

NEPAL MISSION REPORT

Economic Burden Study for Seasonal Influenza
26-27 March, 2015
Kathmandu, Nepal

In collaboration with the Center for Molecular Dynamics – Nepal, Nepal Health Economics Association and the World Health Organization



HITAP International Unit (HIU)
hiu@hitap.net

Table of Contents

Table of Contents	1
Background	2
Overview of Mission.....	2
Introduction	2
Meeting summary	3
Day 1	3
Day 2.....	4
Research Protocol.....	6
Proposed Activities for the Next Steps and Timeline.....	7
Appendices	8

Background

This is a follow-up study to the visit made last year on evidence generation for seasonal influenza preparedness in Nepal¹. This first report responded to the policy question regarding the introduction of new preventive measures for seasonal influenza in Nepal, which received high public and policy attention due to an outbreak. The first report recommends the conduct of two studies on economic burden of seasonal influenza infection and economic evaluation of introducing seasonal influenza vaccination in Nepal. The Health Intervention and Technology Assessment Program (HITAP), Thailand was contracted by the World Health Organization to provide technical support to two local Nepalese partners, namely the Center for Molecular Dynamics – Nepal (CMDN) and Nepal Health Economics Association (NHEA), to conduct an economic burden study followed by an economic evaluation study.

Overview of Mission

Introduction

A first visit for the economic burden study (phase 1) was made to Kathmandu, Nepal on 26-27 March 2015 with the aim to provide technical background of the economic burden study to the local partners and to develop tools for data collection and analysis. It was agreed that the local partners would conduct a pilot test of the tools developed by the meeting participants during this visit, followed by a visit to Thailand for preliminary analysis of the data. Afterward, a final visit to Kathmandu would include a local stakeholder consultation meeting in order to validate and fine-tune the results of the economic burden study.

The meeting was arranged at CMDN with 15 participants from CMDN, NHEA, WHO, and HITAP (see Appendix 1). The agenda of the meeting and meeting materials are in Appendix 2. The following sections summarize the outcome of the meeting, starting with a summary of the meeting's discussions followed by the data collection tools developed during the workshop and the plan for the next steps.

¹ Health Intervention and Technology Assessment Program. *A Report On The Technical Consultation On Evidence Generation For Seasonal Influenza Preparedness In Nepal*. 2014. Print.

Meeting summary

Day 1

The meeting started with brief introductions of all participants followed by a presentation on the background of seasonal influenza in Nepal by Dr. Sameer Dixit. The presentation indicated that there is an increasing concern about seasonal influenza burden in Nepal due to a growing trend of infection and as a result, the government has established surveillance systems since 2010; at the moment there are 11 sentinel sites throughout the country. Currently, there is no policy relevant information available regarding the disease burden (incidence and prevalence), health service utilization attributable to seasonal influenza infection, economic burden, and economic evaluation of seasonal influenza prevention and control measures. Thus, this study will be very important, not only in Nepal, but also in other low-income and lower middle-income countries because there is no such evidence available in such settings.

Subsequently, Dr. Thunyarat Anothaisintawee informed the participants about the results of the systematic review and meta-analysis on costs of illness of seasonal influenza². The review identified 39 studies, of which almost all came from high-income countries except for one from a middle-income country (Thailand). It also underlined the methodological challenges due to different studies applications of different research method approaches, making it difficult to compare the studies.

This was followed by a presentation by Waranya RattanaVIPapong and Dr. Juntana Pattanaphesaj who introduced the methodological concept and research methods that were modified from the WHO's draft Manual for Estimating the Economic Burden of Seasonal Influenza³. The meeting participants are aware that the draft manual is a work in progress and accepted the conditions that the draft will be used confidentially as an internal document and a guideline for the study approach. It was agreed that the study would follow the manual as closely as possible and make any modifications as appropriate.

During the afternoon session of the first day, the participants were divided into two groups. The first group worked on developing tools for epidemiological data collection in order to estimate disease burden. This group identified a weakness of the Manual, which overlooks seasonal influenza infection in patients who do not seek care at a formal sentinel site. The participants were concerned that this may have an implication on estimating the economic burden and economic evaluation of seasonal influenza in Nepal because they predicted that populations presenting with influenza-like symptoms would not seek care at a sentinel site.

² S.K. Peasah et al. / Vaccine 31 (2013) 5339– 5348

³ World Health Organization. *WHO Manual for Estimating the Economic Burden of Seasonal Influenza*. 2014. Draft manual.

In other words, many patients with influenza-like symptoms might self-medicate at home, seek care from traditional healers, or seek care at private facilities.

As a result, the participants proposed two possible approaches in order to address this problem. Firstly, the National Health Survey would be reviewed in order to determine the proportion of Nepalese who report symptoms of influenza-like illness (ILI) but do not seek care at health facilities compared to those that seek care at health facilities, followed by extrapolation of the data for those who do not seek care as well as assign costs to this group to calculate economic burden. The second approach is to conduct a community household survey within the catchment areas of the sentinel sites in order to identify those community members who have ILI, but do not seek care at the sentinel sites. In order to recognize the seasonal variation of seasonal influenza infection, the incidence identified from the community survey will be adjusted using reported cases over a one-year period from sentinel sites. The data collection tools can be found in the next section.

The second group discussed the methodological approaches for estimating direct medical, direct non-medical, and indirect costs associated with seasonal influenza infection. A micro-costing or (bottom-up) study was selected for costing outpatient and inpatient services at formal health facilities. The costing questionnaire for health facilities will be designed and applied to patients who visit the sentinel site during the data collection period. In addition, a patients' costing questionnaire was also developed in order to capture direct medical care costs outside of the sentinel sites, direct non-medical care costs including travel and food, and indirect costs due to absence from work of patients and/or accompanying persons. The patients' questionnaire will be applied to all patients with ILI seeking care at the sentinel sites during the data collection period. For inpatients, the questionnaire will be conducted on the final day of hospital admission. Detailed information of the health facility and patients' questionnaire can be found in the next section.

Day 2

The second day of the meeting began with the continuation of the review of the costing data collection form developed by the second group on the afternoon of the first day of the meeting. The participants reviewed and revised the costing collection form for patients and health facilities. Since these data collection forms have not been used in any study, the pilot of the questionnaire is crucial. As such, it was agreed that the data collection forms would be piloted in one sentinel site in Kathmandu and one sentinel site outside of Kathmandu. The review of the feasibility and usability of these forms will be done in a workshop in Bangkok. CMDN will be responsible for piloting the data collection tools in May 2015. In addition, the meeting participants discussed the primary data collection for phase 2 of the work (previously agreed as economic evaluation of seasonal influenza vaccination in pregnant women) and requested that the data for the epidemiological information for pregnant women be collected at the same time. Thus, the epidemiological information data tool was

developed alongside the health facility costing questionnaire in order to learn about the unit cost of providing seasonal influenza vaccine for pregnant women. The questionnaires for the first phase of work (economic burden) and the second phase will be distinguished as A and B, respectively.

The afternoon of the second day focused on discussion on the research protocol and the timeline for the next steps (presented below). Tentatively, there will be three milestones for this phase of the project. The first is piloting the newly developed data collection tools in May 2015, the second is conducting a workshop for preliminary results analysis in Bangkok in the third week of May 2015, and the third is the stakeholder consultation meeting after completing the data analysis in August 2015. The project should be completed and the final report should be available by September 2015. It was agreed that the second phase of the project would begin in August 2015 with the aim to complete this phase by December 2015.

Lastly, meeting participants discussed the submission of the abstract of this project, combining the two phases of economic burden and economic evaluation study to be presented in the Prince Mahidol Award Conference 2016 under the theme of Priority Setting for Universal Health Coverage. HITAP encouraged CMDN and NHEA researchers to work together to develop one abstract for submission to share the learning experience of conducting policy relevant health intervention and technology assessment on seasonal influenza in Nepal. Given that Nepal is a low-income country, this is a unique case of mainly the local research teams completing the study with support from international experts from WHO and HITAP. Another unique characteristic would be the close involvement of stakeholders in the stakeholder consultation meeting in August 2015. These unique points should be made explicit in the abstract.

The meeting closed with an agreed plan for the next steps and timeline and HITAP will develop a group mailing list that will include all partners for future communication and sharing information throughout the process.

Research Protocol

The below protocol was developed by the meeting participants in order to guide the data collection and analysis. The protocol informs how the data will be collected and the types of data collection tools that will be used as well as by whom, and how to manage data entry. The data collection tools that were developed can be found in Appendix 3.

1. Epidemiological data collection
 - a. Samples: all influenza sentinel sites that have data for the past 3 years in Nepal
 - b. Sampling method: census
 - c. Tools: epidemiological data collection form 1A and 1B
 - d. Data collector(s): CMDN staff will make a visit to each sentinel site and work with key informants on data collection. All key informants at the sentinel site will be given a consent form to sign.
 - e. Data entry: CMDN staff will enter data into Excel® (double entry)

2. Costing data collection
 - 2.1 Health facility costing (direct medical cost)
 - a. Samples: selected 5 sentinel sites representing each of the 5 geographical regions in Nepal, namely eastern, central, western, mid-west, and far-west regions
 - b. Sampling method: purposive sample selection from each region based on willingness to participate in the study and high number of cases reported
 - c. Tools: health facility costing questionnaire 2A and 2B
 - d. Data collector(s): trained CMDN staff will interview key persons representing each group of health professionals who provide services to ILI and SARI patients. All key informants at the sentinel site will be given a consent form to sign.
 - e. Data entry: CMDN staff will enter data into Excel® (double entry)

 - 2.2 Patient costs (direct non-medical cost and indirect cost)
 - a. Samples: all patients visiting the selected 5 sentinel sites in 2.1 within the given month; for ILI the interview will be made preferably with the accompanying person of patients when patients wait for/receive medication (in order to know the drug cost paid by the patient) and for SARI the interview will be made with patients on the day of discharge. For patients aged less than 15 years old, the interview will be made only with the caretaker.
 - b. Sampling method: prospective data collection (census) within the given month with the maximum quota of 20 ILI patients and 5 SARI patients for each sentinel site

- c. Tools: patients costing questionnaire (for patients who do not receive medications in hospital, the interviewer will review the drug prescription of patients and make a note in the data collection form before learning about the price of the drug from the drug store next to the hospital)
- d. Data collector(s): trained CMDN staff will perform the interview at each site. All key informants at the sentinel site will be given a consent form to sign.
- e. Data entry: CMDN staff will enter data into CPro (double entry)

3. Data analysis and validation

- a. Software: SPSS for epidemiological analysis and Excel® for economic burden analysis including probabilistic sensitivity analysis
- b. Approach: WHO Manual for Estimating Economic Burden of Seasonal Influenza, with modifications discussed above
- c. Analysts: CMDN staff with support from NHEA, WHO, and HITAP
- d. Result validation: stakeholder consultation meeting in August 2015 will be conducted at the end of data analysis to perform both face and predicted validations (project the number of ILI cases that need informal care, ILI patients that seek care at outpatient departments, SARI cases admitted in hospitals, cases of death as a result of seasonal influenza infection)

Proposed Activities for the Next Steps and Timeline

Date	Activity	Partner Responsible
March 29, 2015	Submit mission report and data collection tools Share the draft WHO Manual with comments	HITAP
April 6, 2015	Completed translation of data collection forms and submit for ethical approval (NHRC)	CMDN
May 1, 2015	Begin field testing for (1) epidemiological data collection, (2) health facility and (3) patient costing questionnaires at two sentinel sites, one in Kathmandu and one outside	CMDN

Date	Activity	Partner Responsible
May 18, 2015	Share the information collected from the sentinel sites by email to HITAP	CMDN
May 19-20, 2015	Preparation meeting for the three-day workshop	HITAP
May 20 – 24, 2015 (including 2 traveling days)	Three-day workshop in Bangkok to include data from 3 questionnaires for analysis (preliminary results analysis and draft report outline)	WHO SEARO to arrange the team and travel HITAP to arrange local logistics CMDN and NHEA will participate in the workshop
June 2015	Data collection	CMDN
June 2015	Send invitation letter to all stakeholders** for the consultation meeting on August 27, 2015 and ask for confirmation	WHO
July 2015	Data analysis and write the first draft of the report	CMDN
August 1, 2015	Send draft report to HITAP for review and comments	CMDN to send draft by email HITAP to review and share feedback
August 12, 2015	Send policy brief produced by HITAP's communications team	HITAP to send to WHO WHO send to consultation meeting participants
August 13, 2015	Send abstract and reminder for the consultation meeting	WHO
August 26-28, 2015	HITAP visit to Kathmandu for preparation meeting (26), stakeholder consultation meeting (27), after action review (28)	CMDN, NHEA, WHO, HITAP
August 31 – September 2, 2015	Two-day health economic evaluation workshop in Kathmandu on seasonal	WHO, NHEA, CMDN, HITAP

Date	Activity	Partner Responsible
	influenza vaccination for pregnant women	
September 15, 2015	First draft of manuscript completed and send to HITAP	CMDN
September 30, 2015	Revised version of manuscript completed and reviewed	CMDN, NHEA, WHO, HITAP
October 2015	Submit manuscript to journal	CMDN

**Stakeholder consultation to include 20-50 participants from MoHP, NCIP, health professionals, academics, international donors (e.g. GAVI, WHO, Global Fund, etc.) and local NGOs

N.B. WHO headquarters will be asked to co-sponsor the stakeholder consultation meeting

Appendices

Appendix A: List of Participants

Two-day meeting to discuss the conduct of an economic burden study for seasonal influenza in Nepal 26-27 March 2015 Venue: Center for Molecular Dynamics - Nepal	
1. Mahendra S. Thapa	WHO-IPD
2. Sanjita Thapa	WHO-IPD
3. Ganga Ram Choudhary	WHO
4. Sameer Dixit	CMDN
5. Laxmi Bilas Acharya	CMDN
6. Rajesh Rajbhandari	CMDN
7. Badri Pande	NHEA
8. Shiva Adhikari	NHEA
9. Vishnu Sapkota	NHEA
10. Yot Teerawattananon	HITAP
11. Thunyarat Anothaisintawee	HITAP
12. Juntana Pattanaphesaj	HITAP
13. Wantanee Kulpeng	HITAP
14. Waranya Rattanavipapong	HITAP
15. Nattha Tritasavit	HITAP

Appendix B: Meeting Agenda

Time	Session Activity
26-Mar-15	
9.00 - 9.20	Introduction to the meeting / opening speech <i>By WHO Representative to Nepal</i>
9.20 - 10.00	Burden of disease of seasonal flu (incidence, DALY, and costs) and related policy measures in Nepal <i>By Representative(s) from Center for Molecular Dynamics Nepal (CMDN) and/or Nepal Health Economics Association (NHEA) (20 min.)</i> <i>Followed by Q&A (20 min.)</i>
10.00 - 10.40	Review of literatures on economic costs of seasonal influenza vaccination in Nepal <i>By HITAP (20 min.)</i> <i>Followed by Q&A (20 min.)</i>
10.40 - 11.00	Coffee break
11.00 - 11.30	Proposed framework for a cost-effectiveness analysis of seasonal influenza vaccination in Nepal <i>By HITAP</i>
11.30 - 12.00	Discussion on the proposed framework and objectives of the study <i>By HITAP, WHO, CMDN, and NHEA</i>
12.00 - 13.00	Lunch
13.00 - 16.00	Group work: developing proposal <i>By HITAP, WHO, CMDN, and NHEA</i>
27-Mar-15	
9.00 - 12.00	Group work: developing data collection tools <i>By HITAP, CMDN, and NHEA</i>
12.00 - 13.00	Lunch
13.00 - 14.30	Group work: developing data collection tools <i>By HITAP, CMDN, and NHEA</i>
14.30 - 15.30	Presentation of group work and discussion <i>By CMDN and NHEA</i>
15.30 - 16.00	Plan for the next steps <i>By HITAP, WHO, CMDN, and NHEA</i>

Meeting materials can be found at:

<https://www.dropbox.com/sh/g7am28o9grapgvp/AADJxrKxVYF6YM9ajvfd4Jhba?dl=0>

Appendix C: Data Collection Tools

Data collector's name: _____	Site ID: <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>
Epidemiological data collection form 1A for estimating influenza burden	

1. Name of sentinel site: _____
2. Address of the sentinel site
 - 2.1 Region: _____
 - 2.2 District: _____
 - 2.3 VDC/municipality: _____
3. Population in the catchment area of sentinel site

Age group	Number of population
1st year	
1. 0-<6 months	
2. 6 mo-<1 year	
3. 1-<2 years	
4. 2-<5 years	
5. 5-<15 years	
6. 15-<60 years	
7. 60-<75 years	
8. ≥ 75 years	
2nd year	
1. 0-<6 months	
2. 6 mo-<1 year	
3. 1-<2 years	
4. 2-<5 years	
5. 5-<15 years	
6. 15-<60 years	
7. 60-<75 years	
8. ≥ 75 years	
3rd year	
1. 0-<6 months	
2. 6 mo-<1 year	
3. 1-<2 years	
4. 2-<5 years	
5. 5-<15 years	
6. 15-<60 years	
7. 60-<75 years	
8. ≥ 75 years	

4. During the past 12 months, how many Influenza-like Illness (ILI) cases detected according to the following definition
- An acute respiratory infection with measured fever $\geq 38^{\circ}\text{C}$
 - Cough
 - Onset within the last 10 days

Age group	Total number of ILI cases	Number of ILI cases sent for influenza testing	Number of positive test
1st year			
1. 0-<6 months			
2. 6 mo-<1 year			
3. 1-<2 years			
4. 2-<5 years			
5. 5-<15 years			
6. 15-<60 years			
7. 60-<75 years			
8. ≥ 75 years			
2nd year	Total number of ILI cases	Number of ILI cases sent for influenza testing	Number of positive test
1. 0-<6 months			
2. 6 mo-<1 year			
3. 1-<2 years			
4. 2-<5 years			
5. 5-<15 years			
6. 15-<60 years			
7. 60-<75 years			
8. ≥ 75 years			
3rd year	Total number of ILI cases	Number of ILI cases sent for influenza testing	Number of positive test
1. 0-<6 months			
2. 6 mo-<1 year			
3. 1-<2 years			
4. 2-<5 years			
5. 5-<15 years			
6. 15-<60 years			
7. 60-<75 years			
8. ≥ 75 years			

5. During the past 12 months, how many influenza Associated Severe Acute Respiratory Infections (SARI) cases detected according to the following definition
- An acute respiratory infection with history of fever or measured fever $\geq 38^{\circ}\text{C}$
 - Cough
 - Onset within the last 10 days
 - Requires hospitalization

Age group	Total number of SARI cases	Number of SARI cases sent for influenza testing	Number of positive test	Number of deaths in the positive cases
1st year				
1. 0-<6 months				
2. 6 mo-<1 year				
3. 1-<2 years				
4. 2-<5 years				
5. 5-<15 years				
6. 15-<60 years				
7. 60-<75 years				
8. ≥ 75 years				
2nd year	Total number of SARI cases	Number of SARI cases sent for influenza testing	Number of positive test	Number of deaths in the positive cases
1. 0-<6 months				
2. 6 mo-<1 year				
3. 1-<2 years				
4. 2-<5 years				
5. 5-<15 years				
6. 15-<60 years				

7. 60-<75 years				
8. ≥ 75 years				
3rd year	Total number of SARI cases	Number of SARI cases sent for influenza testing	Number of positive test	Number of deaths in the positive cases
1. 0-<6 months				
2. 6 mo-<1 year				
3. 1-<2 years				
4. 2-<5 years				
5. 5-<15 years				
6. 15-<60 years				
7. 60-<75 years				
8. ≥ 75 years				

Thank you for your participation!!!!

Data collector's name: _____	Site ID: <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>
Epidemiological data collection form 1B for estimating influenza burden in pregnant women	

4. Name of sentinel site: _____
5. Address of the sentinel site
 - 5.1 Region: _____
 - 5.2 District: _____
 - 5.3 VDC/municipality: _____

Please fill in the following parts with the data in the past 3 years

6. Number of pregnant women in the catchment area of sentinel site

Year	Number of pregnant women
• 1 st year (From _____ to _____)	
• 2 nd year (From _____ to _____)	
• 3 rd year (From _____ to _____)	

7. During the past 12 months, how many pregnant women with Influenza-like Illness (ILI) detected according to the following definition
 - An acute respiratory infection with measured fever $\geq 38^{\circ}\text{C}$
 - Cough
 - Onset within the last 10 days

Year	Total number of episodes of pregnant women with ILI	Number of episodes of pregnant women with ILI sent for influenza testing	Number of positive test
• 1 st year			
• 2 nd year			
• 3 rd year			

8. During the past 12 months, how many pregnant women with influenza Associated Severe Acute Respiratory Infections (SARI) detected according to the following definition
- An acute respiratory infection with history of fever or measured fever $\geq 38^{\circ}\text{C}$
 - Cough
 - Onset within the last 10 days
 - Requires hospitalization

Year	Total number of episodes of pregnant women with SARI	Number of pregnant women with SARI sent for influenza testing	Number of positive test	Number of deaths in the positive cases
• 1 st year				
• 2 nd year				
• 3 rd year				

9. Length of hospital stay in pregnant women with SARI and **positive test for influenza**

Pregnant women with SARI	Number of days staying in the hospital	Discharge status
1st year		
• 1 st pregnant women		
• 2 nd pregnant women		
• 3 rd pregnant women		
• 4 th pregnant women		
• 5 th pregnant women		
• 6 th pregnant women		
• 7 th pregnant women		
• 8 th pregnant women		
2nd year		

• 1 st pregnant women		
• 3 rd pregnant women		
• 4 th pregnant women		
• 5 th pregnant women		
• 6 th pregnant women		
• 7 th pregnant women		
• 8 th pregnant women		
3rd year		
• 1 st pregnant women		
• 2 nd pregnant women		
• 3 rd pregnant women		
• 4 th pregnant women		
• 5 th pregnant women		
• 6 th pregnant women		
• 7 th pregnant women		
• 8 th pregar women		

Micro Costing Questionnaire: Health Facility Costing of Influenza Illness (Costing questionnaire 2A and 2B)

Introduction to interviewers: This questionnaire provides you with a guideline for collecting the data about direct medical cost of treating influenza illness in Nepal. The direct medical cost refers to the costs associated with the treatment of influenza illness; for example, medicines, medical supplies, and diagnostic tests. This questionnaire consists of three sections. **The first section** is general health facility information. **The second section (Costing questionnaire 2A)** is data collection form of labor costs. **The third section (Costing questionnaire 2B)** is data collection form of material costs.

This questionnaire is designed for a **face-to-face interview** by trained staff. **The interviewees are one key informant per each group of health professionals that provide services to patients with influenza-like illness, ILI (OP) AND/OR patients with severe acute respiratory infection, SARI (IP).** The cost information obtained from each health professional should represent the services provided to only **ONE** patient.

Structure of this questionnaire

- Section 1: General information**
- Section 2: Labor costs of providing services to ILI and SARI patients**
- Section 3: Material costs**

Standard operating procedure for collecting data:

A set of questionnaires should be provided to each health facility with one set representing one health facility. For example, there should be three sets of the questionnaire for three health facilities. The below protocol should be followed step-by-step when administering the questionnaire.

- 1) Fill your name (interviewer), and date of interview on page 3 in the questionnaire.
- 2) Fill information about health facility in section 1.
- 3) Section 2 of the questionnaire gives details of the health facility's labor costs.
 - a. Interview key informants per each group of health professionals who provide services to ILI (OP) and SARI (IP) patients such as doctor and nurse about information described in section 2.1. Please note that the monetary benefits of each category should be put as the annual costs. Each health professional who is interviewed for the section 2.1 also need to answer the sections 2.2 and 2.3, respectively, after completing section 2.1. Although one sheet of section 2.1 may cover all health professionals interviewed, sections 2.2 and 2.3 will require one sheet per one health professional. Therefore, if 5 health

professionals are interviewed in section 2.1, there should be one sheet of section 2.1, 5 sets of section 2.2 and/or 5 sets of section 2.3.

- b. For section 2.2, you have to interview the health professionals (those who are identified from section 2.1) about the types of services that they provide for ILI patients (OP) and the time spent for each type of service. Time spent for each type of service has to be stratified by age groups and pregnant women. Please note that the staff ID on the top of the right hand side should corresponding with the staff ID in section 2.1.
 - c. For section 2.3, interview health professionals (those who are identified from section 2.1) about the types of services that they provide to SARI (IP) patients and time spent on each type of service. Time spent for each type of service has to be stratified by age groups and pregnant women. For SARI (IP) patients, each type of service might be performed more than once, therefore, the quantity of each type of service per episode should be filled. Please note that the staff ID on the top of the right hand side should corresponding with the staff ID in section 2.1.
- 4) Identify and value the consumable/disposable materials of each type of service that each health professional (corresponding with section 2) used for providing service to ILI (OP) and/or SARI (IP) patients in section 3. Please note that the staff ID on the top right hand side should corresponding with the staff ID in section 2. All types of services that are mentioned in section 2.2 and/or 2.3 should also be accounted for in section 3.

Name of interviewer:

Completion date (dd/mm/yyyy):...../...../.....

Section 1: General Health facility information	
1.1 Region	<input type="checkbox"/> East <input type="checkbox"/> Central <input type="checkbox"/> West <input type="checkbox"/> Midwest <input type="checkbox"/> Far west
1.2 Name of sentinel site (please specify)
1.3 Type of support	<input type="checkbox"/> Government support <input type="checkbox"/> Private or charity support

Section 2: Data collection form of labor cost for ONLY health professionals who provide services to ILI and SARI patients

Section 2.1 Fill in all monetary benefit which personnel receive from organization in studied duration **(1 year period)**

Time period: Between (dd mm yyyy).....and (dd mm yyyy).....

Staff ID	Name	Position*/responsibility/tasks	Annual Salary	Fringe benefit	Overtime payment	Others	Working hours/day	Working days/month
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Staff ID:.....
 (Corresponding with section 2.1)

Section 2.2 Fill in time spent for outpatient (OP) of each age group

Activities	Time spent for outpatient (OP) of each age group (minutes/case)					
	0 - <1 years	1 - <5 years	5 - <15 years	15 - <65 years	≥ 65 years	Pregnant
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

Staff ID:.....
(Corresponding with section 2.1)

Section 2.3 Fill in quantity per episode and time spent for inpatient (IP) of each age group

Activities	Quantity per episode (times) and time spent (minutes/case) for inpatient (IP) of each age group												
	0 - <1 years		1 - <5 years		5 - <15 years		15 - <65 years		≥ 65 years		Pregnant		
	Q	T	Q	T	Q	T	Q	T	Q	T	Q	T	
1.													
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.													
10.													

Note: Q = quantity per episode (times)

T = Time spent for inpatient of each age group (minutes/case)

Staff ID:.....
(Corresponding with section 2.1)

Section 3: Data collection form of material cost

Identification and valuation of material used of each type of activities

Activities	Consume material used	Quantity	Unit cost	Sub total	Total
1.					
2.					
3.					

Identify and valuation of material used of each type of activities (cont.)

Activities	Consume material used	Quantity	Unit cost	Sub total	Total
4.					
5.					
6.					

Costing Questionnaire: Patient Costs of Influenza Illness

Introduction to interviewers: This questionnaire is part of the assessment tools for estimating economic burden of the influenza illness in Nepal. The cost of patient refers to the travelling expenses, extra expenses on foods, lodging, and productivity losses or time cost of patient and/or caregivers while obtaining the treatment of influenza illness at health facilities. This questionnaire consists of eight sections. **The first section** is general information. **The second section** is interviewee’s identification. **The third section** is transportation expenditure. **The fourth section** is food expenditure. **The fifth section** is accommodation cost. **The sixth section** is productivity losses. **The seventh section** is direct medical cost of patient outside the study site. **The eighth section** is patient’s income.

This questionnaire is designed for **face-to-face interview of patients with influenza-like illness, ILI (OP) and severe acute respiratory infection, SARI (IP) and their relatives or caregivers.**

Please ask the interviewee to try to answer every question. If the interviewee is not sure or cannot remember the exact detail, please give the best answer possible.

In case of children or people without the ability to respond to this questionnaire, parents or caregivers should be interviewed as a proxy.

Structure of this questionnaire

- Section 1: General information**
- Section 2: Interviewee identification**
- Section 3: Transportation expenditure**
- Section 4: Food expenditure**
- Section 5: Accommodation expenditure**
- Section 6: Productivity losses**
- Section 7: Direct medical cost of patient outside the study site**
- Section 8: Patient’s income**

Standard operating procedure for collecting data:

- 1) Fill your name (interviewer), and date of interview on page 3 in the questionnaire.
- 2) Fill information about health facility in section 1.
- 3) For section 3 to 8, interview participant step by step as shown in the questionnaire.

Name of interviewer:

Completion date (dd/mm/yyyy):...../...../.....

Section 1: General information	
1. Health facility information	
1.3 Region	<input type="checkbox"/> East <input type="checkbox"/> Central <input type="checkbox"/> West <input type="checkbox"/> Midwest <input type="checkbox"/> Far west
1.4 Name of sentinel site (please specify)
1.3 Type of support	<input type="checkbox"/> Government support <input type="checkbox"/> Private or charity support
2. Interviewee identification	
2.1 HN:	AN:
Gender:	<input type="checkbox"/> Male <input type="checkbox"/> Female
Date of birth (dd/mm/yyyy)/...../.....
2.2 Type of visit:	<input type="checkbox"/> OP <input type="checkbox"/> IP, please specify length of stay for this admission.....nights (include the day of discharge)
2.3 Special condition (can choose more than one option):	<input type="checkbox"/> Disabled person <input type="checkbox"/> Health care worker <input type="checkbox"/> Pregnant woman <input type="checkbox"/> Chronic diseases e.g. chronic respiratory diseases (COPD, asthma), chronic heart disease, hypertension with cardiac conditions, chronic heart failure, chronic kidney disease (renal transplantation, nephrotic syndrome, chronic renal failure), chronic liver disease, chronic hepatitis, cirrhosis, chronic neurological disease, stroke, transient ischemic attack, diabetes, immunosuppression (HIV infection, splenic dysfunction, chemotherapy patient)

2.4 Other health conditions:

.....

2.5 For this visit, how many relatives or caregivers accompanied you?.....person
(For inpatient, please specify average number of relatives or caregivers who provide informal care in one-day)

2.6 In the past months, is there any member in your family that had an influenza-like illness symptom?

(Influenza-like illness is defined by WHO criteria as a fever greater than 38°C, either cough or sore throat, and with onset within the last 10 days)

No (next to section 3)

Yes or not sure, please specify how many persons had the symptom? person
(Each individual is asked to complete **costing questionnaire no. 3**, one by one. In case he/she doesn't come, other relative is interviewed as a proxy)

Section 3: Transportation expenditure

Instruction: This section contains data regarding expenses and number of resources used for treatment of influenza illness.

3.1 How did you and your caregivers come to this health service?

- Public transport, please specify type of vehicle.....
Please estimate the round-trip transportation cost of you and your caregivers during this visit/stay?.....NRs
- Personal vehicle, please specify type of vehicle.....
Please estimate total number of kilometres driven from your house to/from this health service during this visit/stay?kilometres
- Bicycle, walk or others (no transportation cost) please specify.....

3.2 How long does it take for round-trip travelling from your house to this health service?
.....hours.....minutes

Section 4: Food expenditure

4.1 During the visit/stay, do you have extra expenses on food for you and your caregivers?

- No.
- Yes, please specify how much does it cost in total?.....NRs

Section 5: Accommodation expenditure

5.1 During the visit/stay, do you have to pay for accommodation for you and/or your caregivers other than already charged from the hospital?

- No.
- Yes, please specify how much does it cost in total?.....NRs

Section 6: Productivity losses

6.1 According to influenza illness, how many day-off the patient taken from school or work?
Please write down "0" if no day-offday-off

6.2 According to influenza illness, how many day-off **unpaid** caregiver(s) taken from school or work? Please write down "0" if no day-offday-off (in total of all caregivers)day-off

Section 7: Direct medical cost of patient outside the study site

7.1 Before the visit/stay, have you sought for medication or treatment according to influenza-like illness? (can choose more than one option)

- No
- Yes, please specify where and how much?
 - Self-medication (proceed to 7.3)
 - Drug store (proceed to 7.3)
 - Private clinic namely..... total expense.....NRs
 - Private hospital namely..... total expense.....NRs
 - Others, please specify.....total expense.....NRs

7.2 Do you have to pay for **paid** caregiver/assistance due to influenza illness?

- No
- Yes, please specify how much?.....NRs

7.3 Please specify name or type of drugs (if possible), approximately how long did you take the drug and approximate cost of drugs.

Name or type of drugs (if possible)	Approximately how long	Approximate cost of drugs
e.g. Acetaminophen 500 mg	2 tablets daily for 3 days	20 NRs
1).....	NRs
2).....	NRs
3).....	NRs
4).....	NRs
5).....	NRs
6).....	NRs
7).....	NRs
8).....	NRs

Section 8: Patient income

8.1 Type of earning

- Daily (proceed to 8.2)
- Monthly (proceed to 8.3)

8.2 How much you earn per day? NRs

How many day you work in the last month? days

8.3 How much you earn in the last month?..... NRs