

# VIETNAM MISSION REPORT

Follow-up Workshop for Technical Support of HTA  
Topic Assessments 13-15 October, 2014

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## Background

This visit is part of the Rockefeller Foundation-funded project on building a global agenda and institutional capacity for priority setting. It focuses on the work area of developing a strategic roadmap for introducing Health Technology Assessment (HTA) as a tool for priority setting into policy in Vietnam, with support from NICE International and working with local technical groups and authorities as well as other relevant stakeholders. Prior to this visit, the Health Intervention and Technology Assessment Program (HITAP) staff conducted an HTA workshop from June 30 to July 4, 2014 at the Health Strategy and Policy Institute (HSPI) for the assessment of three topics: i) using interferon and peg-interferon for the treatment of chronic hepatitis C, ii) using trastuzumab for the treatment of HER-2 positive breast cancer, and iii) using MRI for non-specific diagnosis. This visit acted as a follow-up to the training.

## Objectives of the Visit

1. To provide topic-specific support to the three teams of researchers

### **Group 1: using interferon and peg-interferon (peg-IFN) for the treatment of chronic hepatitis C**

#### **Day 1: 13 October 2014**

The research team briefed the team of experts on the changes made to the study scope and methodology, based on the expert consultation meeting held on 26 September 2014. The changes are shown in Table 1 below.

**Table 1. Changes to study scope and methodology**

<b>Changes made to</b>	<b>Before expert meeting</b>	<b>After expert meeting</b>	<b>Justification</b>
Study Intervention	Interferon (IFN) and pegylated-interferon (peg-IFN)	Peg-IFN only (exclude IFN)	IFN is no longer used in the current practice to treat patients with hepatitis C virus infection due to harmful side effects. Only peg-IFN is in use now.
Target population	Patients with hepatitis C virus infection genotype 1, 2, 3, and 6	Patients with hepatitis C virus infection genotype 1 and 6	Compared to genotype 2 and 3, genotypes 1 and 6 are more common in Vietnam and are more difficult to treat, i.e. treatment course for genotype 1 and 6 need to be longer than that for genotype 2 and 3 while efficacy for the treatment against genotype 1 and 6 is lower than against genotype 2 and 3.
Study perspective	Societal perspective	Health provider perspective (Declined)	This is a study to provide information for reimbursement decision. <b>However, this proposal was declined due to study comparability concern.</b>

The team of experts learned that although peg-IFN is on the reimbursement list, the drug is rarely reimbursed due to difficulties in applying the patient eligibility criteria in practice and the lack of national level data. It was agreed between both teams that the objective of this visit was for the research team to become familiar with the economic model to be used in the assessment with support from the team of experts. In doing so, the information needed was to be identified by the end of the visit in order for the research team to collect the data during the next phase of the assessment.

The team of experts introduced the Markov model for economic evaluation of peg-IFN used in a Thai study by HITAP and the research team learned how to construct Markov traces. It was agreed that the research team would learn how to calculate costs and Quality Adjusted Life Years (QALYs) from the model on day 2. In addition, on day 2 both teams would review all the model parameters to determine the primary data that needs to be collected. It is possible to borrow some parameters for the Thai study so the research team needs to collect data only for those parameters that are not comparable between Thailand and Vietnam.

## Day 2: 14 October 2014

On the second day, the research team completed the remaining Markov traces that were not completed on day 1 and learned about the method used to calculate costs and outcomes from the model. Afterward, the team of experts and the research team went through all the parameters and discussed the primary data that the research team would need to collect in the next steps. Table 2 shows the parameters and respective data sources that were agreed on by both teams.

**Table 2. Model parameters and respective data sources**

Parameter	Agreed data source
Transition probability	International literature (from literature referred to in the Thai study)
Drug efficacy	Refer to the data in the Thai study
<b>Costs</b>	
Peg-IFN cost	Data from Vietnam Social Security database
Other medical costs	Retrospective chart review. If the review is not possible, data in the Thai study will be adopted after the data has been adjusted by purchasing power parity (PPP).
Non-medical costs	Patient interview
Utilities	Primary data collection

Moreover, the teams discussed additional points to consult with experts from the consultation meeting:

- Since some of the model inputs were borrowed from other jurisdictions, the model needed to be validated to represent reality in Vietnam
- Model results that would be used for face validation is drug efficacy while those that would be used for predicted validation is percent of HCV patients developing hepatocellular carcinoma and non-discounted life year. If the numbers did not reflect the situation in Vietnam, adjustments would be made.
- Experts would also be asked to identify more updated literature on drug efficacy so that the research team could update the systematic review previously done by HITAP in the Thai study.

For day 3, the research team was asked to develop and fine-tune questionnaires for a cost and utility interview. Furthermore, prior to the visit, the research team asked HITAP to review how to conduct systematic reviews and meta-analyses again in order to become more proficient.

### **Day 3: 15 October 2014**

As planned, the research team developed the questionnaire for collection of cost data. This was followed by a session on how to conduct systematic review, including conducting a systematic search using search terms constructed according to PICO (Patient, Intervention, Comparator, and Outcome) in PubMed as well as data extraction. The research team was also given a hands-on exercise on how to conduct a meta-analysis with STATA.

At the end of the session, the research team presented a summary of what was learned during the 3-day workshop. The researchers indicated that they understood the model used in the Thai study and were clear about the needs of primary data collection for the model parameters. The research team also began drafting the survey instrument for data collection.

### **Next steps**

The research team indicated that the next steps would include conducting systematic search, selecting studies, and extracting data for meta-analysis and model parameters. The team found eligible systematic reviews recently conducted in the Cochrane library, so they did not have to newly conduct a systematic review. The team also plans to study and modify the Thai model to match the model input that would be identified by the end of October. The instrument for the survey, including the pilot and finalization of the instrument and survey

site preparation, would also be prepared by that time. The survey will be launched during November and December to collect data from both patients (n=100) and clinical experts (n=4-5). Afterward, data analysis would be done in December and January 2015. This includes model validation, sensitivity analysis, and result summary.

The teams planned to hold the next training at HITAP in January 2015, which aims to cover the method of conducting budget impact analysis while also addressing the relationship between the use of peg-IFN and the difficulty of reimbursing the drug.

## **Group 2: using trastuzumab for the treatment of breast cancer with positive HER-2**

### **Day 1: 13 October 2014**

The session began with the research team providing an update of the results of the expert stakeholder consultation meeting held on 26 September 2014. The team explained that the stakeholders strongly agreed with conducting cost-effectiveness and budget impact analysis of using trastuzumab in breast cancer patients and fully supported the research. The assessment will focus on using trastuzumab in HER-2 positive patients in both the early and metastatic stages. Cost-effectiveness analysis and budget impact analysis would be conducted to compare using only Paclitaxel, only Docetaxel, a combination of Paclitaxel and trastuzumab, and a combination of docetaxel and trastuzumab for 1- and 3-week cycles. So far, the progression of the assessment is at an early stage (about 30-40%).

The research team gave an update of their progress so far. The team had not yet finalized the Markov model or identified the full set of parameters and the plan was to collect outcome data quality of life (QOL), from 600 patients in 3 hospitals in Hanoi, Danang, and Ho Chi Minh. The research team had, however, developed a questionnaire consisting of 3 types of instruments, which are EQ-5D, European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-C30 (EORTC QLQ-C30), and EORTC BR23. The questionnaire would take approximately 45 minute to complete the questionnaire through face-to-face interviews.

As the Vietnam Social Security (VSS) only covers 50% of the cost of trastuzumab, it can be assumed that the need for co-payment does not help patients from catastrophic expenditure

due to illness. In addition, trastuzumab is used for 1- and 3-week cycles, without evidence of effectiveness. As a result, the team of experts provided comments on the following issues:

- The research team should add more questions about the household expenditure of patients using trastuzumab in the QOL questionnaire. This information would be useful to verify the abovementioned assumption.
- The research team needs to find out more about the policy to support only 50% of the cost of trastuzumab – who set up the policy and when was it enforced?
- What is the percentage of patients that are eligible for the drug but cannot afford it? What is the percentage of patients that pay for trastuzumab and face catastrophic expenditure?
- The current practice of using trastuzumab for both 1- and 3-week cycles in Vietnam should be supported with clinical evidence. The team should find out through in-depth interviews with doctors why a 1-week regimen is used without evidence. This would provide more information on the reasons for and nature of using drugs for treatment by Vietnamese doctors and how to prevent the use of interventions without clinical evidence in the future. Also, the percentage of patients that are given 1- and 3-week regimens should be determined through data from VSS or interview with patients.
- During the stakeholder consultation meeting, some experts mentioned the cardiovascular side effect of trastuzumab. Thus, the assessment should respond to concerns by reviewing local information/literature on the significance of cardiovascular events for patients using trastuzumab.
- Local observational studies can be used for model validation.

## **Day 2: 14 October 2014 and Day 3: 15 October 2014**

On both the second and third day, the team of experts and the research team discussed the parameters required for the model to be used in the assessment. The parameters discussed are as follows:

### **1. Discount rate**

- The team agreed to use 3% discount rate for both costs and outcomes.

### **2. Efficacy of drugs**

- The team will do a systematic review and meta-analysis to identify the efficacy parameters in models for both early and metastatic stages.
- The team can use a Perez study for the 1-week cycle and should explore the evidence for using the 3-week cycle of trastuzumab. However, the team should do a systematic

review to identify the efficacy of Trastuzumab 3-week cycle compared with 1-week cycle.

### **3. Probability**

- The team was suggested to use a life table for probability of death with another cause starting from age 15 and specific only to females.
- A systematic review on probability of death in metastatic stage and probability of death with side effect should be done.
- The treatment of metastatic stage in 2 models (early and metastatic stage) should be the same for comparability.
- Only 1 drug should be selected, which is most used in Vietnam for comparison purposes (standard drug + trastuzumab).
- If the team would like to include side effect (cardiovascular disease) in the model, it should be added as a sub-stage of the metastatic stage and the probability of death with side effect should be determined from literature.

### **4. Cost**

- The team will obtain the cost of drugs from the price list of the VSS reimbursement system. This figure needs to be compared with the price that hospitals report back to the VSS and whether it is the same price as market price, excluding hospital charges. In addition, the price of the drug may vary so an average price may need to be calculated.
- The team will collect the cost of drugs in 3 central hospitals. If more than one price is obtained, the team should do a meta-analysis and also collect the cost of chemotherapy.
- For the cost of physician and hospital, the team plans to collect information from one hospital using an interview letter. Therefore the team needs to develop a letter to cover all charged items and consult experts.
- The team prefers to use the dose of drug different from that used in Thailand.
- Direct non-medical care costs will be collected through patient interviews – 60 people for the early stage and 60 people for the metastatic stage.
- Income loss won't be calculated in the assessment.
- The criteria for eligible patients for interviewing CHE should be developed; for example, should have been diagnosed for at least 3 months, currently in treatment, etc. The nurses or healthcare providers could fill in the other parts of the questionnaire about the patient's characteristic and the drug prescribed.

- There will be two approaches for the questionnaire, one is trastuzumab-based and another is insurance-based. Using the first approach, we can determine the number of patients that cope with the situation. The patients should be balanced between two group of using and not using trastuzumab, but the quota is not necessity. HITAP will help review the questionnaire.
- The questionnaire will ask about the last 3 months of the patients' expenditure and earning.
- Patients will be asked about money savings, how long they need to save money or if they do not have enough money, what they do.
- The first line of the questionnaire should ask about the history of illnesses, date of diagnosis, whether they have insurance, etc.

## 5. Utility

- Collecting data on process.

## Next steps

After identifying the parameters and the primary data that needed to be collected over, the team of experts and research team agreed that the researchers would try to collect all data by December 2014 so that the team of experts could make a follow-up trip in mid-December to verify the data collected and the model used for both early stage and metastatic stage.

## Group 3: using Magnetic Resonance Imaging (MRI) in non-specific diagnosis

### Day 1: 13 October 2014

The aim of this assessment is to i) identify a list of diseases/disease conditions for which MRI indications are considered appropriate, ii) know the international experience on health insurance payment for MRI, iii) describe the current use of MRI in Vietnam, iv) determine the cost of 1 MRI scan by position and by technique, and v) propose a list of diseases/groups of diseases that MRI should be used for in diagnosis and covered by health insurance in Vietnam.

The research team provided updates on the progress of the assessment and the availability of data for each objective was explored. The research team explained that an expert consultation meeting was held on 10 October 2014 (minutes were not sent by HSPI) and the

participants of the meeting included experts from the Vietnam Society of Radiology and Nuclear Medicine, the VSS, the Department of Medical Equipment and Infrastructure, the Department of Medical Services Management, and the Health Insurance Department, Ministry of Health. Participants of the meeting expressed their concerns on the following issues:

- The indications for using MRI can be very broad. The systematic review might be too big and too broad to conduct.
- Currently, there is no data for diffusion. Also the investment on and management of MRI can be done with no regulation related to criteria for investment and condition for utilization. This is a very serious problem since the current situation is not known and many problems regarding investment and management issues are expected.
- The effective use of MRI not only depends on the performance of MRI, but it also depends on technical issues, availability of MRI, professional capacity and availability and management of services after diagnosis by MRI.
- It is expected that there is a trend of increasing MRI investment with a lower magnet size model (less than 1.5 Tesla).
- Therefore, the conclusion from the meeting is to rearrange the sequence of research objectives, moving the situation analysis to the first phase. The updated research questions are:
  - 1) What is the current situation of diffusion, utilization and quality management of MRI in Vietnam?
  - 2) How much does it cost for one MRI scan (by scanning position; type of technique)? What is the health insurance payment for MRI compared to real cost?
  - 3) Which disease/disease conditions are the appropriate indications for MRI? Which diseases are considered standard diagnostic (Gold standard) and for which cases of with comparators (i.e. CT-Scan, 4D UNS, etc.)?
  - 4) What is the experience of health insurance payment for MRI regulated internationally?

The aim of this visit was to finish the questionnaire for questions 1 and 2 (see Appendix 3 for questionnaires developed during the visit). As such, the research team was divided into two groups on the first day, to focus on the development of MRI diffusion and management and development of MRI utilization questionnaires. The questionnaire of MRI diffusion consists of three main sections, which are diffusion, maintenance schedule, and human

resources capacity and guidelines. This questionnaire will be distributed to all hospitals that have MRI machines and will be administered by the Bureau of Health Service of each province. However, the collection of questionnaires from each province was not yet clear enough. The first draft of the diffusion questionnaire was developed and will be sent to experts who joined the consultation meeting to ask for their comments. In November, testing of the survey will be done and the survey will be launched in late November or early December.

The purpose of the questionnaire on utilization is to explore the rational use of MRI to understand the problems and the inappropriate indications used to send patients for MRI. It consists of two main components: the MRI utilization pattern and the doctor's perspective.

## **Day 2: 14 October 2014**

The teams revised the inventory questionnaire and continued working on the utilization questionnaire for outpatients and inpatients. The inventory questionnaire will ask about the capacity of hospitals to provide MRI services and will be used as a baseline to be sent to both census and facility survey. Questions on financial issues were added to obtain information on the revenue from the national health insurance in order to make the questionnaire more comprehensive. The teams also discussed the protocol and plan for distribution and collection of the questionnaire, agreeing on deadlines for each activity.

The teams agreed to do purposive sampling and developed criteria to select 10 hospitals:

- Level of facility
  - Central
  - 2 Provincial
  - 2 District
  - 1 each from big and small private hospitals
- Sector: public and private
- Size
  - Big and small areas
  - Rich and poor areas (average income of each)
- Type
  - Specialist: 1 in Hanoi and 1 at the provincial level

In each hospital, patient charts will be reviewed to retrieve information on the provisional use and results of MRI. A few approaches for sampling in each hospital were discussed. The first is the pattern of use within one month, but some small hospitals may have limited numbers of cases, which would make it difficult to determine a pattern. The second approach

is to calculate the sample size by using a mathematical formula. However, the number of samples can be quite big (e.g. 380 cases). Third, a number could be selected according to capacity for data collection, e.g. capacity to review 100 cases per hospital. The research team did not reach a consensus on this issue and decided to further discuss the issue with the core group.

A costing questionnaire was also developed by using an example of HITAP's costing survey done in 2008 on PET/CT scans. The costing questionnaire consists of questions regarding fixed cost, variable costs, and other related cost. This was followed by discussion of the activities related to each questionnaire and specification of the names of the person in charge of each activity. At the end of the day, it was agreed that the last day would be spent continuing work on the plan for questionnaire management, developing qualitative questions, and learning about cost analysis.

### **Day 3: 15 October 2014**

On the final day, the research team continued developing plans on the research protocol and learned about systematic review and cost analysis from the team of experts (see Appendix 1.) The issue of sample selection was discussed, including whether different levels of economy (i.e. high and low income areas) should be used to address the different labor costs. The research team planned to develop an excel sheet to distribute to participating hospitals, with the choice of providing one-on-one training or group training. The results of the cost data will be reported as the cost of one MRI scan by position and by technique. However, the research team was concerned about sample size and data collection strategy and decided to consult the core group.

Two concerns were raised for the utilization questionnaire. First, how to categorize the indication? If the form is blank, it is likely that the answer can be too short to identify the specific indication. For example, the respondent might write only 'cancer', which still needs further declaration. Therefore, it was suggested that a literature review should be conducted in parallel with the inventory survey. The objectives of the review are to i) review the MRI indications from clinical practice guidelines in other countries, e.g. UK, US, Thailand, etc., and categorize them by diseases; ii) review the appropriate indications for using MRI by reviewing systematic review articles, and available and reliable clinical guidelines; iii) explore the health insurance in other countries in terms of disinvestment of and limitations to the inappropriate use of MRI. The teams agreed that the literature review should be conducted in parallel with the other activities (i.e. distributing and collection questionnaires).

Other concerns remaining on the last day include:

- 1) The evaluation form and validation form.
- 2) The coding of the diseases and the position which will be used in the revised inventory questionnaire and
- 3) Set up an expert consultation meeting for the appropriate coding system

## Next steps

The MRI team plans to translate the questionnaires into Vietnamese and distribute to experts for comments. They planned to visit Saint Paul hospital for testing of all first drafts of questionnaires and finalizing the draft questionnaires by November 5, 2014. Next, they will test the questionnaires both for census and facility survey in 10-20 hospitals between November 7, 2014 and November 30, 2014. If the surveys are successful, they will do data collection for the census survey until January 31, 2015 and conduct a facility survey and a costing study from March – June, 2015. Moreover, the literature review will be conducted in parallel with other activities.

## Conclusion and outstanding points

The three research teams have developed plans for continuing the HTA studies from October to December 2014. The team of experts observed that the work agreed to be carried out since the previous workshop was quite delayed. The team of experts for the MRI team observed that limited time had been allocated to the MRI project, but made significant progress during this visit.

## Appendices

## Appendix 1: List of Participants

### List of experts

1. Dr. Yot Teerawattananon, HITAP
2. Dr. Nattiya Kapol, Silpakorn University
3. Dr. Surasit Lochid-amnuay, Silpakorn University
4. Dr. Thunyarat Anothaisintawee, HITAP
5. Dr. Inthira Yamabhai, HITAP
6. Mr. Songyot Pilasant, HITAP
7. Ms. Benjarin Santatiwongchai, HITAP
8. Ms. Suthasinee Kumluang, HITAP
9. Ms. Chutima Kumdee, HITAP
10. Ms. Nattha Tritasavit, HITAP

### List of workshop participants (provided by HSPI)

**PARTICIPANT LIST of FOLLOW UP TRAINING**  
**DEVELOPMENT OF ECONOMIC MODEL AND SYSTEMATIC REVIEW**  
*HSPI, October 13-15, 2014*

No	Full-name	Organization/Institution	Research involved in
1.	Khuong Anh Tuan	Vice Director, HSPI	MRI
2.	Vuong Lan Mai	Health Economics Department, HSPI	MRI
3.	Hoang Thi Phuong	Health Economics Department, HSPI	MRI
4.	Lê Hong Chung	Health System Research Center - HMU	MRI
5.	Dang Boi Huong	VHEA	MRI
6.	Le Thi Ngoc Anh	Health Economics Department, HSPI	MRI
7.	Nguyen Khanh Phuong	Health Economics Department , HSPI	Hep C
8.	Nguyen Tuan Viet	Health Economics Department, HSPI	Hep C
9.	Nguyen Hoang Giang	Public Health Department	Hep C
10.	Nguyen Tuyet My	Health System Research Center - HMU	Hep C
11.	Nguyen Thi Thuy	Health Economics Department, HSPI	Hep C
12.	Nguyen Thu Ha	Health Economics Division – HSPI	Beast Cancer
13.	Nguyen Quynh Anh	Health Economics Division – HSPH	Beast Cancer
14.	Ong The Due	Public Health Department, HSPI	Beast Cancer
15.	Hoang Thi My Hanh	Social Medicine Department, HSPI	Beast Cancer

No	Full-name	Organization/Institution	Research involved in
16.	Dr Yot Teerawattananon	HITAP	
17.	Dr Surasit Lochid-amnuay	HITAP	Beast Cancer
18.	Dr Nattiya Kapol	HITAP	HepC
19.	Dr Inthira Yamabhai	HITAP	MRI
20.	Mr Songyot Pilasant	HITAP	Beast Cancer
21.	Ms Nattha Tritasavit	HITAP	
22.	Ms Benjarin Santatiwongchai	HITAP	HepC
23.	Chutima Kumdee	HITAP	Breast Cancer
24.	Suthasinee Kumluang	HITAP	MRI
25.	Thunyarat Anothaisintawee	HITAP	MRI

## Appendix 2: Summary of the MRI team's activities for Day 3

Objective	Data collection method	Forms/contents develops
1) To describe current situation of MRI distribution and utilization in Vietnam	Census survey	Inventory form
	Facility survey	Utilization form, IP and OP forms
		Guideline for In-depth interview with manager
		Guideline for In-depth interview with doctors
		Guideline for In-depth interview with MRI radiologist
2) To know the cost of one MRI scan by position, by technique	Costing study	Costing questionnaire
3) To understand the international experience in MRI indications and utilization	Literature review	<ul style="list-style-type: none"> <li>- Review the clinical practice guideline of MRI</li> <li>- Review the measurement to reduce the overuse of MRI</li> <li>- Review the benefits of using MRI</li> </ul>

## Appendix 3: Questionnaire developed by the MRI research team

### Questionnaires

#### Data collection on diffusion and utilization of MRI in Vietnam from hospital side

**Objective of survey: Introduction of study objective and importance of facility's response**

**Province:**

**Hospital name and level:**

**Private/Public:**

**Respondent/Contact person:**

**Mobile:** .....; **email:** .....

**Date of filling in the form:** .....

#### 1. Basic information

Indicator \ Year	2013	2014	
No. outpatients			
<i>Of which,</i>			
- <i>No. of Insured Patient</i>			
- <i>No. outpatient using MRI</i>			
- <i>No. of Insured patients using MRI</i>			
No. of Inpatients			
<i>Of which,</i>			
- <i>No. of Insured inpatients</i>			
- <i>No. insured inpatients using MRI</i>			
- <i>No. of Insured inpatients using MRI</i>			

Indicator \ Year	2013	2014	
No. of patients referring from other facilities			
No of patients referring to other facilities for MRI			

**2. How many MRI machines which are currently in use and are not in use are there in the hospital? ..... machines.**

Please fill in the table as follows for each machine:

Indicator \ Year	Machine 1	Machine 2	Machine 3	Machine 4	Machine 5
Model/Magnet size (Technical specification)					
Year of procurement					
Year of operating					
Brand-name					
Country of production					
Price of the machine					
Source of finance (Who owns the machine, state clearly the owner of the machine?)					
Brand-new: Y/N					
Refurbish: Y/N <i>If yes,</i> - How old is it at the time you purchased it? - When was it refurbished?					

<b>Indicator</b>	<b>Year</b>	<b>Machine 1</b>	<b>Machine 2</b>	<b>Machine 3</b>	<b>Machine 4</b>	<b>Machine 5</b>
- <i>Where was it from?</i>						
Used: Y/N <i>If yes,</i> - <i>How old is it at the time you purchased it?</i> - <i>Where was it from?</i>						
<b>Maintenance</b>						
Is the maintenance included in the contract/Price of machine? (Y/N)						
No of days during the past year that machine cannot operate due to technical problem?						
<b>Functioning</b>						
Is the machine is no longer in use? (Y/N)						
- <i>If not in use, how long has it been out of use up to now?</i>						
- <i>If in use, is the machine fully functioning? If no, why?.....</i>						

### 3. Human resources implementing MRI

- How many persons runs and operate the MRI machines in the hospital?  
.....persons

*Please fill in the table below with specific qualification of those staff*

	2013	2014
Total no. of staff		
<i>Of which,</i>		
- Doctor		
- Nurse		
- Technician		
-		

- Who will read the result of the scan and how many staff can do this in the hospital?  
..... staff?

*Please fill in the table below with specific qualification of those staff*

	2013	2014
Total no. of staff		
<i>Of which,</i>		
- Doctors		
- ....		
- Technician		
-		

- How many people are trained for MRI scan? ..... persons
- Does the facility have to need support from higher/other facilities to read and analyse scan results? (Y/N)

### 4. Availability of clinical practice guidelines for using MRI

- Do you have clinical practice guideline for using MRI in the Hospital? (Y/N)  
.....
- If yes, who develops the guideline? .....

### 5. HI payment for MRI

	2013	2014
Total no. of staff		
<i>Of which,</i>		
- Doctor		
- Nurse		
- Technician		
-		

**Questionnaire**  
**Data collection on diffusion and utilization of MRI in Vietnam from hospital side**

**Objective of survey: Introduction of study objective and importance of facility's response**

**Province:**

.....

**Hospital name and level:**

.....

**Private/Public/University/Sector:**

.....

**General/Specialist:** .....

**Respondent/Contact person:**

.....

**Mobile:** .....; **email:** .....

**Date of filling in the form:**

.....

**1. General information**

<b>Indicator</b>	<b>Year</b>	<b>2012</b>	<b>2013</b>	<b>2014 (January – November)</b>
Number of planned beds				
Number of actual beds				
Occupied rate/Bed occupancy rate				
No. of doctors				
No. outpatients				
<i>Of which,</i>				
- <i>No. of Insured Patient</i>				
- <i>No. outpatient using MRI</i>				
- <i>No. of Insured patients using MRI</i>				
No. of Inpatients				
<i>Of which,</i>				
- <i>No. of Insured inpatients</i>				

- <i>No. of inpatients using MRI</i>			
- <i>No. of Insured inpatients using MRI</i>			
No of MRI scan			
No. of patients referred from other facilities for MRI			
No of patients referred to other facilities for MRI			

**6. How many MRI machines which are currently in use and are not in use are there in the hospital? ..... machines.**

Please fill in the table as follows for each machine:

Indicator \ Year	Machine 1	Machine 2	Machine 3	Machine 4	Machine 5
Model/Magnet size (Technical specification)					
Year of procurement					
Brand-name					
Country of production					
Price of the machine					
Source of finance (Who owns the machine, state clearly the owner of the machine?)					
Brand-new: Y/N					
Refurbish: Y/N <i>If yes,</i> - How old is it at the time you purchased it? - When was it refurbished?					

<ul style="list-style-type: none"> <li>- <i>Where was it from?</i></li> </ul>				
Used: Y/N <i>If yes,</i> <ul style="list-style-type: none"> <li>- <i>How old is it at the time you purchased it?</i></li> <li>- <i>Where was it from?</i></li> </ul>				
<b>Maintenance</b>				
Is the maintenance included in the contract/Price of machine? (Y/N)				
No of days during the past year that machine cannot operate due to technical problem?				
<b>Functioning</b>				
Is the machine is no longer in use? (Y/N)				
<ul style="list-style-type: none"> <li>- <i>If not in use, how long has it been out of use up to now?</i></li> </ul>				
<ul style="list-style-type: none"> <li>- <i>If in use, is the machine fully functioning? If no, why?.....</i></li> </ul>				

## 7. Human resources implementing MRI

- How many persons operates the MRI machines in the hospital? .....persons  
*(Please fill in the table below with specific qualification of those staff)*

	2012	2013	2014
Total no. of staff			
<i>Of which,</i>			
- Nurse			
- Technician			
- Trained for MRI machine operation (Check with the training for MRI machine operation)			
- Others (Clearly specify.....)			

- Who is responsible for reading the result of the scan and how many staff can do this in the hospital? *(Please fill in the table below with specific qualification of those staff)*

	2012	2013	2014
Total no. of staff			
<i>Of which,</i>			
- Doctor			
+ No. of doctors trained for MRI			
- Diagnostic radiologist			
+ No. of doctors trained for MRI			
- Others (Clearly specify.....)			

*(Note: Including staff from other departments)*

- Does the facility have to need support from higher/other facilities to read and analyse scan results currently? (Y/N) .....
- If yes, please specify in details: .....

#### **8. Availability of clinical practice guidelines for using MRI**

- Do you have clinical practice guideline for using MRI in the Hospital? (Y/N)  
.....
- If yes, who develops the guideline? .....

#### **9. HI reimbursement for MRI**

	<b>2012</b>	<b>2013</b>	<b>2014</b>
Total HI reimbursement			
Total HI reimbursement for MRI			
<i>Of which,</i>			
- Total HI reimbursement for MRI of OP			
- Total HI reimbursement for MRI of IP			

**FORM FOR COLLECTING INFORMATION OF MRI UTILISATION**  
**(Apply for patient at MRI department)**

**Province:** .....

**Name of hospital:** .....

**Sector:**      1) Public Hosp.      2) Private

**Type of hospital:**    1) General Hosp.    2) Specialist Hosp. (in detail): .....

No	Patient ID	Insured/Non-insured	Age	Sex	Referred from <sup>1</sup>	Provisional diagnosis	MRI position	MRI technique	MRI results <sup>2</sup>	Place of next referral <sup>3</sup>

<sup>1</sup> Referred from: From hospital wards = 1, From other public health facility = 2, From private facilities = 3, Patient self visit =4

<sup>2</sup> MRI result: Abnormal result with diseases = 1, Normal result = 2

<sup>3</sup> Place of next referral: To inpatient wards = 1, To other public health facility = 2, To private facilities = 3, Patient self referral ==4

**FORM FOR COLLECTING INFORMATION OF MRI UTILISATION FROM MEDICAL RECORD**  
**(Apply for In-patient wards)**

---

**Province:** .....

**Name of hospital:** .....

**Sector:**      1) Public Hosp.      2) Private

**Type of hospital:**    1) General Hosp.    2) Specialist Hosp. (in detail): .....

**Ward (in detail):** .....

No	Patient ID	Age	Sex	Provisional diagnosis for MRI	MRI position	MRI technique	Admission date	Discharge date	MRI perform day	MRI results	Final diagnosis

**Adding:**

- Insured or Non-insured patients
- Admission date
- Discharge date
- Major operation
- Discharge status (1. Recovered; 2. Referred; 3.Dead..)

## GUIDLINE FOR INDEPTH INTERVIEW WITH MANAGERS OF HOSPITAL

### (Director or deputy director responsible specialist hospital)

**Introduction:** *Health Strategy and Policy Institute was assigned by MOH to conduct a survey on current situation of MRI utilization (in term of indication, utilization, quality and safety management) in Vietnam with the aim to enhance the efficiency of MRI utilization in health insurance. We would like you to willing to answer some questions. All information that you share with us, are used for providing evidence for policy makers to develop and improve of policy on health insurance. Thank you very much!*

*In order to facilitate to our study, we would like to ask for your permission to record our conversations. However, all personal information are ensured confidentiality.*

**Giới thiệu:** *Viện Chiến lược và Chính sách Y tế được Bộ Y tế giao triển khai nghiên cứu đánh giá thực trạng sử dụng MRI ở Việt Nam (chỉ định, sử dụng và quản lý chất lượng) nhằm tăng cường hiệu quả sử dụng MRI trong khám chữa bệnh BHYT. Chúng tôi rất mong Anh/chị vui lòng trả lời một số câu hỏi sau đây. Các thông tin mà các anh/chị cung cấp chỉ sử dụng cho mục đích nghiên cứu cung cấp bằng chứng cho xây dựng và hoàn thiện chính sách BHYT. Xin cảm ơn sự hợp tác của Anh/chị.*

*Để thuận lợi cho việc nghiên cứu, chúng tôi xin phép được ghi âm cuộc trao đổi. Tuy nhiên, mọi thông tin cá nhân chúng tôi xin đảm bảo giữ bí mật.*

**Province:** .....

**Name of respondent:** .....

**Position:**

**Age:** .....

**Sex:** .....

**Years of working experience:** .....

**Name of interviewer:**

**Secretary:**

**Time for starting:**

**Time for finishing:**

**Contents:**

- 1) When did you have MRI in your hospital and how many MRI are there in your hospital? Do you think the MRI meet the needs of diagnosis and treatment in your hospital and your area?
- 2) What department is responsible for management MRI machines? How much capacity are daily used? What kind of patient often use MRI in your hospitals? Do you receive referral patients or by passing patient for MRI? What are the most common?

- 3) How many staff are responsible for MRI? (doctors and technicians)? Are these staff well-trained enough for MRI reading/operating? Do you think your personnel can meet the requirement of MRI operating in your hospital in term of quantitative and qualification? If not, why?
- 4) What are the common indications for using MRI to diagnosis? Of which, what is the most important/popular indication? And what about the second and third indications?
- 5) Compare with other radiology methods, in which conditions that you think MRI has higher effectiveness in terms of both diagnostic accuracy and infrastructure in Vietnam (i.e. availability of qualified personnel, machine, etc.)
- 6) What are conditions for indication MRI when necessary? Who decides indication for MRI for patients? Can your hospital provide treatment/ surgery to the patients after positive MRI results? If not, please give the reason why?
- 7) What factors or criterias that affect your decision to prescribe MRI scan for the patients? Of which, what is the most important factor? Are there any non-medical factors/criterias? If yes, please tell more detail?
- 8) Please, give some suggestions for improving the efficiency and management of MRI utilisation in your hospital?

## **GUIDELINE FOR INDEPTH INTERVIEW WITH MEDICAL DOCTOR IN HOSPITALS**

**(Introduction put here)**

**Province:**.....

**Name of hospital:**.....

**Department:**.....

**Name of respondent:** .....

**Date of birth:** .....

**Sex:** .....

**Years of graduation from Medical school:** .....

**Years of working experience:** .....

- 1) What factors or criterias that affect your decision to prescribe MRI scan for the patients? Of which, what is the most important factor? Are there any non-medical factors/criterias and could you please tell a little bit detail about them?
  - 2) In your area, what are the common indicatons for using MRI to diagnosis? Of which, what is the most important/popular indication? And what about the second and third indications?
  - 3) Compare with other radiology methods, in which conditions that you think MRI has higher effectiveness in terms of both diagnostic accuracy and infrastructure in Vietnam (i.e. availability of qualified personnel, machine, etc.)

- 4) How many MRI machines are there in your hospital? Is it/Are they meet the needs of diagnosis and treatment in practice use of your area? What about the MRI personnel? Are these staff well- trained enough for MRI reading/operating?
- 5) Do you face the problem of patients asking for MRI scan without any appropriate/specific indication? How many percentages of patients/cases like this? And at which conditions/health problems that they want to use MRI without prescription?
- 6) Can your hospital provide treatment/ surgery to the patients after positive MRI results?

## **GUIDELINE FOR INDEPTH INTERVIEW WITH MRI SPECIALISTS IN HOSPITALS**

**(Introduction put here)**

**Province:**.....

**Name of hospital:**.....

**Department:**.....

**Name of respondent:** .....

**Date of birth:** .....

**Sex:** .....

**Years of graduation from Medical school:** .....

**Years of working experience:** .....

- 1) How many MRI are there in your hospital? Is it/Are they meet the needs of diagnosis and treatment in practice use in your hospital? Do you think that you and your colleague in MRI department are well-trained enough to perform MRI reading or operating?  
Please tell more detail about the training process on MRI in your case? And in your hospital?
  
- 2) In your area, what are the common indicatons for using MRI to diagnosis? Of which, what is the most important/popular indication? And what about the second and third indications?

- 3) Compare with other radiology methods, in which conditions that you think MRI has higher effectiveness in terms of both diagnostic accuracy and infrastructure in Vietnam (in terms of availability of qualified personnel, machine, etc.)
  - 4) Can your hospital provide treatment/ surgery to the patients after positive MRI results?
  - 5) In your opinion and experiences, what factors or criterias that affect medical doctors' decision to prescribe MRI scan for the patients? Of which, what is the most important factor? Are there any non-medical factors/criterias and could you please tell a little bit detail about them?

## Questionnaire

### Data collection on costing MRI scan in Vietnam from hospital perspective

**Objective of survey:** Introduction of study objective and importance of facility's response

**Province:**

.....

**Hospital name and level:**

.....

**Private/Public:**

.....

**Respondent/Contact person:**

.....

**Mobile:** .....; **email:** .....

**Date of filling in the form:**

.....

**1. General information of facility about MRI scan (linked with Facility survey on MRI utilization)**

**2. The capital cost**

**2.1 The building of MRI**

- Construction year: .....
- Total construction cost: .....VND
- Total cost of repair up to 2014: .....VND
- Total area: .....m<sup>2</sup>

*If there is not separate room/building for MRI, Where MRI scan is provided?*

.....

*Provide information of the building where MRI is provided*

- Construction year: .....
- Total construction cost: .....VND
- Total cost of repair up to 2014: .....VND
- Total area of the department/building .....m<sup>2</sup>
- Total area is used for MRI: .....m<sup>2</sup>
- Total cost of upgrading for MRI provision: ..... VND

**2.2 Equipment**

**MRI**

- How many MRI and related equipment using to provide MRI are currently use?  
Price of each current equipment? Year of purchase,... as follows

	MRI 1		MRI 2	MRI 3	
	Main unit	Accessories			
Days of operating/week					
Hours of operating/day (Service provision time of hospital)					
Actual hours of operating/day					
Maintenance cost during warranty period					
Maintenance cost after warranty period/year					
Maintenance cost/year					
Cost of repair/year (if yes)					

Check with

Note: Number of days in service

- **Supporting equipment**

	Number	Year of procurement	Price
Air-conditioner			
Computer			
Fan			
Fridge			
Desk...			
Chair			

### 3. The personnel

- Supporting personnel

	Total salary	Other allowance	Overtime hours for MRI /month	Time spending for MRI service (of 100%)	Training cost/year
Staff 1					
Staff 2					
Staff 3					

- Doctors and experts who read analyse MRI results

	Total salary	Others allowance	Overtime for MRI/Time spending for MRI	Time spending for MRI service (of 100%)	Training cost/year
Doctor 1					
Doctor 2					
....					
....					
....					

- How many case for outsourcing per month? ..... cases

How much does it cost for reading and analysing the MRI results/case?

.....

**4. Consumables for MRI (Check with hospital)**

	Price	Number	Total
Dressing sets			
Photographic film			
Medicine			
Chemical			
..			
...			

**5. Other expenses**

- Electricity (Thai experience kw used/machine/month x price of kw)
- Overhead cost  
(Including staff from supporting department:
  - + Time spending for MRI
  - + Total salary of the department
- Water
- Cleaning
- Clothing
- Stationary