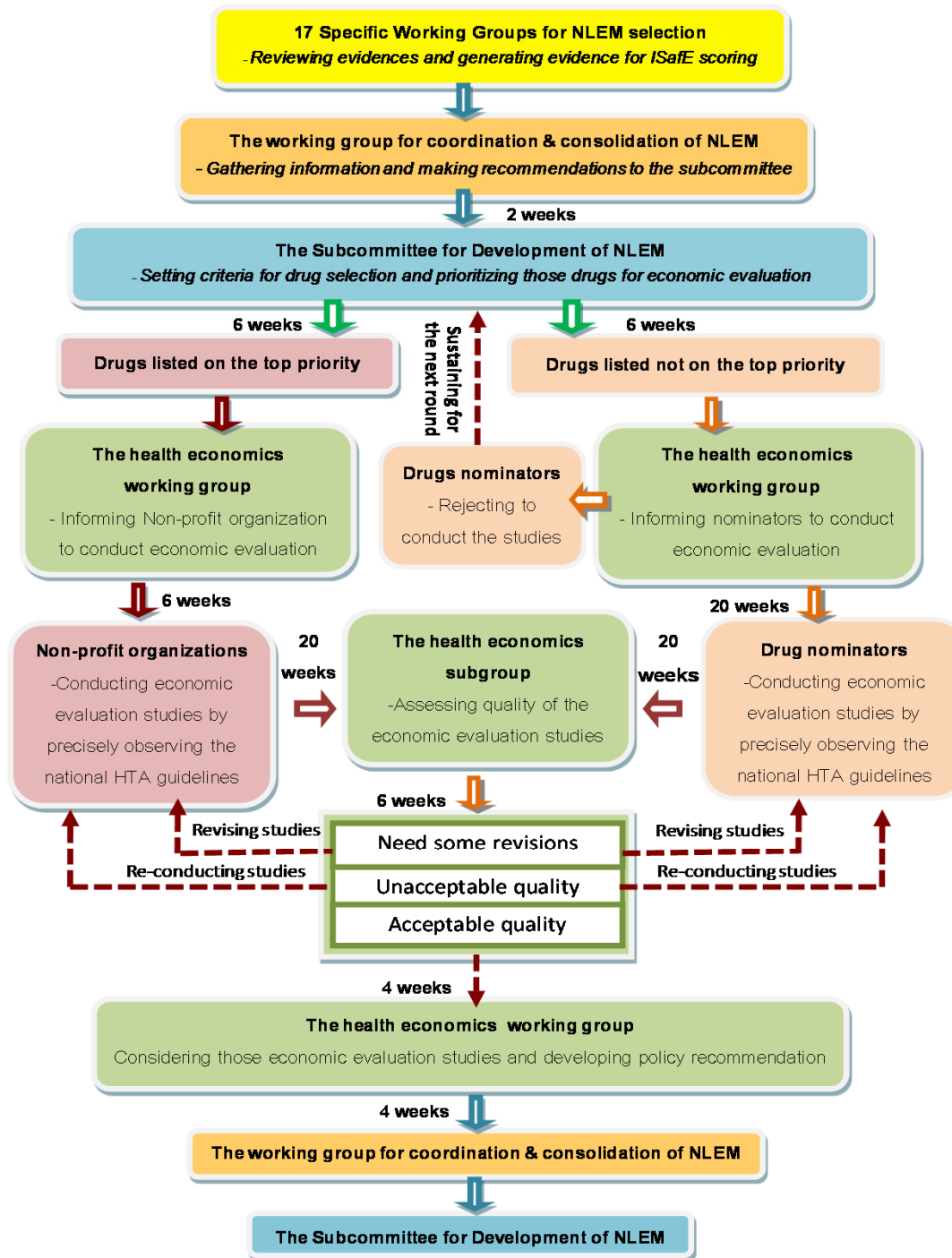
7. หากเด็กอ่านภาพได้ไม่น้อยกว่า 20/20 ให้ติดใส่แผ่นบังตาชนิดรูเข็ม (Pinhole) และอ่านภาพต่อจากแถวที่เลือกดูที่อ่านภาพไม่ได้ หากอ่านภาพได้มากกว่าเดิม ให้จดบันทึกว่า "with PH" แล้ว ตามด้วยแถวที่อ่านภาพได้ เช่น ก่อนใส่ Pinhole อ่านภาพได้ 20/40-2 เมื่อใส่ Pinhole แล้วสามารถอ่านภาพได้ถึง 20/30 ให้จดบันทึกระดับสายตาข้างนั้นเป็น VA = 20/40.2, with PH 20/30



## Using economic evaluation for the UC benefit package development

Health Interventions	Comparators	Baht/QALY (2009)	Coverage decisions
AZT+3TC+LPV/r for PMTCT	AZT plus single dose NVP	cost-saving	Yes
Provider-initiated HIV testing	Voluntary HIV counseling-testing	70,000	Yes
Statin in pop $\geq$ 30% CVD risk	Exercise & diet control	82,000	Yes
Bone marrow transplantation for thalassemia	Blood transfusion	120,000	Yes
Pioglitazone for diabetes	Rosiglitazone	211,000	No
HPV vaccine for girls aged 15 years	Pap smear q 5 years aged 35-60	247,000	No
Alendronate or Risedronate for osteoporosis	Calcium + vitamin D	2-400 ,000	No
Cochlear implantation for profoundly deaf	Training hand language	400,000	No
Fordable lens for cataract	Rigid intraocular lens	507,000	No
Atorvastatin in pop $\geq$ 30% CVD risk	Exercise & diet control	600,000	No
Peritoneal dialysis for ESRD	Palliative care	435,000	Yes
Hemodialysis for ESRD	Palliative care	449,000	Yes
Erythropoietin for anemia in cancer	Blood transfusion	2,700,000	No

# The development of the National List of Essential Medicines (NLEM), 2010- 2012 term



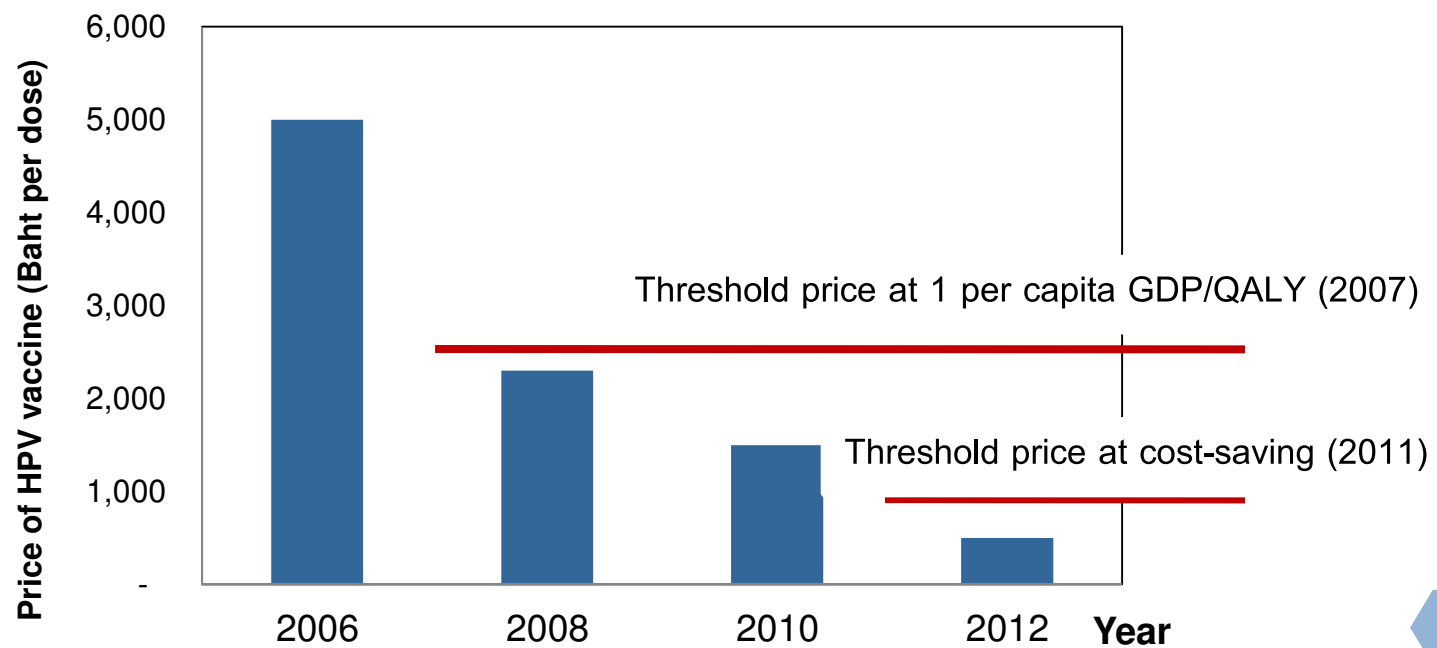


## Using economic evaluation for drug reimbursement list in Thailand

Drugs under consideration	ICER (Baht/QALY)	Coverage decisions	Year
Pegylate interferon alpha 2b plus ribavirin for treatment of chronic hepatitis C subtype 2, 3	cost-saving	Yes	2011
Pegylate interferon alpha 2a plus ribavirin for treatment of chronic hepatitis C subtype 2, 3	cost-saving	Yes	2011
Lamivudine or tenofovir for treatment of chronic hepatitis B	cost-saving	Yes	2011
Simvastatin for primary prevention of cardiovascular disease	82,000	Yes	2011
Nilotinib for the second-line treatment of chronic myeloid leukemia	86,000	Yes	2012
Oxaliplatin (FOLFOX) for treatment of advance colorectal cancer	126,000	Yes	2012
Galantamine for treatment of mild-to-moderate Alzheimer's disease	157,000	No	2010
Donepezil, rivastigmine for treatment of mild-to-moderate Alzheimer's disease	180,000-240,000	No	2010
Osteoporosis drugs (alendronate, risedronate, raloxifene) for primary and secondary prevention of osteoporotic fractures	300,000-800,000	No	2009
Imiglucerase for treatment of Gaucher disease type 1	6,300,000	Yes	2012
Atorvastatin, fluvastatin, pravastatin for primary prevention of cardiovascular disease	negative dominant	No	2009
Recombinant human erythropoietin (rHuEPO) treatment in chemotherapy-induced anemia	negative dominant	No	2008
Adefovir, entecavir, telbivudine, pegylate interferon alpha 2a for treatment of chronic hepatitis B	negative dominant	No	2011

## Not just about listing...Pricing negotiation & identifying alternatives

Health technology	Original price (Baht)	Negotiated price (Baht)	Potential saving (per annual)
Tenofovir	43	12	375 million
Peg-2a 180 mcg	9,241	3,150	600 million
Angiogenesis inhibitor	40,000 (Ranibizumab)	1,000 (Bevacizumab)	1,600 million



# Discussions

- HTA has been employed for health benefit package development under the UC in Thailand
- Systematic and transparent way of setting priority on HTA topics are equal important to the assessment
- Local data is vital for HTA use, esp. for the benefit package development—the need for service model development as well as feasibility studies
- Future challenges: other social values, HTA for disinvestment