

**GOVERNMENT OF ANDHRA PRADESH**  
**HEALTH MEDICAL & FAMILY WELFARE DEPARTMENT**

**Order No.74/COVID-19/HM&FW/2020,**

**Date:04.08.2020**

**COVID INSTANT ORDER – 74**

Sub:- HM&FW – COVID-19 – Establishment of community based district level Serosurveillance system - Orders – Issued – Reg.

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Govt is decided to establish community-based district level Serosurveillance system to monitor the transmission of SARS-CoV-2 infection in the general population. The initial survey would serve as a baseline to determine the seroprevalence of SARS-CoV-2 infection in the community and in high risk groups. Detailed guidelines are annexed to this order.

- To start with 4 districts – East Godavari, Krishna, Nellore and Anantapur are selected.
- A total of 3750 blood samples are to be collected as per sampling matrix given in the annexure.
- These samples would be tested for IgG antibodies using CLIA method.
- The samples are to be tested in CLIA machines available in the state.
- Districts of Krishna and Nellore have CLIA machines and conduct tests at respective district HQs.
- Anantapur district samples shall be sent to Kurnool and East Godavari samples shall be sent to Guntur.
- The survey shall be conducted from 7<sup>th</sup> August to 12<sup>th</sup> August, 2020.
- District wise Epidemiologists to advise on this survey are given in annexure.

State TB program officer shall coordinate at state level and DTCOs shall be the nodal officer at district level.

The District Collectors of above districts are instructed to provide necessary logistical support.



Encl: Annexure - I &  
Annexure – II

**Special Chief Secretary to Government**

**To**

The Collectors and District Magistrates of Krishna, East Godavari, SPSR Nellore & Anantapur Districts.

Copy to the Commissioner of Health & Family Welfare, Gollapudi for information.

Copy to State TB Programme Officer with instructions to coordinate at state level.

Copy to the Director of Medical Education, Vijayawada for information.

Copy to Director of Public Health & Family Welfare, Gollapudi

## Annexure – I

### Methodology for Sero-surveillance of COVID-19 using CLIA (by detecting IgG antibodies) at district level in Andhra Pradesh

#### **Introduction:**

Surveillance systems form the foundation stone of active case finding, testing and contact tracing, which are the key components of the public health response to this novel, emerging infectious disease. There is uncertainty about the true proportion of patients who remain asymptomatic or pre-symptomatic at a given time.

Facility-based surveillance efforts are likely to miss mild and asymptomatic cases. Through household-targeted, antibody-based serologic testing, we can minimize the biases of referral and selective testing affecting laboratory-based surveillance, generate evidence on the role of asymptomatic infection in driving transmission and estimate the extent of infection in a given population (**ICMR study on National sero-surveillance published in Indian Journal of Medical Research 2020**).

The Indian Council of Medical Research (ICMR), therefore, proposes to establish a community-based district-level serosurveillance system to monitor the transmission of SARS-CoV-2 infection in the general population. The initial survey would serve as a baseline to determine the seroprevalence of SARS-CoV-2 infection in the community and in high risk groups as well, while the subsequent rounds would help to monitor the trends of infection in the community (**ICMR study on National sero-surveillance published in Indian Journal of Medical Research 2020**).

This information will also guide the strategy for making decisions related to lockdown options at a district level. The objectives of this sero-surveillance are to estimate and monitor the trend of seroprevalence for SARS-CoV-2 infection in the general population and high-risk group, determine the socio-demographic risk factors for SARS-CoV-2 infection

and delineate the geographical spread of the infection in the general population and high-risk groups.

### **Sample Size:**

With the assumption of one per cent seropositivity, relative precision of 40 per cent, confidence interval of 95 per cent and design effect of 2.5, there is a need to enroll a minimum of 3,750 individuals to get estimate of sero-positivity for each district. Three thousand (3000) subjects selected from general population of the district will be the sample size who will be subjected to CLIA to find out sero-prevalence (based on IgG antibodies positivity).

An addition of 30% of sample size given above which comes to Seven hundred and fifty (750) subjects and will be enrolled among high risk subjects in the district.

### **Sampling strategy:**

Sampling strategy for general population:

As given in Flow chart1, in each district, two mandals in urban areas of **containment zone** (one each) will be selected from two revenue divisions (selected randomly out of 4 revenue divisions) of the district and 8 mandals in the rural areas of containment zones(two each) will be selected from from 4 revenue divisions of the the district.

In each district, one mandal in urban areas of **non-containment zone** will be selected from one revenue division (selected randomly out of 4 revenue divisions) of the district and 2 mandals in the rural areas of non-containment zone (one each) from 2 revenue divisions (selected randomly out of 4 revenue divisions) of the district.

From the selected mandals, required number of clusters as given in flow chart (wards in urban areas and villages in rural areas) will be

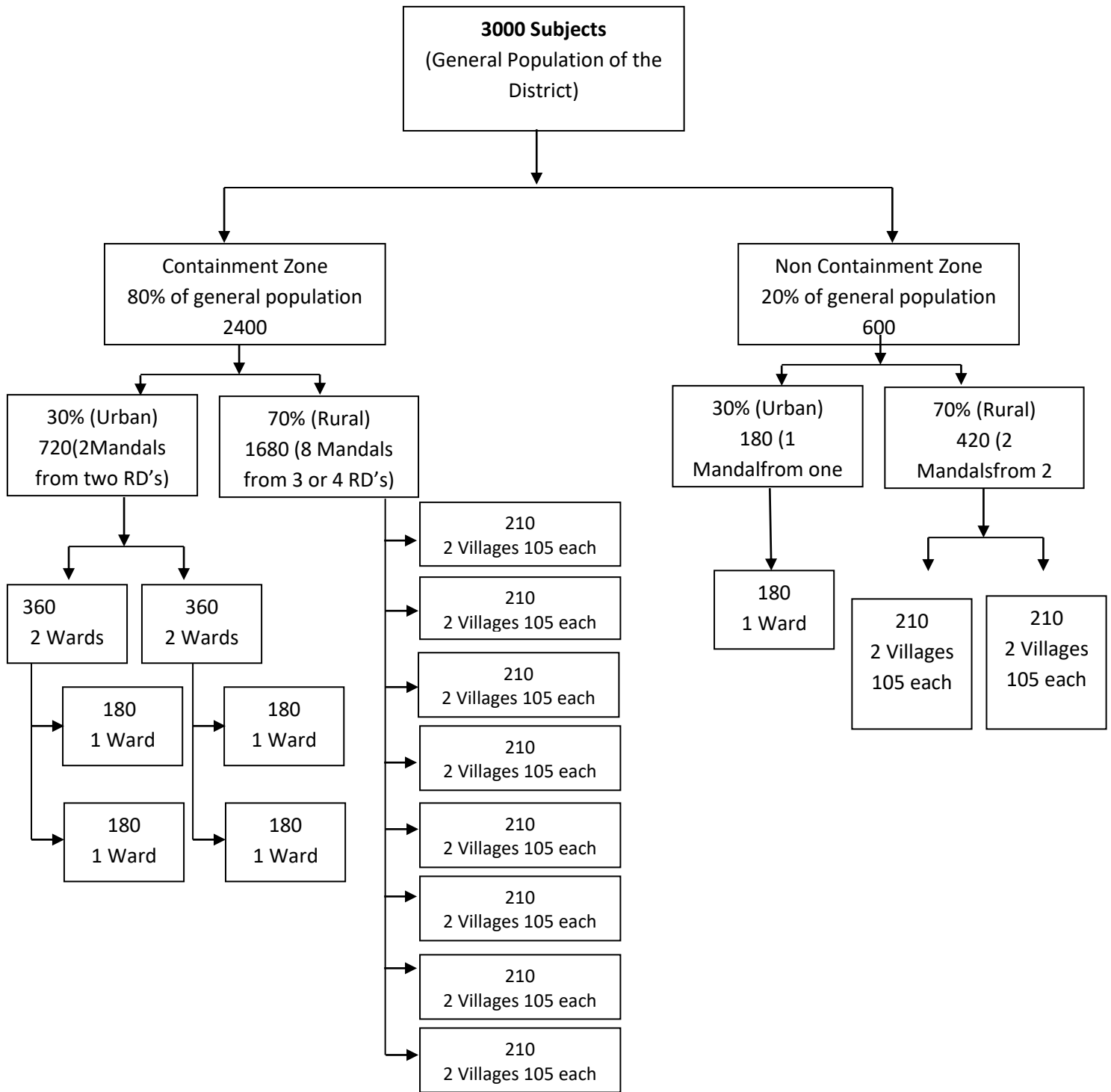
selected which are in different geographical directions of the mandal (NE,SW,NW,SE)

The required number of households which will be selected are equal of required number of persons to be tested (specified in flow chart). The required number of households in each cluster will be selected from total number of households by systematic sampling method (every nth house eg; 5<sup>th</sup> house or 10<sup>th</sup> house). So, one person will be selected from each selected household as per scheme in the table given below.

Sampling strategy for High risk population is given in flow chart2

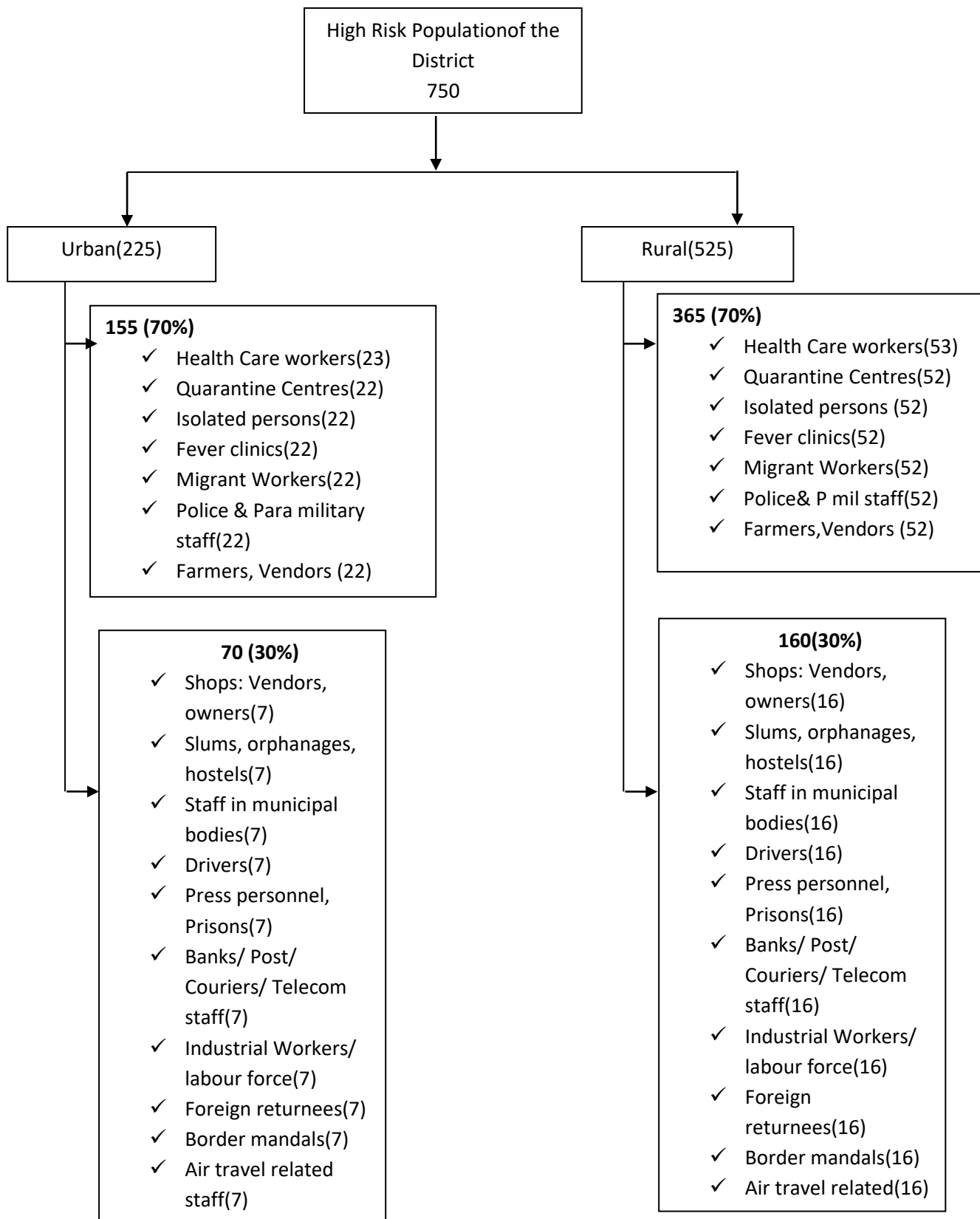
Number of adult females in household	Number of adults in the household			
	1	2	3	4 or more
0	Male	Youngest male	Youngest male	Oldest male
1	Female	Female	Oldest male	Female
2		Oldest female	Male	Oldest male
3			Youngest female	Older male
4 or more				Oldest female

**Sampling strategy for general population (Flow chart 1)**



**Note:** Urban wards and villages mentioned in the flowchart have to be selected by random sampling.

## Sampling strategy for High Risk Population (Flow chart 2)



**Annexure – II**

**DISTRICT WISE EPIDEMIOLOGISTS FOR SEROSURVEILLANCE**

<b>Sl.No</b>	<b>Name of the District</b>	<b>Name of The Officer</b>	<b>Designation</b>
1	East Godavari	Dr Nagaraju, MD	Professor of Community Medicine, SVIMS, Tirupati
2.	Krishna	Dr Ravi Prabhu, MD	Professor & HOD of Community Medicine, SVMC, Tirupati
3.	SPSR Nellore	Dr Shankar Reddy, MD	Associate Professor of Community Medicine, GMC, Kadapa
4.	Anantapur	Dr Cynthia Sudha Prabha, MD	Associate Professor of Community Medicine, KMC, Kurnool



**Special Chief Secretary to Government**