MASTER OF PUBLIC HEALTH

A cooperative Program of

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

&

The IIHMR University

Practicum Training at National AIDS Research Institute

By

Dr Prasad S Bogam

For the Award of Masters of Public Health

IIHMR/JHSPH

2013-2015

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IIHMR UNIVERSITY

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Practicum Training

At

National AIDS Research Institute

(Indian Council of Medical Research)

Fieldwork training & experience in National HIV Sentinel Surveillance program including Antenatal Clinic settings (HSS ANC) and High risk groups (Integrated Biological and Behavioural Surveillance)

By

Dr Prasad S Bogam

Under the guidance of

Dr Suresh Joshi (Practicum Advisor)

&

Dr Sheela Godbole (External Advisor)

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **_Dr Prasad Bogam_** student of Master of Public Health Program offered by Institute of Health Management Research; Jaipur in cooperation with Johns Hopkins Bloomberg School of Public Health, Baltimore has undergone Practicum Training at **National AIDS Research Institute, Pune** on the topic **Fieldwork training & experience in National HIV Sentinel Surveillance program including Antenatal Clinic settings (HSS ANC) and High risk groups (Integrated Biological and Behavioural Surveillance)** from **01-Dec-2014 to 27-Feb-2015.**

The Candidate has successfully carried out the study/tasks designated to him during practicum training and his approach to the study has been sincere, scientific and analytical.

The Practicum Training is in fulfilment of the course requirements.

I wish him all success in all his future endeavors.

Col. (Dr) Ashok Kaushik
(Dean, Academics and Student Affair)
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CERTIFICATE BY SCHOLAR

This is to certify that the Practicum Project titled **Fieldwork training & experience in National HIV Sentinel Surveillance program including Antenatal Clinic settings (HSS ANC) and High risk groups (Integrated Biological and Behavioural Surveillance)**and submitted by **Dr Prasad Bogam** Enrollment No **5** under the supervision **of Dr Suresh Joshi (Practicum advisor) & Dr Sheela Godbole (External Advisor)** for the award of **Masters of Public Health.** The training was carried out during the period from **01-Dec-2014** to **27-Feb-2015** and embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Signature

Dr Prasad Bogam

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Contents

Background of the Organization:

National AIDS Research Institute [NARI] was set up in October 1992 under the aegis of the Indian Council of Medical Research (ICMR). ICMR is an apex body for the formulation, coordination and promotion of biomedical research in India, funded by the Government of India through the Department of Health Research, Ministry of Health & Family Welfare. The mission of NARI is to prevent and control the spread of the HIV/AIDS epidemic in the country by interfacing research with intervention and policy development. Over the last two decades, the Institute has contributed significantly in the fight against HIV and AIDS through

- Quality research encompassing clinical research for optimizing the treatment and care,
- Development and testing of new modalities for prevention and
- Generating new information on HIV biology in context with HIV-1 subtype C infection prevalent in India.

The goal of NARI is to achieve control of HIV spread and to provide care to HIV infected population (Care, Treatment & Vaccine) and strive for the achievement of zero new infections, zero deaths due to AIDS and zero discrimination. NARI envisions building research capability of distinction to face the challenge of growing HIV/AIDS in India.

The Institute has ably supported the National AIDS Control Program in its activities, especially surveillance, capacity building, laboratory services and drug resistance[1].

NARI is a Regional Institute (RI) under National AIDS Control Organization in the western region of India providing technical support to both HIV Sentinel Surveillance and Integrated Biological and Behavioral Surveillance.

[1] NARI website: http://www.nari-icmr.res.in/ (Accessed on 15-Jan-2015)

Background of National HIV Sentinel Surveillance

India`s HIV Sentinel Surveillance is a second generation surveillance system devised to track and monitor the HIV epidemic. The objective of surveillance is to understand levels and trends of HIV epidemic among different population groups as well as to identify emerging pockets of epidemic in the country. Surveillance is used to monitor HIV epidemic among specified population groups by collecting information on HIV from designated sites (sentinel sites) over years, using uniform and consistent methodology that allows comparison of findings across place and time, to help guide the program response. A sentinel site is a designated service point/facility where blood specimens & relevant information are collected periodically from a fixed number of eligible individuals representing a specified population group over a fixed period of time, as part of HIV surveillance. The data from HIV surveillance is also used to estimate and project the burden of HIV at State & National level. This also helps in program prioritization, resource allocation and evaluation of existing programs+. The National HSS system in India is one of the largest HSS systems in the world.

Population subgroup covered under HSS are illustrated in table 1

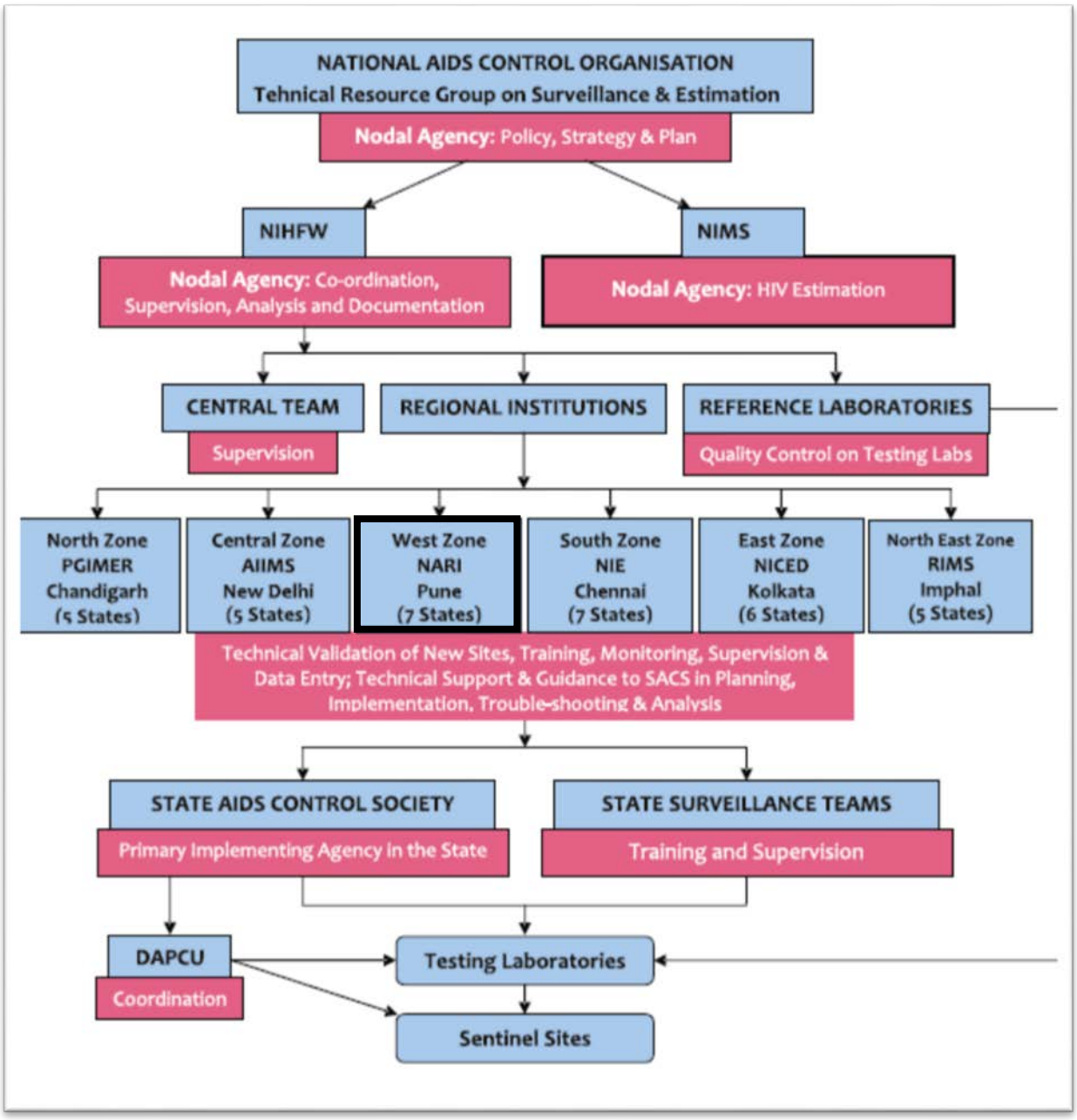
Table 1

Population	**Population Subgroups**	**Surveillance method**
General Population	Pregnant women attending ANC Clinic	HIV Sentinel Surveillance (HSS)
High Risk Population	Female Sex Workers (FSW), Men who have Sex with Men(MSM), Transgender (TG), Injection Drug Users (IDU)	Integrated Biological & Behavioral Surveillance (IBBS)
Bridge Population	Migrants	Integrated Biological & Behavioral Surveillance (IBBS)

NARI is a Regional Institute (RI) under National AIDS Control Organization in the western region of India providing technical support to both HSS and IBBS projects

Implementation Structure of HIV Sentinel Surveillance in India is illustrated in figure 1

Figure 1



Practicum Objectives:

1. To get trained in methodology and gain experience in HIV Sentinel Surveillance conducted at Antenatal Clinic settings

   Deliverables:

   - 1 a: To get trained in HIV Sentinel Surveillance.
   - 1 b: Develop an internal monitoring mechanism to monitor sample collection reporting across all sentinel sites under NARI region

2. To gain practical field training and experience in Sample frame development activities of Integrated Biological and Behavioral Surveillance (IBBS)

   Deliverables:

   - 2 a: To get trained on sample frame development activities & data collection of IBBS.
   - 2 b: Quality review of sample frame development data.
   - 2 c: Perform supervisory visit to field to supervise collection of data for sample frame development.

Objective 1: To get trained in methodology and gain experience in National HIV Sentinel Surveillance conducted at Antenatal Clinic settings

HIV Sentinel Surveillance (surveillance among antenatal clinic attendees)

The surveillance focuses on pregnant women attending antenatal clinics as a proxy measure of HIV infection among the general, sexually active population. Pregnant women routinely access medical care at antenatal clinics during course of their pregnancy and are generally otherwise healthy. Pregnant women represent homogenous group as compared to other persons attending other clinics. Pregnancy being a

physiological event does not lead to bias which other illnesses/diseases can introduce due to underlying factors which may be common to HIV. At antenatal clinics, blood samples are routinely collected for hemoglobin & Syphilis testing, and a part of this is utilized for HIV testing. All pregnant women are also referred to ICTC for HIV testing services as part of the National PPTCT program. Under PPTCT, they receive pre and post counseling services and linkages to ART program if required. ANC facilities are available at all levels of health systems in India making surveillance feasible.

The inclusion criteria for Sentinel Surveillance are pregnant women of age group between 15 to 49 years attending the antenatal clinic for the first time during the current round of surveillance. A woman remains eligible irrespective of her date of ANC registration, HIV status, participation in previous rounds or whether she is tested for HIV under PPTCT.

The recommended sample size for ANC surveillance per site is 400 to be recruited consecutively over 3 months. In certain cases where 400 samples cannot be collected from a single ANC clinic due to low OPD utilization rates, additional ANC clinics are identified in same district to constitute a composite site towards achieving target of 400. In such cases composite sites have a pre-determined target which is maintained over the years

NARI is technically supporting for HSS ANC in training and supervision for western region of India including states of Rajasthan, Gujarat, Maharashtra, Madhya Pradesh, Goa and Union Territories of Daman & Diu and Dadra & Nagar Haveli. The map of NARI region is illustrated in figure 2

Training: The regional ToT (Training of trainers) for HSS ANC was attended from 03rd Dec 2014 & 04th Dec -2014.The training focused on rationale of surveillance, methodology and operational aspects of HSS. The training certificate has been attached in appendix.

Competencies gained

Monitoring & Evaluation

The current round of surveillance commenced on 01-January 2015 after which sites started collecting eligible samples consecutively for HSS. Each site is expected to report the number of samples collected each day by sending SMS from registered mobile numbers. The number of sample collection received through the SMS indicate towards the progress of the surveillance and also helps to identify the possibility of any inconsistent collection of samples or whether consecutive sampling is followed at the site.

Every day, MIS report is updated in the system website http://www.nacohss.itechind.com/SmsLogReport.aspx) based on SMS received from sites. This report only gives number of samples collected each day at each site. The task was to identify Indicators and develop a system using simple excel tools to generate a weekly monitoring report (with appropriate graphical representation) which will help the nodal officer & coordinator to have quick look on the progress of each state in the surveillance. Currently the indicators included in weekly report are

1. Number of Sites & percentage reporting in SMS based MIS report
2. Percentage of SMS rejection due to wrong SMS reporting format
3. Number of sites reporting sample collection beyond the weekly target range (There are two ranges - amber zone having smaller range & red zone having wider range)
4. Sites collecting samples <12 per week and >50 per week
5. Percentage of sample collection in week (Average)

Hence decisions can be made to monitor the sites if sites are progressing as planned or the State authorities should be communicated regarding the issue. Also the report highlights about sites which have collected samples inconsistently which raise questions over the procedure followed for consecutive sampling at sites.

The report generation for the above indicators was automated to a great extent using excel functions. The report is also be shared with respective State AIDS Control Societies (SACS) on a regular basis to sensitize about progress of surveillance and possible inconsistencies in collection of samples.

Outcome: After reviewing the reports, it was observed that all the sites were not reporting through SMS since SMS reporting has been introduced for the first time in the current round of surveillance and also the formats prescribed to send SMS was not followed by all the sites. This resulted in rejection of SMS and consequently reduced the reporting. Hence it was decided to send SMS from NARI to all ANC sites & State surveillance team members sensitizing them about the correct format. A note describing the strategy, its plan & budget has been attached in appendix.

Based on reports actions were taken to maximize reporting through SMS. Regular mails were sent to respective SACS to inform about status of sample collection, , frequent SMS were sent to registered mobile numbers and phone calls were also made to sites which did not report through SMS or report low sample collection. It was observed that the number of sites reporting through SMS increased and the rejection rate of SMS was observed to have minimized over the weeks during which interventions were made.

Objective 2: To gain practical field training and experience in Sample frame development activities of Integrated Biological and Behavioral Surveillance (IBBS)

Background of Integrated Biological & Behavioral Surveillance (IBBS):

IBBS includes collection of Biological and Behavioural data from a respondent following standard protocol. Objectives of IBBS are:-

1. To analyze and understand HIV related behaviors and HIV prevalence among key risk groups in different regions, by linking behaviors with biological findings
2. To measure and estimate the change in HIV-related risk behaviors and HIV prevalence among key risk groups, between baseline and end line for NACP-IV

IBBS is planned in four phases:

1. Pre Surveillance assessment
2. Sample Frame development & Community Preparation
3. Behavioural & Biological data collection
4. Data analysis, interpretation & State/National reporting

Currently IBBS is nearing the end phase where sample frame development activities are been freezed. Second phase includes set of activities carried out to identify and develop a list of places where study population are located /be found in the domain, which can be used for sampling during IBBS. It also includes community preparation which is sensitization of key stakeholders on objectives and core activities of IBBS. Also community preparation activities will help in creation of formal structures in domain (Community Advisory Board and Community Monitoring Board) to ensure that behavioral and biological data collection are being done under the prescribed ethical guidelines and to facilitate solution of any adverse issue (related to IBBS) if reported in field

A 'Domain' is defined as a geographical unit for which the bio-behavioral estimates that will be generated for a specific risk group. Generally a single district is a basic domain for National IBBS, however if the high risk group (HRG) population is inadequate, two or more districts can constitute a single domain. Each domain has number of hotspots where HRG can be found. For example, for Female sex workers the hotspots could be brothels, street corners etc. Each hotspot should not have more than 30-35 HRGs. If HRGs are beyond the required number then the hotspot is segmented.

IBBS Target group and sample size[2]

Risk Group	No. of Domains India	Sample size/ domain	Total Sample Size (India)
Female Sex Workers (FSW)	80	400	32,000
Men who have Sex with Men (MSM)	68	400	27,200
Injecting Drug Users (IDU)	60	400	24,000
Trans-genders (TG)	15	400	6,000
Male Migrants	35	1,200	42,000
Currently Married Women	16	1,200	19,200
Total	274	-	1,50,400

The table illustrates the number of risk groups to be studied and surveyed in India. India HSS being largest in the world, the IBBS is also going to be of same caliber, world is watching for as India's estimates on people living with HIV AIDS ranked third globally. So any strategic information generated as part of second generation surveillance in India does carry international importance.

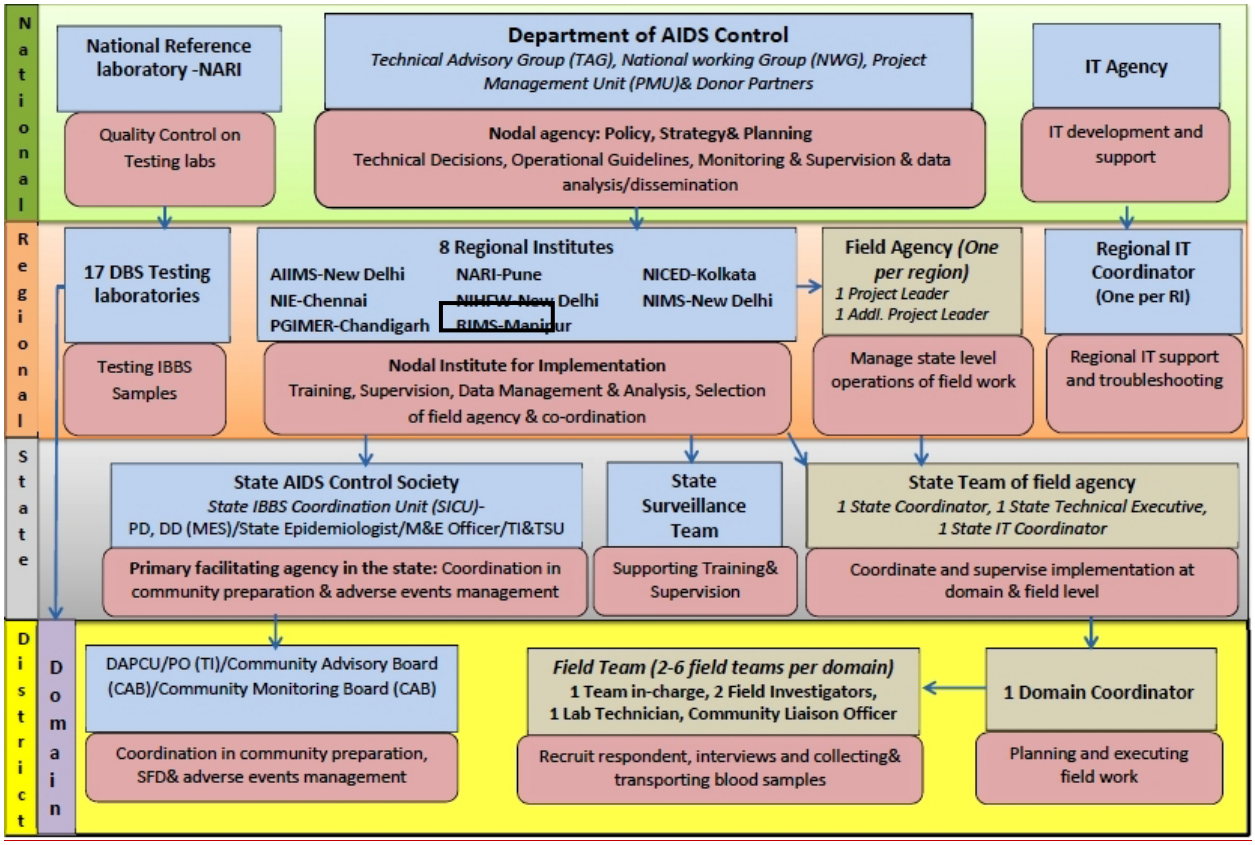
In IBBS, both conventional cluster sampling and time location cluster sampling are followed depending on the dynamics of hotspot in domain,

[2] Training Module: Field Training of National IBBS

NARI as a regional institute is involved in Implementation coordination, Training, Monitoring & Supervision of field activities & Data analysis and interpretation of the data. For IBBS, NARI oversees states of Gujarat, Maharashtra, Goa and Karnataka.

The implementation structure of IBBS is illustrated in figure 2

Figure 2



The required training to play role of State Surveillance team member in Sample framework development phase of IBBS was attended during 08th to 13th December 2014. The Full time field training also included a field visit to Satara district in Maharashtra to support the field teams to carry out sample frame development (SFD) activities for MSM population. The training certificate has been attached in appendix.

During SFD field work, field teams visit the hotspots and collect information from at least 4 key informants (2 from high risk group/community & two from non high risk group/non community) in Hotspot Information sheet.

Competencies gained

Data review During tenure of Practicum, data was reviewed of Hotspot information sheets which include information about location of hotspot, operational days, size and variations in size. The review was done to check

- Whether data is collected for sampling as per the dynamics of location
- Consistency of data – whether size, timings correspond to dynamics of location and other related variables
- Correctness of data – whether the timings, hotspot size are collected as per methodology of IBBS.
- Clarity – whether maps are clear and understandable
- Completeness: whether all required fields are filled by field teams

SFD data review was done for domains such as Dakshin Kannada-MSM, South Goa-FSW, North Goa-FSW, Bangalore IDU & Bangalore Rural MSM. The data is available through web supported system at http://naco-ibbs.in/ using credentials. The review comments were entered in real time in the system.

Monitoring Field Visits: In IBBS, field supervisory visits was successfully completed by a visit to Solapur district on 30th & 31st Dec 2014 to monitor the progress of field work, supervise methodology of Solapur MSM domain, Different stakeholders were met such as domain coordinator, field teams, DAPCU officers (District AIDS prevention & Control Unit), Targeted Interventions (NGOs/CBOs) working in districts, Outreach Workers, peer educators & Link workers. The Source documents and data in system was reviewed and validated. Hotspot was visited with the field team during its operational timings and field was provided supportive supervision on conducting field work and community preparation. All the supervisory

review findings were documented in domain information register at site and as well as in the IBBS system. After Solapur visit, independent supervisory visit were carried out to Yavatmal/Buldhana MSM and Pune MSM domain to track progress of SFD, review SFD data and supervise the field teams.

Organizational skills: To track the ongoing progress and discuss the issues that are faced by field team, a weekly & monthly status meeting is held between NARI, field research agency (IMRB) and also National AIDS Control Organization. Attending the meetings helped to understand the dynamics of various stakeholders in the project and how the progress was tracked and decisions were taken in SFD activities.

Other Tasks:

1. Qualitative study

   A study was conducted by my supervisor Dr Godbole at NARI 'Prevalence of Anal Human Papillomavirus Infection Among HIV-Infected Women from India'. The prevalence of Anal HPV infection in HIV infected women was found to be around 14%. However, only 3 out of 98 participating women report having anal intercourse. There were question about underreporting of anal intercourse, factors that surround anal sex practices among hetero sexual couples or other existing intimate sexual practices which could facilitate anal HPV infection in this population. Hence a qualitative study was undertaken to explore attitudes and behavioral issues related to anal sex and other sexual practices among HIV infected women respondents of the anal HPV prevalence study. Qualitative study includes in depth interviews of 12 participants of anal Prevalence study, 4 male partners and Key informants such as Sexologist, psychologist, counselors)

Competency gained

Qualitative research methodology: Involved in conducting in depth interviews with Key informants. Codes were also developed for coding the qualitative data. Also one interview transcript was translated and coded as per the finalized codes.

2. Observation at NARI clinics which receive patients for HIV counseling, diagnosis & management was made. During observation, services provided by NARI clinicians and counselors at NARI clinics were observed which gave insight into dynamics of day to day care of HIV patients. This also gave an opportunity to observe ongoing activities of phase 3 randomized controlled clinical trial at NARI clinic.

Reflections on Practicum:

Overall the practicum at NARI served the purpose of practicum which is to engage MPH student in activities aligned with their career goals, as well as activities that demonstrate application of public health concepts and critical thinking relevant to the student's area of specialization.

Being involved in National Surveillance project for HIV as a state Surveillance team member was a great opportunity to develop skills for career ahead in public health. For ANC HSS project, skills were applied in defining indicators with appropriate denominators and numerators to monitor and track the process and variations in surveillance activities with respect to sentinel sites. The HSS project is one of the largest HIV surveillance in world, however strong evidence is necessary to prove its relevance in coming years in future. PPTCT (Prevention of Parent To Child transmission) services have started in India since 2002. Hence the data of pregnant women testing for HIV is already been collected in the program. As the coverage & quality of PPTCT increases, the need of HSS will decrease. Almost all of the sentinel sites are public health facilities. The population attending the public health facilities for ANC is not representative of whole country since around 70% of Indian population seeks medical care from private health facilities. However while estimating, this issue is taken care of.

Studies are ongoing with HSS to evaluate whether PPTCT data can be used to determine HIV prevalence by considering the PPTCT coverage, quality of lab results, data and comparing it with HSS data.

IBBS on the other hand furnished with opportunity to experience field work, monitoring the field work and to perform rapid assessment of methodology in the field. It helped in applying the skills of data review to

check inconsistencies in data and sometimes validating data by investigating the source documents. It helped in getting conversant with the Delphi technique during SFD activity. It was a significant learning experience of visiting the hotspots and interacting with field teams and MSM population on whom the surveillance is carried out. The importance of preparation required for field visit planning and the effective communication needed to interact with all stakeholders involved was well appreciated. During visit to Solapur domain, all the stakeholders were invited for meeting which helped in reviewing issues and making quicker decisions.

A crucial learning experience was the culture of organization. NARI internally hosts activity called Journal club where papers are presented and critiqued which is very essential in organization like NARI for knowledge sharing and mentoring students about research methodologies.

Challenges:

The learning experience at NARI has been rich and extensive due to nature & significance of surveillance project and immense support from all the HSS & IBBS team. I appreciate the challenges where various stakeholders are involved in the program. For example- Various stakeholders such as National AIDS Control Organization, NARI, field research agency, State surveillance team members, State AIDS Control Society, NGOs are involved in IBBS. It is challenging to meet deadlines with various stakeholders involved especially with field research agency who faced challenge of huge drop outs of field teams in certain domains. The regular weekly status meetings, regular follow up with field research agency and State surveillance team members and frequent field supervisory visits were understood to be some of the critical measures to prevent the issues arising at different levels. Initially challenges were faced during interaction with high risk groups such as MSM and Transgender due to no prior experience of interacting with community. The instructions provided in field training and experience in field visit during practice helped in understanding the dynamics of community which helped in performing the supervisory visits.

Appendix

1. Attendance sheet at NARI from 01-Dec-2014 to 27-Feb-2015


Attendance.xlsx

2. Weekly SMS based HSS monitoring report


HSS Weekly Report _week 7.doc

3. Note for sending SMS to ANC sites


Note for sending SMS to ANC sites.doc

4. HSS ANC Pre Surveillance meeting certificate


HSS Pre surveillance meeting.pdf

5. IBBS regional ToT certificate


IBBS Regional ToT certificate.pdf