

**Consultation meeting with experts re. EE for FDG PET-CT for Hodgkin Disease and DLBCL.**  
**Date 12.9.18 9.30am - 12noon**  
**HITAP**

**Brief summary and action points**

**Attended:**

1. Dr. Fatim Lakha	Communicable Diseases Policy Research Group, LSHTM
2. Dr. Pattara Leelahavalong	Health Intervention and Technology Assessment Program
3. Mr. Witthawat Pantumongkol	Health Intervention and Technology Assessment Program
4. Ms. Maneechotirat Santi	Health Intervention and Technology Assessment Program
5. Ms. Natthida Malathong	Health Intervention and Technology Assessment Program
6. Dr. chanisa chotipanich	Chulabhorn Hospital
7. Dr. Wanchai Wanachiwanawin	Siriraj Hospital
8. Dr. Sanan Wisutthisakchai	Siriraj Hospital
9. Dr. Archrob Khuhapinant	Siriraj Hospital
10. Dr. Chakmeedaj Sethanandha	Siriraj Hospital
11. Dr. Daolada Kongkabpan	Songklanagarind hospital
12. Dr. Kanjana Shotelersuk	Thai Association of Radiation Oncology
13. Dr. Kanyarat Katanyoo	Thai Association of Radiation Oncology
14. Dr. Rawee Ruangkanhasert	Thai Association of Radiation Oncology
15. Dr. Yuwadee Ketsumphon	Thai Oncology Nurses Society
16. Dr. Udomsak Bunworasate	Chulalongkorn hospital
17. Dr. Chajchawan Nakhakes	Rajaviti hospital
18. Ms. Sumeena Nima	Social Security Office
19. Mrs. Kisana Kosrihadej	National Health Security Office
20. Mrs. Narisa Manthangkul	National Health Security Office
21. Ms. Pataporn Suksawat	Bayer Holding
22. Ms. Wantanee Kulpeng	Prema
23. Ms. Oraphin Niranartkul	MT Phama (Thailand)

**Apologies:**

1. Dr. Artit Ungkanont	Rama Hospital
2. Dr. Suporn Chuncharunee	Rama Hospital
3. Dr. Teeraya Puavilai	Rama Hospital
4. Dr. Noppadol Siritanaratkul	Siriraj Hospital
5. Dr. Wichai Prayoonwiwat	Phramongkutklao
6. Dr. Tontanai Numbenjapon	Phramongkutklao
7. Dr. Arnuparp Lekhakula	Songklanagarind hospital
8. Dr. Tawatchai Suwannabun	Rajaviti hospital
9. Dr. Panisinee Lawasut	Chulalongkorn hospital
10. Dr. Thanyaphong Na Nakorn	Chulalongkorn hospital
11. Dr. Thanin Intornkumchai	Chulalongkorn hospital
12. Dr. Chinadol Wanitpongpan	Srinagarind Hospital
13. Dr. Kanchana Chansung	Srinagarind Hospital
14. Dr. Chittima Sirijerachai	Srinagarind Hospital
15. Dr. Virote Sriuranpong	Chulalongkorn hospital
16. Dr. Punnee Praditsukthaworn	Chulabhorn Hospital
17. Dr. Weerasak Nawarawong	Faculty of Medicine Chiang Mai University
18. Dr. Lalita Norasetthada	Faculty of Medicine Chiang Mai University
19. Dr. Somchai Wongkantee	Khon Kaen Hospital
20. Dr. Sirikachorn Tangdan	Maharaj Nakhon Si Thammarat Hospital
21. Dr. Somjai Dangprasert	Thai Association of Radiation Oncology
22. Dr. Yuthana Saengsuda	Rajaviti hospital
23. Mrs. Mallika Ladawan Na Ayuthaya	Thai Medical Device Technology Industry Association

24. Mr. Viriya Chongphaisal	Prema
25. Dr. Thanaphon Maipang	The Royal College of Surgeons of Thailand
26. Dr. Anchalee Churojana	Royal College of Radiologist of Thailand
27. Mr. Suradach Valeeittikul	Social Security Office
28. Dr. Sakchai Kanjanawatana	National Health Security Office
29. Ms. Aphirada Pansit	National Health Security Office
30. Ms. Suttirat Rattanachot	The Comptroller General's Department

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### Summary:

1. Group agreed overall aim of EE – ‘EE of PET-CT services for HD and DLBCL in Thailand’
2. Experts clarified that the initial request for conducting the feasibility study and now this EE and specifically this arm of the project had originated from the physicians (including haematologists, pathologists, neuroimaging specialists) and from civil society groups who recognised that in other countries use of PET-CT imaging for HD and DLBCL is standard practice.
3. It was agreed that the literature search would be global though language restrictions would be placed (English and Thai) however where Thai data were available then these would be used (e.g incidence, trends and survival data)
4. There was much discussion around ‘what is the decision problem?’ The experts explained that the terminology used with lymphoma is not primary, secondary and metastatic but newly diagnosed, relapsed and refractory. It was also agreed to explore staging, interim response and response evaluation for HD and to explore staging and response evaluation alone for DLBCL.
5. The expert panel clarified that in Thailand the current standard imaging modality is CT plus BMB for staging and CT +/- BMB for interim response and response evaluation (BMB only being) undertaken if the initial BMB was positive. It was explained that in some areas where there is no access to CT facilities then patients will receive USS instead of CT however this is rare and highly unlikely to apply to those who are CSMBS beneficiaries.
6. Group agreed that modified Lugano classification would be the correct classification system for staging lymphomas assessed by CT and that for interim and response evaluation the acronyms and classification used are: CR, PR, NR, SD and Progressive/relapsed. Whilst for PET-CT the Deauville score is used for staging, interim and response evaluation.
7. There was some discussion about the management pathways – with respect to the five Lugano classifications and clarification regarding when in each management pathway a CT or PET-CT would be undertaken for staging, interim and response evaluation.
8. There was a discussion around the table about the exact wording of the first objective and what should and should not be included within the evaluation as regards timing of scan (staging, interim or response evaluation) and also stage of disease (new, relapsed, refractory). Objective 1 was then rewritten as per the group’s decision and using the correct terminology. It included assessment of interim response for those with HD and initial staging. ‘To conduct a Cost utility analysis of using FDG PET-CT imaging for staging, interim response and response evaluation of patients with newly diagnosed Hodgkin’s disease and staging and response evaluation of patients with newly diagnosed DLBCL’.
9. It was agreed that a systematic review would be undertaken to assess previous research/work exploring what economic models had been used globally for similar EE and that other reviews (not full Syst. Review) on diagnostic accuracy; diagnostic and therapeutic impact; and other model parameters such as incidence, survival, quality of life; outcome and resource use)
10. The PICO tables were reviewed by the group and some clarification requested.
  - a. P – it was agreed that the only subgroup analysis would be age ( $\geq 18$  (adults) and  $< 18$  (children)) who are beneficiaries of the CSMBS scheme. That there would be no other subgroup analysis. However on reflection and considering the time restrictions plus the feasibility study results it is only possible to consider  $\geq 18$  (adults) only and that the subgroup  $< 18$  would be for a further study at a later date as per discussion on 25<sup>th</sup> September between HITAP team and 26<sup>th</sup> September with Dr Udomsak

- b. I – FDG PET-CT
  - c. C - Comparators in Thailand for those on the CSMBS scheme are CT +/- Bone Marrow Biopsy (BMB).
  - d. Outcomes – there was some discussion regarding what the economic outcome should be. The terms incremental cost and QALY, IC/QALY and IC/correct diagnosis were discussed and explained. The group agreed that for long term time horizon the associated outcome ought to be IC/QALY as this was more meaningful. For short term outcomes (6/12) we shall use IC/correct diagnosis.
  - e. The outcomes for the other parameters were agreed as were the study types which would be included. It was agreed to search the global literature for diagnostic accuracy studies.
11. Data sources and extraction processes and synthesis were agreed. A minimum of three databases would be used for the search, the search strategy would be limited to Thai and English and that for QA a second reviewer would review 20% of all titles identified, extract data from 20% of papers agreed and as long as there is 80% concordance. HITAP have predesigned extraction forms from previous EE which can be modified for this project. For any critical missing information authors of included studies shall be contacted.
  12. The perspective and time horizons were agreed to be as per Thai HTA guidelines. The need or not for a short term outcome were discussed and it was felt that in the case of lymphoma this was not necessary as once a management plan is agreed then any progressive activity is classed as relapse
  13. Potential costs – both direct and indirect were discussed. There was some discussion about whether the upfront cost of the FDG PET-CT equipment should be included as this is a large initial cost. The outcome of the discussion was that the expert panel felt it was reasonable to include this and that this would be included within the sensitivity analysis for both BIA and CUA.  
There was also a discussion around whether to include OOP payments to the indirect medical costs – whilst at the time I was not so sure on this I think that this is a significant cost to patients, especially if PET-CT is found to not be cost-effective and hence ought to be included.
  14. Parameters (incidence, survival, need plus met demand): Experts agreed with the model parameters table detailed in the presentation and suggested contacting the Thai lymphoma study group for data on incidence, survival, need plus met demand. Dr Udomsak clarified that the data we require for the EE already exists and is collected by the Thai lymphoma study group and that it is possible to obtain the data separated by insurance scheme.
  15. Parameters (accuracy): It was agreed that the best source would be the global literature.
  16. Parameters (Impact): It was agreed that both the literature and data from the hospitals which agree to participate in the primary data collection for utility would be sources of information for this.
  17. Parameters (treatment options): there are Thai guidelines which have been updated this year and these will form the source of information.
  18. Parameters (utility): Collection of utility data: In the first instance it was agreed that the Thai literature would be explored but if there was little or nothing found then there was a need for primary data collection. Experts from Chulalongkorn, Siriraj, Ramathibodi, and Songkhla agreed for their institutions and patients to participate/assist with this piece of research. Dr Udomsak offered to contact Chiang Mai and Khon kaen to ask if they would be able to also be data collection sites so that we would have regional data on utility, costs and impact as opposed to the information being only from BMA.  
There was a discussion about the benefits of collecting data from the regions. We felt that there may be differences as costs incurred would be different and QoL when assessed may be different due to patients having to travel long distances and be separated from family plus incur large indirect costs for PET-CT.  
It was agreed that HITAP would prepare the paperwork for ethics submission to each of the institutions and the expert panel would be named as co-investigators/co-researchers for this piece of work. The expert panel would help to expedite/assist the ethics approval process wherever feasible and the hope is that this process can be started immediately in order for timelines to be met. The timeline agreed for submission and obtaining ethical approval was agreed at one month.
  19. Parameters (cost): Data would be collected from those institutions, listed above, who had agreed to assist with primary data collection.

20. The decision tree was briefly explained and it was agreed that now the management pathways were clearer decision trees would be formulated for each pathway
21. The overall timeline as shown on slide 32 was agreed in principle acknowledging that the only definitive constant is 15<sup>th</sup> June 2019.
22. There was a brief discussion about what lymphoma services exist for the Thai population. Currently lymphoma services are provided in tertiary, secondary and even community hospital level. CT scanners are sited at each of these levels. There are 12 FGD PET-CT scanners in Thailand 9 of which are within the Bangkok metropolitan area (BMA).

Hospital with FDG PET-CT	Number of FDG PET-CT scanners
Siriraj	2
Ramathibodi	1
Chulalongkorn	1
Chulabhorn	2
Bangkok hospital (private)	2
Bumrungrad (private)	1
Chiang Mai	1
Khon Kaen	1
Korat (private hospital)	1

The ultimate aim is to have at least one FDG PET-CT scanner in each region.