

## **Supplementary File S1**

### **The initial definition of survey area**

A survey area was an administrative area consisting of a population of 100,000 to 250,000. However, in a small country like Sri Lanka, a much smaller population could be considered. The survey area must be able to approach within a single day's travel from the main city. Ratnapura was considered the main city of Ratnapura District.

A given MOH area was considered as a single survey area as it fulfills the requirement of a survey area.

WHO/ HAI medicinal price methodology required the selection of six geographical survey areas for the selection of pharmacies. It should include the MOH area which contains the district's main urban centre and five other MOH areas (survey areas). In each survey area, five private and five other sectors pharmacies should be included in the study [7].

As Ratnapura city belonged to the Ratnapura Municipal Council MOH area, it was included as one survey area. The remaining five MOH areas, (as all 19 MOH areas can be reached within a day from Ratnapura city) were selected randomly from all other MOH areas in Ratnapura District as they were eligible for selection [7].

The selection of pharmacies was carried out in two steps.

#### **First step selection of MOH area**

The MOH area which includes Ratnapura city was selected as per WHO/ HAI methodology. Additionally, 5 other MOH areas were selected from the remaining 18 MOH areas by simple random sampling technique.

The selected MOH areas were as follows:

- Ratnapura MC MOH
- Udawalawe (Embilipitiya North) MOH
- Godakawela MOH
- Kuruwita MOH
- Kalawana MOH
- Kahawatta MOH

#### **Second step-Selection of private and SPC pharmacies**

Despite the exclusion of government institutions, our study followed each step of WHO/ HAI medicinal pricing methodology. In WHO/ HAI methodology for selection of private pharmacies, first step was to identify the major government institutions of each MOH area. Then randomly select 4 government institutions in addition to the main hospital in equally representing each level of care/ hospital category. And if there were less than 2 government institutions in each category/ level of care, increase the number from other category/ level of care to compensate. If a total of 5 government institutions were not fulfilled, it was instructed to include the closest government institution from an adjacent area. For the selection of 5 private pharmacies in the survey area, a private pharmacy per chosen government institution should be selected based on the shortest distance between them. If no such private pharmacy exists within 10 km from the government institutions, a private pharmacy can be selected from the urban area where the main hospital was situated. Although we have not included government pharmacies for the price survey, we also followed the same pathway. First, we randomly selected a government hospital from each of the following hospital categories [7].

1. Main hospital of the MOH area-teaching hospital or a provincial general hospital or district general hospital or a base hospital or divisional hospital type A
2. Divisional hospital type B or C- 2 institutions

### 3. Primary medical care institutions / central dispensaries- 2 institutions

This categorisation was selected as there was only one teaching/ provincial general hospital available in the district. In addition, only one district general hospital and four base category B hospitals were available in Ratnapura District.

In many MOH areas in Ratnapura, government institutions were less than 5 per MOH area. On average, only 3.8 government institutions were present in a given MOH area. Therefore, it was decided to select an adjacent MOH area in addition to the randomly selected MOH area to select an adequate number of government health institutions as below:

1. Ratnapura Municipal Council MOH with Ratnapura Pradeshiya Sabha MOH
2. Udawalawe (Embilipitiya North) MOH with Embilipitiya South MOH
3. Godakawela MOH with Weligepola MOH
4. Kuruwita MOH with Kiriella MOH
5. Kalawana MOH and Ayagama MOH
6. Kahawatta MOH with Pelmadulla MOH

Thus, a single survey area consisted of two MOH areas. Initial randomly selected MOH area and the subsequent conveniently selected adjacent MOH area as above. The adjacent MOH area was selected conveniently to improve the socio-cultural representation within the district. Therefore, Embilipitiya South MOH was selected to improve the urban representation. Ratnapura Pradeshiya Saba and Pelmadulla MOH areas were selected to improve the estate sector representation. Kiriella and Ayagama MOH areas were selected to improve the rural representation.

#### **Final definition of survey area**

Two adjacent MOH areas in Ratnapura District.

#### **Selection of the two MOH areas**

A randomly selected MOH area and a conveniently selected adjacent MOH area of the randomly selected MOH area formed a survey area.

Selected main hospitals in the surveyed area were:

1. Ratnapura MC MOH with Ratnapura Pradeshiya Sabha MOH  
Ratnapura Teaching Hospital
2. Udawalawe (Embilipitiya North) MOH with Embilipitiya South MOH  
Embilipitiya District General Hospital
3. Godakawela MOH with Weligepola MOH  
Godakawela Divisional Hospital A
4. Kuruwita MOH with Kiriella MOH  
Kiriella Divisional Hospital A
5. Kalawana MOH with Ayagama MOH  
Kalawana Base Hospital B
6. Kahawatta MOH with Pelmadulla MOH  
Kahawatta Base Hospital B

In each selected survey area, a maximum of five private retail pharmacies was selected for the study. A private pharmacy per chosen government institution was selected based on the shortest distance between them. If no such private pharmacy exists within 10 km of the government institution, a private pharmacy was selected from the urban area where the main hospital of the survey area was situated. WHO/ HAI medicinal drug pricing methodology instructed to selection of five additional pharmacies in each survey area as a stand-by, in case

a pharmacy in the originally selected group did not have 50 percent of the selected medicinal drugs with them during the time of data collection. However, similar to government institutions, on average only 4.4 registered (and registration updated at the time of data collection) private retail pharmacies were available in a given MOH area in Ratnapura. Therefore, all other registered retail private pharmacies in the survey area, irrespective of the number, was shortlisted for the selection if any originally selected pharmacy did not meet the 50 percent availability cut-off during the data collection. Five pharmacies in 3 survey areas were recruited from the above short list, in addition to 30 pharmacies selected, as five pharmacies that were initially selected did not meet the above criteria [7].

Similar to the selection of the private retail pharmacies, other sector' pharmacies should be selected. However, unlike the selection of private pharmacies, the WHO/ HAI medicinal drug pricing methodology did not require to have a minimum of five such pharmacies. The pricing methodology instructed, if there were fewer than five other sector retail pharmacies in the survey area, to select all of them. There were only two SPC pharmacies situated in the entire Ratnapura District, namely Ratnapura (belonging to the Ratnapura Municipal and Ratnapura Pradeshiya Sabha survey area) and Embilipitiya (belonging to Udawalawe and Embilipitiya South survey area); these two pharmacies were included in the study per WHO/HAI medicinal drug pricing methodology [7].