



INTRODUCTORY HTA TRAINING PROGRAMME

BUILDING CAPACITY OF HEALTH TECHNOLOGY ASSESSMENT (HTA) TO
SUPPORT PRIORITY SETTINGS AND RESOURCE ALLOCATIONS IN LAO PDR

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List of Abbreviations

CHAI	Clinton Health Access Initiative
CPI	Consumer Price Index
COVID-19	Coronavirus disease
DFAT	Department of Foreign Affairs and Trade, Australia
DHR	Department of Health Care and Rehabilitation, Lao PDR
DPs	Development partners
ELSI	Ethical Legal and Social Implications
FDA	Food and Drug Administration
GAVI	the Global Alliance for Vaccines and Immunisation
HEE	Health Economic Evaluation
HITAP	Health Intervention and Technology Assessment Program
HIV	Human Immunodeficiency Virus
HTA	Health Technology Assessment
HPV	Human Papilloma Virus
ICER	Incremental Cost-Effectiveness Ratio
iDSI	International Decision Support Initiative
Lao PDR	Lao People's Democratic Republic
LMIC	Low- and Middle-Income Country
LOMWRU	The Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit
LVC	Low-Value Care
MCRI	Murdoch Children's Research Institute, Australia
MoH	Ministry of Health, Lao
MoPH	Ministry of Public Health, Thailand
NCD	Non-communicable disease
NGO	Non-governmental organisation
NUS	National University of Singapore
NHI	National Health Insurance
NIP	National Immunisation Programme
NITAG	National Immunisation Technical Advisory Group
NUS	National University of Singapore
MHIB	National Health Insurance Bureau, Lao PDR
OOP	Out-of-Pocket
QALY	Quality Adjusted Life Year
UHC	Universal Health Coverage
UHEP	Unit for Health Evidence and Policy
UHS	University of Health Science, Lao
WHO	World Health Organisation

Acknowledgements

This mission report summarises the activities and discussions during the first Health Technology Assessment (HTA) training programme for the Lao National Immunisation Technical Advisory Group (NITAG), including other key stakeholders, during July 17-20, 2023. This programme served as an introductory workshop and aimed to promote the conceptual understanding of Health Technology Assessment (HTA), HTA methodological practice, topic prioritisation processes for HTA. The meeting was co-organised by Health Intervention and Technology Assessment Program (HITAP) Thailand, Murdoch Children's Research Institute (MCRI), Clinton Health Access Initiative (CHAI) Lao PDR, Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU), University of Health Science (UHS), National University of Singapore (NUS), and Unit for Health Evidence for Policy (UHEP). This programme received financial support from Murdoch Children's Research Institute (MCRI) under the Department of Foreign Affairs and Trade (DFAT), Australia.

The meeting was opened by Associate Professor Khampe Phongsavath, Chair of the Lao NITAG, with the support from Dr. Phonethipsavanh Nouanthong, the Executive Secretariat of the Lao NITAG. Representatives from the Health Intervention and Technology Assessment Program (HITAP), the Ministry of Public Health (MoPH), Thailand, led by Dr. Yot Teerawattananon, contributed to the presentation content and exercise delivered during the workshop. Lecturers and Facilitators for the exercise included Dr. Yot Teerawattananon, Dr. Jarawee Sukmanee, Nitichen Kittiratchakool, Picharee Karunayawong, Chittawan Poonsiri, Budsadee Soboon, Kumaree Pachanee, Manilung Nalongsack, Papada Ranron, Waranya Rattanavipapong, and Manit Sittimart. Prof. Fiona Russell, Prof. Nigel Crawford, Dr. Praveena Gunaratnam, and Asst. Prof. Kiesha Prem were also engaged and contributed to the panel discussion. The report was prepared by Manit Sittimart with input from Saudamini Dabak, Assoc. Prof. Wanrudee Isaranuwatjai, and Dr. Yot Teerawattananon. The statistical analysis of participant feedback was conducted by Chulathip Boonma.

Colophon

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Disclaimer

The findings, interpretations (views and opinions), and conclusion expressed in this report are of the report authors and not necessarily those of HITAP, MCRI, CHAI, NUS, LOMWRU, UHS, DFAT or any other participating agencies. Any use of data or figures produced in this report should be acknowledged.

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Executive Summary

This mission report provides the summary of the first HTA training programme, held in Lao PDR. This programme was jointly organised in Vientiane on July 17-20, 2023, with the support from DFAT, MCRI, CHAI, NUS, LOMWRU, and UHS. The target audience of the training programme included Lao healthcare personnel working on public health resource allocation, particularly those involved in the national immunisation programme such as the Lao National Immunisation Technical Advisory Group (NITAG). The training programme aimed to engage with relevant stakeholders and promote Health Technology Assessment (HTA) literacy, including key technical aspects of HTA methods in economic evaluation. This report is structured to give an outline of the training programme, the outcome of training activities, as well as summary from the panel and open discussion. This report is also used to mark another step of Lao PDR embarking on HTA journey. Participants' feedback has also been included in this report for future reference.

Introduction

Lao-Thai Collaborations in HTA endeavour

The Lao government has implemented the National Health Insurance (NHI) strategy to establish a clear vision and framework for the development of a unified National Health Insurance Scheme (1). However, challenges remain in ensuring widespread availability of the NHI scheme throughout the country. This scheme facilitates systematic enrolment at healthcare facilities upon the presentation of a family book, and patients are required to make nominal co-payments for their healthcare services. The primary entity responsible for purchasing health services for the Lao population is the National Health Insurance Bureau (NHIB), a department under the Ministry of Health (MoH). NHIB is tasked with overseeing all aspects of health insurance related to the NHI benefit package¹.



Figure 1 The National Flag of the Laos

There has been a growing demand for evidence use in policy decision-making processes in Laos. Particularly, policy decisions concerning the inclusion of healthcare services, with a specific emphasis on reproductive health and nutrition, maternal and child health, and the national immunisation programme (NIP). The consideration of evidence to guide healthcare resource allocation have become increasingly prominent in the local context as the country is preparing to transition from Gavi (Gavi, the Vaccine Alliance) support (2, 3). As such, building internal capacity of the country to support evidence-informed decisions is warranted to ensure efficient resource management following the Gavi graduation and moving forward.

The Health Intervention and Technology Assessment Program (HITAP) has been supporting Lao PDR in building capacity and infrastructure for Health Technology Assessment (HTA). Several activities have been jointly conducted with Lao partners. In 2019, two delegates from Laos participated in the NUS Initiative to Improve Health in Asia (NIHA) Leadership Development Programme (LDP) in Singapore. Following that, HITAP representatives visited Laos to engage and discuss on further collaborations. Subsequently, four participants joined an economic evaluation training programme at HITAP. Among these, two of them continued to work on developing a proposal for an economic evaluation of the typhoid vaccine, which has been completed in collaboration with the Mahidol Oxford Tropical Medicine Research Unit (MORU). Since 2020, HITAP has supported the development of a proposal to conduct a situational analysis for the use of HTA and other health research evidence, as well as the establishment of the Unit for Health Evidence and Policy (UHEP) in Laos (4). HITAP also hosted an intern while also providing support to a Lao PhD candidate in Thailand, including facilitating the participation of Lao representatives in a vaccinology course in both 2019 and 2023. It is worth mentioning that Lao PDR has also become part of the HTAsiaLink.

¹ *Benefit package covering most health services in the public sector and at each level of care – though not drugs outside of the list of essential medicines. It does not duplicate benefits already covered by other programmes such as employment injuries and traffic accidents, malaria, tuberculosis, HIV/AIDS.



Figure 2 A group photo of the 2nd UHEP workshop organising team, including workshop participants on September 1, 2022

Since the establishment of UHEP, there had been two stakeholder workshops conducted to introduce the unit to the local stakeholders and raise awareness of having and supporting the evidence generating body in the country. While the first workshop was arranged virtually due to COVID-19, the second workshop was reconvened in person in 2022 by the Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU), in collaboration with the University of Health Sciences (UHS) and the Ministry of Health (MoH) in Lao PDR. This second workshop served as a platform to facilitate peer-to-peer learning. Its primary objectives were to enhance understanding of HTA topic prioritisation, with a specific focus on Thailand's experiences in this area, and to raise awareness of HTA and the prioritisation process among Lao participants. The workshop also emphasised key principles of being systematic, transparent, evidence-informed, and participatory throughout the prioritisation process.

Following the two UHEP workshops, building technical capacity of conducting HTA studies in Lao was proposed by several key stakeholders from both domestic bodies and international developing agencies. These included Murdoch Children's Research Institute (MCRI), Clinton Health Access Initiative (CHAI), LOMWRU, UHS, NUS, and HITAP, with the support from the Department of Foreign Affairs and Trade (DFAT), the government of Australia (Figure 4).



Figure 3 HITAP presenting on a capacity training plan tailored for local stakeholders in Lao PDR during the scoping visit of the MCRI team

A series of trainings was co-developed by the aforementioned agencies and targeted different audiences to create a sustainable ecosystem for evidence-based policy decisions in Lao PDR. Giving its previous experience in supporting HTA within LMIC context, HITAP was tasked with delivering the technical HTA training programme,

with a vaccine-relatable focus, to the audience from the Lao NITAG including others from the Ministry of Health (MoH).



Figure 4 Group photo of a scoping visit of MCRI team, supported by Australian DFAT and joined by the Lao NITAG, LOMWRU, UHS, NUS, CHAI, HITAP, and other local organisations

Introductory HTA Training Programme

Building capacity of Health Technology Assessment (HTA) to support priority settings and resource allocation in Lao PDR

This workshop marked the first technical HTA event in Lao PDR, with a primary focus on achieving several key objectives. These include (i) providing participants with a comprehensive overview of HTA including Health Economic Evaluation (HEE), along with relevant practical examples; (ii) introducing the common methodologies of HTA and equipping participants with the fundamental skills to conduct health economic evaluations; (iii) raising awareness about the challenges and potential solutions in evidence-informed policy practices, while also facilitating discussions on their relevance and adaptability to the specific context of Lao PDR.

The workshop was conducted in Thai and Lao languages to facilitate participant understanding. It was structured to incorporate a diverse range of activities, including lecture-based presentations, individual and group exercises, discussions and experience sharing sessions (please refer to the workshop agenda in Appendix 1). While training handouts were provided in Thai, some practical exercises were conducted in English. Relevant materials were shared with participants prior to the workshop. To ensure the effectiveness of the learning experience, on-site attendance was required of participants, considering the inclusion of technical practice exercises throughout the training. Summary of daily activities is outlined below.

Day 1 – Setting the scene and building blocks of HTA

The workshop commenced at 8:30 am with the registration process of participants. On the first day, there were a total number of 37 participants who registered and attended the workshop. Training materials were also further disseminated to those who might have not received these through previous communications.



Figure 5 Participants registering for their attendance at the registration desk on the first day of training

Following this, the opening ceremony began, with the workshop having the honour of Associate Professor Khampe Phongsavath, Chair of the Lao NITAG, delivering the opening speech. After that, representatives of the HITAP welcomed the participants, provided some house rules for the training, and outlined the activities planned for the day. Consent to photograph and record during the workshop was also sought and received from participants.



Figure 6 [Left to right on the sitting row] Dr Sounantha Souvanlasy, Dr Vanphanom Sychareun, Assoc. Prof. Khampe Phonsavath, and Dr Yot Teerawattananon, in a group photo with other participants and the instructor team after the opening ceremony of the workshop.

The first presentation of the day was delivered by Dr Yot Teerawattananon, focusing on providing an overview of HTA. In this session, the critical role of health technologies and interventions within healthcare systems was emphasised. However, without careful consideration when introducing or implementing them, it could potentially lead to both positive and negative consequences to the population. In this view, health technology assessment (HTA) and its related principles can be a useful tool for generating evidence to inform decision-making, particularly in relation to development of health benefit packages and price negotiations, promoting greater accessibility and affordability of healthcare services.

The first presentation was followed by a mini exercise, using vaccine prioritisation as an example. This exercise was designed to help participants understand how evidence-informed decisions could lead to more efficient resource allocation (vaccine procurement in this case), as compared to non-evidence-based decision-making methods.

As cost was one of the main elements for consideration in economic evaluation (EE), the understanding of costing is warranted as a building block of technical HTA practice. Accordingly, the second presentation of the day was to enlighten participants regarding different types of costs and what cost is considered in EE. It was also highlighted that economic costs encompass both accounting costs and opportunity costs, with the latter being particularly important in

resource-constrained contexts. As cost is timebound, meaning goods and services can have different values depending on different times, the concept of and practice for cost adjustment (e.g., inflation adjustment, consumer price index (CPI), discounting) were also discussed. After equipping participants with the concept of costing, they were then introduced to a corresponding exercise, in which they were asked to classify costs (direct medical, direct non-medical, indirect costs, for example) used in economic analysis. The concept of perspective in the analysis was also outlined for participants to understand why those differently classified costs are important. Especially in the consideration of using different perspectives in the analysis, the classification would help participants to know what types of cost can be included or excluded.

Similar to the costing aspects of economic evaluations, outcomes play a crucial role in determining the cost-effectiveness of health technologies and interventions of interest. A presentation on measuring outcomes was delivered for participants to familiarise different types of outcomes used in economic analysis and how they are measured. Depending on the type of analysis, outcomes can be clinical, economic, or humanistic focuses. The concept of quality-adjusted life years (QALYs) was also introduced, including how they are calculated, to prepare participants to navigate subsequent sessions of the workshop.

Day 2 – Common tools in HTA and key considerations of non-economic aspects



Figure 7 Participants interacting with their peers during the recap session on the second day of training

On the second day, the workshop activities started with a short summary of the learnings from the day before. Participants were engaged in a small game and interacted with their peers. This allowed them to get to know each other better in order to accommodate group-based exercises at a later stage.

After the ice-breaking activity of the day, the first learning session focused on technical methods on modelling of real-world problems and solutions in health. There are different ways of accessing the value for money of health interventions and technologies. In this session, the emphasis was on the approach of building decision models, including decision tree model and state-transition model (Markov). The conceptual theory behind these models was outlined, including how evidence was synthesised, derived, and interpreted. The financial implications of

introducing new health technologies and interventions were also illustrated through the session on budget impact analysis.



Figure 8 Winners of the icebreaking game on the second day of the workshop

To put theory into practice, respective exercises of modelling were conducted. Participants had the opportunity to build and calculate the value of incremental cost-effectiveness ratio (ICER), using different models and case scenarios. During these practical sessions, participants were required to use their laptops to complete the exercises, in which adequate teaching assistants (TA) were also assigned to support participants learning experience.



Figure 9 Participants doing an interval break between the exercise sessions the workshop

The second day ended with a session on non-economic considerations in HTA, including the ethical, legal, and social implications (ELSI) of health policy and intervention. This particular learning session aimed to show that there are other types of evidence and considerations that ought to be taken into account when making decisions. ELSIs give qualitative points of view, ensuring the inclusion of subjective values for a holistic way of considerations.

Day 3 – On the Shoulders of Giants and the Real-world uses of HTA

The third day started with a short summary of the second day's lectures and exercises. Participants also had the opportunity to ask questions or raise points on issues that were still unclear to them. Following that, participants embarked on another day of learning, with topics related to reviewing literature for model parameters and evidence appraisal. Literature review and appraisal were highlighted as one of the core components of conducting economic evaluation studies, especially for modelling type of work. Reflecting on the phrase 'garbage in, garbage out', it was noted that poor-quality data input will produce incorrect output of the studies. As such, the session was designed to raise awareness among participants and to equip them with some useful skills when appraising and extracting data to use in their future studies. Individual-based exercise was also given to participants where they were asked to read economic evaluation articles and to appraise the quality of the studies, identifying existing gaps and determining whether they should be used.



Figure 10 Dr Yot Teerawattananon started the third day of training with a small recap on previous-day lectures and exercises.

The subsequent session was about providing examples of the real-world uses of HTA in the formal healthcare system. The use cases were drawn from the experience of Thailand, implementing HTA in the process of developing health benefit packages. These cover the National List of Essential Medicines (NLEM) (5), the Universal Coverage Benefit Package (UCBP) (6) for non-pharmaceutical products, and the National List of Essential Vaccines (NLEV) (7). Different process pathways were outlined, as well as how HTA was embedded in the policy process (more details are provided elsewhere). These examples demonstrated how HTA can play a pivotal role in achieving Universal Health Coverage (UHC), promoting financial protection of patients while ensuring the sustainability of healthcare system (8).

Day 4 – HTA in action and Plenary discussion

After the summary session of previous day activities, the fourth day continued with a group-based exercise of HTA topic prioritisation. To put things into perspective, it was designed to help participants gain a better understanding of HTA by applying knowledge and using lessons from the first three days of the workshop in this exercise. Participants were allocated to groups of 7-8

people, and each group was asked to have a role play of being decision makers. The objectives of the exercise were to (i) illustrate how HTA or other research evidence can be used to inform their decision-making, in terms of health technologies that each group may consider investing in or not; and (ii) to understand individual value judgments and criteria for their consideration during the decision-making process.



Figure 11 Participants brainstorming and actively engaging in the group exercise on HTA topic prioritisation

This exercise allowed participants to get a hands-on experience on the deliberative process of HTA topic prioritisation, brainstorming about health technologies that the government may consider investing in or from which the government may not invest in now or not invest in at all. Furthermore, it also allowed participants to explore their own country's landscape of potential barriers, criteria, stakeholders/decision-makers.



Figure 12 Each group actively preparing the results of the exercise to present to other groups

Plenary survey and discussion

One of the highlights during the training was a plenary discussion which aimed to highlight the importance of evidence-informed decision-making, including how HTA as a tool can be useful for policy formulation as well as the Gavi transition of Lao PDR. The plenary was joined by Prof. Mayfong Mayxay, Vice Chair of the Lao NITAG, workshop participants, and representatives from the MCRI, UHS, CHAI, NUS (Figure 1). The session was moderated by the HITAP team.



Figure 13 Participants engaged in the plenary session to discuss about the GAVI graduation and the importance of HTA in the transitioning context

Prior to beginning the open discussion among the participants, a survey was conducted to gain insight into the local context, current needs, and public health priorities in Lao PDR. Table 1 provides the summary of key topics that were identified as key public health areas requiring further support. From the findings, infectious diseases with prominent issues within Lao public health system include dengue fever – a viral infection that spreads from mosquitoes to people, infection of human immunodeficiency virus (HIV), diarrhoea from rotavirus infection, pneumococcal infection, and among others. Many participants also suggested that Lao PDR should consider more vaccines to address vaccine-preventable diseases. These include dengue vaccine, Human papillomavirus (HPV) vaccine, and rotavirus vaccine, for example. Indeed, these were in line with the infectious disease priorities previously identified.



Figure 14 HITAP team recapping on previous day presentation and surveying some discussion questionnaires with participants

Table 1 Summary of key findings from the survey during the HTA workshop in Lao PDR

Particular/Category	Response
Infectious disease largely impacting Lao public health system	<ul style="list-style-type: none"> - Dengue Fever* - HIV* - Diarrhoea – Rotavirus* - Pneumonia* including cases of children age below 5 years/pneumococcal infections. - COVID-19 - HPV - Respiratory infections including measles, rubella. - encephalitis - Hepatitis B - Hepatitis C - Zoonotic diseases – Hexavalent Rabies vaccine, Japanese encephalitis - Malaria - Melioidosis - Tuberculosis - Parasitic infection - Yellow Fever - Typhoid - Enterovirus infection - Chickenpox
Vaccine for the NITAG to consider	<ul style="list-style-type: none"> - Dengue vaccine* - HPV* - Rotavirus vaccine* - Japanese encephalitis vaccine - Hexavalent Rabies vaccine - Hepatitis B Vaccine - Covid vaccine - Polio vaccine
Current vaccine in the NIP (national immunisation program) to be re-considered	<ul style="list-style-type: none"> - Covid vaccine* - PCV* - IPV* - HPV* - Rota Virus vaccine – people need to pay in Laos, but not all can pay) - MMR vaccine - BCG vaccine
Evidence/data which will be useful for the development of NIP	<ul style="list-style-type: none"> - Effectiveness of vaccine* (e.g., BCG, Dengue) and whether immunity was built in children - Side effects (if any) - Evidence on long-term immunity (e.g., PCV13) - Cost effectiveness/cost-utility*

Particular/Category	Response
	<ul style="list-style-type: none"> - Prevalent or Incidence of diseases - Budget allocation for other health technologies and research evidence - Burden of diseases - Budget impact* – e.g., from changing in schedules & brand, changing in target population (for high-risk vs all groups), changing in EPI. - Current vaccination (vaccines cost, mode of delivery, cost benefit) - Epidemiological data such as studies of the effectiveness of vaccines such as measles vaccine - Safety and impact on users - Reassessment of the Covid 19 vaccine whether it has effects on the patient in the long term, because people who have been vaccinated still have a high chance of re-infection.
Main barriers to the investment in health interventions or technologies	<ul style="list-style-type: none"> - Budget* - Human resource* (quantities, expertise, workload) - Infrastructure* (facilities, roads, transportation) - Availability of technologies (need to import) - Stakeholder engagement - Political will - Coverage - Lack of data/evidence - Language/culture

Note: Asterisks indicates high priority in rank;

Additionally, several vaccines were mentioned, and it was discussed whether they should remain in the national list of immunisation programme. For example, COVID-19 vaccines, given the declaration of the end of the global public health emergency. Certain vaccines (such as rotavirus vaccines) were also mentioned for reconsideration by the Lao government due to their high out-of-pocket (OOP) payment, which rendered them unaffordable for the large portion of the population.

During the plenary discussion, several concerns and considerations were shared among panellists and participants. The summary points include:

- Transition from Gavi is a complex process. There is also limited documentation or experience to draw from, considering that there is no country which has fully transitioned out of Gavi.
- Yet, evidence-based recommendations should be the principle embedded in operating mechanisms, especially within entities that are advisory organs of the government.
- Various aspects of evidence, including cost-effectiveness, value of money, effectiveness, budget impact should be considered and used to inform policy recommendations.
- The Lao NITAG should consider the broader perspective on building an evidence-based ecosystem, which may support the sustainability of the country after the GAVI graduation process.
- The operational cost of vaccine delivery was also highlighted as being equally important as the vaccine cost itself, in which both could impact the sustainability of the national immunisation programme.
- Limited resources in terms of number of personnel and technical expertise pose a significant challenge in promoting evidence use and practice in Lao PDR.
- Training and capacity strengthening are key areas which require support from various stakeholders, and that there are numbers of existing international development partners which can support technical capacity development among public health/health personnel in Lao PDR.
- Research collaboration (co-design, co-investigation) with local staff and stakeholders can be an efficient way to build capacity from first-hand experiences.
- To support HTA and evidence-based ecosystem, it was highlighted that necessary data, information, and research should be made available and accessible for researchers or practitioners.
- With limited human resources available in the formal system, in which one staff member may be responsible for multiple roles in the decision-making processes, mechanisms to manage conflict of interest (COI) should be considered. One potential approach is to have separated entities for those responsible for considering vaccine-related evidence and agencies conducting HTA or other health research.



Figure 15 Group photo of the workshop participants and the organising team during the closing ceremony, delivered by Prof. Mayfong Mayxay

Feedback from workshop attendees

At the end of the workshop, a feedback form (template shown in Appendix 4) was disseminated to the participants. A total of 37 people attended the workshop, with 20 of them providing responses to the feedback survey. In general, the feedback from participants was highly positive (shown in Table 2). Almost all the respondents either agreed or strongly agreed with the points that the workshop had clear and well-defined aims and objectives, and that the workshop content was well matched with the participants' needs and understanding. Particularly, information provided during the workshop (e.g., lecture content and accompanying exercises) was found to be useful in terms of influencing and inspiring what participants would do or plan to do in the future. Additional text comments from participants are depicted in Figure 3 where they highlighted additional technical aspects which they believed would be valuable to include in future training. These include dynamic models, vaccinology, and among others.

Table 2 The overall feedback of the workshop from participants

		1 (Strongly disagree)	2 (Disagree)	3 (Agree)	4 (Strongly agree)
Overall feedback on the training	The aims and objectives of the training were clear and well defined.	5.56	-	5.56	88.89
	The content of the training (presentations, exercises) was well matched to participants' needs and understanding about the topic(s).	5.56	-	22.22	72.22
	The training has provided me with information that will influence what I do.	5.56	-	33.33	61.11
	There are things that I will do as a direct result of my participation in this training.	5.56	-	44.44	50

Note: data were presented as % of respondents.

In addition to the overall feedback of the workshop, reflections on individual sessions (session feedback) were also received. The exercise sessions, particularly those involving group-based activities and health outcome measurement, received relatively higher levels of positive feedback than the lecture-based sessions (data were shown in Appendix 5). As suggested by most participants, this is partly because participation and interaction were relatively less encouraged in the lecture-based sessions as compared to the exercises. It is noteworthy that some participants expressed a strong preference for sessions with less focus on HTA technical or methodological aspects. These for example included elements of HTA application, ethical-legal-social implications, as well as learning from existing literature/resources (Table 3). This conveys that matching the learning content with participant profiles would be a way in which participants could most benefit from the training programme.

For future training plans, it was proposed that activities should be extended in duration, with more examples or case studies to aid participants' understanding. In addition, involving participants from various sectors will be beneficial for group-based activities, where they can learn from diverse perspectives and value judgements from people with different backgrounds, emphasising the multidisciplinary nature of HTA, and that health extends beyond health sector.

If any, please provide an example of one thing you will do as a result of participating in this training.

"For me first time for HTA training. Improvement of my knowledge and skills in HTA. In my opinion, this training is very useful and helpful for all sectors."

"Improve decision-tree making within my health settings regarding vaccine preventable vaccine."

"Markov is really interesting to learn about and we can use to describe the result when we finish any research."

If any, please provide an example of one thing you will do as a result of participating in this training.

"Advance on HTA we can use model to do/present on research, MPH students, policy makers to decide on policy"

"Technical writing research proposal"

"The ICER database of drug, vaccine, and medical material"

"More training on HTA to multi-sectors" "More example - based -workshop"

"Dynamic modelling, using R program for cost effective analysis"

"HTA measuring impact and counting outcome practice and also budget impact analysis"

"I need to practice more about model, how to use a model more and improve more about Markov model"

"Should be specific in case of vaccination as a workshop (start from vaccine coming until the decision)"

Figure 16 Additional free text comments provided by the workshop participants

Table 3 Participants' reflections of individual training sessions

Reflective questions	Participant response
<p>What did you like most about the sessions?</p>	<ul style="list-style-type: none"> ▪ All about HTA but lectures 7 and 6 are very interesting for me. ▪ All sessions are very important for researchers and policy makers on how we know about evidence for decision. ▪ All, I have the good experience to know about HTA. ▪ Decision-tree modelling ▪ Exercise and practice, health technology assessment, building models, economic cost, measuring impact and counting outcome. ▪ Lecture 7: standing on the giant shoulder. ▪ Lecture 3: measuring impact and counting outcome. ▪ Lecture on Modelling for real world problems and solutions in health. ▪ Lecture on think again: ethical, social, legal.
<p>Do you have any suggestions on how we can improve the sessions?</p>	<ul style="list-style-type: none"> ▪ Adding more technic to prepare a proposal for study medicine cost assessment ▪ All are satisfied. ▪ Good ▪ It is quite basic for any topic and quite fully for 4 days, maybe we should focus more for the very important point for HTA ▪ More practice & demonstration for participants ▪ Overall is good ▪ Provide more the materials practice and exercise ▪ The training should be longer (in more days)
<p>Do you have any other comments?</p>	<ul style="list-style-type: none"> ▪ HTA training should be continued and has multi-sectoral involvement ▪ if possible next training should have cost effectiveness before vaccination related with nutrition children under 5? ▪ Should have more time to training (i.e., more days)



Figure 17 Workshop participants sharing their perspectives during the plenary discussion

Conclusion

To summarise, HITAP has been supporting Lao PDR's efforts to strengthen its local HTA capacity and infrastructure. Together with other Lao partners, HITAP has undertaken various activities, including conducting a situational analysis, establishing the Unit for Health Evidence and Policy (UHEP), and organising stakeholder workshops. These were instrumental in introducing and promoting the UHEP among local stakeholders. Following these, several key stakeholders, including MCRI, CHAI, LOMWRU, UHS, NUS, and HITAP, along with support from the Department of Foreign Affairs and Trade (DFAT) of the Australian government, proposed a series of training programs to enhance local capacity of evidence generation.

As Lao PDR is preparing for its graduation from Gavi in the coming years, this is vital to create the ecosystem, supporting evidence-based policy decision in the country. HITAP, drawing from its experience in supporting HTA development in low- and middle-income countries, took on the responsibility of delivering technical HTA training with a focus on vaccines to the Lao National Immunisation Technical Advisory Group (NITAG) and others within the Ministry of Health (MoH).

The training was arranged as a 4-day workshop, including a wide range of activities of lecture-based learning, individual- and group-based exercises, and plenary discussion forum. Participants were equipped with the core principles and concept of HTA, as well as some fundamental skills of conducting economic evaluations, for example costing, outcome measuring, and building decision-tree and Markov models. Key considerations of non-economic aspects such as ethical, legal, social implications (ELSI) were also emphasised holistically, enlightened that HTA is indeed a multidisciplinary approach.

Positive feedback was received from the majority of participants. They found the information shared during the workshop, including lecture content, and accompanying exercises, to be highly valuable, inspiring them in their future endeavours. Some suggestions were also made for future



Figure 18 Dr Yot Teerawattananon representing the workshop organising team presenting a certificate of training completion to a representative of the Lao NITAG

training. These include (i) incorporating additional technical aspects of dynamic models, vaccinology, and among others; (ii) extending the duration of activities; (iii) incorporating more examples or case studies to enhance understanding; and (iv) involving more participants from diverse sectors. These insights highlight participants' interest in gaining deeper knowledge and the expansion of training content in future programs.

In addition to strengthening research technical capacity, this collective effort was indeed successful. It has raised greater awareness for and interest in evidence synthesis and use in Lao PDR, marking a significant step towards improving healthcare outcomes in the country and the region.

Appendices

Appendix 1: Agenda



Introductory HTA Training Programme outline

Programme title: Building capacity of Health Technology Assessment (HTA) to support priority settings and resource allocations in Lao PDR

Date: 17 – 20 July 2023

Venue: Don Chan Palace Hotel & Convention, Vientiane, Lao PDR

Co-organisers: Health Intervention and Technology Assessment Program (HITAP) Thailand, Murdoch Children's Research Institute (MCRI), Clinton Health Access Initiative (CHAI) Lao PDR, Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU), University of Health Science (UHS), National University of Singapore (NUS), and Unit for Health Evidence for Policy (UHEP)

Supported by: Department of Foreign Affairs and Trade (DFAT), Australia

Background

With the 2012 United Nations resolution on having Universal Health Coverage (UHC) by 2030, countries have committed to achieving such a goal of providing affordable, equitable, and quality essential health services to their populations. As a multi-disciplinary process and policy tool to inform decisions around the set of health products (pharmaceutical, non-pharmaceutical, vaccines) and services which governments provide as part of the health benefits package, Health Technology Assessment (HTA) has been adopted to promote and ensure efficient resource allocations in low- and middle-income country (LMIC) settings. In Asia, HTA is increasingly being used over the past decades and that capacity building for HTA is identified as one of the priorities under the Health Cluster 3 of the Association of Southeast Asia Nations (ASEAN), with a goal of harmonising HTA in the region. Nonetheless, HTA is currently at various stages in terms of capacity, awareness, and development among the ASEAN countries.

In Lao PDR, there has been an increasing interest in strengthening capacity for HTA to inform health policy. Since 2018, the University of Health Sciences (UHS) and the Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU) have been conducting activities with partners, including with the Health Intervention and Technology Assessment Program (HITAP), Thailand, and resulted in the establishment of the Unit of Health Evidence for Policy (UHEP). Among various activities, a situation analysis of HTA and policy practice in Lao PDR was conducted

and identified capacity building as one of the key areas required in the short- and long- term to ensure the sustainability of the HTA eco-system to support UHC in the country.

Learning objectives

The main aim of the training programme is to support capacity building of HTA in Lao PDR, as a tool to prioritise scarce resources and design evidence-informed health policy, which can further strengthen healthcare systems, UHC, and public health crisis preparedness. Specific objectives include:

- To provide an overview concept and practical examples of HTA including health economic evaluation (HEE),
- To introduce basic methodology of HTA and learn how to conduct health economic evaluation and use to support decision-making about technology and health policy,
- To raise awareness, challenges, and potential solutions on the evidence-informed policy practices, as well as providing an opportunity to discuss relevance and potential for adaptation to the Lao context.

Who is this course for?

The primary target audience for this introductory programme include:

- Policymakers/healthcare managers who are involved in health resources allocation and priorities setting, including implementing, and evaluating health policies/programmes,
- Public health/healthcare professionals from hospitals, ministry of health,
- Researchers/postgraduate students/academia in health economic evaluation, medical/pharmacy study, public health/health policy, health system and services or related fields.

How is the programme structured?

The workshop is structured as follows:

- The workshop is arranged for 4-day training, in the form of lecture presentations, individual and group exercises, discussions and experience sharing sessions, as well as Q&A sessions (see also the agenda below).
- The presentations will be delivered in Thai language with English simultaneous translation.
- Training materials are prepared in Thai; however, some practical exercises will be in English.
- Participants are required to attend in-person only and expected to bring their own laptops for the hands-on exercises.
- There are some interval breaks during the training includes course materials, refreshments, and lunch.

What is expected to achieve?

The overarching goal is to raise awareness on HTA and strengthen capacity for HTA and evidence synthesis for policy development. In the long term, it is expected that there will be more HTA personnels and champions to drive evidence-informed decision-making in the country. While some technical details of HTA will be introduced, this is not an advanced course and is not intended to enhance technical skills in conducting economic evaluation models. It is anticipated that participants of the programme will:

- Develop the understanding and awareness on HTA concept and evidence-informed policy practice to support UHC or other health policies,
- Understand how HTA, especially model-based health economic evaluation, is conducted; and be able to construct simple decisions trees and Markov models typically used in HTA,
- Gain an appreciation of the political economy of health priority setting (e.g., how the individual need for evidence may differ among different stakeholders; why HTA is important in resource-limited and resource-rich settings).
- Be equipped with key essential knowledge to further their technical skillsets in more advanced courses of HTA.

Agenda of the training programme

Basic course				
Date	Time	Duration (hr)	Topic	Lecturer/instructor
17 Jul 23	08.30-09.00	0.30	Registration	
	09.00-09.15	0.15	Opening remark	Assoc. Prof. Khampe Phongsavath
	09.15-09.25	0.10	Housekeeping rules + ice breaking	Manit Sittimart Chittawan Poonsiri
	09.25-10.10	0.45	Lecture 1: Health Technology Assessment 101: scene setting	Dr Yot Teerawattananon
	10.10-10.25	0.15	Break	
	10.25-11.00	0.35	Exercise 1: Learning from practice of vaccine prioritisation (Group exercise)	Dr Yot Teerawattananon Dr Jarawee Sukmanee
	11.00-12:00	1.00	Lecture 2: What is economic cost?	Picharee Karunayawong
	12.00-13.00	1.00	Lunch break	
	13.00-13.45	0.45	Exercise 2: Getting to know more about the costing (Individual exercise)	Budsadee Soboon Kumaree Pachanee
	13.45-14.45	1.00	Lecture 3: measuring impact and counting outcome	Dr Jarawee Sukmanee
	13.00-14.45	0.45	Exercise 3: Learning from Health outcome measurement (Individual exercise)	Papada Ranron Chittawan Poonsiri
	14.45-15.00	0.15	Break	
	15.00-16.15	1.15	Lecture 4: Modelling of real-world problems and solutions in health	Nitichen Kittiratchakool
	16.15-16.30	0.15	Fireside chat (Q&A)	HITAP team
18 Jul 23	08.30-09.00	0.30	The world café (recap)	Dr Jarawee Sukmanee Picharee Karunayawong
	09.00-10.15	1.15	Exercise 4: Building a decision-tree model (Individual based exercise)	Waranya Rattनावipapong Parnthip Junthama
	10.15-10.30	0.15	Break	
	10.30-12.00	1.30	Exercise 5: Building a Markov model	Waranya Rattनावipapong Manit Sittimart
	12.00-13.00	1.00	Lunch break	
	13.00-13.45	0.45	Lecture 5: Knowing financial implication: budget impact analysis	Nitichen Kittiratchakool
	13.45-14.15	0.30	GEAR Project	Chittawan Poonsiri

Agenda of the training programme

Basic course				
Date	Time	Duration (hr)	Topic	Lecturer/instructor
	14.15-14:30	0.15	Break	
	14.30-15.00	0.30	Lecture 6: Think again: Ethical, Social, Legal aspects of health policy and intervention	Dr Yot Teerawattananon
	15.00-15.15	0.15	Fireside chat (Q&A)	HITAP team
19 Jul 23	08.30-09.00	0.30	The world café (recap)	Waranya Rattanavipapong Chittawan Poonsiri
	09.00-11.00	2.00	Lecture 7: Standing on the shoulders of giants: literature review for model parameters and evidence appraisal	Dr Jarawee Sukmanee
			Exercise 6: Literature appraisal for health economic evaluation (Individual exercise)	Budsadee Soboon Papada Ranron
	11.00-11.15	0.15	Break	
	11.15-12.30	1.15	Lecture 8: Thinking the past, enjoying the present, and preparing the future in HTA	Dr Yot Teerawattananon Budsadee Soboon Kumaree Pachanee
	<i>No sessions (Homework/time for participants to prepare for the next day discussion)</i>			
20 Jul 23	08.30-09.00	0.30	The world café (recap)	Manit Sittimart Chittawan Poonsiri
	9.00-10.30	1.30	Exercise 7: Setting the HTA scene in Laos: HTA topic nomination, prioritisation, and implementation	Kumaree Pachanee Parnthip Junthama
			Group presentation from exercise 7	Vannida Douangboup Waranya Rattanavipapong
	10.30-10.45	0.15	break	
	10.45-12.00	1.15	Plenary discussion: <ul style="list-style-type: none"> GAVI transition and the importance of HTA HTA Research opportunities (Group discussion) 	NUS, MCRI, CHAI, LOMWRU Moderator: Dr Yot Teerawattananon
	12.00-12.15	0.15	Q&A and Wrap-up	HITAP team and All
12.15-12.30	0.15	Closing remark	Prof. Mayfong Mayxay	

Appendix 2: Participant List

No	Position	Organisation
1	Pharmacist	LOMWRU
2	Ped ID fellow	Sethathirath hospital/LIDS
3	Director General	Mother & Child health centre (MCHC)/NITAG
4	Medical Administration	MCH
5	Director general	Food & Drug Department, MoH/NITAG
6	Lecturer	University of Health Sciences, UHS
7	Lecturer	University of Health Sciences, UHS
8	Lecturer	University of Health Sciences, UHS
9	Staff	Centre for HIV/AIDS/STI (CHAS)
10	Graduate Master (HPV)	Lao Tropical and Public Health Institute, TPHI
11	Lecturer	UHS/UHEP
12	Chair	Lao National Immunisation Technical Advisory Group (NITAG)
13	Program lead	NUS
14	Ped ID fellow	Children's hospital/LIDS
15	Clinician	Infectious disease-tropical medicine, MSH/NITAG
16	Pharmacist/PhD	LOMWRU
17	Deputy head	Bacteriology department/LOMWRU, MSH
18	Staff	Children Hospital
19	Member/Lecturer	University of Health Sciences, UHS
20	Lecturer	UHEP/Faculty of Pharmacy - UHS
21	Head	Bacteriology department/LOMWRU, MSH
22	Vice President	University of Health Science (UHS)/NITAG
23	Lecturer	University of Health Sciences, UHS
24	Planning and Coordinator	UIB
25	Adult ID physician	Infectious disease-tropical medicine, MSH
26	Tech-St	Food and Drug Department
27	Retired	Deliver and Women's Disease Section, Mahosot Hospital/NITAG
28	Scientific Director	CILM - Centre Infectiology Lao-Christophe Mérieux
29	Executive Secretary	Lao National Immunisation Technical Advisory Group (NITAG)
30	Lecturer/staff	University of Health Sciences, UHS
31	Lecturer/staff	University of Health Sciences, UHS
32	Medical Officer	Mittaphab Hospital
33	Ped ID fellow	Paediatric Infectious Disease, MSH
34	Technical staff	Institutes of research & education development, UHS

No	Position	Organisation
35	Head of division	University of Health Sciences, UHS
36		FDD, MoH, Lao PDR/NITAG
37	Deputy head	Epidemiology department, NCLE
38	Executive director	Promotion of Family Health Association (PFHA), Laos
39	Vice-Director	IREU/UHEP – UHS
40	Nursing Program	Mother & Child health centre (MCHC)
41	Dean of Faculty of Pharmacy	University of Health Sciences, UHS
42	Lecturer	University of Health Sciences, UHS
43	Deputy Director	Mother-Newborn Hospital (MNBH)/NITAG
44	Lecturer	University of Health Sciences, UHS
45	Deputy	University of Health Sciences, UHS
46	Vice chair	Lao National Immunisation Technical Advisory Group (NITAG)
47	Paediatrician & epidemiologist	Paediatric Infectious Disease, MSH
48	Research fellow	NUS
49		UIB
50	Technical	Centre for HIV/AIDS/STI (CHAS)
51	Lecturer/staff	University of Health Sciences, UHS
52	Physician/staff	Mother-Newborn Hospital
53	Member	Lao National Immunisation Technical Advisory Group (NITAG)
54	Staff	Lao Tropical and Public Health Institute, TPHI
55	Technical	DHHP
56	Nursing Program	Midtaphab Hospital
57	Director	University of Health Sciences, UHS
58	Staff	Department of Planning and Financing
59	Staff	DPR

Note: total number of 59 individuals registered; attending rate of the workshop was 36-37 ppl daily.

Appendix 3: Participant Instruction sheet

Participant guide:

ການສ້າງຄວາມເຂັ້ມແຂງໃນດ້ານວຽກງານ Health Technology Assessment (HTA) ເພື່ອສະໜັບສະໜູນການຈັດບຸລິມະສິດ ແລະ ຈັດສັນຮັບພະຍາກອນດ້ານສາທາລະນະສຸກໃນປະເທດລາວ.

ເອກະສານທີ່ຈຳເປັນໃນການຝຶກອົບຮົມໄດ້ຖືກຈັດກຸ່ມໃນຮູບແບບ PDF format. ຜູ້ເຂົ້າຮ່ວມການຝຶກສາມາດດາວໂຫຼດໄດ້ຕາມລິ້ງຕໍ່ໄປນີ້: [\[July 2023\] Introductory HTA training - Laos PDR](#). ເອກະສານໃນລິ້ງດັ່ງກ່າວປະກອບດ້ວຍ:

1. ວາລະຂອງການຝຶກອົບຮົມ (ພາສາອັງກິດ)
 - 1.1. ວາລະຂອງການຝຶກອົບຮົມ (ພາສາລາວ)
2. ປຶ້ມແບບຮຽນ (ເອກະສານຈຳເປັນ)
3. ແຟ້ມແບບຝຶກຫັດ
4. ຄຳແນະນຳໃນການຕິດຕັ້ງ Plant-A-Tree
5. ແບບຟອມໃຊ້ສຳລັບການໃຫ້ຄຳຕີຊົມຕໍ່ກັບການຝຶກອົບຮົມ

ຄຳແນະນຳໃນການກຽມຕົວ:

- I. ເພື່ອກະກຽມໃນການຝຶກອົບຮົມ. ຜູ້ເຂົ້າຮ່ວມສາມາດຮຽນຮູ້ກ່ຽວກັບພາບລວມຂອງການຝຶກອົບຮົມຜ່ານວາລະການຝຶກອົບຮົມຕາມເອກະສານ number 1 & 1.1
- II. ເພື່ອກະກຽມໃນການຝຶກອົບຮົມ. ຜູ້ເຂົ້າຮ່ວມສາມາດດາວໂຫຼດເອກະສານທີ່ຈຳເປັນໃນການຝຶກອົບຮົມ ໂດຍສະເພາະເອກະສານທີ 2 ແລະ 3
- III. ທຸກບົດຮຽນທີ່ຢູ່ໃນປຶ້ມແບບຮຽນແມ່ນຖືກຈັດລຽນຕາມວາລະການຝຶກອົບຮົມ. ດັ່ງນັ້ນ ຜູ້ເຂົ້າຮ່ວມສາມາດນຳໃຊ້ສາລະບານໃນປຶ້ມແບບຮຽນເພື່ອຕິດຕາມການຝຶກອົບຮົມ
- IV. ເພື່ອກະກຽມການຝຶກອົບຮົມໃນວັນທີ 2 (ວັນທີ 18 ກໍລະກົດ 2023). ຜູ້ເຂົ້າຮ່ວມການຝຶກອົບຮົມຕ້ອງໄດ້ກະກຽມຕິດຕັ້ງ Plant-A-Tree ຕາມຄຳແນະນຳທີ່ໄດ້ກະກຽມໄວ້ໃຫ້ (ເອກະສານເລກທີ4). Plant-A-Tree ແມ່ນຈະຖືກນຳໃຊ້ເຂົ້າໃນການເຮັດແບບຝຶກຫັດໃນການຝຶກອົບຮົມ. ຫາກຜູ້ເຂົ້າຮ່ວມທ່ານໃດພົບບັນຫາໃນການຕິດຕັ້ງ ກະລຸນາຕິດຕໍ່ຫາຄະນະຜູ້ສອນໃນລະຫວ່າງການຝຶກອົບຮົມ.
- V. ລະຫວ່າງການສົນທະນາ ແລະ ແລກປ່ຽນປະສົບການ (ວັນສຸດທ້າຍ) ຈະມີການໃຫ້ໂອກາດແກ່ຜູ້ເຂົ້າຮ່ວມໄດ້ສົນທະນາ ດັ່ງນັ້ນ ຫາກຄະນະຜູ້ຝຶກສອນຈິ່ງຢາກແນະນຳໃຫ້ຜູ້ເຂົ້າຮ່ວມກະກຽມເນື້ອໃນທີ່ສາມາດແລກປ່ຽນຄວາມຄິດເຫັນໄດ້. ເຊິ່ງແນວຄຳຖາມໃນການກະກຽມປະກອບດ້ວຍ:

- ສົນທະນາກ່ຽວກັບຂໍ້ຫຍຸ້ງຍາກ ແລະ ໂອກາດທີ່ສາມາດຈະພັດທະນາຕໍ່ໄປໃນລະດັບ NITAGs ແລະ/ຫຼື ກະຊວງສາທາລະນະສຸກ/ກະຊວງການເງິນ ລະຫວ່າງການປ່ຽນຜ່ານ (GAVI Transition)
- ຄວາມເປັນໄປໄດ້ໃນການຮ່ວມມືໃນການກຽມຕົວ ແລະ ຮຽນຮູ້ຮ່ວມກັນໃນຂະບວນການປ່ຽນຜ່ານຕ່າງໆ Gavi Global Fund, UNFPA ແລະ ໜ່ວຍງານອື່ນໆ (Transition Plan)
- ໃນຖານະຜູ້ມີສ່ວນກ່ຽວຂ້ອງຫຼັກໃນການບໍລິຫານວັກຊີນພາຍໃນປະເທດ, ທ່ານຄິດວ່າຄວນມີການສະໜັບສະໜູນຫຼືເພີ່ມພູນທີ່ກະສະໃດທີ່ຈະເປັນປະໂຫຍດຕໍ່ການປ່ຽນຜ່ານ
- ຈາກການເຂົ້າຮ່ວມການຝຶກອົບຮົມທີ່ຜ່ານມາ, ທ່ານຄິດວ່າ HTA ຈະສາມາດໃຫ້ປະໂຫຍດໃດຕໍ່ກັບວຽກງານຂອງ NITAG
- ນອກຈາກ HTA, ທ່ານຄິດວ່າຍັງມີວິທີການ ແລະ ເຄື່ອງມືໃດທີ່ສາມາດສະໜັບສະໜູນວຽກງານຂອງ NITAG
- ໃນອະນາຄົດຂ້າງໜ້າ, ບັດໃຈຫຍັງທີ່ທ່ານຄິດວ່າຈະຊ່ວຍໃນການສະໜັບສະໜູນການນຳໃຊ້ HTA ເຂົ້າໃນວຽກງານຂອງ NITAG

Please bring your own laptop to the training programme as well!

Participant guide

Introductory HTA Training Programme: Building capacity of Health Technology Assessment (HTA) to support priority settings and resource allocations in Lao PDR

All training-related documents have been prepared in electronic format. Please download them from this link: [\[July 2023\] Introductory HTA training - Laos PDR](#) The documents in the link provided should include:

1. Agenda of the workshop [English version]
 - 1.1. Agenda of the workshop [Lao version]
2. Training handbook [the main material]
3. Exercise folder
4. Guide for Plant-A-tree installation
5. Training feedback form

Instructions

- I. To gain an understanding of the training overview, please refer to the workshop agenda provided in documents no. 1 & 1.1.
- II. To prepare for the training, kindly download all the documents, especially documents no. 2 and no. 3, as they serve as the primary learning materials.
- III. The training chapters in the handbook (no. 2) are organised in accordance with the agenda's sequence. Please utilize the table of contents in the handbook to navigate through the training.
- IV. Before participating in the second-day workshop, please install the software program "Plant-A-Tree" by following the instructions outlined in the guide (no. 4). This program will be used in one of the exercises. If you experience any issues, please do not hesitate to seek assistance from the teaching assistants present during the training.
- V. During the plenary discussion (last day), there will be an opportunity for training participants to actively engage. Please be prepared to share your thoughts on the following guided questions during the session, if applicable:

- Discussion around the transition has been taking place for some time, what are the main outstanding concerns or opportunities that you may like to leverage (at the levels of NITAGs and/or MOH/MOF)?
- Given concurrent transition plans for Gavi Global Fund, UNFPA, and among others, what would be appropriate in terms of developing joint learning/coordination?
- As the key player within the immunisation programme, what support will be needed throughout the transition phases or what certain capacities would be useful?
- From what you have learned from the training this week, what are your perspectives in terms of how HTA can be useful for NITAG's work?
- Apart from HTA, what are other things that might also be useful?
- As for the next steps, what would be required to support the use of HTA as part of NITAG recommendations?

Please take some time to reflect on these questions and come prepared to contribute to the plenary discussion, and do not forget to bring your own laptop to the training programme as well.

Appendix 4: Feedback form

Overall event feedback form

Thank you for participating in our event; we hope you got as much out of attending as we did organise it. Please let us know your thoughts so that we can keep improving our logistics and content.

Title Introductory HTA training

Date 17-20 July, 2023

Location Vientiane, Lao PDR

Use the scale below to show your agreement with each statement.

	1 (Strongly disagree)	2 (Disagree)	3 (Agree)	4 (Strongly agree)	- Do not know
The aims and objectives of the training were clear and well defined.					
The content of the training (presentations, exercises) was well matched to participants' needs and understanding about the topic(s).					
The training has provided me with information that will influence what I do.					
There are things that I will do as a direct result of my participation in this training.					
If any, please provide an example of one thing you will do as a result of participating in this training.					
Please provide an example of an improvement you would like to see in future training.					

Session feedback form

Instructions: Please indicate your level of agreement with the statements in the tables below for each session by putting in numbers corresponding to rating scale as follows:

Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Not applicable/Do not know
1	2	3	4	5	NA

Session	My knowledge on the focus of the session has increased	The presenter was knowledgeable on the subject	The materials distributed were helpful	Participation and interaction were encouraged
Lecture 1: Health Technology Assessment 101: scene setting prioritisation				
Exercise 1: Learning from practice of vaccine				
Lecture 2: What is economic cost?				
Exercise 2: Getting to know more about the costing				
Lecture 3: measuring impact and counting outcome				
Exercise 3: Learning from Health outcome measurement				
Lecture 4: Modelling of real-world problems and solutions in health				
Exercise 4: Building a decision-tree model				
Exercise 5: Building a Markov model				
Lecture 5: Knowing financial implication: budget impact analysis				
GEAR Project				

Lecture 6: Think again: Ethical, Social, Legal aspects of health policy and intervention				
Lecture 7: Standing on the shoulders of giants: literature review for model parameters and evidence appraisal				
Exercise 6: Literature appraisal for health economic evaluation				
Lecture 8: Thinking the past, enjoying the present, and preparing the future in HTA				
Exercise 7: Setting the HTA scene in Laos: HTA topic nomination, prioritisation, and implementation				
Plenary discussion				

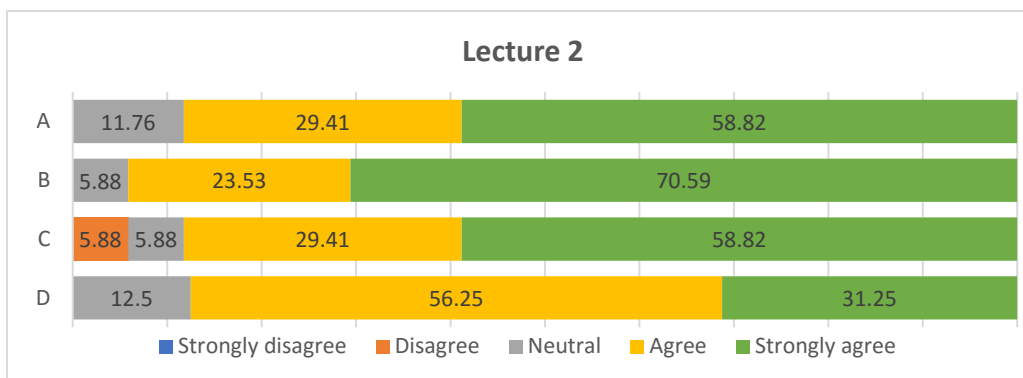
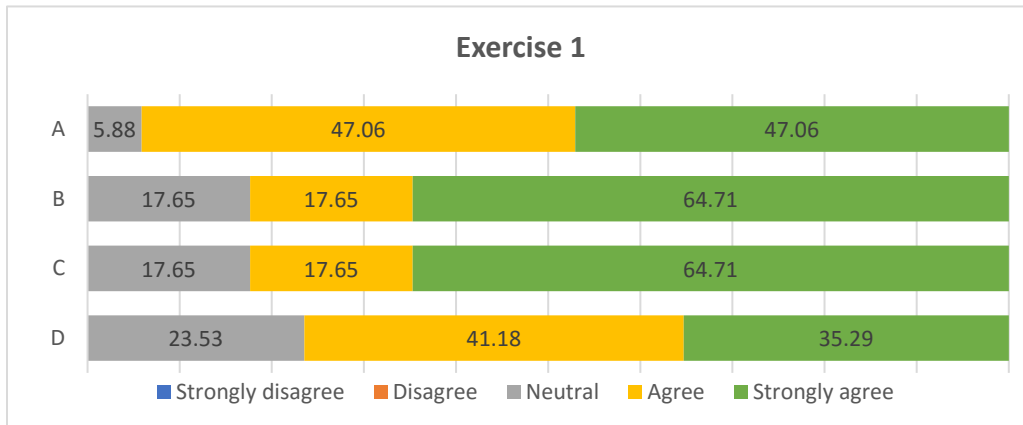
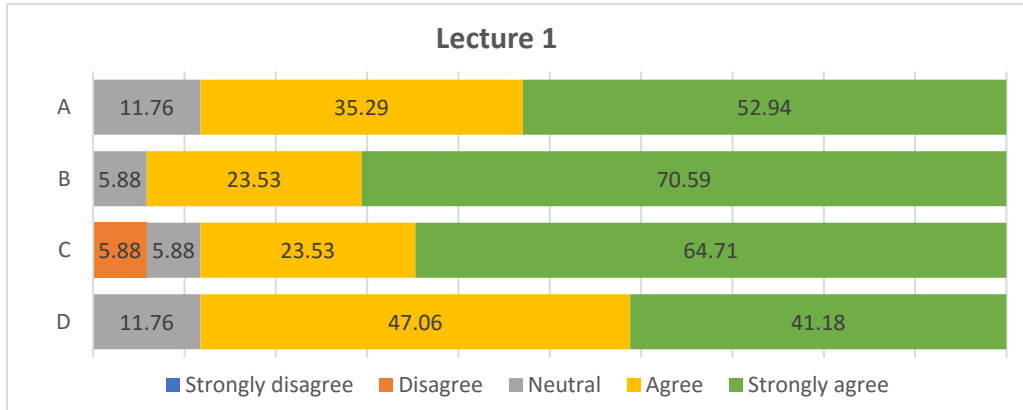
Other comments and suggestions

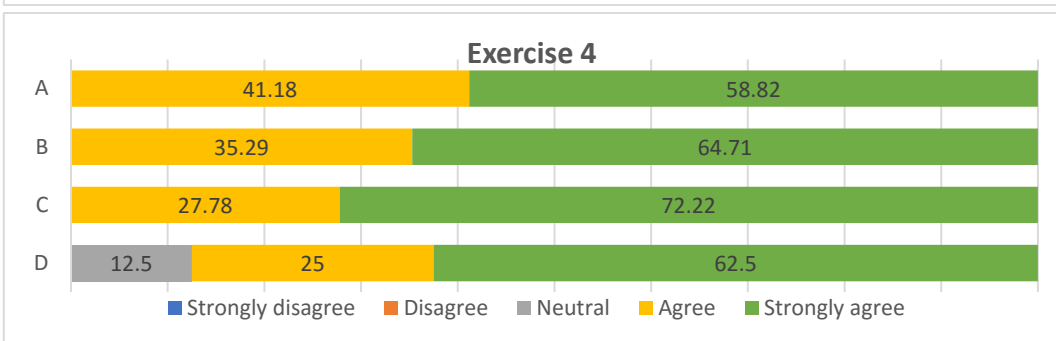
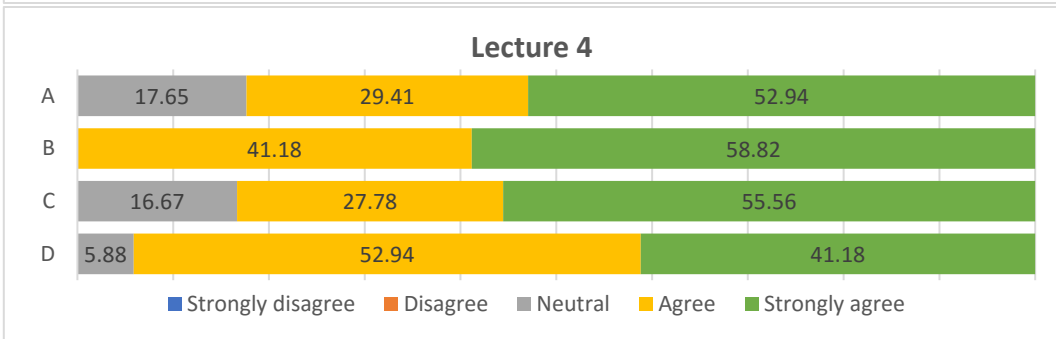
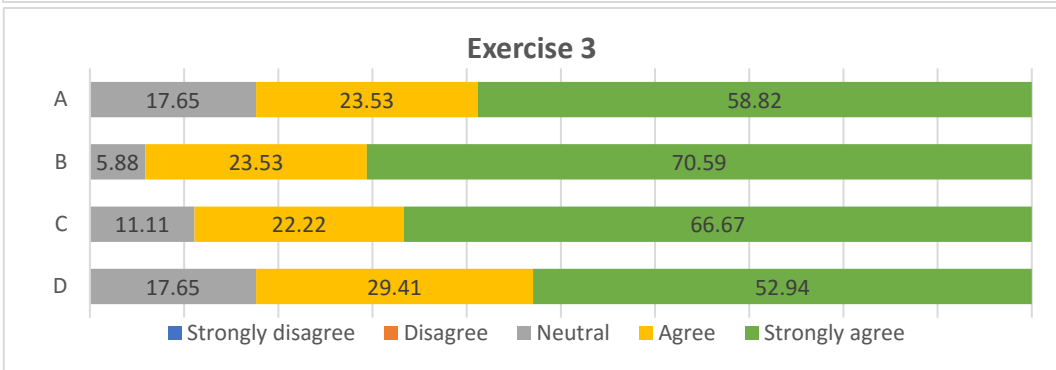
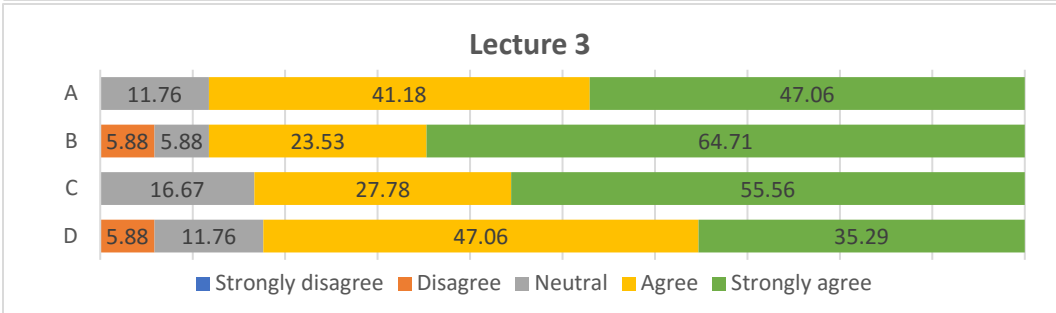
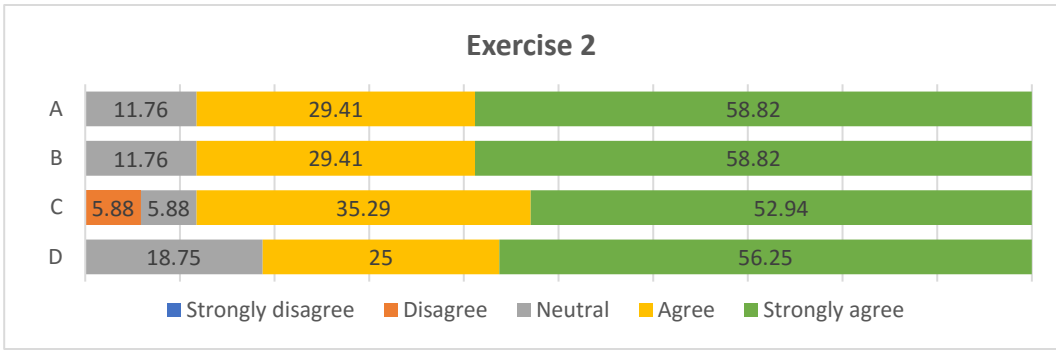
What did you like most about the sessions?
Do you have any suggestions on how we can improve the sessions?
Do you have any other comments?

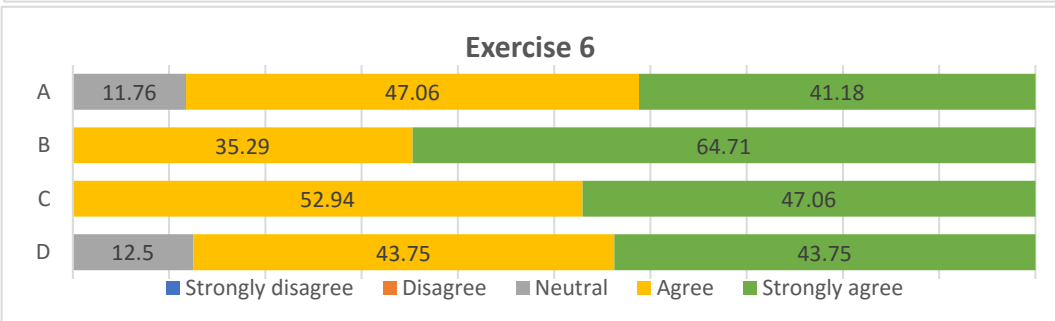
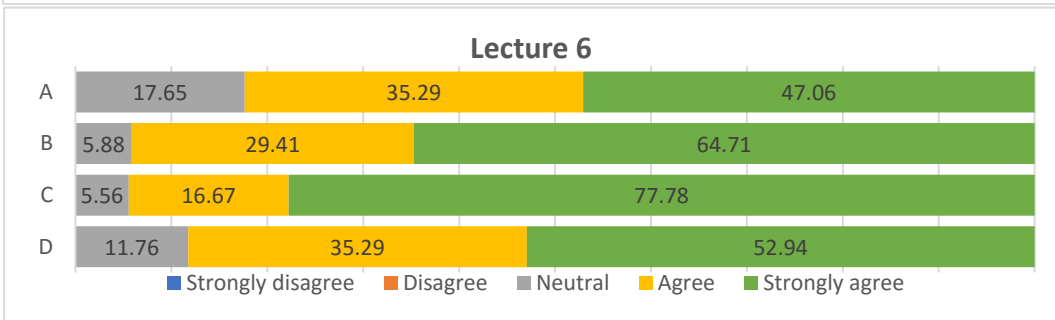
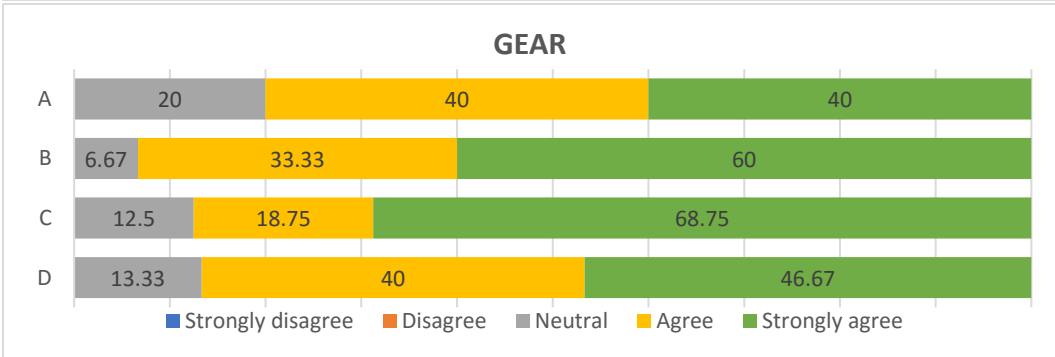
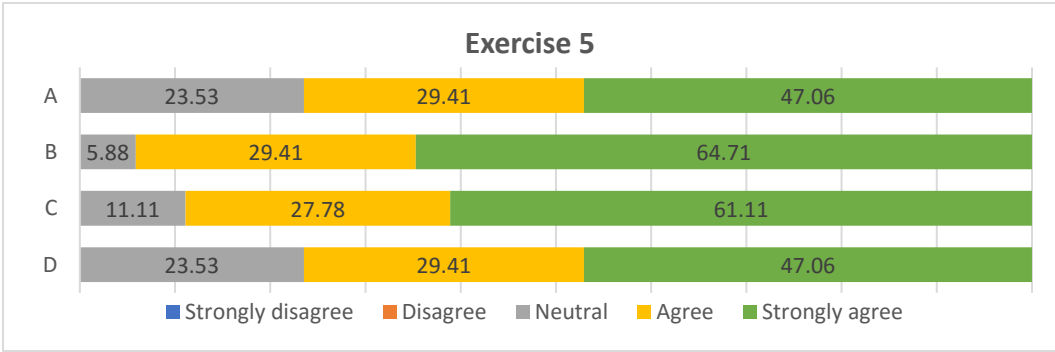
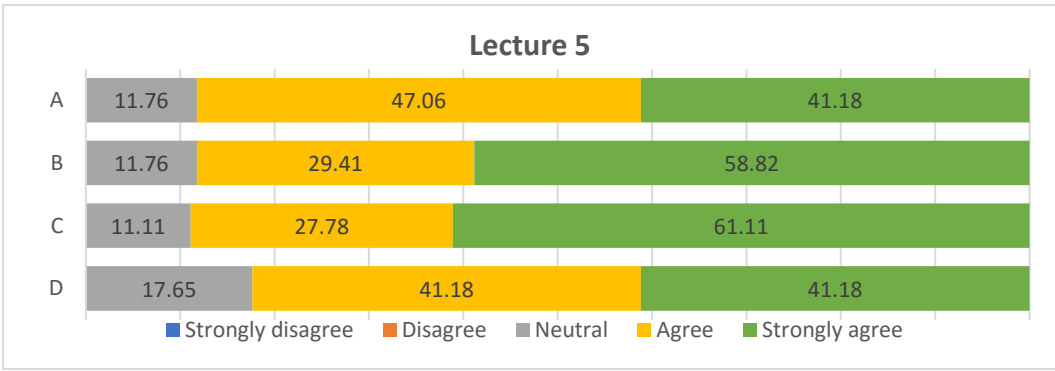
Appendix 5: Session feedback

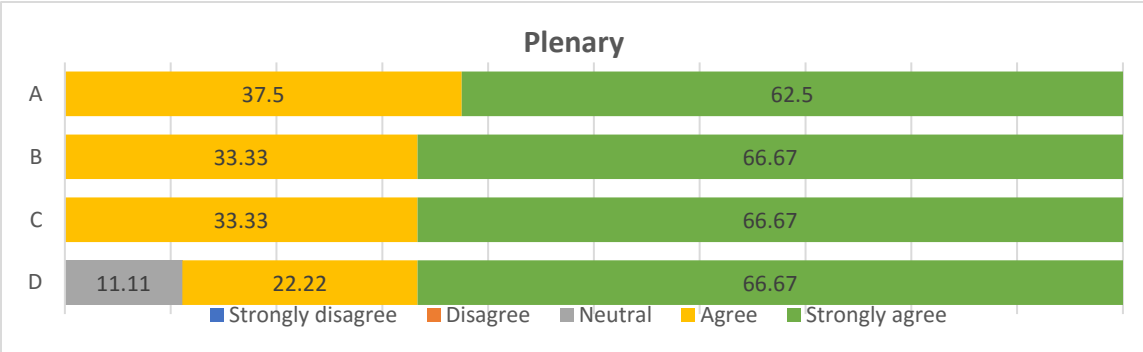
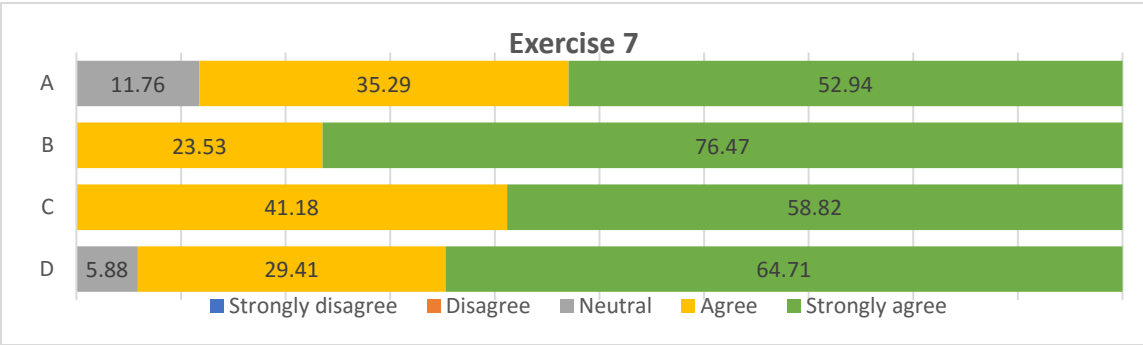
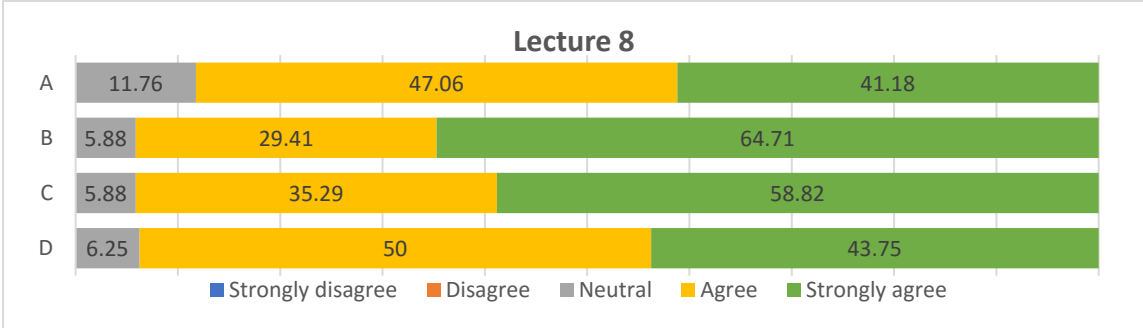
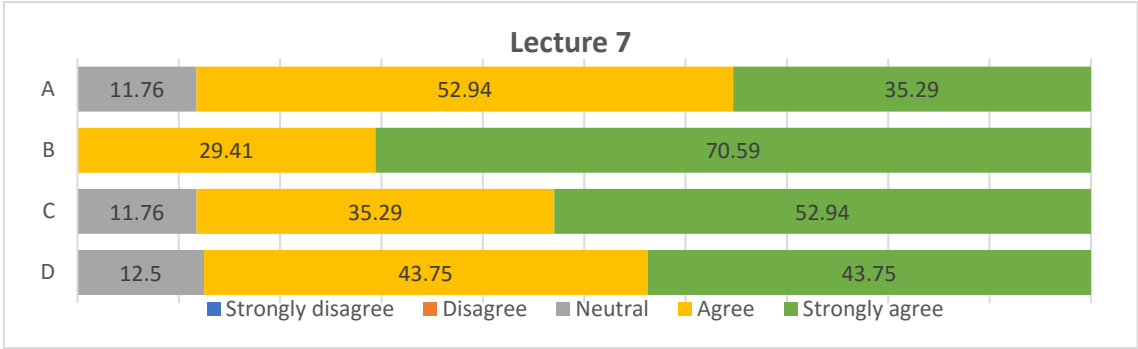
Data Dictionary

Code	Definition
A	My knowledge on the focus of the session has increased.
B	The presenter was knowledgeable on the subject.
C	The materials distributed were helpful.
D	Participation and interaction were encouraged.









Appendix 6: Instructor team

Session	Lecturer/Instructor		
Lecture 1: Health Technology Assessment 101: scene setting prioritisation	Yot Teerawattananon		
Exercise 1: Learning from practice of vaccine	Jarawee Sukmanee Yot Teerawattananon		
Lecture 2: What is economic cost?	Picharee Karunayawong		
Exercise 2: Getting to know more about the costing	Kumaree Pachanee Budsadee Soboon		
Lecture 3: measuring impact and counting outcome	Jarawee Sukmanee		
Exercise 3: Learning from Health outcome measurement	Chittawan Poonsiri Papada Ranron		
Lecture 4: Modelling of real-world problems and solutions in health	Nitichen Kittiratchakool		
Exercise 4: Building a decision-tree model	Waranya Rattanavipapng Parntip Juntama		
Exercise 5: Building a Markov model	Waranya Rattanavipapng Manit Sittimart		

Lecture 5: Knowing financial implication: budget impact analysis	Nitichen Kittiratchakool	
GEAR Project	Chittawan Poonsiri	
Lecture 6: Think again: Ethical, Social, Legal aspects of health policy and intervention	Yot Teerawattananon	
Lecture 7: Standing on the shoulders of giants: literature review for model parameters and evidence appraisal	Jarawee Sukmanee	
Exercise 6: Literature appraisal for health economic evaluation	Papada Ranron Budsadee Soboon	 
Lecture 8: Thinking the past, enjoying the present, and preparing the future in HTA	Kumaree Pachanee Budsadee Soboon Yot Teerawattananon	  
Exercise 7: Setting the HTA scene in Laos: HTA topic nomination, prioritisation, and implementation		 
Plenary discussion	Moderators: Manit Sittimart Yot Teerawattananon	 

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