

Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development & Cooperatives  
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Project Management Unit

Consulting Services for Operational Research to Establish

## **Urban Health and Demographic Surveillance System**

Service Package No. S-4.1

Second Quarter Progress Report

Submitted by:

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## **1. Introduction**

This report is prepared in fulfilment of the requirement mentioned in the contract agreement of the project “Primary Health Care Services Delivery Project (Urban Health and Demographic Surveillance System); Service Package No. S-4.1 (Operations Research)”. According to the Terms of Reference, “Quarterly progress report should be submitted within 21 days after end of each quarter”.

For understanding population, health and socioeconomic problems prevailing in the slums, currently available data are necessary but not sufficient to deal with these problems. So, there is a need to establish a data collection system (Health and Demographic Surveillance System) for capturing data from slum population of Bangladesh which will enable monitoring health, demographic and socioeconomic indicators and facilitating evaluation of intervention programs.

icddr,b has been the pioneer institute to develop and maintain Health and Demographic Surveillance Systems (HDSS). Currently icddr,b has three rural HDSSs and two urban disease surveillances in place. Dedicated to saving lives through research and treatment, icddr,b addresses some of the most critical health concerns facing the world today, ranging from neonatal survival to HIV/AIDS.

## **2. Goal of the assignment**

The goal of the project is to set up a Health and Demographic Surveillance System in selected slums of Dhaka and Gazipur City Corporations (Figure 1: Location of slums). More specifically, to establish a data collection system to assess the level of fertility, mortality, migration, marriage and divorce, family planning, violence against women, morbidity, sickness care, health expenditure, and knowledge and practice of non-communicable diseases.

The outcomes are: population profile with measures of fertility, mortality, migration, marriage and divorce along with four publishable manuscripts based on the survey data (surveys are: health seeking behaviour (MNCH), family planning, violence against women, health expenditure, and knowledge and practice of non-communicable diseases).

The milestones achieved in the second quarter (October 8, 2015 to January 7, 2016) are: a) Computer program for HDSS data collection, b) Pre-testing/finalization of HDSS questionnaires, c) Data collection manual- HDSS, d) Repeated visits for absentee households, and e) Data cleaning/field verification.

## **3. Project activities**

The following activities were carried out by icddr,b during the second quarter (October 8, 2015 to January 7, 2016) of the project (see, Figure 2: Timing of activities/events).

The activities are:

1. Computer program for HDSS data collection
2. Pre-testing/finalizing of HDSS questionnaires
3. Training on HDSS data collection
4. Data collection manual- HDSS
5. Household listing
6. Data collection-baseline/socioeconomic census
7. Data cleaning/field verification
8. Repeated visits for absentee households
9. Data quality and security
10. Report generation

### **3.1 Computer program for HDSS data collection**

We are collecting the data by portable electronic device (Tab) and HDSS data collection programs were developed accordingly. As mentioned in the first quarter report, the master database is a relational one and going to be managed in MySQL server. In the Tab, Sqlite database is installed in back-end and Android Java in front-end. Some consistency checks are being incorporated in the HDSS data collection program (range checks, logical checks (i.e, age and pregnancy, no pregnancy for unmarried etc), however some logical checks (mainly longitudinal checks) are also performed at the office after loading/merging all the data files.

### **3.2 Pre-testing/finalizing of HDSS questionnaires**

Pre-testing of all the HDSS questionnaires was initially done by two female Field Workers under the guidance of PI and Field Research Coordinator. Feedback received from the field test was reviewed by the PI and Co-PIs and useful suggestions were incorporated in finalizing the questionnaires. However, these questionnaires were earlier approved by the Research Review Committee as well as Ethical Review Committee of icddr,b.

### **3.3 Training on HDSS data collection**

First, three Field Research Assistants were trained on questionnaires by the PI and Field Research Coordinator. Subsequently, sixteen female Field Workers were trained by the Field Research Coordinator and Field Research Assistants. During training, female Field Workers were trained on data collection instrument, data collection device, and on interviewing techniques. The training on data collection devices (Tab use) was organized by the Computer Programmer. Duration of training was for seven days: five days in office (training on questionnaires, mock interview and Tab use) and two days for field practice.

### **3.4 Data collection manual- HDSS**

The HDSS data collection manual has two sections: data collection tools and use of Tab. The manual for data collection tools includes responsibilities of field workers, general and operational guidelines for data collection. The manual for Tab use includes instructions on how to operate it during data collection.

### **3.5 Household listing**

During the first quarter, we completed listing of 20,000 households; however, remaining households (10,000 households) were completed by October 31, 2015. As mentioned in the first quarter report, the female Field Worker assigned *bari* number (cluster of houses of a particular owner) during household listing and also assigned household number within the *bari* (wrote *bari* number at the door with permanent ink). During the listing, the female Field Worker also recorded household head's name, household size as well as name of the house-owner (*bariwala*).

### **3.6 Data collection- baseline/socioeconomic census**

During the first quarter, we completed baseline/socioeconomic census of 2,200 households, however remaining households (27,800 households) were completed by January 7, 2016 instead of December 7, 2015. The baseline/socioeconomic census took longer (4 more weeks) than expected and it was because of the delay in purchasing Tabs as well as inclusion of new slums, as there was a rumour that households besides the railway tracks (one of our slum) of Shayampur will be abolished.

As mentioned in the first quarter report, the Field Workers are also carrying printouts of household listing in addition to data in the Tab to find the *baris*. Once *bari* is identified, the Field Worker enters slum name, area name and *bari* number in Tab and verifies the record (households) with the printout (Figure 3: Visitors observing baseline data collection; Figure 4: Visitors discussing at the office after the field visit). The baseline data includes age, sex, marital status, date of birth, education etc while socioeconomic data includes ownership of land, ownership of house and household assets. Moreover, additional socioeconomic data (structure of dwelling, drinking water, toilet use etc) is also being collected from selected households (every 10<sup>th</sup> household).

### **3.7 Data cleaning/field verification**

Although in the data collection program, some logics were incorporated, some errors were detected in the data when frequency tables were prepared (using statistical package). Subsequently more logical checks were incorporated in the data collection program to reduce inconsistencies during data collection. However, it is not recommended to introduce every type of logic in the data collection program as it would slow the data collection process. So, there are some errors in data and data cleaning is taking longer than planned.

### **3.8 Repeated visits for absentee households**

During the baseline/socioeconomic census some households did not have eligible respondent present to provide the information. These households were visited again in the next day (morning or lunch time) and interviewed, if eligible respondent was found. The remaining absentee households were visited again after completion of the baseline/socioeconomic census, however in some cases the visit was up to four times before it was decided not to follow-up. This also caused the delay in completing the baseline/socioeconomic census.

### **3.9 Data quality and security**

#### **3.9.1 Data quality**

As mentioned in the first quarter report, Field Research Coordinator and three Field Research Assistants are responsible for assessing day to day data quality. In fact, Field Research Assistants are responsible to observe the female Field Workers data collection as well as entering data independently in the Tab in some cases, if event had happened. The Field Research Assistants are also responsible to re-interview 2% households per day (mainly for HDSS event). Once in a week, Field Research Assistants receive data from the female Field Workers and after preliminary checks send the data to the Field Research Coordinator as email attachment file.

#### **3.9.2 Data security**

To maintain security and confidentiality of the data file, the data server is restricted by a security password and access is given only to a selected person. For further security, a backup of the data set is kept in different locations; these data files are being updated periodically.

#### **3.10 Report generation**

As soon as data file is received from the field, report is generated (every week) to assess the data quality (Appendix A, status of data collection). The data shows expected pattern for most of the variables, however inconsistent data are sent back to the female Field Workers for verification (by examining available records or through field visit).

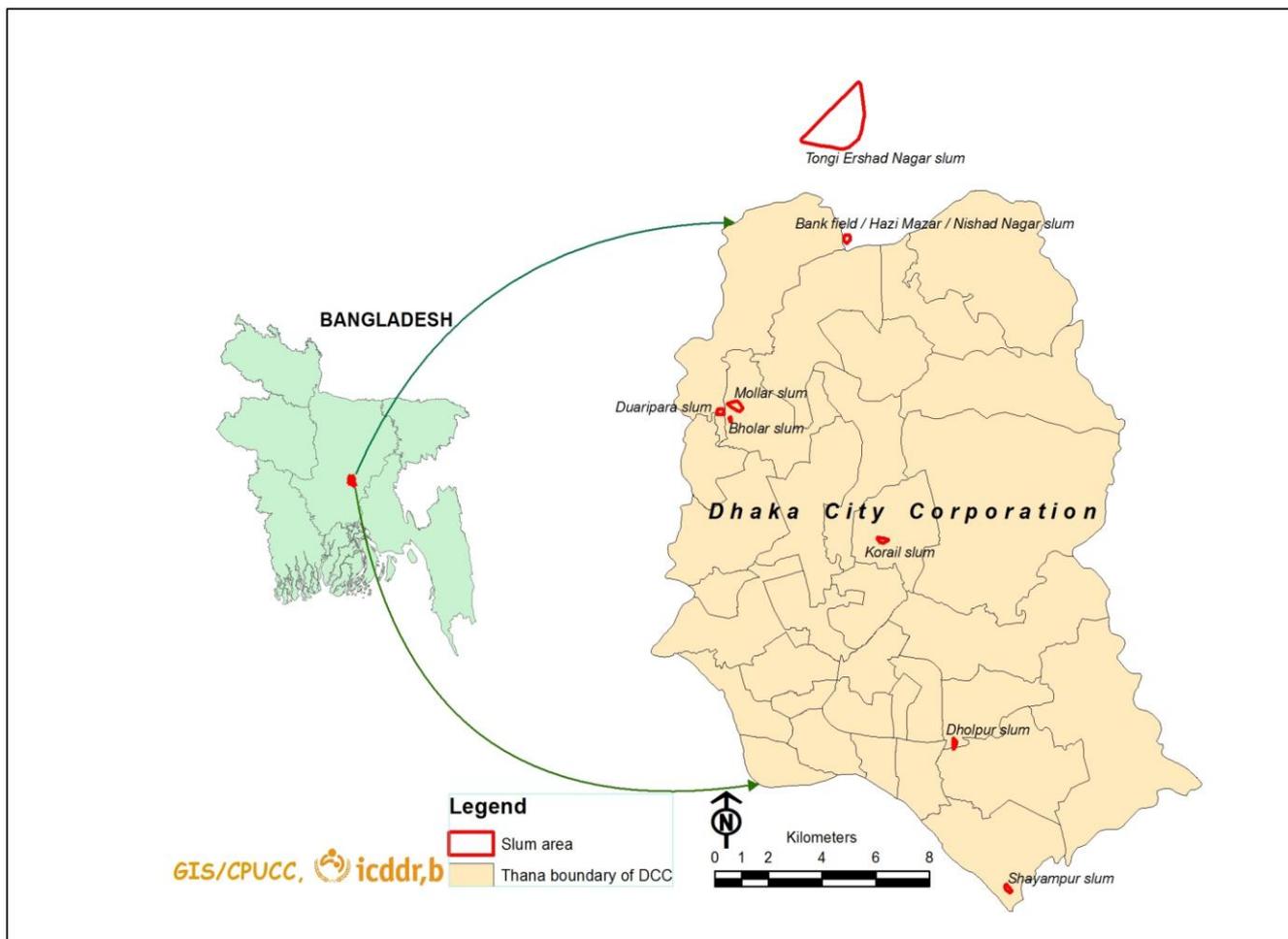
## **4. Comparative statement on activities planned and accomplished**

During the first two months of second quarter (October 8, 2015 to January 7, 2016), we planned to complete ten activities but completed seven. The three activities those were not completed in time are: baseline/socioeconomic census, repeated visits to find absentee households and data cleaning/field verification; these activities were completed by January 7, 2016 (some editing continues, as error detected). Due to delay in completion of these activities (4 weeks delay), we had to delay in starting the surveillance (HDSS) data collection as HDSS data is based on the cleaned baseline census data.

## **5. Conclusion**

During the first two months of second quarter (October 8, 2015 to January 7, 2016), we planned to complete ten activities but we completed seven, however the rest three activities took about four additional weeks to complete. Due to delay in completion of these three activities, the surveillance data collection (HDSS) was postponed for four weeks. To complete the project by March 31, 2017, our plan is to reduce the 5<sup>th</sup> cycle of HDSS data collection from three months to two months.

**Figure 1: Location of slums: Dhaka and Gazipur City Corporations**



**Figure 2: Timing of activities/events (October 8, 2015 to January 7, 2016)**

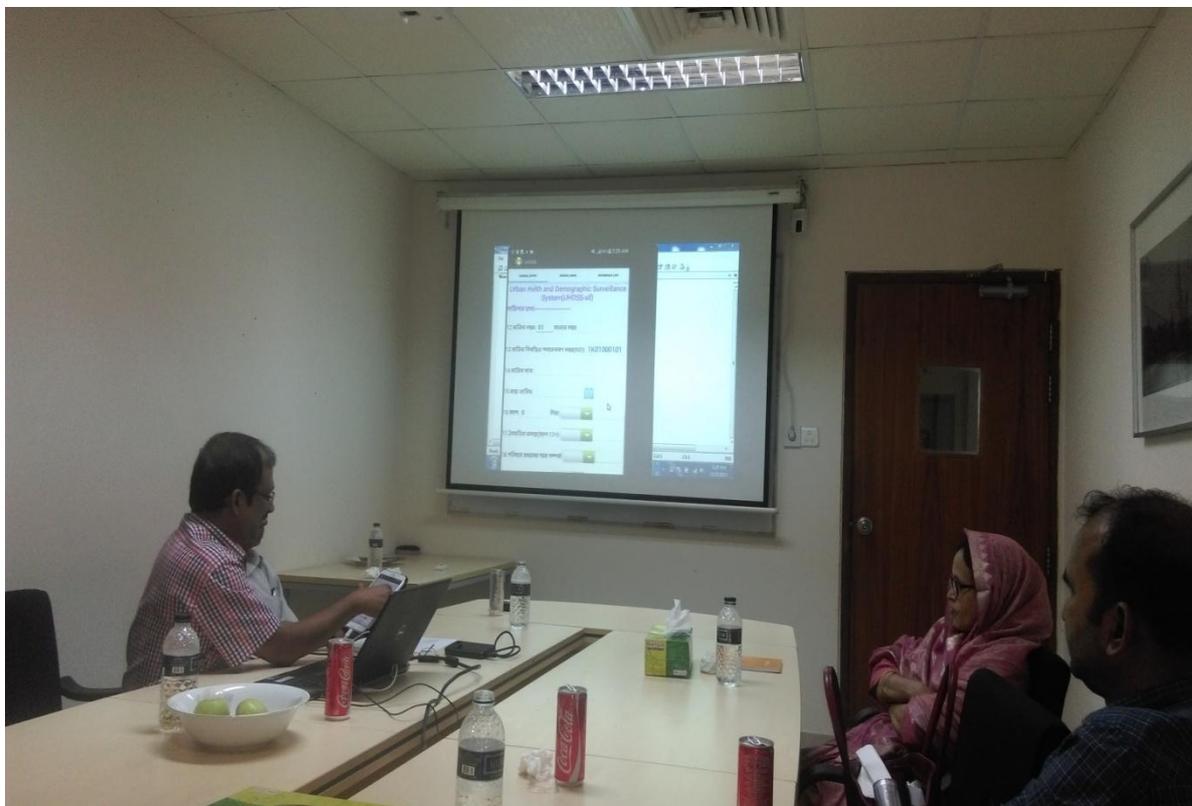
Activities/events	Oct			Nov					Dec					Jan
	8-15	16-23	24-30	1-7	8-14	15-21	22-28	29-31	1-7	8-14	15-21	22-28	29-31	1-7
1. Computer program for HDSS data collection														
2. Pre-testing/finalizing of HDSS questionnaires														
3. Training on HDSS data collection														
4. Data collection manual (HDSS)														
5. Household listing														
6. Data collection-baseline/socioeconomic census														
7. Data cleaning/field verification														
8. Repeated visits for absentee households														
9. Data quality and security														
10. Report generation														

**Figure 3: Baseline census data collection in Mirpur slum**



Note: Visitors from UPHCSDP- observing data collection in Mirpur (Dwari para) slum

**Figure 4: Review meeting with the visitors after field visit**



Note: Visitors from UPHCSDP- after field visit, discussing issues related to field work

Appendix A1: Distribution of household by slum location (as of January7, 2016)

Slum	Frequency	Percent
Korail	9,384	31.9
Mirpur	5,868	20.1
Tongi	10,146	34.5
Dhalpur	1,962	6.7
Shayampur	2,008	6.8
Total	29,368	100.0

Note: About 600 households yet to add

Appendix A2: Distribution of population by slum location (as of January 7, 2016)

Slum	Frequency	Percent
Korail	35,777	31.3
Mirpur	21,894	19.2
Tongi	40,825	35.8
Dhalpur	8,118	7.1
Shayampur	7,562	6.6
Total	114,176	100.0

Note: About 600 households yet to add

Appendix A3: Socioeconomic census\* by slum location (as of January 7, 2016)

Slum	Frequency	Percent
Korail	713	27.0
Mirpur	559	21.2
Tongi	979	37.1
Dhalpur	180	6.8
Shayampur	209	7.9
Total	2,640	100.0

\*Note: Every 10<sup>th</sup> households; About 300 households yet to add