Studying COVID Prevalence in Karnataka: Collaboration with the CMIE panel

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Population Prevalence of COVID

First case of COVID in India – Jan 31; First case in Mumbai – March 12.

India imposes strict lockdown – March 22.

No estimates of spread or prevalence of COVID in population in India
- What share of population in urban & rural areas are infected?
- Symptomatic / Asymptomatic?
- Age profile of infections?
- IFR? (need population prevalence estimates)
- How quickly is the epidemic spreading?

Project Objective and Challenges
with Anup Malani (U. Chicago) and Anu Acharya (Mapmygenome)

Aim 1: To estimate **prevalence of antibodies AND antigen in a state-wide sample**

- **Comparison** with Mumbai Seroprevalence Study (*BMC, NITI, TIFR, THSTI, Kasturba, IDFC, Duke, U.Chicago*)
  - 6 areas (slum / non-slum in 3 urban wards).
  - Seropositivity in Mumbai: **51-58% in slums, and 11-17% in non-slums during July 2020.**

Aim 2: To test a **novel method of studying trajectory of the disease** by combining serology and antigen tests in the same population

- Serology (ELISA test for RBD spike protein) to detect antibodies for past infection; RT-PCR for current infections.

Challenges:

- Permissions (state, central, ethics review) & funding
- Lockdown – logistics of visiting households / conducting surveys & sample collection
- Collecting & transporting biological samples in the middle of a pandemic

Solution / Opportunity

SAMPLING / DATA COLLECTION

Sampling Frame to pick hhlds

Need data collection team that can be quickly mobilized

Minimize data collection time (demog, time invariant vars)

💡Partnership w CMIE

BLOOD & SWAB COLLECTION

Option 1: Work w existing labs

Option 2: Hire our own team of phlebotomists

Logistics of collection, storage in field and transport of samples (covid samples in the middle of a pandemic!)

Consumer Pyramids Household Survey

CPHS is a pan-India household survey conducted by CMIE

of a panel of 174,000 households

designed to capture fast-frequency measures of household wellbeing.

CPHS began in January 2014.

3 Waves of the complete sample surveyed every year.

CPHS is conducted all over the country.

CPHS never stops. Households are surveyed every day.

Leveraging CPHS Panel in Karnataka

CPHS has an all-India representative sample based on a multi-stage stratified survey design covering over 320 towns and over 3,900 villages

- Karnataka sample has 9,717 HHs covering 211 villages and 17 towns. For logistical reasons roughly over a quarter of the sample was chosen for this project, with special emphasis on towns.

CPHS is conducted in-house by CMIE staff using CMIE technology

- We were able to develop a complex survey app, train local surveyors and supervisors quickly, and hit the field fast.

Privately placed questions use existing CPHS infrastructure

- Complete survey execution and validation machinery in place; detailed information on households already collected; near real-time data delivery possible

Collaborations with CMIE

We actively encouraged researchers to use our data and place additional questions on top of the baseline survey if they wish

Our only condition – PIE is never revealed

We can fit any other requirement
- Complex instruments
- Complex survey design
- New subject areas
- Client confidentiality

Brief Status Update / Conclusion

Data Collection will be completed by end of August.

All analysis expected to be completed and preliminary results available by middle of September.

Stay tuned!

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