



Preparedness and Response to COVID-19 Outbreak in Assam: An Experience from the Field

Dr Subrata Chanda^{1*}, Dr Ajit Sudke², Ms Pomi Baruah³, Mr Najeeb Hazarika⁴, Dr Ramnath Ballala⁵,
Dr G S Reddy⁶, Mr Pranjal Saikia⁷, Ms Shelley Dhar⁸, Mr Chiranjib Baruah⁹, Dr Dhrubajyoti Borah¹⁰,
Mr Hardeep Singh Bambrah¹¹

¹ State CD Head, Piramal Swasthya Management and Research Institute, Guwahati, India

² Clinical Domain Head, Piramal Swasthya Management and Research Institute, Hyderabad, India

³ Deputy Secretary, Government of Assam, Guwahati, India

⁴ Operation Head, Piramal Swasthya Management and Research Institute, Guwahati, India

⁵ Public Health Expert, SATH, Piramal Swasthya Management and Research Institute, Guwahati, India

⁶ Monitoring and Evaluation Expert, SATH, Piramal Swasthya Management and Research Institute, Guwahati.

⁷ Call Centre Head, Piramal Swasthya Management and Research Institute, Guwahati, India

⁸ Chief Manger, Special Projects, Piramal Swasthya Management and Research Institute, Guwahati, India

⁹ COP Head, Piramal Swasthya Management and Research Institute, Guwahati, India

¹⁰ State Transformation Manager, ADT program, Piramal Foundation, Guwahati, India

¹¹ State Head, Piramal Swasthya Management and Research Institute, Guwahati, India

Corresponding Author:** Dr Subrata Chanda, Piramal Swasthya Mangment and Research Institute, Bamunimaidam, Guwahati, India, Email: **, Ph: 9830471177

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ABSTRACT

The world is now fighting against a new deadly virus disease, novel coronavirus disease (COVID-19), which is first declared as public health emergency and later declared as Pandemic by WHO. As COVID-19 spread around the world, governments, companies, international organizations announced measures to help contain the spread. Assam with 36 cases and the other north eastern (NE) states have been able to control the number of cases quite well compared to other states in India. To contain coronavirus spread in Assam, government leveraged nine projects implemented by Piramal Swasthya Management and Research Institute (PSMRI), in addition to other activities. This paper gives the elaborative listings of activities done by PSMRI in respond to COVID-19 outbreak to support the government respond to this pandemic. Activities are- Inbound calling, out bound calling, contact tracing, Visit and follow up of quarantined patients, data entry and updating Integrated Disease Surveillance Project (IDSP) portal and door step delivery of medicines. As on 26th April, 1,25,566 COVID-19 related calls received in 104-Health Helpline (HIHL). In addition, 37,886 beneficiaries called for quarantine follow up. Field staffs also visited households of home quarantined patients and screened more than 9000 people for COVID-19. PSMRI also supported in activities of Assam Cares Financial scheme and Dhanwantri Scheme. The above activities helped in mitigating the risk of coronavirus infection and also 'helped in timely respond to the reported cases.

Keywords: COVID-19, Outbreak, Response, Assam

Introduction

The world is now fighting against a new deadly virus disease, novel Coronavirus Disease (COVID-19), which originated in Wuhan, China. ^[1] The disease is caused by an RNA virus SARS-COV-2 and is characterised by fever, sore throat, cough and respiratory distress. The disease manifests its severe form in vulnerable with co-morbid conditions such as cardiovascular diseases, diabetes mellitus, cancers etc. ^[2] On 15th May 2020, there were 43,38,658 coronavirus cases across 216 countries/ territories with 297,119 deaths ^[3] The first case of Coronavirus globally was reported in late December 2019 in Wuhan, China and the first case in India was reported on 30th January 2020, originating from China. The same day the World Health Organisation (WHO) declared the outbreak of (COVID-19), a Public Health Emergency of International Concern (PHEIC) and on March 11, 2020, the COVID-19 outbreak was declared a pandemic. ^[3]

As COVID-19 spread around the world, governments, companies, international organizations announced measures to help contain the spread. Billions of people are into lockdown. More than 90% of the coronavirus cases are now outside China, and USA now has the maximum number of cases, followed by Spain, Italy, France Germany and UK. India to everybody's surprise has been able to control the spread to some extent by taking proactive steps at a very early stage including issuing advisories on precautions and social distancing, screening at airports, banning of travel from foreign countries etc. The Honourable Prime Minister of India announced a national lockdown, ^[4] named as "Janata Curfew" of 14 hours on March 22nd from 7 AM to 9 PM. ^[5] Subsequently, he called for a nationwide lockdown from March 26th to April 14th, 2020 when the total number of COVID-19 cases were below 1000. ^[6] On April 14th there were 11487 COVID-19 cases in India and seeing the rising trend in cases, the Union Government extended the lockdown till 3rd May 2020. Subsequently, with no ray of hope on decline of cases, government of India, once again extended the lockdown to 17th May 2020. Currently, as on 15th May 2020, total cases increased to 85940 with Maharashtra tops the charts with the highest number of COVID-19 cases at 29100 followed by Tamil Nadu and Gujarat with 10108 and 9931 respectively. Assam with 90 cases and the other north eastern (NE) states (cumulative cases for other NE states is 174) have been able to control the number of cases quite well compared to other states in India. ^[7] The Ministry of Health and Family Welfare has classified the districts across the country into Red, Orange or Green zones based on their COVID-19 status. The districts which are the hotspots and reporting major outbreaks or cluster of COVID-19 cases come under Red zone, while the Non-Hot spot districts where new cases are emerging or showing a sign of decline come under Orange Zone and non-infected districts come under Green zone. A District in a red zone can shift into Orange or Green Zone if no new cases reported in the past 14 or 28 days respectively. ^[8]

The Government of Assam developed a multipronged approach including leveraging of existing public partnership projects for the COVID 19 response. Piramal Swasthya Management and Research Institute (PSMRI), is involved in managing many of these public private partnership (PPP) projects in Assam over many years. In this paper, we elaborate on how the existing PPP projects as well as other non-Governmental project staff was leveraged in the Government of Assam's COVID-19 response. This paper is a descriptive study enlisting and elaborating all activities done by PSMRI and Piramal Foundation in Assam.

Setting

The north-eastern state of Assam has a population of 30.12 million with 993 females per 1000 males. ^[9] The state has 33 districts, 184 blocks and 26395 villages. As per ministry of health and family welfare, Govt of Assam, the state has 6 medicals colleges, 33 District hospitals, 172 CHCs and 946 PHCs and 4644 sub centres. ^[10] As per recent rural health statistics, Assam has a shortfall of 21 % of Sub-Centres (SCs), 1 % of Primary Health Centres (PHCs) and 28 % of Community Health Centres (CHCs) against the sanctioned

numbers.^[11] Nearly 16.8% SCs are beyond 3 kms radius of villages and 31.7% of PHCs are beyond 10 km radius of villages.^[12]

Assam has reported 90 COVID-19 cases with 2 deaths across 16 districts. As the paper proceeds, the specific projects and activities undertaken in each for coronavirus containment response are described below.

Projects involved

Projects are described below:

(A) Remote Health Advisory Interventions (RHAI):

Health Information Helpline-104.

The health information helpline -Sarathi was started in Assam on 7th November, 2010, by the Government of Assam in public private partnership with Piramal Swasthya. The health service of Sarathi can be availed by dialing a toll-free number '104' from any landline or mobile phone 24*7 throughout the year. The 50-seater call center is manned by four categories of staff viz. - Health Advisory Officers (HAOs) (51), Medical Officers (MOs) (14), Service Improvement Officers (SIOs) (5), Counseling Officers (COs) (5), all are involved in COVID-19 response.

Early Childhood Development (ECD) call centre

The ECD centre which aims to reach out to every pregnant mother and to parents of children up to the age of 2 years was inaugurated on 1st January 2020. In Assam the ECD centre includes three clusters managed currently in a pilot phase by 25 ANMs and three Medical Officers.

(B) Community Outreach Programs (COP):

Sanjeevani Mobile Medical Units (MMU) in partnership with Government of Assam

Sanjeevani is once-a-month, fixed date outreach initiative with 80 Mobile Medical Units across 27 districts of Assam. Each MMU is manned by a Registration & Measurement Officer, Lab Technician, Pharmacist, Auxiliary Nurse Midwife (ANM) and a Pilot. Each MMU covers 2 villages and a population of approximately 3000 each day in a monthly cycle of 24 days. More than 350 paramedics and support staff are actively engaged in field surveillance of COVID-19 since 24th March 2020.

Sriram Transport Finance Corporation Limited (STFCL) supported COP

The STFCL program was launched in March 2017 in three phases across 22 states of India. In Assam, the MMUs serve in two cities viz. Guwahati and Silchar providing health care services to the truck drivers and cleaners at eleven 'truck parking hub'. Each MMU is manned by four staff members with a driver, doctor, nurse and a Pharmacist.

Oil India Limited (OIL) supported MMU: Sparsha

Launched in May 2015, project, supported by OIL, aimed to provide primary health care services to vulnerable population staying in highly inaccessible and remote areas in Assam and Arunachal Pradesh. The programme includes a total of 46 staff members managing seven mobile vans and is manned by a seven-member team including two doctors, two nurses, two pharmacists and a pilot. Covering 24 and 252 villages in Arunachal and Assam respectively.

United Nations Development Program (UNDP) supported MMU:

Piramal Swasthya is managing the single mobile medical van for UNDP and Airports Authority of India (AAI) providing primary healthcare services through 22 camps per month in Rani Block in Kamrup Rural District of Assam. The Mobile medical van is manned by 4 staff members with a doctor, nurse, pharmacist and pilot.

Plan India supported Elimination of Mother to Child transmission of HIV/AIDS (EMTCT) program: AHANA

This project is implemented with support from Plan India and GFATM in the state of Assam, Arunachal, Sikkim and Meghalaya. The goal is to increase uptake of EMTCT services in 33 districts of Assam State. There are district level 9 program officers and 44 block level field officers in Assam.

Diagnose Early, Save Him / Her (DESH) program

DESH is a community-based cancer screening program in Kamrup district which aims to reduce the proportion of late-stage diagnosis and mortality from breast, cervical and oral cancers in partnership with Dr. B. Borooah Cancer Institute, Guwahati, Assam. 6 Counselors, 4 mobilizers, 9 nurses and 2 coordinators are involved in the project.

(C) Advisory programs

NITI Aayog supported Aspirational District Transformation Programme

Piramal Foundation collaborates with NITI Aayog to support the district of 25 Aspirational Districts across seven states in improving key health and nutrition parameters. In Assam, there are 5 ADT districts under NITI Aayog. As part of COVID-19 response, 52 members of state, district and block actively took part in following up the home-based quarantine people in Assam.

Sustainable Action for Transformation of Human Capital (SATH)

This program runs in collaboration with NITI Aayog and Government of Assam. The program aims for transformation of Assam into a model state for health. The program is manned by experts each in the field of public health, Human Resource, Information Technology, Procurement and Monitoring. They are supported by many consultants. More than 10 staffs from this program is involved in the COVID-19 response activity. Below figure 1 gives details of the projects involved in COVID-19 activities in Assam

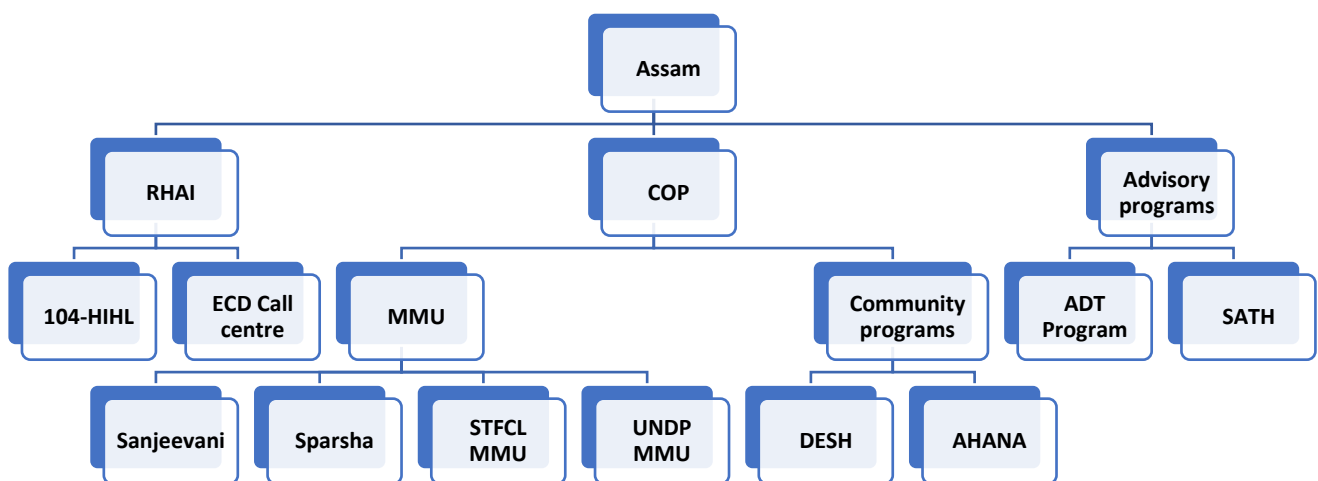


Figure 1: Projects under Piramal Swasthya involved in COVID-19

Following the lockdown in India and in Assam from 24th March 2020, the government leveraged all above-mentioned projects to respond appropriately to COVID-19 pandemic. The Government nominated a full-time officer to 104- Health Information helpline (HIHL) to work closely with the Piramal Swasthya team to develop and monitor the COVID-19 response plan using the staff members from the above programs. The team members from the above-mentioned projects were sensitized on COVID-19 virtually and their COVID-19 related duties were explained.

The modality of engagement of these staff in COVID-19 response is explained below.

Major activities Conducted

1. **Incoming calls:** The beneficiaries reach out to Sarathi 104 Health Helpline to report symptoms and seek advice. They also report suspect cases that are breaking the quarantine. The team proactively shares information on COVID-19, how it spreads, and preventive measures with the help of trained paramedics, doctors and counsellors (refer to Box 1).

Box 1: Services delivered through 104-Helpline

- COVID 19 information calls (FAQ) - Daily reporting to NHM, IDSP and Health Department officials
- COVID 19 symptomatic reporting - daily reporting to NHM, IDSP and Health Department officials
- Contact tracing and dissemination of information to the IDSP teams
- COVID 19 self/suspect reporting - daily reporting to NHM, IDSP and Health Department officials
- Counselling calls by CO desk
- Mental health counselling by Psychiatrist. Also, NHM has deputed 1 psychiatrist in 104 centres to support the activity
- Medical advice calls by MO & HAO
- Administrative issue (like scarcity of food, emergency transportation etc.) raised due to COVID situation reporting to NHM - Real time reporting to NHM, IDSP and Health Department officials
- Cancer/Kidney Transplant/Heart Surgery/Liver Transplant patients who got stuck outside Assam due to lockdown, Government of Assam has announced financial support for those patients. Reporting of such patients have been done through 104 helplines.
- Daily follow up calls on the abandoned numbers of previous day to cater any urgent need
- Receipt and dissemination of requests for medicines home delivery to the authorities for necessary action

2. **Outbound calls:** The Health Helpline team, under the directions of the National Health Mission, Government of Assam, also proactively reached out to an exhaustive list of individuals that have migrated to Assam and had been asked to quarantine themselves at home. The quarantined individuals were contacted to check on their well-being, symptoms developed if any and adherence to quarantine. Calls also done to follow up cases of people attended religious gathering at Nizamuddin, Delhi. The 104 Health Helpline has also made outbound calls to hundreds of people who have travelled outside of Assam recently to counsel them, support them and provide much needed medical advice. Doctors from telemedicine Centre have made video calls to these individuals to check on their health and provide medical advice. Govt has organized 100 volunteers, to make outbound calls to home quarantined individuals.

3. **Support in contact tracing:** To contain spread of the virus, Hon'ble Health Minister, Govt. of Assam, Shri. Himanta Biswa Sarma, made an appeal to the citizens on reporting any individual with a travel history to any place outside Assam via Sarathi 104. Since then the centre has received calls from all across Assam. People are coming forward and voluntarily reporting the cases. This information is shared on real-time basis with the Govt. to provide necessary support to the individual. The 104 Helpline has also served as a nodal point for contact tracing to help curb the spread of infection.

4. **Assam Cares Migrant Outreach Scheme:** This scheme entails financial assistance to beneficiaries, who are below poverty line and stuck outside Assam. The SATH team supported the Govt. of Assam in preparing the Standard operating Procedure for this scheme. The SATH and ADT program

team also helped in mobilising and training the Volunteers from different colleges and universities to support the activity. More than 800 volunteers were trained to make outbound calls to stranded people of Assam outside the state to support them to fill up the application form to avail the monetary benefit under the scheme.

5. Dhanwantri Scheme: In addition, our staffs are involved in coordinating with government under Dhanwantari scheme. This is an ongoing scheme whereas Assam Government providing free medicines at door step for senior citizens (>60 years) where pharmacy not available in 10 KM radius from home location. Details of the patients along with their local contact details is been registered in the Sarathi 104 centre or citizens can self-register in the web link. After the registration the patient uploads the prescription with medicine details to a district specific WhatsApp number which is available in the Web Form itself (near to the district selected) or is shared with them by 104 during registration. The registration details captured in Sarathi 104 and through the Web Form is been shared with the District Drug Store Managers on an hourly basis by the 104 data management team, who verifies the details with the prescriptions received in the WhatsApp number, check eligibility and then deliver the requested drugs to the address of the patient.

6. Field activities:

6.1 Home visits of quarantined patients: The Sanjeevani field team along with the Govt. public health staff are engaged in home visits of people with recent travel history, ensuring that they are home quarantined. Requisite stamping is done as per the COVID-19 guidelines.

6.2. Screening: Screening for COVID-19 suspected cases is another important task that the Sanjeevani team has taken up along with other Govt. health workers. Cases have been screened across Assam on priority basis as per instructions received from Govt. authorities and district IDSP cells with 9 Mobile Medical Units are designated only for night duty. Several Sanjeevani members are actively engaged in PHC labs for conducting lab tests and in IDSP control rooms in districts, helping the concerned department in data management and back operations.

6.3. Delivery of Medicines: Further, the Field Officers of Prevention of Parents to Child Transmission of HIV project has been doing home delivery of antiretroviral therapy (ART) and cotrimoxazole preventive therapy (CPT) medicines to number of positive pregnant women and their spouses in remote locations across Assam.

Results

1. Incoming calls: In the month of March-April 2020, a total of 5,59,135 calls have been attended by the team. On an average, the team has been attending to approximately 9,000 calls in a day post the outbreak and lockdown. This number has been steadily increasing (Refer table 1).

Table 1: Inbound call summary for COVID-19 response

Parameter	1 March to 11 May 2020 (Number of Calls)
Offered Call	776414
Answered Call	559135
COVID-19 Situation Related Call	246640
Reporting Domestic Travel	464
Reporting International Travel	24
Reporting Nizamuddin	292
Reporting General Help Request	229

- Offered call- Calls landed at 104-HIHL, answered call- calls connected and received

2.Outbound calls: from 1st March to 15th April 2020, a total of 30589 calls have been made to such individuals. Details are given in below table.

Table 2: Outbound call for Quarantine Follow up

Parameter	1 March to 15 April 2020 (Number of Calls)
Total Data received	54606
Data with phone numbers	37886
Unique phone numbers	30589
1st Call Attempted	30589
2nd Follow Up Call Attempted	16510
1st Call Connected	20656
2nd Follow Up Call Connected	10788
Symptom reported	355
Quarantine not followed	1064

3.Field Activities

3.1. Home visits of quarantined patients: Households of people have been visited and quarantined so far. Surveillance visits to ascertain the home quarantine status/wellbeing are also carried out (refer to table 3).

Table 3: Screening and field follow up of Quarantined patients

Activity	Coverage (24 th March to 26 th April)
Home visits to generate awareness around COVID-19	3890
Home visits of people with travel history	4963
Follow up of home quarantined individuals	4713
Awareness camps	264
Screening for Suspected COVID-19 Individuals	9000
Contact tracing and quarantined individuals	5378

- Contact tracing: persons who came in contact with COVID-19 positive cases were tracked and quarantined.

3.2. Screening: People have been screened across Assam on priority basis, including trucker's community as per instructions received from Govt. authorities and district IDSP cells (Refer table 3).

3.3. Delivery of medicines: The team has managed to map the present location of patients and delivered the medicines to 197 positive pregnant women and their spouses, and 74 exposed infants in remote locations of Assam. The team has also delivered ART medicine to 67 general HIV patients as per request from ARTC - NACO, across Assam. Under Dhanwantri scheme, 4444 medicine delivery requests received at 104-HIHL and medicines delivered to 1230 patients so far.

3.4. Activities undertaken by ADT and SATH Programme:

The ADT team called up total 26815 quarantine people and out of that 17349 answered the calls. Then the ADT team volunteered to render their service for new initiative launched by Govt. of Assam under Assam Cares Scheme. The ADT team underwent training organised by Govt of Assam and started the activity since 18th April. Till now 16931 persons have been contacted who got stuck in various states outside Assam and 6421 applications have been successfully closed.

Challenges

We faced certain challenges while implementing above activities. Huge call flow which was unable to handle with existing manpower. We have roped in additional manpower from other projects. Also recruited new staffs. Challenge in getting correct data from beneficiaries for schemes announced by govt. We did outbound call to get corrected calls. Shortage of masks and PPE kits for field staffs. Govt supported in this and provided PPE kit for field staffs doing home visits and related surveys. Bringing all staffs to the call centres was a challenge due to lockdown imposed by govt. govt had exempted all our staffs and also provided dedicated vehicles to commute to and from office.

Conclusion

The preparedness and response of the government of Assam in which Piramal swasthya has supported whole heartedly, found to be quite satisfactory, which can be seen from the less number of positive cases reported as compared to other states. The preparedness also helped in mitigating the risk of coronavirus infection in spite of many challenges. Government should also be prepared to tackle cases with life threatening symptoms considering the recent increase of cases.

Declarations

Ethical Approval:

Piramal Swasthya Management and Research Institute's institutional research ethics committee approved the study (Letter no. IEC Study Ref: PSMRI/2020/16, Dated 28 April 2020).

Acknowledgement:

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Competing Interests:

The authors declared that there is no conflict of interest exist in the publication.

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