

**National Tuberculosis Prevalence Survey
Nepal
2017**

**Hand book
For
Regional and District Focal Persons**

**Ministry of Health
Department of Health Services
National Tuberculosis Center
Thimi, Bhaktapur**

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1. Prevalence Survey Overview

1.1. TB epidemiology of Nepal and introduction to prevalence survey

- TB is one of the top health challenges of Nepal
- More than 15 million people are infected with TB (45% of population)
- 44000 new cases each year (54% male and 36% female)
- 120 new cases of TB each day and 25 cases are missing each day

(Source: 2017 TB Fact sheet I)

Concurrent effect

- Case notification rate stagnant (123/100,000 as of 2015)
- Difficulty in calculating actual disease burden
- 5000-7000 death each year

1.2. Prevalence Survey

Prevalence is a frequently used epidemiological measure of how commonly a disease or condition occurs in a population. It measures how much of some disease or condition there is a population at a particular point in time.

- Prevalence survey of TB is to estimate the true prevalence of active TB cases in the country per 100,000 populations in a point in time.
- It is cross sectional and population based survey.
- Only the population aged 15 years and above will be included
- Census will be done visiting each household within the defined clusters adopting statistical process.

1.3. Importance of Prevalence survey in Nepal

TB has been a major public health problem in Nepal for a long time. Despite best efforts, it is estimated by annual NTP is still missing to identify nearly 10,000 cases in the country. The case notification has also been stagnant for a decade and across all different terrains and regions. If Nepal is to achieve the END TB targets, then identification of true burden of TB in the country is a must so that concentrated and tailored efforts can be made to identify, manage and eliminate TB program the country. This is why TB Prevalence survey in Nepal is very crucial at this given time.

1.4. Goal of PS

To gain a better understanding of the burden of disease caused by TB in the communities of Nepal

1.5. Objectives of PS survey

- To measure the prevalence of overall Genexpert positive pulmonary TB and smear positive Genexpert positive pulmonary TB, among the adult population at national level estimate in 2017

- To extrapolate prevalence of bacteriologically positive TB prevalence based on results of culture and GeneXpert
- To identify health seeking behavior of general people for TB symptoms
- To identify health service utilization practice of persons having TB in past or present

1.6. Methodology, sampling design, Screening strategies, Data collection

Methodology

- Cross sectional Population based Study
- Sample population includes anyone with age above 15 years in the selected HH
- Frame: PPS model
- Stratum – 11 (Eco-terrain wise)
- Cluster no. – 99 (VDC/municipality) wise
- Piloting – 3 cluster
- Each cluster with average 582 sample; Sample size: 57,610 minimum

Study period: 17 months of field work for data collection with total duration of 25 months till production of final report and dissemination.

Sampling design

Multi-stage cluster sampling where stratification was done based on the unique character of epidemiology of TB distribution and geographical variation.

Primarily stratified according to Mountain/Hill/Terai/Kathmandu valley and further Stratification was based on Rural and Urban, followed by small, medium and large strata for each strata.

Cluster

Primary Sampling Unit (PSU): VDC for Rural and Municipality for Urban

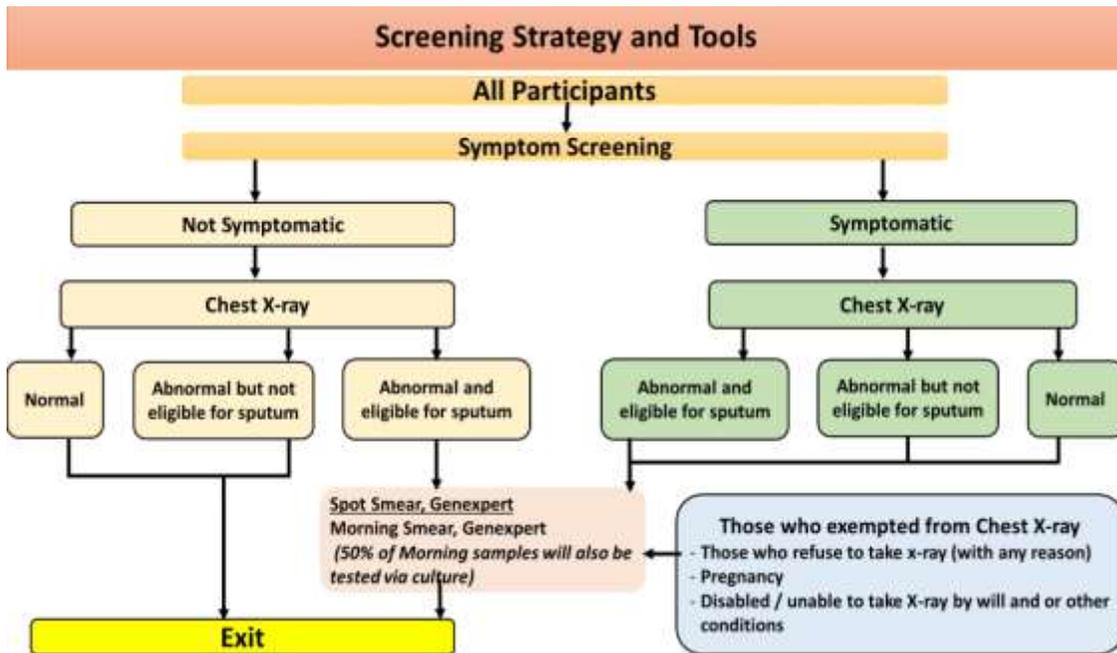
Secondary Sampling Unit (SSU): Wards with the PSU

Sample Size calculation: Total of 99 clusters and population of 57,610 (excluded 3 clusters for piloting)

TB PS Screening Strategy and Case definition

Screening strategy

Screening tools for the PS are chest X-ray and symptom screening questionnaires. A person is considered eligible for sputum examination if the chest X-ray shows any lung/ mediastinum abnormalities or/and the screening questionnaire shows symptoms. Participants exempted from taking X-ray will be considered eligible for sputum examination.



Case definition in PS

A Case for PS is when a survey participant has at least one Genexpert +ve (GX+) result, given that the result is not regarded as cross contamination, among any of the two specimens tested (Spot and Morning sputum samples). Further extrapolation will be done based on the results of smear and culture results, but the primary case definition is based on Xpert/MTB result.

This definition will also hold true regardless a participants history of TB. (i.e if he/she is a diagnosed case of TB under treatment / not under treatment / recently completed or previously treated)

Data collection

The main data for the survey are the results of the sputum tests (Xpert/MTB supported by smear and culture) of the sample population. As collection, transport and testing of sputum samples of all nearly 58,000 participants is not practically feasible in the given time and resource, a screening method to collect and process sputum of those with high likelihood of having TB is used in the survey.

Screening will be done by interviewing all eligible participants using structured questionnaires followed by Chest Xray. Those who ever are positive / symptomatic by either of the tools will be eligible for sputum collection and testing.

Besides this data will also be collected regarding:

- Health seeking behavior of participants having current and/ or past TB symptoms
- Health service utilization (Present or past) for Treatment of TB of the population who currently have or had TB disease in past

2. Technical Overview Of PS

There are following stages in Prevalence Survey. There will be 99 cluster operation and 3 pilot cluster operation to begin with. Primary objective of conducting piloting is to evaluate feasibility, time, adverse factors, cost implication and statistical variability. So that these factors can be adjusted as require and avoid systematic as well as unexpected complications.

Piloting district/ VDC and municipality

Districts:	VDC/ Municipality
Dolakha	Lamabagar
Bhaktapur	Madhyapur Thimi NP
Sindhuli	Sirthauli

The main components of each cluster operations are:

- Formation of committees in regional and district level in PS
- Pre-visit
- Pre Census
- Census
- Screening
- Sputum Collection
- Mop up and
- Follow up

2.1. Formation of regional and district level committees in PS

Prevalence Survey has an organizational structure with different committees and functional units. All committees and functional units have different roles and responsibilities for its functioning. There are regional and below level committees; Provincial / Regional Coordination Committee, District coordination Committee and in the cluster level (VDC or Municipality), there is Local Health Facility Operation and Management Committee (HFOMC) for PS field operation and facilitation.

2.2. Pre-visit

This is the first step in the planning of the field work. The main purpose of Pre-visit is to orient the local leaders and all relevant stakeholders at the cluster sites regarding prevalence survey and get consensus for the initiation of the survey. Pre-visit will also aim to seek support that would be required for field teams for the conduction of the actual field work, set tentative dates and time for the survey along with other logistical management, a select tentative site for the field operation, finalize the cluster map, randomly select the sub unit / household from where the sampling would start, identify and orient the Pre-census team and other local team members and collect all data required for carrying out the fieldwork.

2.3. Pre Census

Pre census is phase after pre-visit and before census; it is basically census preparation. Before census in PS, pre census activities will be carried out starting few days (not more than 2 weeks) earlier to census. Following are major activities in pre-census;

- Social mobilization to inform HH regarding PS in selected cluster,
- Make door to door visit of each household of the sample area.
- Collection of pre-census data in register

2.4. Census and field set-up

After arriving at the cluster, the survey team team will be divided into two subteams. One team will conduct census and another one will be doing site setup simultaneously in first two days.

Census will be done to collect the required information to find the eligible participant in selected cluster. There will be 5 sub teams with 3 members (one from central team and one from SM in each team, supported by a pre-census team member who had visited the household during pre-census work. Each of these sub-teams will visit approximately 20-25 households per day and 40-50 household in 2 days so that required number of eligible participants for that particular cluster will be achieved. It is estimated that if team visits in approximately 200 households, about 600 eligible participants will be available.

Field setting up will also be done simultaneously for the field operation in 2 days' time.

2.5. Screening process in PS

The screening process, i.e. crux of field operation takes place immediate after census. Screening consist of three main parts; Questionnaire interview screening, X-ray and Sputum collection. And it follows the steps to go through the process;

- Reception or informed consent unit: If participant agree to give consent then will proceeds to symptom screening interview
- Interview for individual symptom screening unit: every participant will be interviewed using a structured symptom screening questionnaire together with health seeking behavior for symptomatic and health service utilization practice for TB patients (current or past) where relevant questionnaire will be asked
- X-ray unit: Following Interview, all eligible will be have their chest xray taken.
- Medical Officer's unit: All Xray taken in will be read by the medical officer in the field.
- Team Leader's unit: TL decides the eligibility for sputum collection based on the result of symptom screening and xray. If the participants are eligible for sputum collection then he/she proceeds to laboratory unit
- Field laboratory unit: sputum collection
- Logistics unit: After completing all steps at the end participant will visit the logistic unit for arranged giveaway items.

2.6. Mop up and Follow up

Mop up is a process of contacting individual for screening and sputum collection from eligible participants who did not attend the survey examination in scheduled time on 4th, 5th and 6th day. Mopping up operation will be conducted on every next fay of field survey screening examination till 7th day /last day of field operation.

Post survey follow up and feedback

It is the process of providing the survey examination results to the health facility that are received from PSS/NTC and ensure that each participant receive the information on examination results through health system. Post survey follow up also includes following activity;

- Mobilize local health staff to collect sputum sample of those suspects either due to require indicated recollection or result of x-ray reading is changed to abnormal and is labeled as eligible for sputum collection by central radiology team or QA team
- Ensure timely transportation of these samples to central laboratory
- Ensure enrollment of diagnosed active TB cases during prevalence survey, for treatment as per NTP guideline

3. Formation of committees in regional and district level (RCC and DCC formation and Roles and responsibilities)

Provincial / Regional coordination committee formation

As per the Prevalence Survey design and its protocol, which have been approved form Ministry of Health and Steering committee of PS chaired by Secretary Health; a Regional Committee will be formed to get support in TB prevalence survey in regional/provincial level and termed as Regional/provincial coordination committee. Regional Health Director will chair and will lead the committee. Regional TB/L Officer (RTLO) will be the member secretary and will be responsible for most of support and facilitation process. Other members in the committee are pre designated according to their position and will be as follows (as per the NTPS protocol);

Members:

Chairperson:	Provincial / Regional Health Directorate
Member:	Regional/Zonal Hospital Medical Superintendent
Member:	Representative from Regional Administration Office
Member:	Public Health officer.
Member:	Statistical Officer of RHD
Member:	Regional TB Partners (Maximum 5 organizations)
Member:	Regional QC in charge
Member:	RTCO
Member:	Regional/Zonal Hospital Radiologist- 1
Member Secretary:	Regional TB/Leprosy Officer (RTLO)

P/ RCC formation procedure

As soon as the NTC hand over or dispatched the official letter to RHD for support in Prevalence Survey, where RCC formation will be specified as in protocol and role of RDH, the RHD then release official letter to all designated members (as given above) to inform their nomination in committee and will call for meeting to officially declare the formation of regional coordination committee. Hence the committee formed and will hold 1st official meeting regarding their roles and responsibilities.

Role of RTLO in forming committee

As a member secretary, RTLO in coordination with RHD, will communicate with all member of committee and take initiative to form committee. More specifically;

Coordinate with RHD to form and declare committee

Communicate with other member of committee and dispatched official letter from RHD to members

Communicate with member and schedule meeting (time, date and venue)

P/RCC responsible for:

Supervision, coordinating and facilitation among all; central working committee, District Coordination Committee (DCC) and outsourced agency for better performance of the PS in the region.

Procedure for RCC/ Provincial Coordination Committee meeting

1. Set agenda for the meeting (Orientation on PS and Committee formation, preparing supervision plan)
2. Confirm date, time and venue by RCC Chairperson (RHD) and Member secretary (RTLO).
3. Invite all the invitees at least before a week by official letter. Also, send email to all participants
4. Make sure all other things are ready beforehand.
5. Remind invitees through phone before 2/3 days of meeting.
6. Prepare presentations before the meeting.
7. Conduct meeting. Announce
8. Get attendance of participants.
9. Prepare meeting minutes
10. Circulate meeting minutes to all the participants of the meeting

Necessary preparation:

1. Register of attendance
2. Lunch
3. PowerPoint presentations
4. Travel arrangement for members from central team.

***RTLO will be responsible for the formation of RCC and conducting meetings and supervision**

***RCC should be formed (within two weeks for survey clusters and within one week for piloting cluster) after returning from Sauraha workshop and all the meeting minute should be circulated to PS Secretariat/NTC within two days.**

***Budget for Regional Coordination Committee meeting with expenditure norms**

Meeting of Regional coordination committee		Unit Cost				
Activities/Cost Description	Measurement Unit	Quantity	Events/Months/Days		Rate (NPR)	Rate (NRS)
Transportation Exp	Per person	20	2		1,000	40,000
Refreshment	Per person	20	2		200	8,000
Stationery	Per person	20	2		100	4,000
Total						52,000

District Coordination committee formation

Likewise P/RCC, to implement and supervise PS in cluster level, a district level coordination committee will be formed, as stated in protocol. The district coordination committee will be chaired by DHO, and will lead the committee. District TB/L Officer (DTLO) will be the member secretary and will be responsible for most of support and facilitation process. Other members in the committee are pre designated according to their position and will be as follows (as per the NTPS protocol);

District Coordination Committee (DCC)

Members:

Chairperson:	DHO/DPHO
Member:	Officer Representative from District Administration Office
Member:	DEO or Representative
Member:	Rep. District Development Committee
Member:	Chief of Branch statistical office
Member:	Rep. District Education Office
Member:	Rep. from District Police Office
Member:	Medical superintendent
Member:	Statistical officer/assistant
Members:	NATA representative
Members:	Red Cross representative
Member:	District TB Partners (minimum 2 organizations, 1 from each organization)
Member Secretary:	DTLO

Invitee Member: Municipal health coordinators or focal point – Where the cluster operation are to be conducted

Invitee Member: Ward Chief – Elected Chief of wards where the cluster survey operation will be carried out.

Invitee Member: Health Facility Incharges of health facilities which is responsible for the cluster population to be surveyed.

DCC formation procedure

As soon as the NTC hand over or dispatched the official letter to DHO/DPHO for support in Prevalence Survey, where DCC formation will be specified as in protocol and role of DHO/DPHO, the DHO/DPHO then release official letter to all designated members (as given above) to inform their nomination in committee and will call for meeting to officially declare the formation of district coordination committee. Hence the committee formed and will hold 1st official meeting regarding their roles and responsibilities.

Role of DTLO in formation of DCC

As a member secretary, DTLO in coordination with DHO will communicate with all member of committee and take initiative to form committee. More specifically;

Coordinate with DHO to form and declare committee

Communicate with other member of committee and dispatched official letter from DHO to members

Communicate with member and schedule meeting (time, date and venue)

DCC is Responsible for:

- Conduct meeting.
- Develop supervision plan
- Develop facilitation plan
- Set and confirm pre-visit dates in the cluster – Municipal Health coordinator requested to support this while pre-visit is conducted in the municipal office next.
- Ward chief and health facility incharge to facilitate the 2nd day of previsit meeting at HFOMC at the cluster level. Health facility incharge also to explore and recommend pre-census team members and other local staffs during previsit meeting (based on the given criteria)
- DTLO in particular to plan and facilitate the pre-visit process to follow next.
- Recommend Pre-census team members during pre-visit and local staffs for field operation days.
(DTLO should be with the entire cluster full time from pre-visit up to the end of field operation; therefore it is a must to have a robust supervision and facilitation plan of DLTO)

Procedure for DCC meeting

1. Set agenda for the meeting (Orientation on PS and Committee formation, preparing supervision plan)
2. Confirm date, time and venue by DCC Chairperson and Member secretary.
3. Invite all the invitees at least before a week by official letter. Also, send email to all participants
4. Make sure all other things are ready beforehand.
5. Remind invitees through phone before 2/3 days of meeting.
6. Prepare presentations before the meeting.
7. Conduct meeting.
8. Inform health facility in-charges that they will need to explore and suggest at-least 5 local staff members for pre-census work during the pre-visit meeting which will be organized next in the municipal office. They will also be requested to explore and recommend other local staffs to be recruited for field operation work
9. Get attendance of participants.
10. Prepare meeting minutes
11. Circulate meeting minutes to all the participants of the meeting

Necessary preparation:

1. Register of attendance
2. Lunch
3. PowerPoint presentations

*DTLO will be responsible for the formation of DCC and conducting meetings

***DCC should be formed (within two weeks for survey clusters and within one week for piloting cluster) after returning from Sauraha workshop and all the meeting minute should be circulated to PS Secretariat/NTC within two days.**

***Budget for District Coordination Committee meeting with expenditure norms**

Meeting of Districts coordination committee		Unit Cost				
Activities/Cost Description	Measurement Unit	Quantity	Events/Months/Days	Times	Rate (NPR)	Rate (NRS)
Transportation Exp	per trip	20	1	2	1,000	40,000
DSA		3	2.25	2	1,600	21,600
Refreshment		20	1	2	200	8,000
Stationery		20	1	2	100	4,000
Total						73,600

3.1. Health Facility Operation Maintenance Committee (HFOMC)

As stated in protocol, coordination with existing HFOMC is essential for field level PS activities. Therefore, DTLO will communicate with HFOMC for PS orientation and coordination meeting as per requirement; and hold the meeting flowingly. This meeting will be a follow up meeting of pre-visit (2nd day) , where mainly the pre-census team in recruited, oriented for pre-census work and the field site will be finalized together with date and time for field operation.

1. Set agenda for the meeting
2. Confirm date, time and venue by Ward and HFOMC Chief.
Make sure all invitees are invited at least before a week through official letter by Member secretary of HFOMC.
3. Make sure all other things are ready beforehand.
4. Make sure all local staffs and pre-visit teams to be recruited for field operations are invited in the meeting.
5. Make sure all invitees are reminded through phone before 2/3 days of meeting.
6. Prepare presentations before the meeting.
7. Conduct meeting.
8. Get attendance of participants.
9. Prepare meeting minutes
10. Circulate meeting minutes to all the participants of the meeting

*Member Secretary of HFOMC will be responsible for conducting HFOMC meetings.

Necessary preparation:

1. Register of attendance
2. Lunch

Budget and norms of HFOMC meeting

Meeting of health facility & operational management committee		Unit Cost				
Activities/Cost Description	Measurement Unit	Quantity	Events/Months/Days	Times	Rate (NPR)	Rate (NRS)
Transportation Exp	per trip	20	1	2	1,000	40,000
Refreshment		20	1	2	200	8,000
Stationery		20	1	2	100	4,000
Total						52,000

4. Pre-visit in PS

A part of field operation carried out in the beginning for the orientation of stakeholders of selected cluster, date and time confirmation for cluster operation, site selection, and selection of pre-census team and for the collection of all required data before field operation.

The pre-visit team will have three major tasks during the visit;

- ❖ Have all relevant stakeholders oriented and onboard for PS.
 - ❖ Set and finalize cluster site, date and time for field operation for PS in the cluster
 - ❖ Collect all the necessary information and feasibility assessment required for the cluster operation.
 - ❖ Recruit and orient the pre-census team and local teams for pre-census, census and field operation.
- The pre-visit team is composed of mixed team members. Representation from the outsource agency (preferably field team leads), representation from PSS (preferably liaison officers), DTLO forms a core component of the pre-visit team with others supporting staffs as required.
 - Pre-visit team will also coordinate and hold meeting with local health facility, VDC/ ward of municipality, local health facility and other local stakeholders and orient them on national prevalence survey.
 - The meeting will be conducted in the Municipal office first followed by a 2nd meeting at the field set up the site (HFOMC meeting) under the leadership of the Municipal chief, Health focal point, health facility in charge of the cluster and DTLO along with support from others as required.
 - Pre-visit team will gather all required basic information of the selected cluster so that evidence based field operation plan can be developed and field operation activities can be accomplished smoothly and systematically.
 - Pre-visit will be carried out in two phase and total 3 pre-visit teams will be mobilized in each region. In first phase 17 clusters will be covered in each region.

- These pre-visit teams will assess all the basic information required to develop detailed cluster plan to complete field operation in the selected cluster.

After completing field operation in in first phase 51 cluster (in around 6 month), a review meeting will be organized to review the progress and share the lesson learnt. Then second phase of pre-visit will be initiated by the same team in remaining cluster of their respective region within one month and second phase of field operation will be carried out accordingly.

Composition of pre-visit team

Team one

- 1.Team Leader.. 1
- 2.DTLO (of respective district)... 1
- 3. Liaison officer 1
- 4. Local health facility in-charge... 1

Team two

- 1. Medical Officer.. 1
- 2.DTLO (of respective district)... 1
- 3. IT officer 1
- 4. Local health facility in-charge... 1

Note: if there are more than one cluster in the district same team shall cover all the clusters so that DTLO will be able to join the team.

Major activities during pre-visit

Assess the feasibility of conducting the field operation at the selected cluster

Pre-visit team will collect information from the village representatives regarding the feasibility and accessibility of the selected ward(s) for field operation.

If the team agree, field operation is not feasible to conduct at the selected ward/s, in such condition team will inform to survey coordinator for alternative management. Then, the feasibility of conducting field operation at the alternative village is assessed in the same previous manner.

Estimate the number of eligible population (15 years old and above) in the selected ward/s

Since every ward has its own census data, the mission with support of local authority and health facility in-charge is to estimates the number of eligible population for the survey (i.e. the number of the population with age 15and above years old)

Select additional ward(s) if the number of eligible population is less than required.

If the number of eligible population in the selected ward is estimated to be less than required for that particular cluster (as given in cluster size chapter), additional ward(s) needs to be selected until the number becomes sufficient (600). While selecting the additional ward, clockwise direction will be followed and immediate next ward will be selected for require population.

Decide the area/part of ward to be covered by the survey

If the selected cluster is ward of metropolitan/sub-metropolitan or municipality, the ward may be too large and it is not possible to conduct survey in whole ward. In such condition field operation should be done in a part of the selected ward, either it is initially or additionally selected. The part (i.e. household groups) must be selected in one of the following manners. In most of the municipalities the wards may have

household with their house hold number therefore can be selected by the household number groups; for example 1-2500, or 100-350 etc. estimating the adequate number of participating.

If the ward does not have household number groups, divide the ward in household blocks or segments so that there will be 250- 300 household in each blocks(it is estimated that 200- 300 household will have adequate number of eligible participants).Then an ID number needs to be allotted to each block, which desirably has an eligible population of nearly 600. Following the numbering, the study block is randomly selected from the household group and is marked in the map. In either way, the method of the selection of the household groups needs to be recorded on the field operation report.

Listing household group / block numbers for the survey

Listing of each house group/ blocks of the mapped cluster will be done.

Observe and plan for setting up field site and accommodation for field staffs

At the cluster the team assesses further, such as the availability of the venue for the field operation site, including the accommodation for field operation team at the site, and supply of water. The field operation site should be as close to the center of the cluster as possible so that the participants can access easily to the operation site. As per availability, of accommodation the team can hire a house with sufficient space and rooms or can manage hotel near by the field operation site, however the travel time between the hotel and the field operation site should be less than an hour. It is recommended to take the GPS mapping clusters.

Provide IEC materials to local Health Facility.

The brochure and materials brought to orient the selected household members regarding the PS will be handed over to the health facility to distribute to the village representatives and will be requested to be distributed to those selected household. Health facility will also manage to distribute IEC materials in the house hold mobilizing the social mobilizers before one week of census and during the visit for census.

Recruit and orient local staffs and pre-census teams.

The Health facility incharge is to recommend local teams during the first day of previsit. The health facility incharge would have already been requested to explore the team during the district coordination committee meeting and recommend during the previsit. In the 2nd day of previsit in HFoMC meeting, these recommended local staffs needs to be invited, contracted and oriented on their specific roles and responsibilities. (for pre-census work , census work and field work). A specific focus needs to be made to orient the pre-census team as there will still be opportunity to discuss with field team during field set up days. There will be minimum of 5 pre-census team members and other local staffs(Preferably 3 local health staffs, 8 local non-health staffs including FCHVs)

Process

Day 1

Meeting at Municipal Office

- The meeting day is to be pre-scheduled by outsource agency with support from DTLO and liaison unit at PSS.
- Introduction to the team

- Handover the letter issued by MOH to support in PS survey
- Present to the chief and team the objective of PS and details of each step required for all field operations (from pre-census up-to follow up).
- **For Rural Municipal:** Using the Pre-Developed Map of the cluster, make clear demarcations of blocks using either natural (eg. River, terrains) and or manmade landmarks/structure (eg. Road, settlements, temples, schools etc)
- Confirm the overall household and tentative population aged 15 or above of each blocks.
- On the pre-developed cluster map, request Municipal Chief (or if he/she is not available, then request other members), to select randomly a block from where the pre-census would start.
- **For Urban Municipal areas:** first the selected ward will be further segregated to multiple grids (small uniform areas generated by GIS). On the pre-developed cluster map with numbered grid, the team will request Municipal Chief (or if he/she is not available, then request other members), to select randomly a grid from where the pre-census would start.
- If incase the number of household estimated is not sufficient, then move to another grid based on the standard of movement (starting from 3 o'clock clockwise)
- Request health facility in-charge to recommend 5 pre-census members to be recruited for carrying out the pre-census work for next 2 weeks, and
- Request health facility in charge to organize a meeting the very next day in the health facility with ensured participation. They might invite other influential individuals like teachers, members of civil society, religious leaders, ward citizen and other potential candidates to support PS operation (up to 5 persons).
- Randomly select a household to start the cluster census operation. This will be done on a pre-developed cluster map (A detailed map with grid and north, south, east and west orientation to be developed beforehand by Liaison Unit at PSS/NTC).
 - Selection of household in the ward
 - Selection of next ward (if sample not sufficient)
 - Selection of next VDC (if sample not sufficient in whole VDC)
 - Selection of Sub-award (for Municipal or urban areas where cluster size is huge)
- Confirm the tentative date, time and site for field work with the team
- Collect information required for detailed cluster planning (pre-developed format)
- Request for next day meeting participation and wrap-up

Day 2

(1st half)

Meeting at the local field site level (preferably at health facility- HFOMC meeting)

- Introduce the team and brief the group regarding PS and importance of field operation and their support.
- Finalize again on the site of field operation, logistic management for PS (accommodation for visiting team and logistic and security)
- Finalize again the dates and time for field operation
- Contract and orient the pre-census staff

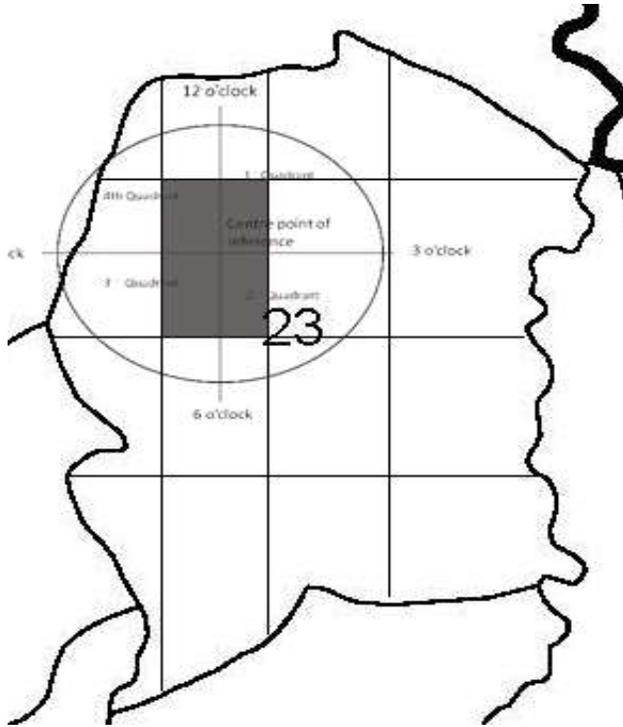
- Provide official contract to the selected Pre-census team members.
- Provide them with TOR and SOP of how pre-census data needs to be collected
- Onsite coaching on the methodology of pre-census data collection
- Provide them with the map and the household from where they need to initiate collection of pre-census data.
- Explain to them in detail regarding the flow they need to follow from one household to next and if needed from one ward to the other or if required from one VDC to next (if sample size estimated is less than 600 in average)
- Provide them the template to be used to carry out the pre-census data collection.
- Provide them with the IEC materials to be distributed during the process.
- Contract and orient other local volunteers (Preferably 3 local health staffs, 8 local non-health staffs including FCHVs) regarding their roles and responsibilities during the census, field site setting and field operation days.
- Field team leads (from the outsourced agency) will be responsible for follow up on the progress of data collection/status of the pre-census team with support from the local health facility in-charge on a regular basis.
- Kindly explain to all members and stakeholders regarding the importance of their support and cooperation for PS.
- Wrap up

(2nd half): Visit of Field Operation Site

- Visit the field site with all the members of the 1st half workshop.
- Assess the adequacy and feasibility of field operation site (It must be sufficient for reception and informed consent unit, symptom Screening unit, waiting room before x-ray, radiology unit with adequate space and changing room, room for MO and laboratory unit and field data management unit at least)
- Confirm the field operation site.
 - If selected cluster site is school or other institution, ask whether it is possible to get for 5 days during field operation if yes what is process and requirement.
- Access to field staff logistics - fooding and lodging during the field operations
- Prepare a pre-visit report. Pre-visit report should be prepared in the format given in annex
- Report one copy to the Liaison Unit at PSS.

Sampling technique for the household selection:

- Prepare the block map of the cluster.
- Randomly select a block.
- Start from the household that lies in the center of the block.
- Divide among five pre-census groups for the collection of data in the selected area.
- If the estimated eligible population of the selected area is not sufficient then move to the area under next grid (following standard criteria of selection of grid).

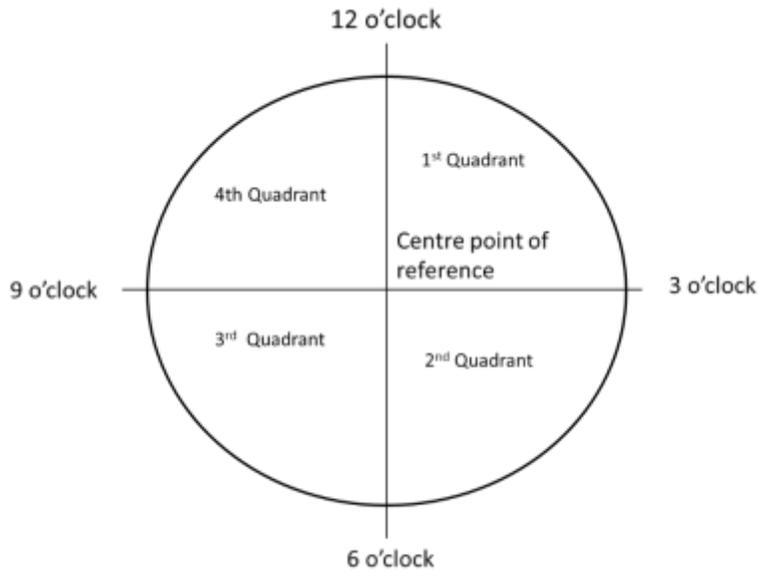


- Verify and update the cluster map used/updated by the pre-census team during pre-census along with all other information.
- Divide the selected cluster in a minimum of five (5) subgroups/ blocks and assign identification numbers (1 to 5) based on the cluster size.
- After verification of the mapping, prepare a table for each block with total numbers of households and estimated total population, and eligible population.
- Each census team will be then assigned a separate block for conducting household visit and each team should have a map of the cluster with demarcation.

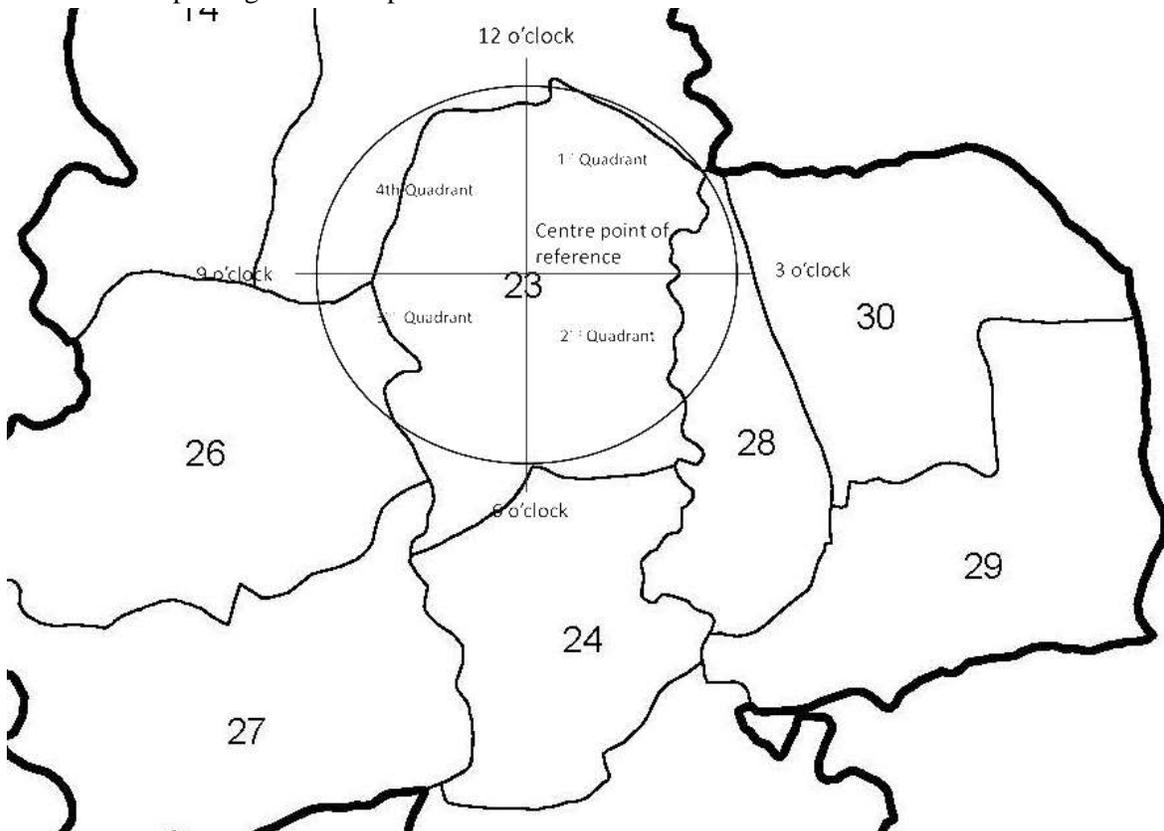
Selection procedure for additional wards if the sample size is not adequate:

In some cases, when the number of samples obtained from the individual selected cluster is less than the sample required, the adjoining ward will be selected using the methodology as described below. If the selection of ward is still not enough, then further selection of ward will be done. If whole VDC's population isn't enough, then the adjoining VDC will also be selected in the same manner:

- The map of the selected cluster will be taken as a reference for the selection of the adjoining cluster.
- If the size of ward is less than required then,
 - Refer to the map and take center of the map as reference point
 - The first select area which is on its 3 o' clock then 6 o'clock then 9 o'clock and then finally move to 12 o'clock.
 - Refer to the figure below in this regard;



- Overlap the circle in the randomly selected grip on the map by positioning 12 o'clock towards north and placing the center point of reference to the centre of the ward.



- Starting from the zero-degree angle (at the position of 3 o'clock), the cluster lying immediately at the direction of first quadrant (to the right-hand side of the vertical line, moving towards 6 o'clock) will be the next ward to be included for the household survey.

- If the second ward is also not sufficient to fulfill the required sample size, another subsequent ward will be selected with the same technique, moving further right-hand side in the 1st quadrant, then 2nd quadrant, 3rd quadrant and lastly 4th quadrant till the cluster selection process is complete.

Day 3- Departure to next cluster

Phases of pre-visit

For field survey implementation, altogether 99 clusters are divided into three regions; eastern, central and western. 3 survey teams will be mobilized for field operation. To maintain the gap of fewer than 6 months in between pre-visit and field operation, pre-visit will be conducted in two phases. When the first phase of pre-visit is completed, field operation will be started. After completion of the first phase of field operation, there will be a review of the prevalence survey. After review of the second phase of pre-visit, field operation will be carried out. The table below shows the list of clusters for pre-visit:

5. Pre Census

Pre census is phase after pre-visit and before census; it is basically census preparation. Before census in PS, pre census activities will be carried out starting few days earlier to census. Following are major activities in pre-census;

- Social mobilization to inform HH regarding PS in selected cluster,
- Preparation for census
- Field operation Site assessment survey examination
- Coordination with local stake holders
- Preparation of local staff for census

This is the second step in the planning of field work. The main purpose of pre-census is to collect household pre-census data and estimate the population who meet the eligibility criteria. The pre-census team will also inform the household members regarding the PS data and time for census and fieldwork.

Responsibility:

There will be a minimum of 5 pre-census team members selected for the pre-census data collection process. He/she will work individually during the process. The Team leader (from the outsourcing agency) will be responsible to follow up the progress of pre-census data collection. And the health facility in-charge will be requested to supervise locally.

Stepwise process:

➤ During Pre-Census visit

- Conduct home visit in the assigned area of the cluster starting from the assigned household.
- In household visit:
 - Introduce yourself and the purpose of visit
 - A brief introduction to the importance of PS.
 - Based on pre-census data collection form; collect data on:
 - Name of household chief
 - Number of family in the household (if rental or eating separately)
 - A number of the estimated eligible population in the area.
 - Every evening, prepare the final list of households covered on that day, update the list of previous days as well and report the updates to the respective field manager of the cluster (from outsourcing agency).

- Based on the feedback, if the sample size is not sufficient then visit the adjoining areas as suggested by the field manager.
- Prepare final list upon the arrival of the census team.

6. Census

Census taking is the first step before conduction of the field operation. The main objective is to identify population sample for the survey in the cluster, confirm the eligible population among the sample, orient them regarding PS, make a formal invitation for participation in the field operation and develop a master register of the sample population to be used in the field operation. This is usually done in a minimum of 2 days' time for each cluster to be followed immediately by field operation. The field set up for screening purpose and accommodations will be done in parallel accordingly to the local cluster situation and availability.

Responsible person

Field survey manager: from the outsourcing agency is overall responsible for the management of the team in the field for the census, field setup and operation.

Census sub-teams: There will be 5 census sub-teams and the focal person assigned by Field survey manager who will be responsible for each sub-team.

Key-Definitions

Census: an official count or survey, especially of a population under study. For PS, it is the count of the population residing in the selected household in the clusters.

Eligible population: Population who are eligible to participate in the survey. During the survey, the population who are aged 15 or more, residing in the household for 2 weeks or more (owner or on rent), a Nepali national (if a foreigner, then those living in Nepal for more than 5 years, but those with diplomatic status and tourist will be excluded) will be eligible to participate in the field operation.

Exclusion Criteria: This survey will exclude Diplomatic areas and personnel, offices, Guests of hotels/motels (but owners, workers who live in the hotel will be included), administrative areas (prisons, army/police camps), hostels/schools/colleges, factory, areas of congregate settings (eg. Orphanages, geriatric homes, monasteries), health facilities (hospitals).

6.1. Stepwise Procedure for census

Arrival Day:

- In the first half, the team will arrange for accommodation, unload the logistics from vehicles and make temporary arrangement for storing logistics/equipment in the available warehouse/ storeroom.
- In the second half, the team will again orient local staffs (health and non-health staff including pre-census team members) regarding census and field operation and their roles as per TOR.
- Survey Field Manager will divide survey team into two groups: Screening examination site setting group and Census group. These two groups will work simultaneously. The Survey field manager will

be managing and supervising both teams, with a special focus on census team whereas medical officers will support more on-site setup.

a. Screening Examination site setting:

The Medical Officers (MO) will assist the survey field manager for setting up of screening examination site.

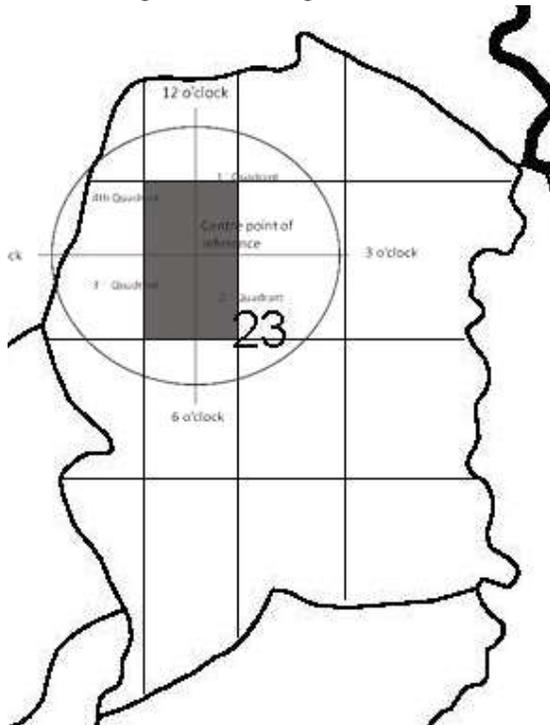
b. Census team:

The census team will have at-least 5 sub-teams and each team will have at least 3 members:

- 1: At-least one trained a member of the central team
- 2: One local staff
- 3: One pre-census team member

The stepwise procedure of census:

- Gather the details of cluster household maps and all pre-census information collected by the pre-census team. Confirm, verify and develop census team mobilization plan based on the pre-census map.
- Divide among five pre-census group for the collection of data in the selected area. This group will be supported by pre-census team and visit the household that they visited beforehand.
- If the estimated eligible population of the selected area is not sufficient then move to the area under next grid (following standard criteria of selection of grid).

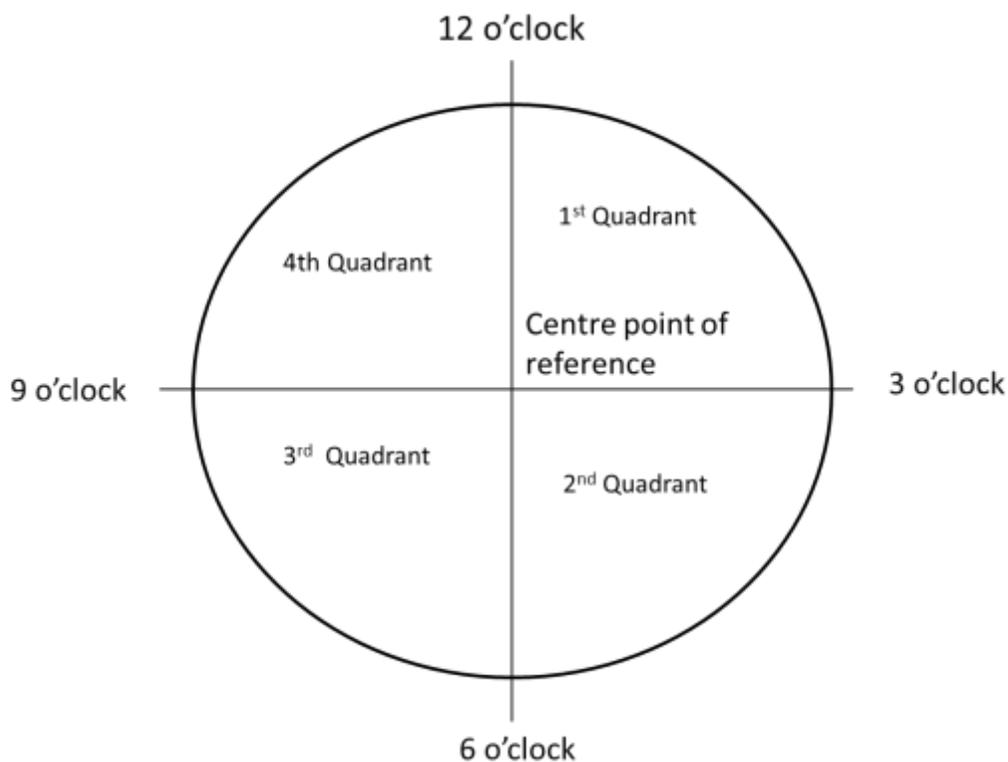


- Each census team will be then assigned a separate block for conducting household visit and each team should have a map of the cluster with demarcation.

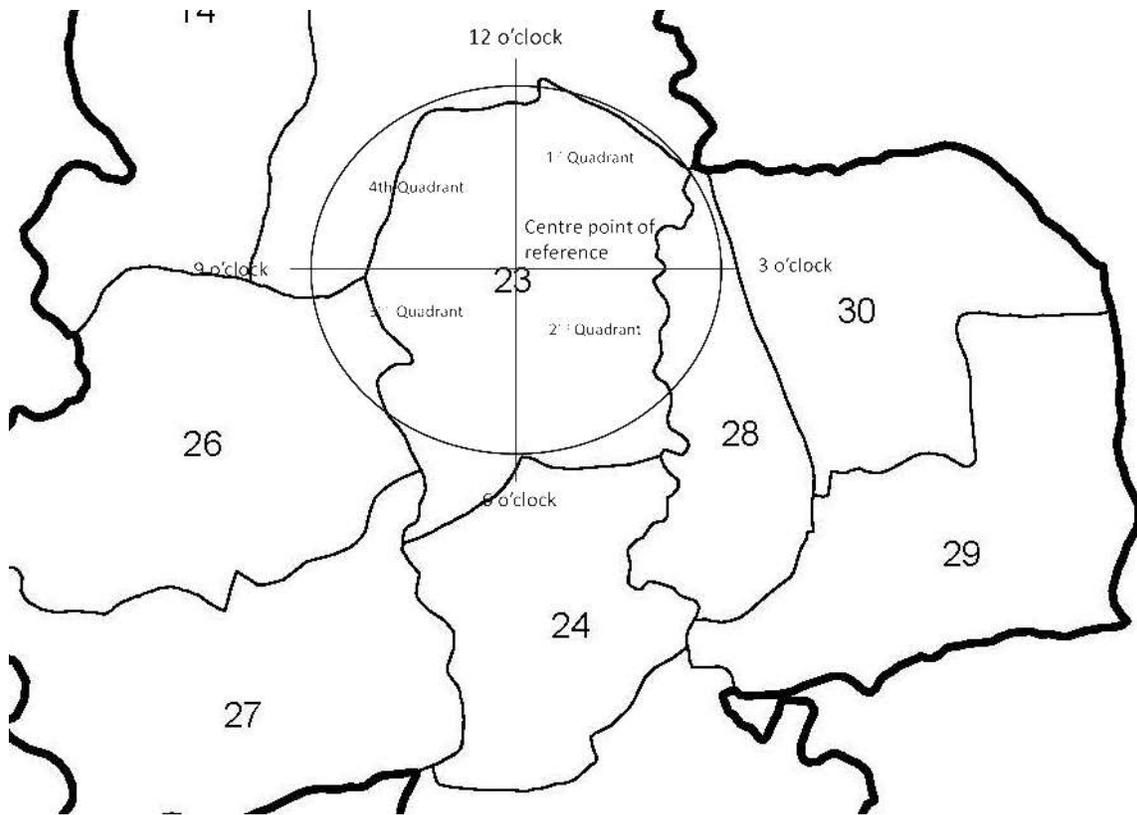
Selection procedure for additional wards if the sample size is not adequate:

In some cases, when the number of obtained samples from the individual selected cluster is less than the required sample, the adjoining ward will be selected using the methodology as described below. If the selection of ward is still not enough, then further selection of ward will be done. If whole VDC's population isn't enough then the adjoining VDC will also be selected in the same manner:

- The map of the selected cluster will be taken as reference for the selection of the adjoining cluster.
- If the size of ward is less than required then,
 - Refer to the map and take center of the map as reference point
 - The first select area which is on its 3 o'clock then 6 o'clock then 9 o'clock and then finally move to 12 o'clock.
 - Refer to the figure below in this regard;



- Overlap the circle in the randomly selected grip on the map by positioning 12 o'clock towards North and placing the center point of reference to the Centre of the ward.



- Starting from the zero degrees angle (at the position of 3 o'clock), the cluster lying immediately at the direction of first quadrant (to the right-hand side of the vertical line, moving towards 6 o'clock) will be the next ward to be included for the household survey.
- If the second ward is also not sufficient to fulfill the required sample size, another subsequent ward will be selected with the same technique, moving further right-hand side in the 1st quadrant, then 2nd quadrant, 3rd quadrant and lastly 4th quadrant till the cluster selection process is complete.

6.2. Preparation for census

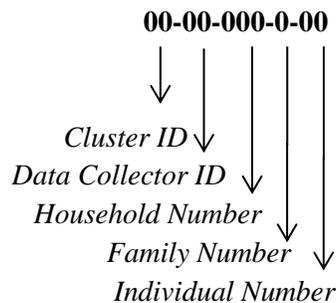
There will be five census teams assigned for taking a household census. Each of these sub-teams will visit 20-25 households per day in average and 40-50 households for 2 days so that required number of eligible participants for that cluster will be achieved.

6.3. Household ID and Individual ID generation

The household ID is the unique seven-digit number for each household. The first two digits represent cluster ID, second two digits represent data collector ID, and the third three digits signify the household number. After the household number is generated, it should be written/noted down on the sticker and pasted at a visible location in the house such as entrance gate, besides the wall of the house etc.

The individual ID is the ten digits unique number that is generated for everyone participating in the survey. The first seven digits are as same as the household number and the additional, eighth digit represents a family number, while the last two digits represent the unique individual number of that family.

Household and Individual ID:



6.4. Household Census procedure

- The team should first greet and brief about the objective of the census to the household owner or members (who can provide information) and set friendly environment and request for participation.
- Interview a household owner or head of household or any family member who can provide required information of the family & other families who are living in the house.
- Irrespective of age, take information of all persons in the household and register in a tablet (Use paper only in case of tablet malfunction).
- Register all the family members living in the house including persons living in rent (those who are living continuously for more than two weeks in the house (as per the criteria mentioned in PS protocol).
- Once the census is complete for an individual household, list of all eligible participants will be generated; software will automatically display the list of eligible participants with unique individual survey ID number.
- Issue individual invitation cards with the expected day to visit field operation site, including expected time (e.g. Wednesday afternoon 14:00-17:00).
- Before leaving the house, prepare an 8-digit household ID sticker and stick it outside the house. A gentle reminder should be given to the participants about the survey examination site on the scheduled date and time. The team should also advise participants not to bring/wear valuable ornaments during screening camps.
- Generally, each sub-team will invite approximately 1- 40 eligible participants for the 1st day of field operation, 41- 80 participants for 2nd day and 81-120 participants for the 3rd day. Thus approximately 40 individuals from every 5 teams will make 200 participants/day and 600 participants in three days.
- The collected data should be backed up at the end of each day on pen-drive by exporting from the census application in the tablet (refer to Mobile application manual) after completion of the census in every 5th household.
- At the end of each census day, all 5 teams will hand over the Tablet to the IT officer together with the backup pen drive. IT officer will then synchronize the data collected in the census into the field server.
 - The field IT Officer will get the tablet.
 - Connect the tablet and field services to the field LAN.

- Go to the Upload section in the census application on the tablet.
- Select the Database to be uploaded and then upload the data to the field server using the LAN.

Materials required for census

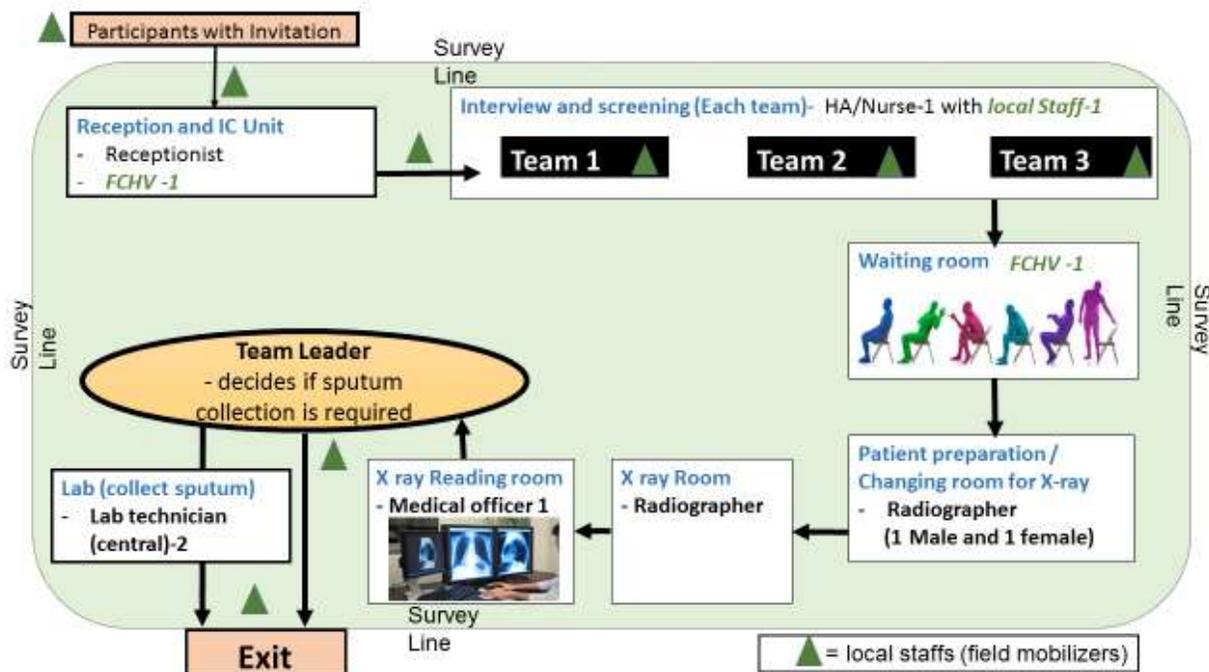
- Tablet with installed software for census data entry
- Invitation cards
- Pen drive
- IEC materials: PS related poster, brusher, leaflet etc.
- Household number sticker as per number of households
- Marker for writing household number in sticker
- Map of the cluster with the demarcation of blocks/ segments assigned for the sub-team.
- Census registers/questionnaire only for emergency backup
- And other materials required for census

7. Field site setup and database management in PS

During the field operation, on day 2 and day 3 the field site setting team (remaining members) will finalize and set up the field operation site. The MO will take lead in site setting with support of local Health facility in-charge / teacher or local leaders. The team will set the site for field operation considering suitability and easy flow of participants. The site should be managed as follows;

- Arrangement should be made in such a way that first the participant will come to **reception and informed consent unit** where he or she will be enrolled for PS survey participation and requested for consent and written consent will be taken (after listening all the content of consent form if s/he agree to provide informed consent). After getting consent, barcode will be printed and the participant will get wrist band with barcode.
- Participants providing informed consent will inter to **Symptom Screening unit** where s/he will be interviewed with a set of structured questionnaire. There will be 3 teams in three tables in screening room. Each team will have a barcode scanner to scan participant's barcode.
- After completing the interview the participant will go to waiting room for chest X-ray and before the x-ray room there should be a dress change room adjoining to x-ray room.
- Then the participant will move to **x-ray room** to take chest x-ray, x-ray room will also have a barcode scanner to scan participants barcode.
- After taking x-ray, the participant will inter to the room of MO, where MO will scan the barcode and Export the image to TL.
- **TL will decide** whether s/he is eligible for sputum sample collection or not. If s/he is labeled as **eligible for sputum collection then** s/he will be sent to laboratory unit for spot sputum sample collection and provide sputum sample collection tube/s for next day morning sample collection, after adequate counseling to produce sputum.
- **And if s/he is not eligible for sputum collection , will exit for home .**
- Near to the exit door logistic unit will be placed to provide letter of appreciation, T-shirt, biscuits and juice.

Field Operation site setting



Note: In participant's movement, while visiting different unit according to field operation setting; barcode will be scanned at first in each and every unit once it is printed and placed in wrist

Process

- Assess the local setting of field operation site (decided by pre-visit team).
- If it is school, collage, local health facility or any other institution, have a coordination meeting and request for permission to conduct field operation which will take about 7 days (2 day preparation + 3 days survey examination + 1 day mop-up and last pack-up day) to complete the field operation task.
- Hand over the official letter issued by Ministry/Department or District level office and request for cooperation.
- Arrange the room setting in such a way that flow of participants will be easy.
- If there is no infrastructure (building) available tent setting to be established.

Set up reception and informed consent unit

There will be one person for reception and enrollment one person for informed consent and one FCHV for supporting reception and informed consent in this unit, the unit will manage sitting arrangement accordingly.

Symptom screening unit

There will be two (2) symptom screening teams and two health workers and (one from center and one local) and one volunteer in the unit. The unit needs large space to adjust three (3) table and chairs.

Waiting room

One volunteer will be placed in the room to support the participants and sending to x-ray room on queue. There will be a Television set and DVD player where message or documentary, video records should be played regularly about TB awareness. Sitting arrangement in the room must be sufficient to accommodate few numbers of participants. Bench sitting arrangement would be more feasible and appropriate in waiting room.

Setting of X-ray unit

This is the room for field x-ray installation and taking chest x-ray of all eligible participants and before entering to x-ray room adjoining to x-ray room there should be a changing room where participant can change dress and be ready to go to x-ray. One volunteer (F) will be placed in changing room to support the participant. X-ray will be installed as per guideline given for field setting.

Laboratory unit

Collection of sputum sample and timely transport these samples to central laboratory for bacteriological examination maintaining its freshness without contamination is the major function of field laboratory in national prevalence survey. The laboratory unit consists of three persons: 2 lab technician from the central team and a local non- health staff. Lab technician will lead to set up field laboratory unit in such a way that it will maintain the standard requirements needed for field laboratory unit. Generally there must be sufficient space and arrangement for sputum collection and transportation.

Place for spot sputum specimen collection at the survey site.

First (D1) spot sputum sample of all suspects should be collected at the survey site and space should be managed to collected specimen in the open air near the field operation site. There must be a place for morning sample (D2 a and D2b.) reception and storage in cold box before transportation to central laboratory unit where these sputum samples are processed for examination.

Place for counselling and IEC materials demonstration for counselling suspect participants to produce cough on the spot , as well as morning sample at home.

Logistic store management

There must be a space for storing and managing laboratory related logistic, forms/format cold box, sample collection tubes and ice pack freezer.

Waste disposal

Where waste container is placed

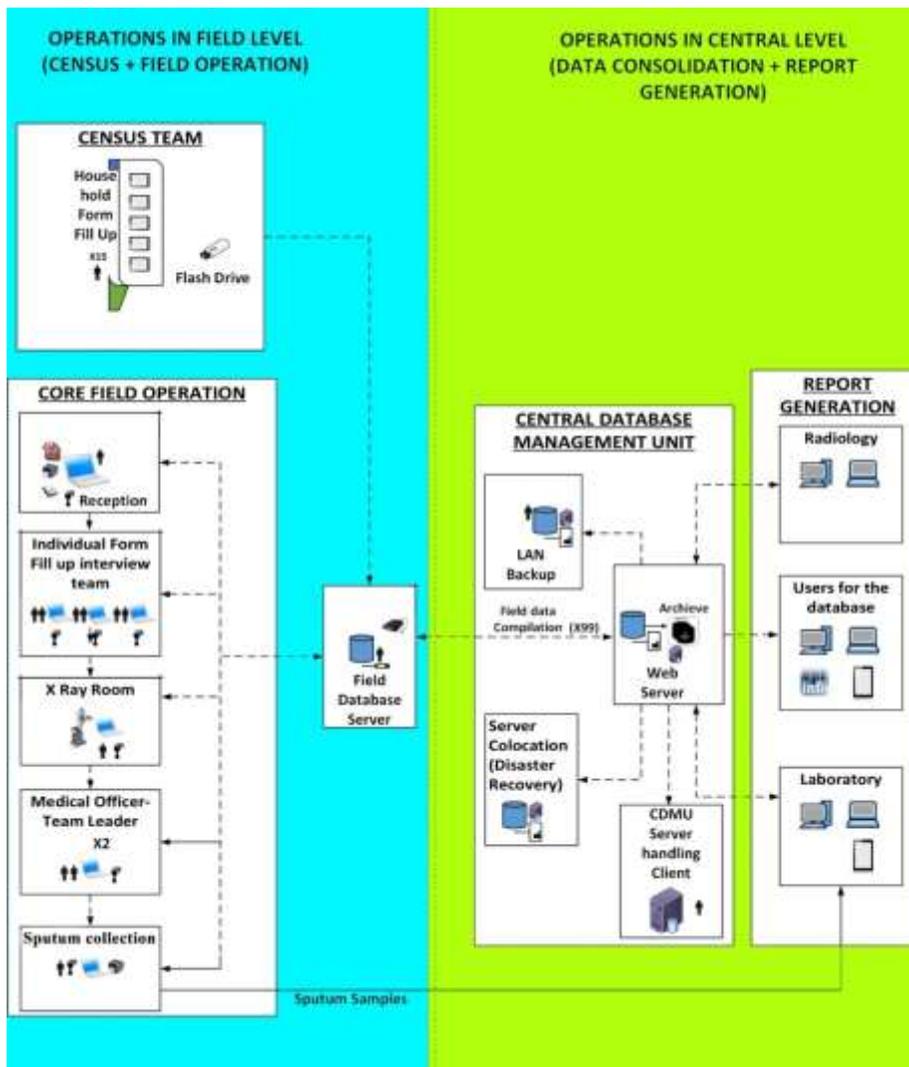
Hand washing and toilet facility with soap and water**Rooms for TL and MO**

In this room connectivity and networking should be established so as to receive real time data from symptom screening and chest x-ray images. First MO will read chest x-ray image and decide whether x-ray is normal or abnormal. If there are some confusing cases MO will consult to TL and TL will decide after looking the information from x-ray and symptom screening unit whether that participant will go to laboratory (those having abnormal x-ray reading suggestive to TB or symptoms for TB suspect) or Exit for home (normal chest x-ray and no any TB suspect symptom.).

Data management unit

IT Asst. will set up internet connectivity and networking of all computers to share real time data from all units and give technical support in all units to maintain quality of data. There must be easy flow of data from every unit to local server and from there to each unit. In case of census where data entry is off line pen drive will be supplied to save data after each 5 household. At the evening data of all 5 sub team will be synchronized to make master census register.

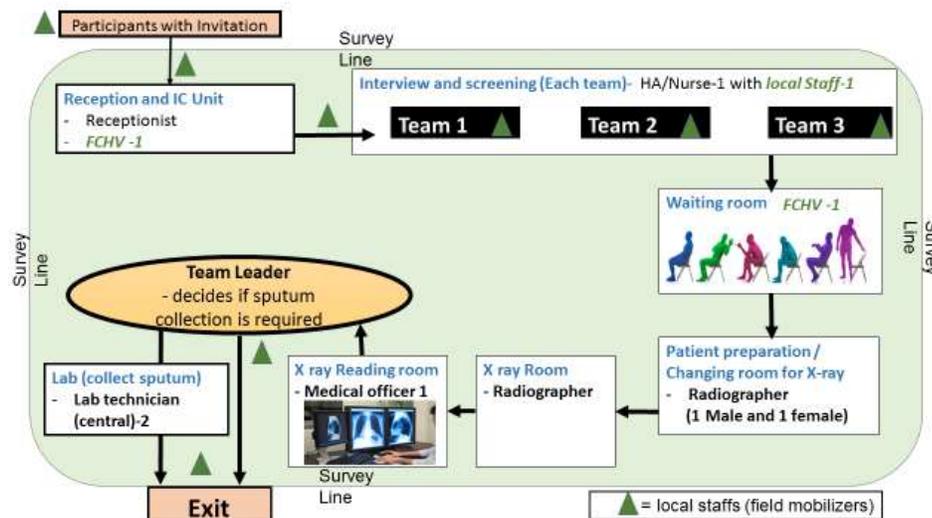
All the field IT equipment are prepared and tested in the central IT unit and sent for the field operation site. The IT equipment are handed over to the outsource agency fully configured for the field operation. The network is setup using the wireless router in the field, the equipment like Tablets, Laptops, and Servers are connected to each other using the wireless router for data synchronization.



8. Screening process in PS

The screening process, i.e. crux of field operation takes place immediately after census. Screening consists of three main parts; Questionnaire interview screening, X-ray and Sputum collection. And it follows the steps to go through the process;

- Reception or informed consent unit: If participant agrees to give consent then will proceed to symptom screening interview
- Interview for individual symptom screening unit: where relevant questionnaire will be asked
- X-ray unit: X-ray is compulsory for all, which then proceeds to MO and then TL
- Medical Officer's unit
- Team Leader's unit: TL decides the eligibility for sputum, if needs to collect sputum then proceeds to laboratory
- Field laboratory unit: sputum collection
- Logistics unit: After completing all steps at the end participant will visit the logistic unit for arranged giveaway items.



9. Mop up

Mop up is a process of contacting individual for screening and sputum collection from eligible participants who did not attend the survey examination in scheduled time on 4th, 5th and 6th day. Mopping up operation will be conducted on every next day of field survey screening examination till 7th day /last day of field operation.

Mop up is a process of contacting individual for screening and sputum collection from eligible participants who did not attend the survey examination in scheduled time on 4th, 5th and 6th day. Mopping up operation will be conducted on every next day of field survey screening examination till 7th day /last day of field operation.

Objectives of mop-up operation

- To trace all the missing eligible participants, who did not attend the survey examination site and bring them for enrollment in survey examination (symptom screening and chest x-ray).

- Collect sputum sample at home of disabled participants (those eligible participants who are not able to visit to survey examination site.)
- Trace all the missing eligible suspects whose morning sample is not received field laboratory unit and collect all remaining morning samples.
- To trace and collect sputum samples of diagnosis changed participants (those suspects whose chest x-ray reading was initially labeled as "normal" and has changed as "abnormal" after review by the central radiology team and feedback is received for sputum collection.
- Recollection of sample, from those suspects whose earlier collected sample are discarded due to any reason and sample re-collection is needed.

Process for mop up

Tracing the missing participants

- Review the participation status at the end of each day of field operation.
- Ensure, all expected eligible participants are attending on expected day or not.
- If there are some missing cases prepare a list of missing eligible participants with survey ID number, Name, age, sex household number.
- Prepare a list of disabled participants from census register (who are not able to come to field operation site).
- Mark the areas in cluster map, where missing or disabled participants are located.

Mop-up for sputum specimen collection

- Review the morning sample collection status.
- Prepare a list of the suspects whose morning sample is not yet received and needs follow-up
- Locate those areas needing follow-up team mobilization.
- If there are some participants whose chest x-ray reading decision is changed and feedback from central radiology team is to include them in eligible suspects to collect sputum specimen, also include them in the tracing list.
- Make mop-up teams of volunteers and social mobilizers and local health staffs.
- Mobilize the mop-up teams for tracing participants and morning sample collection.
- Manage sputum collection of disabled participants at home if remaining any.

10. Sputum collection and Transportation

Sputum specimens should be collected of all suspects from screening examination (interview for symptom screening and/ or person with abnormal chest x-ray and labeled as eligible for sputum specimen collection or any person who is not able to take chest x-ray or are exempted from x-ray examination are eligible for sputum specimen collection and sputum specimen should be collected by the field lab team.

For collection of sputum specimen field laboratory team must:

- Prepare sputum container/ tubes for the subjects.

- Sputum collected first day is called “D1” sample. It should be collected in the same day on the site by lab personnel.
- Sputum collected next morning is called “D2” sample. D2 specimen/s will collect by the suspect individuals in the morning at home and bring to the survey examination site.
- For collection of morning sample, every odd number (1,3,5,7,9 and so on) suspects will be provided one sputum container/ tube and two sputum containers/tubes for each even number (2,4,6,8,10.....) suspects. As per national prevalence survey protocol sputum specimen only of 50% suspects will be cultured so those individuals receiving two sputum container/ tubes (even number) are systematically selected for culture and specimen of one tube (blue cap) will be used for culture and specimen in red capped tube for genexpert and smear microscopic examination .
- Before sending the participant explain the reason why sputum examination is necessary
- Explain how to collect a good sputum sample, with demonstrating pictorial poster or leaflet
- Demonstrate how to open and closed screw cap of the tube
- Show how much sputum should be collected
- Tell the participant to come up next day bringing morning sample/s with the 2nd sputum container/s and the ID (wrist band containing barcode)
- Explain to the participants/suspect about the importance of sputum quality and need of proper amount of sputum for accurate diagnosis.
- Conform each participants understood how to collect good quality sputum sample in the morning at home especially those who are supposed to bring two cups (even number participants)
- Print the barcode and attach the barcode and stick it on the tube also label with name of the participant.
- Do not forget to inform that morning sample should be brought in the container which is given to him/her and it should not be exchanged with other person. It is more important if there are more than one suspects in the same house.

Transport of sputum specimens

A testing or processing laboratory will be assigned to each study site and all study related sputum specimens must be forwarded to the designated laboratory for processing as soon as possible and within 24 h of collection. All specimens should be transported in compliance with local and national regulations governing the transport of potentially infectious materials. These rules must be followed, no matter how short the transport distance is.

- From each cluster, samples will be transported 3 times. 1st transport will be made on the second day (containing 1st-day spot and second day morning), 2nd transport on third day morning (containing second-day spot and third day morning sample and final transport after the end of mop-up on last day (containing third-day spot, fourth day morning and mop up samples)

- Before the transport of specimen, the laboratory unit has to drain water out of the icebox and replace an appropriate number of chilled ice packs in the transport box to maintain the temperature between 2°- 8°C.

Sample Transpiration Plan

In national prevalence survey, there will be three central labs. The sputum specimens of the eastern team will be transported to IOM lab, Damak, Jhapa, and specimen of the central team will be transported to GENETUP lab Kalimati, Kathmandu and the sputum samples from the western team will be transported to NTC lab Thimi, Bhaktapur. The transportation system will be managed to consider the transit time in order to preserve the freshness of the specimens.

11. Follow up and feedback

Post survey follow up and feedback

- Provide the survey examination results to the health facility that are received from PSS/NTC and ensure that each participant receive the information on examination results through health system
- Mobilize local health staff to collect sputum sample of those suspects either due to needing recollection or result of x-ray reading is changed to abnormal and is labeled as eligible for sputum collection by central radiology team or QA team
- Ensure timely transportation of these samples to central laboratory
- Ensure enrollment of diagnosed active TB cases during prevalence survey, for treatment as per NTP guideline

12. Logistic Management in PS

A well planned logistic management system is needed to make readily available of all commodities needed for a successful prevalence survey. There will be 3 different field survey teams distributed for field operation in 3 regions of Nepal where the logistics management is the core and vital one to complete survey activities. Following plan has been developed for logistic management;

- A central level store is already established at NTC assigning a PS logistic officer responsible for entire logistic management for the PS
- Detail logistic management and supply plan will be prepare considering all the central and field level requirements of the PS, as well as in coordination with OSA
- All consumables and non-consumables items necessary for the PS will be procured, stored and managed through the central store
- All necessary logistics needed for field operation will be handed over to outsourced agency (OSA)
- All logistic transportation and supply management will be managed by Logistic Coordinator (LC) of the OSA based at the NTC
- OSA will recruit assign 3 logistic officer for 3 team to support and manage all the logistics required for field setting and functioning of field level units (i.e. radiology, laboratory and data management units)
- In each region strategic number locations for storage and management will be identified as convenient so that all field survey teams will get easy access for the the logistics needed to accomplish their field work
- Supports from the regional medical stores (RMS) will be coordinated and sought for the logistic management of PS in the respective regions
- The OSA will manage for logistics transportation up to the clusters as well from cluster to cluster according to the team's movement
- For regular monitoring of the logistics appropriate computer software will be developed and used

- The Field LOs (FLOs) will update the daily logistics information with support from IT officer and submit to the Central LO of OSA

13. Budget for PS monitoring and supervision and expenditure norms

Supervision by Regional coordination committee		Unit Cost				
Activities/Cost Description	Measurement Unit	Quantity	Events/Months/Days	Times	Rate (NPR)	Rate (NRS)
Bus fare	times	3	2	1	2,000	12,000
DSA	per day	3	5	1	1,600	24,000
Local transportation	per day	3	3	1	1,000	9,000
Total						45,000

Supervision by Districts coordination committee		Unit Cost				
Activities/Cost Description	Measurement Unit	Quantity	Events/Months/Days	Times	Rate (NPR)	Rate (NRS)
Bus fare	times	2	2	1	1,000	4,000
DSA	per day	2	7	1	1,600	22,400
Local transportation	per day	2	2	1	1,000	4,000
Total						30,400

14. Roles & responsibilities of DTLO in different phases of PS

During the preparatory and pre-visit phase:

- Work as an overall focal person for the management of PS at the district/cluster level within his/ her district
- Facilitate the overall coordination of pre-visit meeting at Municipal office as well at the cluster site (HFOMC meeting)
- Work as a host and a key team member in the pre-visit team
- Support to carryout pre-visit objectives and major activities
- Support to conduct HFOMC and other stake holders orienting meetings at the field operation site
- Gather other required information necessary for conducting the PS
- Support the pre- visit team to prepare comprehensive the pre- visit report

During Pre-census Phase

- Follow up on the pre-census team and their work progress.
- In close coordination with HFI and other stake holders keep the community aware of the time for the field operation and need of their support and participation.

During filed Operation

- Support and facilitate in conducting orientation sessions of local health, non-health and SMs
- Support the TL while forming the census team and field site setting teams

During census

- Liaise with VDC, municipality and other stakeholders for getting their supports in the PS activities
- Supervise the census teams to ensure the quality in every steps of census as per SOP
- Contact each team and ensure that they will be able to complete their work within the expected time
- Discuss with the TL for mobilizing additional HR to complete census at the cluster within given time

During site setting

- Coordinate with local stakeholders in setting an appropriate SE site at the cluster
- Support Outsource agency and coordinate with HFI and local support staff for setting the SE site
- Ensure that setting of the SE site is done as recommended by the PS protocol and SOPs

During survey examination

- Ensure that all staff are placed in their assigned posts/units and SE activities are being carried out smoothly
- Ensure the SOP of field operation at each section / Field unit is being followed (from reception unit, interview unit, x-ray unit, Medical officer unit, Logistic unit and Laboratory unit)
- Ensure that at the end of each day, a list of missing participants are review the participation status and prepare list of the missing participants for tracing and mop up
- Coordinate with cold chain officer of respective DHO/DPHO and local Ice factory to produce quality Ice packs if required
- Ensure that all the exit participants are getting juice , biscuit, appreciation letter and T-shirt of specified color
- Support TL and other team members for smooth functioning of the PS activities when necessary.

During mop up and after survey examination

- Review the register, identify the missing eligible participants and mobilize the SMs to trace them
- Mobilize the SMs to collect sputum sample at home of eligible participants who were unable to visit at the field operation site

- Mobilize SMs to trace and collect the morning samples of those participants who missed to bring at the SE site
- Prepare a cluster level summary report and submit to the DHO/DPHO

During follow up

- Receive result of TB diagnosis of the eligible participants from NTC and provide it to the concerned health facilities
- Ensure that all the participant received feedback and treatment according to the NTP system
- In close collaboration with the HFI, mobilize local staff to collect sputum samples of suspects who needs to re-collect sputum samples when results are differed
- Recollect sputum sample due to different reasons (I.e. sample is rejected in central labs and needed to reconfirm (<10 colonies in culture)

During post survey examination follow up

- Ensure that the sputum samples are transported to the concerned central laboratory as per schedule
- Ensure that all the active TB cases diagnosed during prevalence survey are registered for treatment as per NTP guidelines
- Ensure that the final results of the TB diagnosis are made available to the local health facilities and to the concern survey participants
- Ensure that case management of all the cases detected during prevalence survey has started treatment as per the NTP policy and guide lines