THE SMART RESPONSES TO COVID-19

A Documentation of Innovative Actions by India's Smart Cities during the Pandemic

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Content

India takes preemptive action

The COVID-19 pandemic is undisputedly the greatest challenge we have faced since World War II. A pneumonia of unknown cause was first detected in Wuhan (China) in December 2019. Since its emergence the virus has rapidly spread across the globe.

Thermal screening of incoming international passengers from China and Hong Kong started in India on 18 January 2020. The World Health Organization (WHO) declared it a Public Health Emergency of International Concern on 30 January 2020 – the same day India detected its first case.

On 11 February 2020, WHO announced a name for the new coronavirus disease: COVID-19.

Acknowledgement

Preface

The COVID-19 crisis is unprecedented for most of us. In these trying times, it is heartening to see how our Smart Cities have risen to the occasion, spurred by the Hon'ble Prime Minister, Narendra Modi's message of *"jaan hai toh jahaan hai."* The unavoidable lockdown posed some stiff challenges, but our cities worked day and night to ensure essential services were kept operational and hardships for citizens were minimized. City officials kept working through these challenges, creating systems and making provisions to equip citizens to face the pandemic. They quickly reassessed the situation and implemented a two-pronged plan to support both *jaan* (lives) and *jahaan* (livelihoods).

'Building cities for people' is at the core of the Smart Cities Mission which was launched in June 2015 by the Hon'ble Prime Minister. The Mission has been instrumental in giving Indian cities a global appeal and has continuously endeavoured to equip them with digital technology-based management solutions to match the ever-accelerating urban demands in governance, efficiency, access and security.

The Mission has made significant progress over the last five years towards its proposed investment of ₹2,05,018 crore in 5,151 projects. Till date, close to 4,800 projects worth over ₹1,67,000 crore have been tendered of which 3,900 projects amounting to about ₹1,28,000 crore are under implementation. Projects worth nearly ₹28,000 crore have already been completed and are delivering benefits to citizens. In order to boost walkability, non-motorized transport and public transport, our cities have completed over 200 smart road projects worth ₹3,200 crore and 400 projects worth ₹16,000 crore are near completion. A total of 97 PPP projects worth ₹3,800 crore have been completed and 210 projects worth ₹23,000 crore will be completed soon. A total of 53 projects, worth ₹800 crore related to vibrant urban spaces have been completed; 70 projects worth ₹2,400 crore related to smart water and 41 projects worth ₹200 crore of smart solar have also been completed. Leveraging technology for solving urban problems continues to be a big differentiator of the Smart Cities Mission.

As the world faces one of its worst crises in recent history, our Smart Cities have been at the forefront in leveraging technology to manage the crisis, with 47 of them using their Integrated Command and Control Centres (ICCCs) as crisis management war rooms and 35 working to complete them at the earliest. There have been several innovative successes around data and technology, wherein cities have created mobile solutions to ensure communication, coordination and collaboration with citizens, communities and their field force, and have used emerging technologies like drones, artificial intelligence, social media, chatbots and data science to tackle challenges due to COVID-19.

It is with great pleasure that I present The Smart Responses to COVID-19: *A Documentation of Innovative Actions by India's Smart Cities during the Pandemic* – an overview of how India's Smart Cities are innovating, adapting, and pivoting during the pandemic in order to overcome challenges. A one-of-a-kind compendium, this publication captures the best innovative practices that are being adopted by 100 smart cities across India in their fight against the pandemic.

In many ways, this compendium is also a tribute to the tenacity and resolve of all frontline workers: from our city officials, medical personnel, and sanitation staff to health workers, police staff, and other volunteers. The numbers keep changing but it is reassuring to know that there are able women and men in our cities who are constantly innovating, strategizing, and responding to keep us safe.

I wish everyone good health and safety!

Durga Shanker Mishra
Secretary,
Ministry of Housing and Urban Affairs,
Government of India

Foreword

The COVID-19 crisis is a bolt from the blue. The first COVID-19 patient in India was diagnosed in January 2020. Early on, administrations at all levels realized that an unprecedented challenge was brewing. From health concerns to associated socio- economic challenges, COVID-19 pushed India's civic administrations to innovate and act even as the pandemic ran its course.

Over the past three months, civic administrations have demonstrated adaptive leadership in uncertain times. They have employed new ideas and tools, in a very short time, with scant leeway for trial and error. While responding to an unknown crisis of this scale, cities have strived to maintain the delicate balance between *jaan* (life) and *jahaan* (economic well-being) as both ultimately meant one and the same thing — precious human lives had to be saved at all costs. There was no time to strategize and innovative choices had to be made on the go. Although problems faced by individual cities look similar at the macro level, there were crucial differences in how the crisis presented itself in each context.

India's Smart Cities have been at the forefront of this fight from testing, isolation, treatment, and enforcing the lockdown to using technological innovations for information collection, crisis management, effective communication, and predictive modelling.

The Smart Responses to COVID-19: *A Documentation of Innovative Actions by India's Smart Cities during the Pandemic* is an attempt to showcase how Smart Cities have responded to the pandemic's challenges. Key measures taken by them have been captured for use as best practices in other cities. The compendium is not an exhaustive and comprehensive list of actions taken by cities. Instead, consider this as a curated selection of the best practices in technology enabled, people-centric responses to COVID-19.

Responding quickly to uncertain, wicked problems is not easy. Many at the forefront of this battle are working tirelessly, night and day, without recognition or expectations. I salute all our unsung warriors and I sincerely

hope these learnings will help us in furthering our efforts towards building resilience and creating a better future in the new normal.

I wish this document ignites hope and inspires confidence in the ability of our civic ecosystems and becomes a milestone in shaping our future engagements in the urban sector.

Kunal Kumar
Joint Secretary & Mission Director,
Smart Cities Mission, Ministry of Housing and Urban
Affairs (MoHUA), Government of India

Introduction

Difficult times call for difficult measures. Our cities have the unenviable task of tackling a sudden pandemic of a global scale as never seen before. As part of this, Indian cities also had to manage one of the most stringent lockdowns in the world.

The unprecedented nature of the crisis threw most world governments off-kilter as cities scrambled to contain the virus without the luxury of time or the benefit of reflection, analysis, or consultation. India was no different, and our cities, with their high population density and cramped spaces, became hotbeds of infection. Indian cities had no option but to plunge headlong into grappling with this virulent virus.

We were thrust into the battlefront unprepared, and decisions had to be made quickly. Some of the actions taken were unorthodox. In hindsight, certain situations could have been handled differently, but time was of the essence, and the administration had to hit the ground running, learning along the way. Saving lives and reducing human casualties was the priority —everything else came later.

Even as I write this, the numbers are rising, and we have no way of knowing when these figures will taper. Amidst this unfolding scenario, The Smart Responses to COVID-19: *A Documentation of Innovative Actions by India's Smart Cities during the Pandemic* buoys hopes. It is representative of our very Indian indomitable spirit – to innovate, to learn, and to tap available resources to make the most of a challenging situation.

This publication offers a window into how 100 Indian smart cities are working to counter the pandemic. The learnings and insights are staggered across five key categories of action — Tracking & Monitoring, Diagnostics, Sanitization, Awareness & Capacity Building, and Citizen Support. Many of the practices documented here have the potential for wider deployment and can serve as powerful tools in our arsenal —in our fight against COVID-19.

Tracking & Monitoring
Many smart cities deployed all-in-one mobile COVID-19 tracking apps and repurposed their existing Smart City infrastructure such as the Integrated Command and Control Center (ICCC). The *Bruhat Bengaluru Mahanagara Palike* (BBMP) developed a Coronavirus War Room, in a record 24 hours. With academic insights and private partnership, the city was able to control the pandemic quite effectively. The 24X7 War Room maps all positive cases, the quarantined and health workers using GPS and geofencing, and helps to draw up containment plans using heat mapping technology.

Diagnostics
Telemedicine, helplines, free tele-counselling, mobile clinics, and door-to-door surveys are some of the many ways in which cities are ensuring early-stage diagnostics reach its citizens. Telemedicine allowed the administration to avoid any contact with patients and yet get their medical concerns addressed. Thane Municipal Corporation (TMC) in Maharashtra set up fever outpatient departments (OPD) and drive-through testing booths across Thane. Greater Chennai Corporation (GCC) smartly repurposed an app that was originally meant to crowd-source information on the state of existing civic infrastructure. During the lockdown, the app was converted into a COVID Monitoring Application with citizens able to voluntarily report their symptoms to help the administration map likely cases.

Sanitization
The Bharat Heavy Electricals Limited (BHEL) manufactured the BHELMISTER — a disinfectant sprayer — in four days. Many cities have adopted the BHELMISTER, which uses water mixed with a sanitizer, atomized through a spray nozzle, and converted into fine droplets. One BHELMISTER can pump out 2000 liters of disinfectant in two hours and can be mounted on a vehicle to access narrow lanes. Some cities have even opted for drone sanitization to disinfect areas where manual spraying is either difficult or dangerous. Varanasi *Nagar Nigam* uses drones to disinfectant hot spots, quarantine zones and containment areas in a bid to prevent unnecessary footfalls.

Awareness & Capacity Building
Cities are using various channels including public announcement systems (PAS) that are controlled and monitored from their War Room. Cities are also harnessing popular social media platforms, such as WhatsApp and Instagram, to raise awareness and dispel misinformation. Surat used creative thinking by carrying out innovate awareness exercises in slums through attractive wall paintings and *rangoli* art at all entry points. Surat also focused on staff capacity building with training being provided by nodal officers to all frontline responders — from medical officers and pharmacists to sanitary staff.

Citizen Support

During the lockdown many cities worked to ensure the needy received shelter, essentials and free food via community kitchens and state-run programs. Surat's *roti*-canteens served thousands of *rotis* daily to those who needed food. During the lockdown, several cities also tied up with food delivery aggregators such as Zomato and Swiggy to ensure citizens received essential commodities at their doorstep. The Government of Rajasthan employed GIS based mapping of food distribution points to optimize allocation of resources. A web page was created to collect food distribution data, and monitor demand, quality and quantity of food being distributed by the government and various non-government organizations (NGOs). This ensured real-time, dynamic mapping of food requirements at distribution points and also captured the views of officers working in the field for real-time analysis.

The initiatives, captured in this publication, show that India cities are not leaving any stone unturned in their fight against the virus. Every single initiative is backed by a team, we will never know, working tirelessly behind the scenes.

Look around you and acknowledge that humble garbage collector, the tired delivery boy/girl bringing your order to your doorstep, or the government functionary rushing to work. As responsible citizens we can serve as the foot soldiers in this battle by following the basic precautions of handwashing, social distancing and wearing of masks. Our commitment to follow these norms is the only way we can break this cycle and get our cities to win this vicious fight.

While adjusting to the post-pandemic new normal, our cities will have to share best practices and learn from each other with a focus on becoming resilient and they need to plan for their residents, migrants, and vulnerable communities. I hope this compendium serves as a resource to learn and share best practices across cities in India.

I wish you good health, stay safe.

Dr. OP Agarwal
CEO, WRI India

Tackling the Pandemic through Action and Innovation

How city governments are harnessing the power of technology to track, test, monitor, communicate and contain.
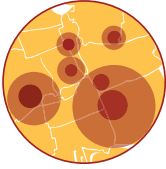
TRACKING & MONITORING
Many cities are utilizing their Smart Cities resources or deploying mobile apps and dashboards for rapid response.

DIAGNOSTICS
From drive-through testing to telemedicine, cities are testing different platforms to lessen the burden on hospitals.

SANITIZATION
All cities are conducting regular sanitization drives across the city and also work to sanitize vehicles for public use.

AWARENESS AND CAPACITY BUILDING
Social media, public address systems, mass media and apps are being used to convey facts along with capacity building modules for officials.

CITIZEN SUPPORT
Websites, helplines and ingenious apps that connect the vulnerable with help are some of the many ways cities are supporting citizens.

Agartala

City: **Agartala**
State: **Tripura**
Population: **3,99,688**
(2011 Census)
Area: **76.51 sq.km.**
Round: **2**

**agartalasmartcity.
tripura.gov.in**

Agartala, capital of Tripura, is the third largest developed city and the oldest municipal body in north-east India. Agartala Smart City Limited (ASCL) in conjunction with the Agartala Municipal Corporation (AMC) had a vital role in developing and modernizing the state machinery and managing the fight against the pandemic. Some of the novel initiatives being conducted include mobile sample collection kiosks, doorstep delivery of free food/ration to migrants during the lockdown and involving women's self-help groups (SHGs) to make reusable masks that were then sold to the citizens at a reasonable rate.

 DIAGNOSTICS

Mobile Sample Collection Kiosk

ASCL has designed a mobile COVID-19 sample collection that is the first of its kind in the north-east of India. The kiosk ensures complete protection to the sample collecting health worker and prevents wastage of personal protection equipment. Mounted on a three-wheeler vehicle, the kiosk effortlessly navigates Agartala's many narrow lanes and facilitates mass testing of people, in a shorter time window is essential given the criticality of the unfolding situation.

CITIZEN SUPPORT

Food Distribution to Front Line Workers and Needy Citizens

ASCL provided cooked food/dry ration to the urban homeless people, migrant laborers, rickshaw pullers and daily wagers during the lockdown starting 26 March. The members of women run Self-Help Groups (SHGs) under State National Urban Livelihood Mission (NULM) prepared the food and packed it ensuring proper hygiene standards were met. The food was cooked centrally in kitchens run by local urban bodies with an average of 1,866 people receiving free meals daily. The cooked food packets were distributed twice a day and the team ensured social distancing norms were maintained.

Ration Distribution to Migrants

Dry ration in the form of *aata* (wheat flour) was provided to laborers of Golbazar area initially which was soon expanded to include rice, oil and other basics for all needy citizens. Each bag provided a week's ration for five people and included 12 kg rice, 2 kg dal, 500 ml oil, soya bean, potato, turmeric powder, salt, etc.

Employing SHGs for Mask Production

Approximately 183 women SHG groups, under the *Deendayal Antyodaya Yojana*-National Urban Livelihoods Mission (DAY-NULM), have been involved in mask production for frontline workers. A source of livelihood for women in the lockdown period, urban local bodies provide cloth and other raw material to make masks on the basis of guidelines issued by the office of the Scientific Advisor to Government of India. These masks are distributed to Health Department officials, police personnel, and AMC's sanitization workers and garbage collectors while a portion are earmarked for sales to citizens.

Agartala

Agra

City: **Agra**
State: **Uttar Pradesh**
Population:
15,85,704 (2011 Census)
Area: **87 sq.km.**
Round: **2**

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agrasmartcity.in

Agra is a city of historic importance and is also a centre of political, commercial and cultural activities. The principal economic driver of the city is tourism followed by crafts-based industries – both of which have been affected by the pandemic. The administration is leveraging its Smart City infrastructure to ensure effective tracking and monitoring of cases and hotspots and has created a GIS dashboard, an SOS portal (*Sarvam Setu* App) and a lockdown monitoring app among others in their bid to tackle the pandemic.

TRACKING & MONITORING

Smart City Integrated Command & Control Centre (ICCC) as a 24X7 COVID-19 War Room

A 25 member team works round the clock in the ICCC to integrate various functions of the district administration such as managing the district control room, the grocery help line, security and surveillance functions, traffic monitoring, monitoring of lockdown and live telecast of advisories through vendor management systems (VMS) and public address systems etc. Lockdown violations and crowding get reported to the police department and e-*challans* are issued to violators.
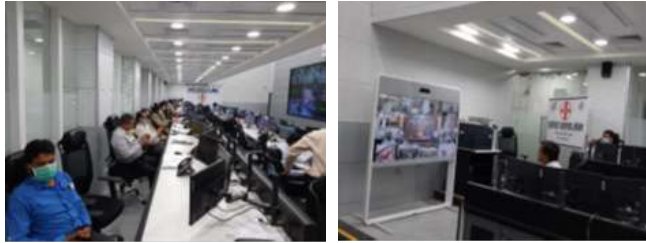
Agra COVID-19 Tracker

A GIS dashboard tracks hotspots, heat maps, positive cases, recovered cases etc. Updated daily, the dashboard *http://covid.sgligis.com/agra* is developed on the IGiS platform - an indigenous technology which brings GIS, Image Processing, Photogrammetry, and CAD together on a single platform. This platform can also cater to a multitude of solutions across industries from agriculture and defence to forestry, disaster management and urban planning.

Agra Lockdown Monitor App

The Agra Lockdown Monitoring App was made available to the administration and police personnel as required. The technology enabled video analytics that detected groups, crowds, and close proximity of people to raise an alert on field staff's mobile phones thus helping the police administration monitor the situation on ground.

SANITIZATION

Fogging and sanitization of all prominent places is being done regularly by the Agra *Nagar Nigam* – the process is thoroughly monitored through the GIS based dashboards and ICT based monitoring systems. All government offices and prominent public places are being cleaned and sanitised regularly.

AWARENESS & CAPACITY BUILDING

The Smart Health Center works to spread awareness about COVID-19 with patients getting a briefing on the advisory and general consultation. The PA system, installed across 27 major junctions, broadcast COVID-19 advisories and are monitored through the ICCC. The advisory is also displayed on visual media systems installed at prominent places while 100 hoardings have been set up on unipoles to further spread awareness.

Webinar on Combating COVID-19 through Technology
As a part of the sharing of best practices, a webinar was conducted which was viewed by more than 80,000 citizens in which various information and communications technology (ICT) enabled initiatives were explained.

CITIZEN SUPPORT

Sarvam Setu **App — SOS Portal for Citizens by Citizens**
This AI driven hyper local SOS and emergency response management platform allows citizens to raise geo-tagged requests for emergency help across nine categories such as food, medicine, medical help, fumigation, case reporting etc. It also acts as a one-stop interface to access all emergency information, local alerts, nearest medical centres, and hyper local suppliers of essentials.

Citizens can select the category of help needed and press the SOS button. The alert will go to volunteers in a 300 mtrs radius and the registered personnel will receive, accept, and close incoming requests from their SmartCadre *Sarvam Setu* app.

The app platform consists of a multi-factor AI engine, which uses cognitive intelligence, automation and algorithms to match and allocate, within microseconds, the incoming requests to the best suited personnel based on proximity, availability, skills, task load, and other factors. The city tracks this real time data, analytics, and GIS dashboards of emergency requests and response management status.

E-Doctor *Seva* - Tele-Consultation Facility

This tele-video consultation facility, launched by Agra Smart City Ltd., can be accessed on *https://tinyurl.com/edoctorapp*. Supported by an app as well, doctors stationed at the Command Center conduct video appointments and give online prescriptions. On request, required medicines are also delivered home via the Smart Health Center-Pharmacy. The service also offers calls with distress counsellors.

Delivery of Food & Essential Commodities

Bulk messages regarding *kirana* shops and vegetable vendors who deliver within 24 hours were sent ward-wise. Rates were fixed for various essential items to prevent hoarding and price rise. This was supplemented by a grocery helpline monitored by the War Room. The helpline guides citizens on doorstep delivery of essentials and a webpage allows people to search for nearby

vendors by ward or locality or pin code. The Agra city administration & Smart City also tied up with Zomato and Big Bazaar for doorstep grocery delivery. Along with the administration's efforts, a cooked food bank has been established that collects cooked food packets from various NGOS to distribute it to the needy.

Citizen COVID-19 Self Registry Platform

The Self Registry platform allows citizens to assess their health risk and create a PIN code based early risk assessment matrix that help authorities. This app, based on smart feedback SaaS platform, is powered by Microsoft Azure. This interactive web app is simple and interactive with inbuilt analytics and reports that enable authorities to see the daily picture of High, Medium, Low, or No Risk self-assessments, as well as detect trends that help in identifying early patterns of emerging hotspots. While the Azure infrastructure ensures that data is safe, secure, and encrypted, the SaaS platform can be easily scaled to include other cities. If a citizen registers a high-risk self-assessment, appropriate medical teams reach out to the individual while maintaining their privacy.
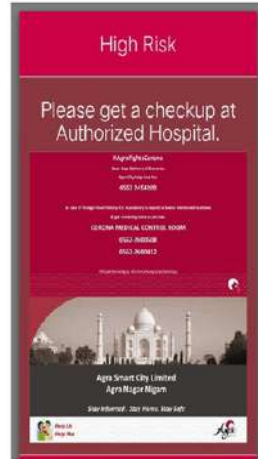
Other Services

Feeding Strays: Under the leadership of the chief veterinary officer a team has been constituted to give regular feeding to animals, dogs, monkeys etc.

Mask Distribution: A self-help group is making face covers and the same is being distributed to citizens at a cost of ₹10/-.

Ahmedabad

City: **Ahmedabad**
State: **Gujarat**
Population:
55,77,940 (2011 Census)
Area: **464 sq.km.**
Round: **1**

ahmedabadcity.gov .in

The city of Ahmedabad is the largest in Gujarat and a major industrial and financial hub—contributing approximately 14% to the total investments in all stock exchanges in India. The city is also home to many scientific and educational institutes of international repute. In its fight against the pandemic, Smart city Ahmedabad development limited (SCADL) has taken several monitoring and IT initiatives such as citizen grievance redressal services, COVID-19 response apps and city-level dashboards along with ensuring residents' essential needs are met.

TRACKING & MONITORING

Command and Control Center

SCADL, with its state-of-the-art Integrated Command and Control Center (ICCC), is harnessing city-level surveillance by doing a joint exercise with the city police. The ICCC staff constantly monitor city areas to check for crowds or any other violation upon which the police are alerted to take requisite action. As per the directive of MoHUA, SCADL uses the dashboards and software provided by Quantela but has customized the platforms for the city's specific needs.

COVID-19 Response Mobile Application

SCADL created a mobile app for centralized data capture of all positive/suspect cases, testing, movements, inventories, etc., that are being captured by field officials at the backend. Designed to ensure better collaboration among all stakeholders, the app provides data visualizations in the form of dashboards on various GIS layers. It allows authorities visibility into areas which are more prone to infection and that have adequate testing or need more testing intervention.

CITIZEN SUPPORT

Citizen Grievance Redressal Services

The city's Citizen Grievance Redressal Services (CCRS) project has been helping citizens to register and resolve grievances. A team of 50 trained staff work round the clock and handle an average of 50,000 daily calls. Facilities like call-back feature, recording voice messages, time frame-based auto escalation, automatic intimation to field authorities and back to citizens, to complete the loop, are available through it. Furthermore, citizens can also track the status of their complaint online.

AMC Vegetable on Wheels

Ahmedabad Municipal Corporation (AMC) has come up with the idea of Vegetables on Wheels—an initiative to provide citizens fresh vegetables and fruits at their doorstep using e-rickshaws. This initiative is also helping channelize the efforts of women self-help group, NGOS and startups to support society.

Aizawl

City: **Aizawl**
State: **Mizoram**
Population: **2,91,822 (2011 Census)**
Round: **3**

aizawlsmartcity. mizoram.gov.in

Aizawl is the capital of Mizoram and the largest city in the state. The center of the state administration, the city is home to several important government offices and is dotted with quaint churches, neat neighborhoods, and emerald blue lakes. Apart from setting up a war room to tackle the pandemic, the city has also made face masks mandatory in office premises, set up sanitizers, screens all staff and visitors and maintains a registry of visitors.

TRACKING & MONITORING

COVID-19 War Room
A COVID-19 War Room is in the formulation stage using the Quantela platform. The War Room, once up and running, will collate all data and ensure all responsive measures are monitored through a single interface.

AWARENESS

Visual and Audio Communication Messaging
The administration is using signages equipped with loudspeakers to effectively communicate precautionary

measures across offices and other locations that see public footfall.

CITIZEN SUPPORT

Ensuring Safety of Office-Goers
Standard Operating Procedures (SOPs), issued by the Government of Mizoram, are being followed by the city administration. Office-goers have been requested to regulate staff attendance to ensure social distancing and part of the staff strength is mandated to work from home.

Face masks are mandatory and sanitizer dispensers have been placed at the entrance of all government buildings and offices. Furthermore, staff and visitors are screened at the entrance and a registry of visitors is strictly maintained. Government offices are also using shields between seated staff to ensure utmost safety.

Ajmer

City: **Ajmer**
State: **Rajasthan**
Population: **5,51,360 (2011 Census)**
Area: **55.76 sq.km.**
Round: **2**

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nagarnigamajmer. com/smart-city

Ajmer is one of the oldest cities of Rajasthan and the center of Ajmer District. Home to the famous Ajmer Sharif shrine, Ajmer has been selected as a heritage city for the National Heritage City Development and Augmentation Yojana (HRIDAY). The city administration moved into high gear to combat the pandemic by setting up a COVID-19 war room, deploying an app for citizens, dispensing relief care through shelters and food distribution and by partnering with hotels and other institutions to set up quarantine centers among others.

TRACKING & MONITORING

COVID-19 War Room

Ajmer Municipal Corporation (AMC) sets up a COVID-19 War Room at *Nagar Nigam* that is headed by senior administrative officials and staffed with medical and police personnel among other others. The *Abhay* Integrated Command and Control Center (ICCC) is being used by the city police and traffic department to monitor traffic and public movement via CCTVs.

DIAGNOSTICS

Quarantine Facilities
The administration is partnering with hotels and other private institutions to set up quarantine facilities in the city. The high-risk primary contacts of positive cases are being monitored in quarantine centers as per guidelines.

SANITIZATION

Use of Fire Tenders for Disinfection
The city fire force has been tapped to disinfect main roads, bus stands, bus stops, railway stations, institutions, hospital campuses, etc. Small fire tenders are being used for smaller streets. The vehicles are GPS enabled and the administration employs real-time tracking to effectively manage disinfection activities across the city.

AWARENESS & CAPACITY BUILDING

The COVID-19 War Room
The COVID-19 War Room is instrumental in the planning and implementation of various innovative strategies to create awareness among its citizenry in following COVID-19 precautionary steps issued by World Health Organization (WHO) and the Ministry of Home Affairs (MHA), Government of India.

Feedback and Information Sharing
The City Collector and Commissioner undertake regular surprise visits to review the groundwork and take out time to interact with citizens, answer queries and gather feedback.

Tapping into Public Address Systems
Awareness drives related to COVID-19 are being broadcast regularly using Public Address (PA) systems in

association with Ajmer Municipal Corporation's fire and sanitation department.

 CITIZEN SUPPORT

Food and Shelter
The homeless are being shifted to designated city shelters while cooked food and essential items are being provided to the needy in select localities. The War Room receives requests for food assistance and deploys a flying squad to assess the situation and distribute dry ration.

COVID-19 Helpline
A helpline has been established that is monitored by War Room officials. Using it citizens can reach out to request for food, disinfection, and other services.

Identification of Pilgrims
Pilgrims visiting *Dargah Sharif* Ajmer and held up in the city due to the lockdown, were identified and sent back to their hometowns after due diligence and medical checkup/screening.

Identification of Migrants and Facilitating Movement
Stranded labor of other states can register on the '*Raj COVID Info App*' or *e-mitra* website to avail of safe transportation to their destinations. The app is also used to issue e-passes for inter-state and inter-city movement both to and from the city. Passes are approved by designated city officials.

Aligarh

City: **Aligarh**
State: **Uttar Pradesh**
Population: **2,57,803 (2011 Census)**
Area: **34.98 sq.km.**
Round: **3**

smartcityaligarh. com

Aligarh, the administrative headquarters of Aligarh district, is mostly known as a university town as it is home to the famous Aligarh Muslim University. The city adopted cost-effective strategies for pandemic preparedness and focused on core infrastructure such as water and sanitation systems, along with conducting extensive sanitization drives across the city.

SANITIZATION

Aligarh Municipal Corporation (AMC) has enforced intensive sanitization using different equipment. AMC has converted all jetter machines, used for sewage cleaning, into sanitization machines. In the case of broad main roads and large institutions, sanitization is being done mechanically using jetter machines, water tankers, etc., while congested streets and parks are catered to using hand-held machines. Pesticide spraying machines (with 100-meter-long pipes) used in farms have also been modified for effective sanitization and disinfection of dense and narrow streets.

Aligarh

Intensive Sanitization Drives
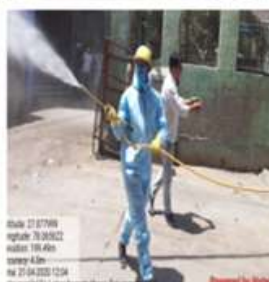
Amaravati

City: **Amaravati**
State: **Andhra Pradesh**
Population: **1,03,000 (2011 Census)**
Area: **217.23 sq.km.**
Round: **3**

assccl.ap.gov.in

Amaravati became Andhra Pradesh's capital after the bifurcation of Andhra Pradesh and Telangana and is being developed as a planned city based on the Singapore model. This city came into existence as recently as October 2015 and the Amaravati Smart & Sustainable City Corporation Ltd. (ASSCCL) is working round the clock to counter the pandemic in close collaboration with Andhra Pradesh State Disaster Management Authority (APSDMA).

TRACKING & MONITORING

In coordination with APSDMA, ASSCCL has deployed apps like the COVID Alerting & Tracking System to track the home quarantined in real-time and to monitor recent returnees to the city.

SANITIZATION

The administration is ensuring regular and 100% sanitization of the city.

AWARENESS

The public address systems across the city have been tapped to communicate key messaging. Awareness exercises are being carried out on public forums and the ASSCCL website Assccl.ap.gov.in.

CITIZEN SUPPORT

Amravati's administration is also distributing preventive homeopathy medicine to the public to curtail the spread of infection.

Amritsar

City: **Amritsar**
State: **Punjab**
Population: **9,66,862 (2011 Census)**
Area: **250 sq.km.**
Round: **2**

smartcityamritsar. com

Amritsar is an important seat of Sikh history and culture deriving its name from the *Amrit Sarovar* (pool of nectar) in which stands the Golden Temple, the most sacred of Sikh shrines. Footfalls to the city have greatly reduced during the pandemic and the city administration is ensuring citizens find help at hand through web-based solutions including a portal that allows migrants to register for train transport back to their hometowns.

 DIAGNOSIS

Amritsar Smart City Limited (ASCL) has sent up a portal *www.asrcovid19helpline.in* that serves as a one-stop for all COVID-19 related queries and reporting. The website features a doctor's interface that captures medical data on cases with influenza-like illness (ILI) and severe acute respiratory infections (SARI) that help in active tracking. Suspected cases can self-report their symptoms here on the site and can also use the portal to report cases in their locality. This information can be filled in the vernacular as well.

CITIZEN SUPPORT

The website *www.asrcovid19helpline.in* was created and launched in about 24 hours. Citizens can search for grocery, fruits & vegetable and medicine vendors who service their area, take a COVID-19 self-assessment test and access helpline numbers.

Citizens stuck abroad and wanting to come back can register on the site which is linked to the state-level database. Likewise, people, chiefly migrant laborers, seeking to go back to their home states, can also register on the portal. Trains to transport migrants were booked accordingly, based on the information received.

ASCL is focusing on collecting and disseminating information related to COVID-19 for quick analytics and swift decision making. Accordingly, the portal hosts the latest COVID-19 updates with details of infrastructure, health facilities, available human resources, and relief work.

Amritsar

Aurangabad

City: **Aurangabad**
State: **Maharashtra**
Population:
**11,75,116 (2011
Census)**
Area: **139 sq.km.**
Round: **2**

**electroinfosoft.
com/aurangab-
adsmartcity**

Aurangabad, the administrative headquarters of Aurangabad district, stands at the confluence of ancient cultural heritage and rapid modernization. A major production center of cotton textile and artistic silk fabrics Aurangabad is one of the largest urban agglomerates in the western region of India. Aurangabad city and Aurangabad municipal administration had to quickly transform and adapt to address the COVID-19 situation and did so through a mix of monitoring, surveillance, medical health infrastructure and provisioning of basic services for the needy.
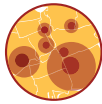
 TRACKING & MONITORING

Active Monitoring of Containment Zones

Aurangabad devised a strategy wherein a large team of senior officers was deployed across 18 containment zones in the city. These officers, from Aurangabad Municipal Corporation, District Collectorate, and Divisional Commissionerate undertook foot patrolling, monitoring and provisioning of food and essentials services.
Their efforts essentially took the entire COVID-19 care infrastructure to the streets and homes of people.

Trace, Test, Isolate Approach

Aurangabad has been using its testing resources optimally. The constitution of a special task force, with members from the Police Administration (Cyber Cell), Municipal Administration and Aurangabad Smart City Development Corporation Ltd. (ASCDCL), worked in sync with the larger healthcare administration team of Aurangabad.

A spike in cases was registered between 27 April to 1 May and by then contact tracing had already ensured that the infected were in institutional quarantine. Field knowledge combined with mobile tower data helped trace primary contacts and identify potential hotspots that could be quickly contained through strong perimeter control. The data captured at the backend indicated that most COVID-19 carriers were young and asymptomatic and took the virus home infecting vulnerable family members. This knowledge was critical in understanding the spread and taking measures to mitigate it.

Special Task Force Outcome

(Growth in Covid-19 Case Detection)
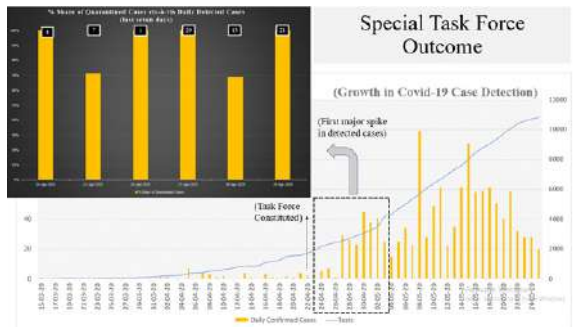
Combination of Data Analytics & Locally Embedded Knowledge: Mobile Tower Data

Combination of Data Analytics & Locally Embedded Knowledge: On-Field Interviews

Legend:
- 🔴🔴 Positive Cases
- • High Risk Contact
- • Low Risk Contact
- 📍 Places visited
- — Contact/Visit
- 🔵 Nearest CCC
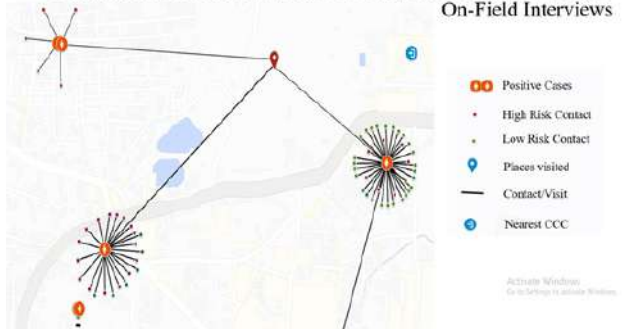
Young Asymptomatic Carriers Taking the Infection Home to the Old & Vulnerable

Age-Wise Split of Confirmed Cases
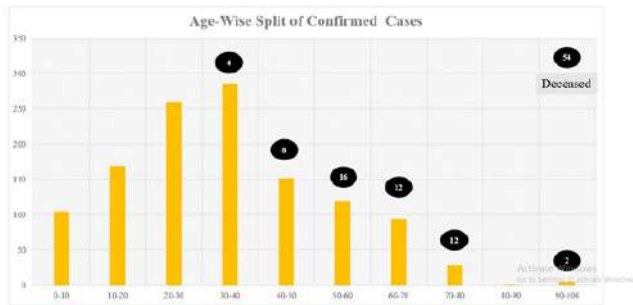
DIAGNOSTICS

The administration planned for 5,000 isolation beds at a time when the city had zero active cases and worked to activate these facilities as the number of cases grew. Out of these, 300 critical care beds have been earmarked for extreme cases. The city has worked to keep a solid reserve capacity and will roll out more facilities within the existing Dedicated Covid Health Centers (DCHCs) in collaboration with MIDC, thanks to the support of the Maharashtra government.

Planning for Waves of Pandemic: Building the Care Infrastructure

Covid Care Centres' Capacity (Municipal Administration)

More than 1,873 of Activated Isolation Bed Capacity at Covid Care Centres.
More than 5,000 of Un-activated capacity
Some CCCs may be converted into Dedicated Covid Health Centres (DCHCs)

3,343 Activated Isolation Beds

Oxygen/Critical Care Beds		
Type	Facility	Beds
DCHC1	Civil Hospital Chikalthana	220
DCHC2	Asian City Care Hospital	100
DCHC3	MGM Hospital	500
DCHC4	Dhoot Hospital	200
DCH	Government Medical College	450
	Total	1470

CITIZEN SUPPORT

Three Lines of Frontline Staff

The human resource planning for all field activities is being done in a manner such as not to exhaust the teams. All government employees, above 55 of age, have been asked to stay at home and avail paid leave. The administration created three levels of teams. When the first line team takes a break, the second line team gets activated, and subsequently a third line team swings into action. All teams are trained and work in this staggered manner to ensure they get their rest and are ready to be deployed, together, if the need arises.

Covid-19 Special Task Force: Aurangabad City

Aurangabad Police (Cyber Cell)
Smart City SPV Team
Municipal Administration & Health Team

Bareilly

City: **Bareilly**
State: **Uttar Pradesh**
Population: **8,98,167
(2011 Census)**
Area: **300 sq.km.**
Round: **4**

bareillysmartcity.in

Bareilly is a city in northern Uttar Pradesh. A Commissionery district it falls under the geographical region of Rohilkhand. The city is a center of furniture manufacturing and trades in cotton, cereal, and sugar. During the crisis, the city ensured the needy received food and citizens were home-delivered essentials.

CITIZEN SUPPORT

Community Kitchen for the Needy

The Municipal Corporation of Bareilly established a community kitchen with funds raised by officials and employees of the corporation and through donors. The kitchen is being operated in collaboration with Municipal Corporation, Bareilly Contractors Association and Radheshyam Enclave Welfare Society. Food packets, sourced from the kitchen, are distributed at key locations across the city such as bus stands, the city railway station, shelter homes, etc. Donations in cash and kind are also facilitated while workers who prepare the food receive transportation assistance. The meals, hygiene standards and menu are supervised by the municipal cooperation's contractors who manage the Police Lines kitchen. The kitchen is sanitized before and after food preparation and

special care is taken with workers wearing gloves, caps, aprons, etc. From time to time, the quality of food is also tested by the Food Safety Department.

Home Delivery of Essentials

The Municipal Corporation Bareilly website displayed a list of vegetable and grocery vendors who offered home delivery during the lockdown. Citizens could locate vendors by ward and call to place their order.

नगर निगम क्षेत्र में आने वाले किराना व सब्जी विक्रेताओं की सूची।

| वार्ड नं0 | 3 |
| वार्ड का नाम | छोटी बिहार |

क्र0सं0	किराना की दुकान	मोहल्ला	मो0नं0	सब्जी विक्रेताओं के नाम	मो0नं0
1	अनुपम दीक्षित	छोटी बिहार		चमकन दास	9878046948
2	गुप्ता प्रोवीजन स्टोर	छोटी बिहार	9784402002	दीपक	7300778419
3	कजपाई किराना स्टोर	छोटी बिहार	7905780610	मो0 हनीफ	908802742
4	साहू प्रोवीजन स्टोर	छोटी बिहार	7905312335	अहमद चार खां	8650449163
5	दीपक प्रोवीजन स्टोर	छोटी बिहार	9319003337	पुर्षेन्द्र प्रजापति	7253901301

Bareilly

Belgaum

City: **Belgaum**
State: **Karnataka**
Population: **4,88,157 (2011 Census)**
Area: **94 sq.km.**
Round: **1**

bsck.in

Belgaum or Belagavi, earlier known as *Venugrama* or bamboo village, is located along the Western Ghats. The administrative headquarters of the Belgaum division and Belgaum district, Belagavi Smart City Limited (BSCL) has leveraged a plethora of citizen engagement tools, controlled and monitored from the Integrated Command and Control Centre (ICCC), such as a city portal, video conferencing, citizen apps, Variable Message signs (VMS) messaging, Public Address Systems (PASs) and SMS push notifications to disseminate COVID-19 related information and to raise awareness.
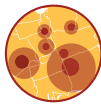
TRACKING & MONITORING

Belagavi Smart City Limited (BSCL) has made its Integrated Command and Control Centre (ICCC) the technological backbone of its fight against the virus. All relevant, verified information is displayed on the ICCC dashboard (as a map-view) for better emergency response and control.

Government authorities can view the heat map of quarantined Individuals, allocate resources basis quarantined cases density data and generate daily report and statistics. Police officers get on-the-go visibility

into the quarantined and can take appropriate action if quarantined individuals breach the location radius thresholds. Medical authorities operating from the ICCC use predictive analytics to estimate the number of cases for improved planning and resource deployment. Citizens can also access the platform to view live heat maps of affected areas, apply for a travel pass or raise a request for essential goods in their area.

Video Monitoring
BSCL implemented strict enforcement of the nation-wide lockdown by monitoring on ground situation using the city's network of surveillance cameras. Health officials' mobile devices have also been equipped with a video push feature for remote surveillance that allows them to take videos/images that are directly sent to the ICCC for necessary action.

Tracking the Quarantined
Using mobile number tracking and app tracking solutions, the administration can track the movement of quarantined cases and raise an alert/notification in case of any breach. This movement trail along with the current location is visible on the ICCC dashboard. Once the alert is raised, an automated voice call, SMS/text message or email can be sent to the quarantined case. After a certain duration, and radius of movement, authorities step in to intervene. Field officers are armed with mobile apps for contact tracing and patient reporting with a call operator feature integrated for immediate assistance. This app can also be used for home assessment of quarantined citizens.

DIAGNOSTICS

If any citizen is assessed to be at risk, they immediately receive a digital consultation with a doctor over the phone/video call and are guided to the nearest testing centre if required.

AWARENESS & CAPACITY BUILDING —

BSCL is leveraging its IT infrastructure and technology expertise to raise awareness. The official portal, a citizen app, Variable Message signs (VMS) messaging, Public Address Systems (PASs) and SMS push notifications are being used to disseminate information and create awareness among citizens. Awareness messages are being broadcasted through PAS installed on intelligent poles while COVID-19 related messaging (in the form of text and video) feature on digital display boards installed on intelligent poles and at bus shelters.

CITIZEN SUPPORT

Mobile App
BSCL has launched a mobile app *AyushBelagavi* that is available for download on Google Play store. Citizens can use this app to get information on containment zones, quarantine centres, fever clinics, essential commodities and medical stores in their vicinity, protection and prevention guidelines and a self-assessment test, among others.

Helpline for Citizens
A helpline has been set up for health queries, emergencies and for directing citizens to testing and quarantine centres. Accessible over phone and mobile apps, the service is in the process of being extended to an automated chat bot.

Bengaluru

City: **Bengaluru**
State: **Karnataka**
Population:
84,43,675 (2011 Census)
Area: **709 sq.km.**
Round: **3**

Bengaluru is India's fifth largest city and one of Asia's fastest growing metropolises. Labelled the IT Capital of India or India's Silicon Valley, the city tapped its technological expertise to combat the pandemic. Bengaluru made use of real-time data to track and monitor positive cases and the home quarantined and also displayed its humanitarian side by delivering free food to those most affected by the lockdown — migrants and daily laborers.
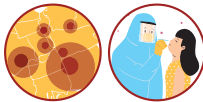
TRACKING, MONITORING & DIAGNOSTICS

COVID-19 War Room

To effectively leverage the city's technology solutions, Bengaluru's Bruhat Bengaluru *Mahanagara Palike* (BBMP), along with Bengaluru Smart City and support from technology partners, set up a COVID-19 War Room. The War Room, assembled in 24 hours with help from Infosys and Microsoft engineers, focuses on using real-time data to track citizens who test positive, those under home quarantine, as well as primary and secondary contacts of all positive cases. Geographic Information System (GIS) data is used to map COVID-19 case and by early April Bengaluru became the first Indian city to put out data on new COVID-19 cases daily.

The War Room runs continuously, and uses dashboards to integrate data from police, hospitals, and the health department, among others. The strategy employed creates risk profiles of neighborhoods, monitors distribution of resources to the areas that need it the most, and monitors economic activity and movement in low-risk zones.

Movement in containment zones and home quarantine is tracked through mobility data from phones, GPS and social media while Wadhwani AI, a non-profit, was involved in developing "predictive models," to determine how to open the city's economy post lockdown. GPS systems are also used to track the movement of healthcare workers and service vehicles. Citizens under quarantine receive regular calls from the War Room over a two-week period to check for COVID-19 symptoms.

In addition, the War Room also tracks and manages contact tracing and building awareness around COVID-19. The BBMP War Room case study has been virtually demonstrated before a committee to serve as a model for other cities to replicate.

War Room Decision Support System

KEY QUADRANTS	STRATEGIES	APPROPRIATE TOOLS	MAJOR OUTCOMES
Information	Various Datasets and analysis	Dashboard	Situational analysis
Communication	Data Integration	Webpage	City to city timelines
Management	Data Visualization	GIS Mapping	Pace of progression
Integration	Source Reporting	Applications Sahaaya Sethuve, BBMP IQMS	Real-time Information
	Online Registration	Google Forms	Predictive modelling
	Simulation	Tele-Consultation	Strategic planning and decision making

Bengaluru

War Room

Decision support system - information

IEC sharing through all sources & media

Decision support system - management

Bengaluru
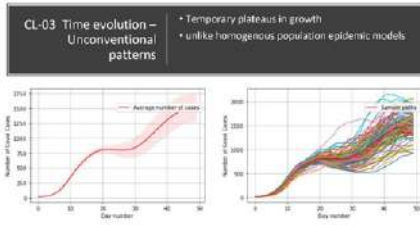
Predictive analysis & modelling

Bhagalpur

City: **Bhagalpur**
State: **Bihar**
Population: **3,98,139 (2011 Census)**
Area: **342 sq.km.**
Round: **2**

Bhagalpur is the third largest city in Bihar and the district headquarters serving multiple functions. The Vikramshila Dolphin Sanctuary, near the town, is the only sanctuary in Asia dedicated to the conservation of Gangetic Dolphins. Information Education and Communication (IEC) and technology for spreading awareness has been the cornerstone of Bhagalpur Smart City Limited's (BSCL) support to the city in its fight against COVID-19. Other initiatives include the establishment of shelters for vulnerable population and distribution of protective gear and equipment such as masks, gloves, disinfection tunnel, etc.

SANITIZATION

To ensure disinfection was scaled up, especially at vulnerable public spaces, BSCL manufactured and installed a disinfection tunnel at Jawaharlal Nehru Medical College and Hospital to sanitize all health personnel, incoming patients and visitors

AWARENESS

BSCL has effectively leveraged the power of FM radio to reach out to the population and to ensure right messages are disseminated. In addition, outreach activities are continuously being conducted through public address system equipped e-rickshaws and social media campaigns on Facebook, YouTube, Twitter, etc.

CITIZEN SUPPORT

Citizen Mobile App

BSCL supported the launch of '*Mera* Bhagalpur' mobile app to act as a single point for verified information and to engage people and keep their moral high. The app features daily updates on COVID 19, dos and don'ts, important announcements, list of doctors, emergency number, volunteer listing and a BSCL channel.

Lockdown *Ke Panney*

Lockdown *Ke Panney* is an innovative IEC initiative that was undertaken by BSCL during the lockdown. A storytelling series, the show captured the various experiences of different citizens during the lockdown period. Every story had a positive message which helped to keep the morale high and encouraged listeners to introspect and explore their hidden talents.

Food and Shelter for the Needy

BSCL supported the creation and running of four food distribution centers while the Municipal Corporation Bhagalpur established 10 shelters for the homeless, and ensured inmates received free food and lodging.

Sanitizers & Safety Gear

Given the crisis of lack of sanitizers in the market, BSCL set up the production of hand sanitizer and got the same distributed to government departments, frontline staff,

etc. The Bhagalpur Municipal Corporation and BSCL also mobilized labour and machinery to tackle the issue of dearth of gloves and masks and ensured distribution of these to government staff, Corona warriors and other residents of the city.
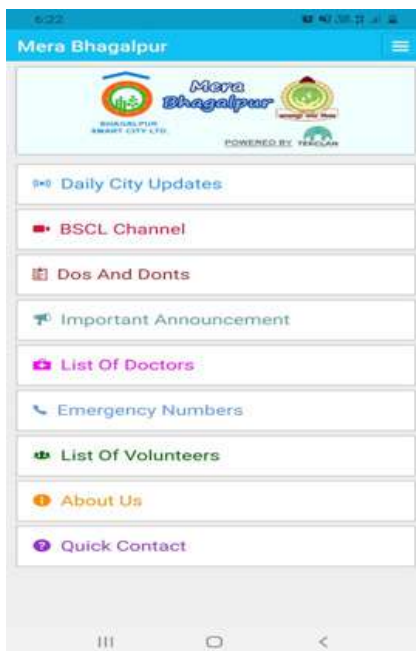
Bhopal

Bhopal is the capital of Madhya Pradesh and administrative headquarter for Bhopal district and Bhopal division. One of the greenest cities in India, Bhopal is known as the 'City of Lakes' on account of its various natural and artificial lakes. Bhopal Smart City Development Corporation Limited (BSCDCL) has been at the forefront in the fight against the pandemic. From converting its existing Integrated Command and Control Centre (ICCC) to a State Level and City Level Combat Center to leveraging its incubation cell to launch innovations, BSCDCL is using a mix of technology and effective management strategies in tackling the virus.

TRACKING & MONITORING

COVID-19 Data Analysis

Bhopal Smart City Development Corporation Limited (BSCDCL) is using its Integrated Command and Control Center (ICCC) to develop a dashboard for all COVID-19 data analysis. The platform captures district data covering 19 zones and 85 wards. KPIs reflected on the platform include ward-wise/*thana*-wise positive cases, GIS mapping of containment zones, primary contact conversion data, hospital facility utilization, patient count by category (health, police, sanitation, etc.), daily tally of admitted, home quarantined, recovered, deceased and a trend

analysis that can be based on different parameters such as age, ward, gender, etc. This data is analyzed at periodic intervals and reports and recommendations are generated and conveyed to the City Action Team. Through these analytics, BSCDCL takes preemptive action and empowers those out in the field.

ICCC as the State Resource Center

The ICCC in Bhopal is functioning as the 'State Resource Center' and addresses all medical, non-medical and other emergency concerns of citizens and spearheads issue of e-transit passes, telemedicine facilities, donation aggregation, and media updates. In addition, it also serves as a repository of best practice, advisories, data analytics and standard operating procedures along with ensuring the smooth coordination between rapid action teams and the media. Essential services vehicles are also tracked through the ICCC as are surveillance cameras across the city that monitor traffic density and pedestrian movement.

Drone Aerial Surveillance

Vizzbee (a Bhopal Incubation startup incubatee) has developed a solution that allows enforcement agencies to remotely monitor public places using drones. First responders can access a live video stream for aerial monitoring and situational awareness.

App-Based Contact Tracing

A mobile app and portal developed for 'Advanced Contact Tracing' is being used by the Gandhi Medical College in the city. A survey app has also been developed and is being used by Accredited Social Health Activist (ASHA) workers/*Anganwadi* workers for door-to-door surveys to determine high-risk and low-risk primary contacts of positive cases.

CoronaTraces.com Map

The *CoronaTraces.com* map is generated with the location history of confirmed cases/suspects who have travelled to high-risk COVID-19 affected countries. Launched on 22 March 2020, the map can be accessed anywhere in the world and offers visibility into the current situation in Bhopal.

Active Positive Cases vs Cured/Deceased Chart
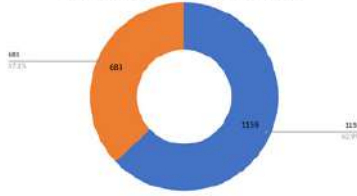
Date wise Active Positive Case Chart
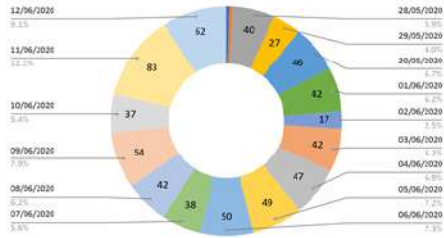
Thana Wise Active Positive Patients
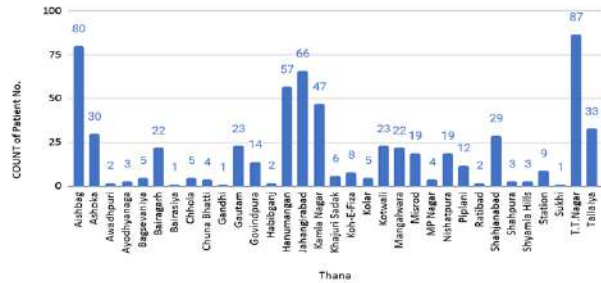
Cured vs Active Cases Thana Wise
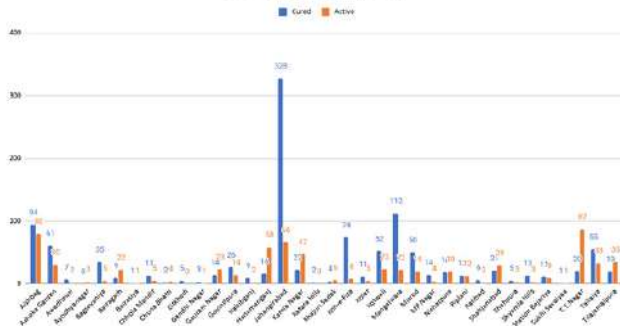
DIAGNOSIS

24X7 Tele-Counselling and Video Counselling
Different helplines and WhatsApp and video calling numbers have been integrated into a single consolidated ICCC 24X7 helpdesk. The operators at the ICCC are trained to attend all calls while medical officers stationed at the ICCC cater to calls of a medical/health nature via tele-counselling and video counseling.

SANITIZATION

Drones are being used for disinfection across the city.

AWARENESS & CAPACITY BUILDING

Influencer for Good
'Influencer for Good' is an initiative by Finchfly (a Bhopal Incubation startup incubatee) to tackle the spread of fake news and to ensure citizens receive verified and accurate information. Verified information dissemination is also happening through Visual Media Displays (VMDs), digital billboards and the city's Public Addressing System (PAS).

CITIZEN SUPPORT

Bhopal Innovates: Non-Contact Dispensers to Food Tracking
Several incubates, driven by Bhopal Incubation, are innovating to support the government in its fight against COVID-19. SNA Sistec has developed a non-contact 'SNA Dispenser' for citizens. Compact and portable, with a filling capacity of 500ml, the device detects hand movement at the base to dispense sanitizer/soap. The *Kabadiwala* has

designed an application to track food distribution and deployment of relief vehicles across Bhopal.

Bhubaneswar

City: **Bhubaneswar**
State: **Odisha**
Population: **8,37,737 (2011 Census)**
Area: **422 sq.km.**
Round: **1**

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smartcitybhu-baneswar.gov.in

Bhubaneswar is the largest city of Odisha state. A robust IT industry, premier higher education institutes and institutions of advanced medical care, coupled with the boom in the metals and metal processing industries, has made Bhubaneswar one of the fastest developing cities of India. The Bhubaneswar Smart City Limited (BSCL) has tapped its technological expertise to roll out various apps such as the TickMe Mobile App for citizen services and the COVID Odisha app to monitor the home quarantined. Sanitization by drones, regular disinfection, door-to-door garbage collection and social media outreach campaigns are other methods being employed to ensure hygiene and awareness.

TRACKING & MONITORING

The COVID Odisha application is being used to monitor the home quarantined. The app is designed to alert authorities if there are violations or if there is a critical health situation so that the necessary steps can be taken. The application, which includes a self-assessment test, is hosted on two platforms – a mobile application that can be downloaded by citizens and as a portal which offers municipal authorities monitoring rights and access to data.
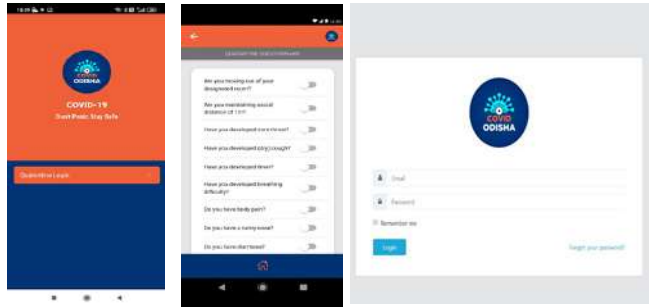
Bhubaneswar

SANITIZATION

Bhubaneswar Municipal Corporation (BMC) has been using drones to spray sodium hypochlorite solution to sanitize and disinfect the city quickly and effectively. Bhubaneswar Smart City Limited (BSCL) monitors the activity that is regularly carried out in different parts of the city. Sanitization is done at night as is mechanical sweeping while in the morning, road sweeping, door-to-door garbage collection, drain desilting etc. continues to be undertaken by BMC to keep the city clean and green.

 CITIZEN SUPPORT

TickMe App: The Neighborhood Store Aggregator

TickMe is an innovative app promoted by BMC and BSCL to prevent crowding and ensure social distancing. Through this app, citizens can place online orders for groceries, medicines, and other essentials from stores in their neighborhood and choose a convenient pick-up time. Upon confirmation from the store, the citizen can go across for their order.

24X7 Toll-Free Helpline

Bhubaneswar Helpline 1929 has been enabled to offer citizens guidance, support and information related to essential services, medicines, communication, transport facilities and COVID-19 related issues. The helpline is being managed by BSCL as well as the health department/ National Urban Health Mission (NUHM). BMC has tied up with local vendors and pharmacies and through the helpline ensures the delivery of essential items in containment zones. The helpline also addresses queries and guides people on the various provisions made by the state for out-of-station laborers arriving from different states.

The helpline links service and facilities and is the common interface between different departments such as the Bhubaneswar Municipality, the police, National Urban Health Mission (NUHM) and Housing and Urban Development (H&UD) among others.

The city has also revamped its existing grievance redressal app and integrated it with its GIS map (Bhubaneswar.me) for easy tracking and closure.

Citizen Engagement: Keeping Spirits Up

The hashtag #MyCityBhubaneswar on Twitter has become a popular trend with citizens during the lockdown. Various online activities and games such as #PicturePuzzle, #GuessThePark, #SpotIs etc. has helped relieve lockdown stress and kept citizens engaged and entertained during trying times.

Biharsharif

City: **Biharsharif**
State: **Haryana**
Population: **2,97,268 (2011 Census)**
Area: **23.50 sq.km.**
Round: **4**

Biharsharif is the headquarters of Nalanda district and the fifth-largest sub-metropolitan area in Bihar. Biharsharif Smart City Limited (BSCL) centered its strategy on monitoring COVID-19 positive individuals and tracking their movements. BSCL also focused on raising awareness in hotspots and containment zones as well as at key locations across the city.

TRACKING & MONITORING

BSCL tapped technology to monitor COVID-19 positive individuals through Google Map technology and ensured the quarantined stayed within their confinement radius. This live-tracker can be accessed by the administration as well as citizens. During initial stages of the nation-wide lockdown BSCL prepped their comprehensive content strategy by creating a map that showed demarcated containment zones—both Area-Based Development (ABD) and pan-city.

AWARENESS

BSCL in conjunction with the local police have been actively raising awareness about use of face masks and the importance of hand hygiene via speaker equipped vans and the city's Public Address System (PAS).

Bilaspur

City: **Bilaspur**
State: **Chhattisgarh**
Population:
3,30,106 (2011 Census)
Area: **227 sq.km.**
Round: **3**

smartcitybsp.com

Bilaspur is the administrative headquarter for both, Bilaspur district and Bilaspur division. The city is famous for its aromatic rice (Doobraj), handloom silk saris and flora and fauna. Bilaspur Smart City Ltd. (BSCL) and Bilaspur municipality have undertaken several measures during the pandemic, such as catering to railway travelers stuck due to the lockdown, ward-wise sanitization, biomedical waste disposal and toll-free helplines for citizen assistance.

SANITIZATION & WASTE COLLECTION

Regular Disinfection
A ward-wise sanitization plan has been drawn up and all public places, public transport, auto rickshaws and toilets are being sanitized on a regular basis.

Waste Collection
Door-to-door waste collection services continue to be carried out with utmost care. All positive cases' homes carry special stickers and their waste is collected and disposed by a separate agency that specializes in handling bio medical waste.

AWARENESS

Social Distancing
Stickers have been placed on the ground, outside shops, spaced 1.5 meters apart, and people are only served if they maintain social distancing—i.e. by standing on the sticker.

Social Media as a Weapon
BSCL is channeling information, dos and don'ts, educational videos, and other key messaging through official social media channels to ensure maximum reach.

CITIZEN SUPPORT

Accommodating In-transit Passengers during Lockdown
Since Bilaspur is the zonal head of South-Eastern Central Railways many passengers were stuck in between their journey during the lockdown. To minimize possible spread of the virus, all passengers were screened and shifted to Raen Basera with the municipality bearing food and stay expenses.

Free Home Delivery of Goods and Medicines
Anyone in need of medicines or basic provisions can place a toll-free call and get their needs addressed on a cash-on-delivery system.

Bilaspur

Chandigarh

City: **Chandigarh**
State: **Punjab**
Population: **9,61,587 (2011 Census)**
Area: **114 sq.km.**
Round: **2**

chandigarhsmart-city.in

Chandigarh, the dream city of India's first Prime Minister, Shri Jawahar Lal Nehru, was planned by the famous French architect Le Corbusier. Chandigarh rose to tackle COVID-19 as soon as the first COVID-19 positive case was reported in the city. A mobile application (CVD Tracker App) to monitor the quarantined, arrangements for delivery of essential items, sanitization by drones, waste management and tracking of delivery vehicles and vendors were some of the initiatives rolled out on an immediate basis.

TRACKING & MONITORING

As soon as the first COVID positive case was reported in Chandigarh, the city started quarantining all contacts. The quarantined citizens are monitored through the CVD Tracker App and special provisions are made to ensure quarantined families receive food and other essentials.

The Municipal Corporation of Chandigarh (MCC) uses a mobile app for real-time tracking of delivery vehicles to ensure effective utilization of resources. This app also enables better planning of trips and offers real-time information to the driver about emergency needs. Integration with the MCC Portal allows citizens to view the location of delivery vehicles.

SANITIZATION & WASTE MANAGEMENT

Waste Collection

Quarantined households are divided into four zones and supervised by one supervisor each. All vehicle drivers and helpers, deputed for collection and transportation of waste from quarantined households, are equipped with PPE kits. The drivers also wear GPS enabled smart watches powered by the E-Human Resource Tracking Project (E-HRTS). The movement of the vehicles is tracked through these smart watches and displayed on a dashboard to ensure no quarantined household gets left out.

Sanitization

Public places are being sanitized regularly. Sanitization of dense areas such as slums and *mandis* is being carried out using drones.

CITIZEN SUPPORT

Services for the Urban Poor

Migrant worker shelters have been set up in village Maloya where pre-cooked food is being served to the workers. The Chandigarh city government has tied up with civil society groups, the private sector, restaurants and various other donors for distribution of food, ration and other essentials to the needy — through the National Urban Livelihoods Mission (NULM) and vendor cell network. Personal hygiene kits (masks, sanitizers, soap and disinfectants), ready-to-eat oatmeal, pre-cooked food, 14 days dry ration and sanitary napkins are some of the items being made available.

Food and Essentials

The Municipal Corporation of Chandigarh (MCC) uses Google Forms to identify the requirement of shopkeepers and making the same available to distributors. The Chandigarh administration also tied up with various app-

based vendors and stores across categories and circulated the numbers in wider public interest. The details of home delivery vendors, for each sector, was made available through social media channels.

MCC in collaboration with Chandigarh Transport Undertaking also delivers fruits and vegetables at the neighborhood level on a regular basis and the service is utilized across the city by more than 1.5 lakh households.

Fruit & vegetables delivered to citizens

Chennai

City: **Chennai**
State: **Tamil Nadu**
Population:
46,46,000 (2011 Census)
Area: **426 sq.km.**
Round: **1**

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cscl.co.in

Chennai, once known as Madras, is a major commercial, cultural, economic, and educational hub that is often seen as the 'Cultural Capital of South India'. In the wake of the pandemic, the Greater Chennai Corporation (GCC) established a bouquet of integrated services consisting of contact tracing, quarantine monitoring, symptomatic assessment, identifying suspected cases and offering psycho-social support through tele-counselling among others.

TRACKING & MONITORING

Greater Chennai Corporation (GCC) set up a Tele-Counselling Center on 26th March 2020 that works in three shifts round the clock. The Center was initially set up to track the health status of international travelers and others in self-quarantine. It has since expanded to contact tracing of patients, quarantine monitoring, symptomatic assessment and identifying suspected cases besides becoming the common link to various services. The Center is staffed with medical officers, social workers, psychologists and counsellors associated with Loyola College Chennai and further supported by 200+ volunteers working from home.

DIAGNOSTICS

Telemedicine
An app called 'GCC Vidmed' gives direct access to doctors 24X7 via video calls or telemedicine.

Psycho-Social Support
The GCC Center provides a variety of services based on WHO and IFRC guidelines and handles both incoming and outgoing distress calls. When a call is received, basic details are captured, and the citizen is transferred to a counsellor or a medical officer basis their needs. If there is a suspicion of symptoms the patient is referred for examination, testing and follow-up.

Contact Tracing
The medical team ensures the hospitalization of COVID-19 positive patients during the contact tracing process. Contacts are traced by the memory recall method for a period of 28 days to identify the primary case, index case and the source of infection. The contacts with high-risk levels and with influenza-like illnesses (ILI) and severe acute respiratory infections (SARI) symptoms are referred to the Rapid Response Team (RRT) for further action.

Tracing Unlinked Cases
This is a unique set of persons who have tested positive but do not know how they got infected. Doctors and volunteers work together to find the missing link to these unlinked cases.

CAPACITY BUILDING

The Center provides contact tracing training and follow up call trainings to all associated personnel including volunteers. Trainings are also conducted for police officials and sanitary officers and inspectors.

CITIZEN SUPPORT

The GCC Center now acts as a common platform for medical, emergency services, social work, psychology, engineering, and public health officials to ensure quick coordination. The total time taken to respond to a person who needs support is not more than 6 hours on an average. If calls are received, that indicate a need for food or medicinal support, the same is communicated to the zonal officers immediately to ensure speedy delivery.

Coimbatore

City: **Coimbatore**
State: **Tamil Nadu**
Population:
10,50,721 (2011 Census)
Area: **246.8 sq.km.**
Round: **1**

ccmc.gov.in

Coimbatore is one of the most industrialized cities of Tamil Nadu and is popularly known as the Manchester of South India on account of its booming textile industry. Coimbatore City Municipal Corporation (CCMC), in its fight against the pandemic, is harnessing Information and Communications Technology (ICT) to effectively monitor and manage operations. A range of people-centric measures were also undertaken such as door-to-door fever surveys, free medical aid to vital sanitary workers, free food distribution to the needy and more.

 TRACKING & MONITORING ──────────

Using ICT to fight COVID-19

CCMC has tapped ICT to monitor and manage the on ground COVID-19 situation in the city. A web-based app has been deployed to track and alert while door-to-door surveys and testing is being carried out. All data is captured at the backend and daily updates are made to the state government by preparing and uploading the day's report on the state government website.

SANITIZATION

Biowaste Management

As part of the safety measures being employed, the administration has set up a medical waste-disposal infrastructure and caution is being exercised in disposing/segregating medical waste. With the help of private organizations, medical waste from hospitals, health centers and containment zones is being safely disposed.

DIAGNOSTICS

Building Immunity

The Government of Tamil Nadu has recommended the Siddha certified *kasayam* (Herbal Ginger syrup) for boosting immunity and CCMC ensured *kasayam* was distributed to public.

Sanitary Worker's Health Management

Td vaccination has been given to all sanitary workers as a preventive measure and workers are medically screened as well. All data is captured and tracked with the administration checking in on staff and ensuring their well-being. Sanitary workers also receive free medicine such as Vitamin C pills and Zinc tablets to boost their immunity.

AWARENESS

Education and Awareness Initiatives

CCMC is ensuring social distancing is ingrained into the minds of the people via social media. CCMC communicates the latest information and raises awareness through television and the internet. The tally of COVID-19 positive is also public knowledge as it is shared through official social media channels.

CITIZEN SUPPORT

Supply of Essentials
During the lockdown, basic requirements of citizens were met through delivery of staple items such as vegetables, groceries, and medicines. More than 2,270 mobile vegetable vehicles were deployed across the city to sell produce bags at the very nominal price of ₹100 per bag.

Food for All
Free food packets were distributed to stranded people from outside the state as well as those stuck in different districts while the *Amma Unavagam* restaurant in CCMC supplied free/subsidized food to the needy. Furthermore, CCMC also collaborated with NGO 'No Food Waste' to support the emergency food response for migrant workers, daily wagers, and the homeless people for the duration of the extended lockdown.

Dry Ration Family Resource Kit Distribution
The Emergency Food Response volunteers conducted a survey to identify eligible, needy communities, i.e., people who have the infrastructure to cook but could not afford to purchase raw materials. The ration kits, donated by Reliance Foundation, Zomato and SEEDS India, in association with NGO No Food Waste cost about ₹1,000 each and consisted of 10kg rice, 5 kg wheat, 2kg dal , 1 liter of oil, 1kg sugar, 1kg salt and 250gm *masala* powder.

Hygiene Kit Distribution
The survey also identified needy communities lacking basic hygiene facilities and provisions were made to distribute hygiene kits and immunity boosting *Kabasura Kudineer* packets. The hygiene kits were also given to the destitute and tribal communities.

Each hygiene kit (costing ₹500) consists of a 100 ml handwash, 4 soap bars, 1 towel, 2-liter disinfectant, 4 masks, a packet of sanitary napkins and 1kg detergent. The Hygiene kits were donated by SEEDS India in collaboration with No Food Waste.

Coimbatore

Dahod

City: **Dahod**
State: **Gujarat**
Population: **1,30,503 (2011 Census)**
Area: **14 sq.km.**
Round: **3**

Dahod serves as the district headquarters for Dahod district and is in proximity to the Delhi Mumbai Industrial Corridor (DMIC). To track and monitor the ongoing COVID-19 situation, Dahod Smart City Development Limited (DSCL) deployed a dashboard with data analytics integration and channelized important guidelines through a single forum to ensure authentic information reaches citizens.

TRACKING & MONITORING

DSCL took immediate actions to curb the spread, launching a single platform connect between citizens and the administration through the Smart City infrastructure of the Integrated Command and Control Center (ICCC) and extending it to include a COVID-19 Dashboard. The dashboard was made live within a day to display all crucial information such as the number of cases, hotspots, government guidelines, etc.

The dashboard offers DSCL a real-time bird's eye view of hot spots as well as quarantine, buffer and containment zones, helping the administration in strategizing their approach. This single updated source of information, which can be accessed on mobile, helps

the administration ensure all affected areas are medically well-served. Identifying hotspot areas and new cases also augments dashboard contact tracing for effective containment of the spread.

AWARENESS & CAPACITY BUILDING –

The presence of a COVID-19 Dashboard was communicated to citizens through visual media displays across the city and citizen were asked to regularly check the portal for verified updates.

CITIZEN SUPPORT

Citizens benefitted from positive messages, right guidelines, emergency contact numbers and accurate COVID-19 data. The platform also helped in curbing fake news and reassured citizens that they were receiving reliable information from apex authorities. This dashboard is updated daily, and vital information is shared between all stakeholders.

Davanagere

City: **Davanagere**
State: **Karnataka**
Population: **4,35,128 (2011 Census)**
Area: **77 sq.km.**
Round: **1**

davanageresmartci-
ty.mrc.gov.in

Davanagere lies at the center of the southern state of Karnataka earning it the moniker "Heart of Karnataka". Once known for its numerous cotton mills, Davanagere is today known for its rich culinary tradition that encompass the entire length and breadth of Karnataka.

Davanagere Smart City Limited (DSCL) brought forth a series of Information and Communication Technology (ICT) interventions to monitor and contain the spread of COVID-19—ranging from educating the citizens through digital display boards and the Public Address System (PAS) to CCTV monitoring, Intelligent Transport System (ITS) integrated ambulances and a COVID-19 tracker application.

TRACKING & MONITORING

Mapping for Effective Management
Availability of real-time information layered on a geographical map played a pivotal role in appropriate decision making. These real time geographically accurate reports are shared with all departments and ensure better coordination with the Central and local government bodies (such as municipal corporation, municipal council, and *panchayats*).

CCTV Surveillance

The city police are keeping an eye on vehicular movement and gatherings of people at sensitive locations such as containment zones, by monitoring the city's network of Closed-Circuit Television Cameras (CCTVs) from DSCL's Smart Command and Control Center (SCCC).

ITS enabled Government Ambulances

An Intelligent Transport System (ITS) is being used to track and monitor all government ambulances. GPS devices installed in the ambulance and integrated with the ITS web portal ensures effective monitoring and quick deployment. At any point, officials at the SCCC have visibility into the driver's location, vehicle number and emergency contact details and the same has also been made available to the health department.

Tracking through GPS and Bluetooth

Patients showing symptoms, quarantined citizens and asymptomatic foreign travelers are tracked using GPS via the COVID-19 tracker app. In addition, the administration employed Bluetooth to trace primary contacts. Bluetooth enabled phones record the numbers of all other Bluetooth enabled phones that come within a specific radius thus eliminating the dependency on a COVID-19 patient's recall of close contacts. Singapore has effectively implemented this in their Trace Together application. The COVID-19 tracker app also monitors health of COVID-19 positive individuals to determine if the quarantine needs to be removed or if hospitalization is required.
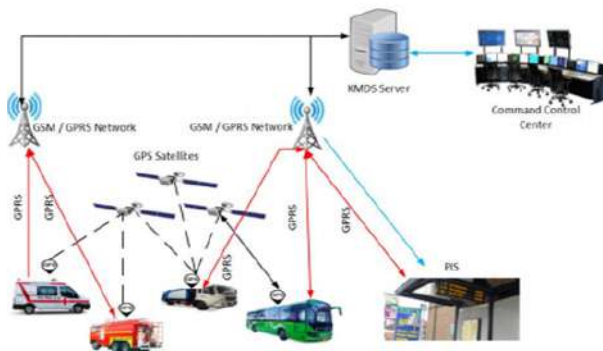
DIAGNOSTICS

The city administration periodically checks on the quarantined and notes their health condition. Collected data is then processed and the next steps such as a test, or other medical advice is issued.

AWARENESS

Digital Display Boards
The SCCC is monitoring all digital display boards across the city through a Cloud software. The digital display boards have been programmed to raise awareness by

displaying key information. DSCL is using slides provided by the Health Department along with displaying the city's COVID-19 emergency helpline number.

Public Address System
DSCL is using its Public Addressing System (PAS) to broadcast vital information and to raise awareness. Monitored by the SCCC, police personnel also use the system to issue alerts and warnings related to overcrowding, social distancing, etc.
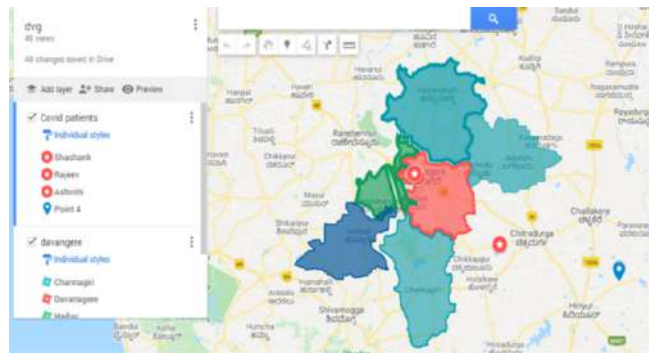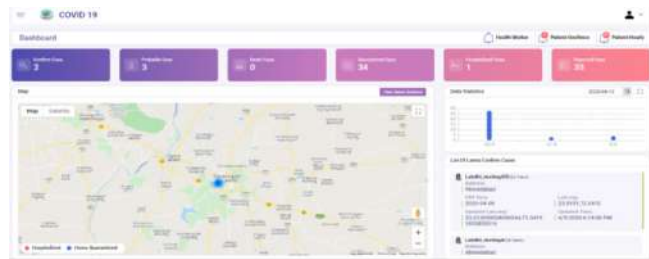
Dehradun

City: **Dehradun**
State: **Uttarakhand**
Population: **5,69,578 (2011 Census)**
Area: **64.6 sq.km.**
Round: **3**

smartcitydehradun.uk.gov.dhcp.in

Dehradun is the state capital and district headquarters. One of the most developed cities in the Sivalik foothills, Dehradun is the only corporation city in Uttarakhand and acts as the gateway to the far-flung hill areas of Uttaranchal. With tourism on the backfoot, Dehradun Smart City Limited (DSCL) is monitoring the situation through their Integrated Command and Control Centre (ICCC) and ensuring citizens are duly notified of developments.

TRACKING & MONITORING

Dehradun Smart City Limited (DSCL) monitors isolation wards and quarantined persons movement via its Integrated Command and Control Centre (ICCC) named *Sadaiv Doon*. CCTVs have been set up at different hospitals and quarantine wards across the city and the video feed uses AI based facial recognition to monitor movement.

AWARENESS

DSCL is tapping its social media platforms ranging from Facebook and Instagram to Twitter and WhatsApp to spread awareness about the lockdown, the virus and available government services. COVID-19 awareness messaging is also being published on virtual media displays at critical junctions of the city along with prominently displaying helpline numbers and other emergency numbers.

Dehradun

CITIZEN SUPPORT

During the lockdown DSCL set up a portal for emergency lockdown passes. Citizens could visit the link to apply and the same was approved for senior citizen care, funerals, medical services, grocery service providers, home delivery service providers, IT and Telcom service and other utilities and administrative staff.

Dehradun

Dharamshala

City: **Dharamshala**
State: **Himachal Pradesh**
Population: **30,764 (2011 Census)**
Area: **27.60 sq.km.**
Round: **2**

dharamshalasmartcity.in

Dharamshala, in the upper reaches of the Kangra Valley, is surrounded by a dense coniferous forest and is the center of the Tibetan exile world in India. Following the 1959 Tibetan uprising, the city witnessed an influx of refugees who followed the 14th Dalai Lama. His presence, and the Tibetan population, has made Dharamshala a popular destination for tourists and Tibetan historians and researchers. Dharamshala Smart City Ltd. (DSCL) focused on sanitation, food delivery and frontline staff safety.

DIAGNOSTICS

DSCL contributed over ₹45 lakh, from its CSR funds, to convert urban shelter homes into dedicated COVID 19 isolation wards.

SANITIZATION

Rain shelters, bus shelters, smart dustbin areas, etc., are regularly sanitized as are all essential goods vehicles exiting quarantined areas. PPE kits and masks have been made available to all frontline staff engaged in sanitization activities. Fire tenders are being used to disinfect public

places by spraying sodium hypochlorite solution while the DSCL office is regularly sanitized and social distancing norms are adhered to at all offices and in public spaces.

Urban shelter homes have been converted into COVID-19 isolation wards

Goods vehicles are regularly sanitized at containment zone exit points

Areas like rain shelters, bus shelters etc. are regularly sanitized

Dharamshala

Sanitization workers receive PPE kits

Fire tenders are being used to disinfect public places

Diu

City: **Diu**
State: **Dadra and Nagar Haveli & Daman and Diu**
Population: **23,991 (2011 Census)**
Area: **40 sq.km.**
Round: **4**

Diu is a coastal town in Diu district in the union territory of Dadra and Nagar Haveli and Daman and Diu. Primarily a fishing town, Diu is a scenic destination known for its fortress and old Portuguese cathedral. After the lockdown till June 2020, no COVID-19 positive cases were detected there. Nonetheless, the administration has taken up measures such as free of charge treatment, setting up of quarantine facilities, monitoring entry points and roping in volunteers or COVID-19 warriors to ensure citizens adhere to social distancing norms, wear masks, etc.

 TRACKING & MONITORING

Monitoring Entry Points
The city's two entry points — Ghoghla Checkpost and Tad Bridge Checkpost — are monitored day and night. The movement of people is closely watched and all who enter are scanned using thermal guns with a database being maintained electronically.

DIAGNOSTICS

Quarantine Centers

A government circuit house located adjacent to a check post has been converted into an institutional quarantine area with the provision of 40 isolation beds. This service is being provided free of cost. The existing sports complex has also been converted into an institutional quarantine zone with 60 beds. Apart from government institutional quarantine centers, three paid for private establishments have been identified as facility quarantine zones.

Testing and Availability of Protective Gear

Diu city does not have any testing facilities, but provisions have been made to transport samples to Silvassa for testing. The administration has heightened its preparedness by ensuring there are sufficient PPE kits, ventilators, and sample taking kits at hand for any eventuality.

SANITIZATION

All government offices, vegetable market, fish and meat markets, general market areas, etc., are being sanitized daily using sanitizing spray machines and fire trucks.

AWARENESS & CAPACITY BUILDING

The existing vegetable market and meat market have been painted with social distancing circles/marks to maintain social distancing. To raise awareness and educate citizens about the need to follow norms, the Diu administration has trained government employees as well as volunteers to lend support and has named them 'COVID Warriors'.

CITIZEN SUPPORT

Distribution of Food and Essentials
Movement of essential goods services such as fruits and vegetables, groceries, meat sellers, etc., is restricted to 7am to 7pm as are the markets. Social distancing is being maintained across the city.

Facilitating Travel
People who wish to travel out of Diu needs to apply for registration and passes are issued for the same for a specific period. The administration has also launched a paper-less, contact-less e-pass system via online registration on *www.diu.gov.in/epass.php*

Erode

City: **Erode**
State: **Tamil Nadu**
Population: **1,57,101 (2011 Census)**
Area: **109.52 sq.km.**
Round: **4**

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tnurbantree.tn.gov. in/erode

Erode city is the district headquarter of Erode district and is often on account of its handloom, power-loom textiles and ready-made garments industry referred to as the 'Loom city' or 'Tex-Valley of Tamil Nadu'. Like other cities, business in Erode has also been adversely impacted during the pandemic and the city has taken prompt steps to manage, monitor and disinfect containment zones, along with ensuring adequate medical care for essential workers, free food for the needy and ensuring that citizens are catered to during the lockdown.

 TRACKING & MONITORING ———————

Control Room
The primary objective of establishing a 24X7 control room was to ensure the safety and security of service providers and to monitor the quarantined. This was achieved by installing CCTV cameras at specific locations.

Containment Zones
The first case of COVID-19 was identified on 17 March and the city administration immediately swung into action demarcating a 1km radius outside the perimeter of the af- fected house. The entire area was isolated by barricading and declared a containment zone. Precautions and control

measures started the same day with the containment zone closed for vehicular traffic and for trading activities. Residents were asked to self-quarantine at home and movement was completely restricted.

Barricading and quarantining in the containment zones

Tracking Positive Contacts

The Erode city administration simultaneously started tracking the network of positive contacts and began conducting health surveys. People with ailments such as hypertension, diabetics, influenza, and pregnant women were closely monitored. Homes with quarantined members were labelled while all quarantined people had their hands stamped with indelible ink for easy identification.

DIAGNOSTICS

Prevention and Control Activities in Non-Containment Zones

Medical teams were formed ward wise to supervise and monitor the entire corporation area, at the rate of 1 staff per 100 houses. Erode Smart City Limited (ESCL) medical teams were formed comprising of urban health nurses, Integrated Child Development Services (ICDS) staff and volunteers who checked every household daily to identify affected people and provide medical support.

Free Mobile Clinics for the Needy

Erode City Municipal Corporation collaborated with a local NGO (*Jain Sangada* organization) to arrange for mobile clinics and to provide free medical care to slum dwellers.

SANITIZATION

Mechanical sprayers are being used in narrow streets while jet rodding vehicles and mist blowers were used on wider roads to spray disinfectant twice a day in containment zones. The vehicles are procured from the police and fire service department. The engaged workers are equipped with safety caps, masks, protective glassed, gloves, shoes, etc.

AWARENESS & CAPACITY BUILDING

ESCL is continuously disseminating information regarding health measures and services provided by the Erode Municipal Corporation and other programs. The messages are spread through various mediums including newspapers, social media (WhatsApp, Facebook) and audio announcements, among others.

CITIZEN SUPPORT

Essential Services in Containment Areas
In containment zones daily needs such as vegetables, groceries, fruits, milk and RO water are supplied to residents at their doorsteps. Garbage from containment zones is being collected separately and disposed through deep burial at dump yards.

Care for Frontline Workers
Health workers are made to undergo regular medical check-ups and are provided with medicines free of cost. Groceries valued at ₹2,000 are provided to every sanitary worker along with each worker receiving an insurance coverage of ₹5 lakh.

Decongesting Vegetable Markets
A temporary vegetable market was setup at the spacious

Erode Central Bus Terminus while the farmer's market has also been shifted. Strict rules for washing hands using disinfectant before entering the market, for traders and public was in place. Furthermore, the administration also made provisions for home delivery of vegetables and groceries to avoid crowding on roads and in marketplaces.

Observing Hygiene in Public Places
The essential staff of the Erode City Municipal Corporation, government employees and visitors were allowed inside the Corporation office premises only after washing hands with soap and disinfectant.

Free Food for the Needy
The Erode City Municipal Corporation offers free food to the needy and to sanitation workers through *Amma* canteens.

Helping Vendors and Migrants
A total of 728 street vendors received ₹1,000 to counter their livelihood loss. Homeless and migrant workers were accommodated in corporation schools with required amenities and were given meals with the help of NGOS and community kitchens.

Erode

Faridabad

City: **Faridabad**
State: **Haryana**
Population:
14,14,050 (2011 Census)
Area: **742.9 sq.km.**
Round: **2**

smartcityfaridabad. co.in

Faridabad is a leading industrial center and one of Delhi's major satellite cities. In order to combat the outbreak of COVID-19, Faridabad Smart City Limited (FSCL) is helping district administration to monitor and track patients and the quarantined, along with supervising sanitization activities, waste management initiatives and setting up of quality quarantine facilities among others.

TRACKING & MONITORING

Integrated Command and Control Center
Faridabad City's Integrated Command and Control Center (ICCC) acts as the "nerve center" for operations management. Police personnel monitor the entire city night and day from the ICCC, tapping into the CCTV network across the city. Adaptive traffic lights are also being monitored by traffic police from the ICCC to ensure ambulances get a free passage across the traffic lights corridor.

सेक्टर-20ए में तैयार कमांड एंड कंट्रोल सेंटर से कर रहे मॉनिटरिंग

500 सीसीटीवी कैमरों से रख रहे लॉकडाउन पर नजर

Integrated Command & Control Center at Faridabad Smart City Limited

SANITIZATION & WASTE MANAGEMENT

Waste Segregation

Every Municipal Corporation Faridabad (MCF) garbage collection van is equipped with a yellow bag in which used PPE, face masks, etc., are deposited. In addition, separate garbage collection vans collect trash from the residences of the quarantined.

Regular Sanitization

MCF has deployed five fire tenders, two road sweeping machines and five tractors (through the Director Agriculture, Faridabad) to spray hypochlorite solution across the city. MCF has also deployed 75 shoulder spray machines to service areas where the streets are very narrow. In addition, 6 medium spray machines have been engaged in fruit and vegetable markets *(sabzi mandi)*, ATMs, religious places and other places with high footfall. MCF has deployed six teams for fogging malathion solution every day. MCF/FSCL also distributes face masks, hand gloves, PPE kits, and hand sanitizers to sanitation workers involved in the spraying of hypochlorite in containment zones.

Sanitization of infected areas and other public spaces and roads

AWARENESS & CAPACITY BUILDING −

Education and Awareness Initiatives

The city is using Variable Message Sign (VMS) boards to spread awareness and share key government messaging. The Commissioner, Municipal Corporation Faridabad (MCF)/ Faridabad Smart City Limited (FSCL) has ordered all Resident Welfare Associations (RWAs) to help senior citizens. MCF officers were also directed to educate the public in their areas. From the ICCC control center, police personnel access the Public Address System (PA) installed at every corner of the city, to spread awareness and share COVID-19 guidelines.

CITIZEN SUPPORT

Delivery of Essentials
During the lockdown, RWAs were allowed to arrange for delivery of essential commodities and groceries to their locality.

Hygiene at Vegetable Markets
Municipal Corporation Faridabad (MCF) has installed wash basins/water jugs with soap at the entrances of vegetable markets.

Quarantine Facilities and Night Shelters
The administration has set up quarantine facilities for symptomatic individuals, those with travel history, and those believed to have been exposed to the virus. Additionally, four night shelters have also been set up.

Helping the Needy
The data of all migrant laborers, people from the unorganized sector and people in-distress has been collected from all government agencies. Based on their inputs, the district administration planned a strategy for the city's 40 municipal wards. Each ward was put under the direct supervision of State Services Class-I/II officer who reported directly to the district administration as well as to the Nodal Officer (Food).

Over 14,000 families were identified who were not receiving any government assistance. The families were given emergency dry ration (for 5 members each) during the lockdown period.

Safe Disposal of Dead Bodies
MCF has made provisions for safe disposal of the COVID-19 positive dead, deploying four trained teams with five members each.

Faridabad

PPE kits for frontline workers being handed over to Municipal Corporation Faridabad

Supply of essential services to needy citizens and migrant workers

Quarantine facility

Gandhinagar

City: **Gandhinagar**
State: **Gujarat**
Population: **2,06,167 (2011 Census)**
Area: **205 sq.km.**
Round: **3**

gandhinagarmunici-pal.com

Gandhinagar is Gujarat's capital and is one of the greenest cities in India. Situated on the west bank of the Sabarmati river, Gandhinagar is spacious and a well-organized, architecturally integrated city. To combat the pandemic, the city worked in two stages starting with identification and monitoring of positive cases coupled with sanitization and waste management initiatives to managing the lockdown such that citizens' needs were catered to.

TRACKING & MONITORING

CCTV and Drone Surveillance
A control room has been established in the Integrated Command and Control Centre (ICCC) in the Gandhinagar Municipal Corporation (GMC) office. During the lockdown, all monitoring was done from the ICCC with the team scanning CCTV cameras to spot violations. Drone aerial surveillance was also done to ensure rules were being followed and all violators were penalized as per the law.

Drone arial views

Mobile App to Track Home Quarantined

A mobile application to track the movements of the home quarantined persons is being monitored from the ICCC. Violations and emergencies result in an immediate alert and the ICCC accordingly dispatches GMC field staff, police or health teams as needed.
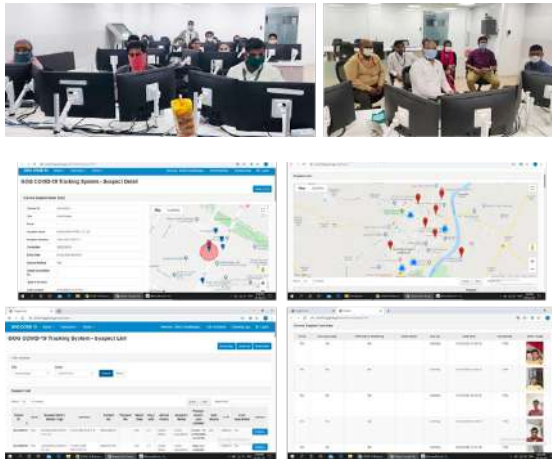
Screenshots of COVID-19 suspects tracking system

Door-to-Door Surveys

The Gandhinagar Municipal Corporation (GMC) team, along with the police, revenue, and health departments, is conducting a survey to identify all possible cases of infection and the database is being updated using 'TeCHO+' software. Based on the data and information received from the Airport Authority of India and Indian Railways, all individuals with a travel history are being identified and door-to-door surveys are being carried out

to check if the travelers or their families have developed any symptoms.

Household survey by GMC

Health checkup by GMC and Health Officials

DIAGNOSTICS

Telemedicine and E-Counselling

GMC has established a helpline number (8141800751) for telemedicine and e-counselling through video calling. There is a dedicated team of doctors stationed at the ICCC who help citizens with their medical and psychological needs.

Doctor on call in the ICCC

Monitoring Of COVID-19 Suspects and Quarantined Households

GMC is monitoring all home quarantined persons regularly in coordination with health and police departments. GMC collects the health status of the quarantined person twice a day and if any individual shows symptoms, they are immediately attended to by the medical team.

Self-Declaration of Symptoms and Travel History

A self-declaration form for Novel Coronavirus infection has been shared with citizens through social media, SMS, and via the GMC website. GMC has also started a helpline number where citizens can share details about their travel history and status of their health.

Treatment and Quarantine Facilities

GMC has set up quarantine beds and that is being utilized for suspected cases. Daily monitoring of residents' health and sanitization of quarantine centers is done. The Gandhinagar Civil Hospital is treating critical and non-critical cases.

Daily health checks for suspects housed in government quarantine centers

ગાંધીનગર મહાનગરપાલિકા
સરકારી ક્વોરેન્ટાઈન સુવિધા સ્થળોની યાદી

અ. નં	સરકારી ક્વોરેન્ટાઈન સુવિધા (સ્થળનું નામ)	કુલ પથારીઓની સંખ્યા (total beds)	ઉપયોગમાં રહેલી પથારીઓની સંખ્યા (occupation)	ખાલી પથારીઓની સંખ્યા (vacant beds)
૧	યુથ હોસ્ટેલ સેક્ટર-૧૬,	૪૬	૨	૪૬
૨	સ્વર્ણ ટ્યુસીન કોલેજ સેક્ટર-૧૭	૫૪	૧૩	૪૧
૩	વાગનવાડી, સેક્ટર-૨૮	૫૦	૦	૫૦
૪	ઉદ્યમાનર્સિંગ કોલેજ, સેક્ટર-૩૦	૫૪	૦	૫૪
૫	બ્લાઈન્ડપીપીઈ સ્કૂલહ, સેક્ટર-૨૪	૬૦	૦	૬૦
૬	ટીનહવાળ મોગલ્ટી અને મહેસુળી વહીવટ સંરચા, સેક્ટર-૧૪	૧૫૮	૦	૧૫૮
૭	બે-ખખાઈડીઘોમેમ ઈ-ટ્રેનિંગ	૬૬	૦	૬૬
	કુલ સંખ્યા...	૪૮૮	૧૩	૪૭૨

Government quarantine facilities

Gandhinagar

Self-Declaration form on the GMC website

SANITIZATION & WASTE MANAGEMENT

Sanitization of Public Spaces and COVID-19 Hotspots

A 24x7 control room has been set up to monitor fumigation activities across the city. GMC regularly conducts fumigation and disinfection of all quarantine houses, COVID-19 containment zones, vegetable markets, government offices, help centers, clinics, and hospitals. Fire fighting vehicles and fire brigade equipment and jetting machines are being used for sanitization of public spaces.

Sanitization of public spaces

Sanitization of shelter homes

Waste Collection and Segregation

GMC is collecting the waste from all the households and establishments daily. Domestic hazardous waste including masks, gloves, and sanitary waste is being collected separately and treated as per Bio Medical Waste Management (BMW) rules. Waste from containment zones/home quarantined is collected in specially marked garbage bags (as per BMW Rules 2016) by manpower trained to handle bio medical waste using separate collection vehicles. The collected waste is disposed as per biomedical waste rules.

Separate collection of domestic hazardous waste and medical waste

Container for collection of domestic hazardous waste

AWARENESS & CAPACITY BUILDING —

Information Education and Communication (IEC) Initiatives

GMC uses a bulk SMS facility to inform citizens about COVID-19 and providing the latest information. Social

media (Facebook, Twitter, Instagram) is being used extensively to educate and raise awareness along with the sharing of helpline numbers and contact information of supermarkets, grocery stores, pharmacy stores, etc. that home deliver. Important instructions related to COVID-19 are being played on the city's Public Address System (PAS) and door-to-door waste collection vehicles are also equipped to broadcast information further spreading awareness among citizens.

Media Updates and Staff Capacity Building

Daily press notes and periodic press conference are being made to update media over the current scenario. All GMC staff members including frontline workers have been provided special training and the necessary safety material such as masks and sanitizers. Staff screening is being done daily using an infrared temperature measuring gun to detect early signs of infection.

COVID- 19 updates through social media

CITIZEN SUPPORT

Essential Commodities Distribution

During the lockdown, GMC coordinated with vegetable vendors and NGOs to arrange mobile vans and tri-cycle carts to ensure citizens were not inconvenienced. To ensure a smooth supply of milk GMC saw to it that milk tetra packs were made available along with vegetables. The GMC official website also lists pharmacy stores, grocery stores and other shops/malls that offer on-call services and home delivery.

Delivery to Home Quarantined Families

To facilitate the families under home quarantine, 14.5 kg of groceries and 7 kg of vegetables once a week and 1.5 litres of milk are being provided free of cost.

Preparation and distribution of meals by NGOs in Gandhinagar

Social Distancing at Shops

All shops are mandated to have clear circles in front to ensure social distancing.

Benefits to Vendors

All registered vendors received Direct Benefit Transfers (DBT) under the National Urban Livelihoods Mission (NULM) scheme.

Helpline Numbers

Citizens can call dedicated helpline numbers for telemedicine, e-counseling, food distribution, fumigation, and other COVID-19 related complaints/concerns.

Shelter Homes

Shelter homes for migrants and the homeless have been set up with safe water supply, medical facilities, and clean toilets. All residents are provided with free meals twice

a day. Patrolling is also being done to shift the homeless into the shelter homes.

Social distancing demarcations at grocery stores

Home delivery of essential goods, vegetables, and milk

Gangtok

City: **Gangtok**
State: **Sikkim**
Population:
1,00,286 (2011 Census)
Round: **3**

Smartcitygangtok. com

Gangtok is the largest town and the capital of Sikkim. It is also the headquarters of the East Sikkim district and is known as a seat of Buddhist learning. Known for its serene beauty, the city's unique blend of tradition and attractions draws tourists from both India and abroad. The state was in the green zone when this information was compiled.

AWARENESS

The state official website *https://www.covid19sikkim.org/* serves as a central repository of all COVID-19 related information from the mapping of quarantine centres, to latest statistics. All guidelines, helpline numbers and other essential information is also available on the site. An additional feature is the Fake News tab that seeks to counter rumours.

Guwahati

City: **Guwahati**
State: **Assam**
Population: **9,57,352 (2011 Census)**
Area: **328 sq.km.**
Round: **1**

gscl.assam.gov.in

Guwahati is the largest city in Assam and the largest metropolis in North-East India. A major riverine port city, Guwahati is known as the 'Gateway to North East India'. Guwahati Smart City Ltd. (GSCL) is developing a scalable 'IT Platform' for citizens that enabled direct delivery of essential commodities to households during the lockdown.

 CITIZEN SUPPORT

Home Delivery through the Essential Services IT Platform

The GSCL is looking at the creation of an IT platform called Essential Services System (ESS) that connects wholesalers, retailers, and households through a hyper local model. A demand can be raised via the platform and supply will be made through well-defined logistic delivery channels monitored by community representatives. Stock reporting at the retail and wholesale level can also be integrated with the platform to ensure visibility and transparency, thus preventing hoarding.

GSCL is also planning to extend the platform to make it a possible source of revenue generation. The city is considering integrating services such as a 'Single Window

Guwahati

Market Place' that offers all government services and other non-essential local services, promotes local retailers and other service providers, and helps the MSME sector by creating an e-marketplace for locally sourced/grown/ manufactured products. All services will be charged a nominal fee.

Gwalior

City: **Gwalior**
State: **Madhya Pradesh**
Population: **1,06,976 (2011 Census)**
Area: **464 sq.km.**
Round: **2**

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gwaliorsmartcity. org

Gwalior, in Madhya Pradesh, is well known for its majestic fort, considered one of the best conserved in the world. Today heritage structures stand side-by-side as the city is also a hub of industry, home to factories producing cotton, paint, ceramics and leather products among other things. At the onset of the pandemic, the city quickly changed gears by setting up a COVID-19 Suspect Tracing and Information Management, deploying a robust Border Management System, a 24X7 Corona helpline for citizens, a WhatsApp video medical consultation service, and a variety of such services. Like other smart cities the Integrated Command and Centre (ICCC) now functions as a 24X7 control room.
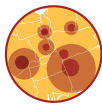
TRACKING & MONITORING

Identifying and Monitoring Suspect Cases
All calls received are registered and every call is issued a complaint number. A preliminary investigation is conducted, and a suspect risk profiling is done post which the observation case is transferred to the concerned Incident Commander (IC) for field action. A team comprising a doctor, para medic, security personnel is deployed after the screening of an individual is done by

the doctor and a sample is collected, if needed. After all results are captured and if non symptomatic, home quarantine is initiated and further tracked.

Border Management System

Gwalior Smart City Development Corporation Limited (GSCDCL) has developed a strong online Border Management System that tracks all check-post data along with ensuring health screening to be conducted by doctors at every entry point. All information can be accessed by the city's Integrated Command & Control Centre (ICCC). The Sub-Divisional Magistrate (SDM)/ *Tehsildar* have a monitoring tool through the Border Management Portal to keep tabs on the health monitoring at the entry point and can check on the number of people coming in, which areas they are coming in from and the probability of them being carriers, on the basis of their travel. Predictive analysis helps the administration in containing the spread and guides decision-making.

DIAGNOSTICS

Testing and Treatment

The concerned SDM/*Tehsildar* visits the home of possible suspect cases, those with recent travel history, etc., and ensures samples are taken and testing done. Based on reports received the administration institutes home quarantine for negative primary contacts (but possible carriers) while positive cases are admitted immediately to the JAH Super Speciality Isolation Centre with medical teams providing treatment as per guidelines.

24X7 Corona Helpline and Doctor Consultation via WhatsApp Video

Gwalior was the first city to start a free medical consultation through the WhatsApp Video Call facility. Conducted and monitored from the ICCC, a team of experienced doctors follow a well-defined procedure to track possible cases. All cases are classified into High Risk, General and Low Risk cases with the former tested while

the rest are advised home quarantine and prescribed medical advice according to their symptoms.

Flow chart of Standardised Protocol for
COVID-19 Suspect Tracking
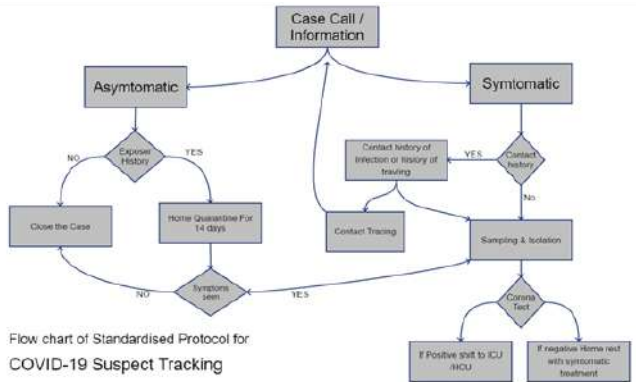
COVID-19 Suspect Tracing and Information Management System

Hubbali Dharwad

City: **Hubbali Dharwad**
State: **Karnataka**
Population: **9,43,788 (2011 Census)**
Area: **202.3 sq.km.**
Round: **2**

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hubballidharwadsmartcity.com

Hubbali and Dharwad are twin cities that together constitute Karnataka's second-largest urban agglomeration — in terms of area. A unique experiment in Indian urban development, the Hubbali-Dharwad Municipal Corporation (HDMC) was constituted in 1962 by combining the two cities that are 20 km apart. To combat the pandemic, the city developed a patient monitoring system and surveillance system, set up a lab for testing, established mobile swab collection units and quarantine centers, set up a domestic violence helpline and creating a Rapid Response Team (RRT) for delivery of essentials to the needy.

 TRACKING & MONITORING ————

Patient Monitoring System Management
Hubbali-Dharwad Smart City Limited (HDSCL) has deployed a Patient Monitoring System that supports health emergency preparedness and monitors effective action planning along with communicating with public and engaging with inter -department communities such as the police department, health department, district officers and other inline departments.

The Hubbali-Dharwad Patients Monitoring System captures the master data of patients across six categories – Affected person's personal details, contacted persons, quarantine details, swab testing details, follow up details, and quarantine violation reports. The COVID-19 Project Management System (PMS) platform helps in capturing micro level data and ensures centralized vital information is made available, on a single platform, for detailed investigation and reporting.

In addition to accurate information produced by the tool, the system also helps in monitoring the delineated data based on COVID-19 patients monitoring system reports, GIS mapping of positive cases and primary contacts, the tracking of interstate migrants, etc., all of which helped to assess and fill in capability gaps. Furthermore, analytical and graphical representation of data helped in making holistic solutions and deploying immediate relief.

Monitoring and Surveillance
More than 40 committees were constituted for the proper management of various aspects related to the COVID-19 outbreak. Strict curfew was imposed in the city with immediate sealing of the district borders and all check

points were monitored. Only essential services functioned during the lockdown. The administration identified COVID-19 hotspots with high number of cases and strict vigil was maintained to ensure minimal movement of people.

DIAGNOSTICS

Testing Laboratory

The Indian Council of Medical Research (ICMR) sanctioned a laboratory to test throat swab for COVID-19 infection at KMS Hospital, Hubbali that tests up to 40 samples daily. Government hospitals, private hospitals, swab test centers, fever clinic and hotels have been taken over by the administration to supplement government infrastructure and quarantine facilities.

Clinical Care

The necessary clinical care is being provided in the form of swab testing centres, mobile swab collection centre vehicles and quarantine centres. Checklists to monitor activities and process indicators through a specially developed tool helped in careful assessment. The Hubbali-Dharwad Patient's monitoring system ensured all information was easily accessible which helped in planning.

AWARENESS & CAPACITY BUILDING

UID Based Communication

Regular contact with the affected audience, by employing a Unique Identification Number (UID), helped avoid duplication and led to quick assessment of potential gaps in the COVID-19 response. Regular and proactive communication with the public-risk populations helped in building trust. It also increased social support and ensured the most affected received access to basic needs.

 CITIZEN SUPPORT

Domestic Violence Helpline

One unique step taken by Hubbali-Dharwad Smart City Ltd. was to create a Domestic Violence Helpline to report in abuse that stemmed either from the pandemic situation or during the lockdown.

Delivery of Essentials

The police delivered supplies and food to homes in containment zones. A Dharwad district Rapid Response Team (RRT) was formed to provide migrant laborers with essentials.

Imphal

City: **Imphal**
State: **Manipur**
Population: **2,64,986 (2011 Census)**
Round: **2**

imphalsmartcitylimited.com

Imphal is the capital of Manipur and the headquarter of Imphal district. The verdant jewel of the north-east, Imphal boasts of the oldest polo ground in the world and has a rich heritage that is captured in its museums and traditional art, culture and local handicraft industries. A separate COVID-19 management cell, under the Chief Minister's Office (CMO), has been set up as part of the state's response initiatives however Imphal Smart City has not been involved in any direct COVID-19 related work yet.

CITIZEN SUPPORT

Website for Updates
The Manipur State Government portal *https://manipur.gov.in/* displays the latest COVID-19 related alerts/updates. The site has a facility for citizens to air their grievances along with a provision for stranded residents to register for their return to the city. Payment of utility bills, etc., can also be done online eliminating the need to visit the city corporation office.

Indore

City: **Indore**
State: **Madhya Pradesh**
Population: **19,64,086 (2011 Census)**
Area: **530 sq.km.**
Round: **1**

smartcityindore.org

Indore is Madhya Pradesh's education hub and largest city. To monitor and control the pandemic in Indore City, an ICT based solution was developed with key modules to screen and identify primary contacts of positive cases. Along with contact tracing, quarantined patients are being followed up actively using mobile apps and a web interface.

 TRACKING & MONITORING

Containment Planning

Based on directives received from central government and World Health Organization (WHO) representatives, the Indore Administration worked with a local tech team to prepare a containment plan that comprised of the following modules:

Screening Survey (Entire City Population)	Contact Tracing (All COVID Positive Patients)	Home Quarantine	Home Isolation of Positive Cases	Private and Fever Clinics	Domestic Traveller Monitoring
To identify the high-risk individuals and ensure their timely treatment and follow-up	To establish epidemiological linkages	To monitor suspects and individuals identified through **Screening & Contact Tracing**	To reduce hospital load through home isolation of Asymptomatic and Mild Symptomatic Cases	To reduce hospital load through screening of suspects at clinic level	To identify and monitor possible suspects thereby containing possible spread in advance

Dashboard Contact Tracing and Screening

An ICT based solution was developed to screen residents and trace primary contacts. The solution comprised of a web portal, monitored from the Control Center, and a mobile app for those on the field. All contacts of COVID-19 positive individuals are marked as high/low risk and the platform also allows for follow-up of quarantine cases and possible positives.

The Control Room team uses the dashboard to perform activities like adding/updating contact details, action planning, monitoring of self/institutional quarantine cases, etc. The on-field staff uses a mobile app, under the supervision of the respective Sub-Divisional Magistrate (SDM), to ensure contact profiling, initial screening, follow-ups, recommendation for quarantine/hospitalization, etc. The COVID-19 Indore App is used by Rapid Response Teams (RRTs) for identification of primary and secondary contacts.

Epidemiological Analysis

Community Health Officers (CHOs) under a dedicated team of 11 doctors from the Preventative and Social Medicine (PSM) department work in the Control Center. Doctors from the PSM department do the epidemiological analysis of contacts and provide the report to the SDMs for preventive measures

Dashboard with summary of COVID-19 identified cases

DIAGNOSTICS

Screening Survey

A mobile app with dashboard was developed for city-wide screening. The system is monitored through a dedicated Control and Command Center by operators assigned to individual SDMs. Information about the screened, quarantined, symptomatic, doctor follow-up, etc., is captured at the backend. The team deployed for screening include an Additional District Magistrate (ADM), SDM, doctors, supervisors (auxiliary nurse midwives/Integrated Child Development Services staff), a survey team (consisting of *Anganwadi* workers, ASHA health workers, teachers, municipal staff, NGOs and volunteers) and other field staff.
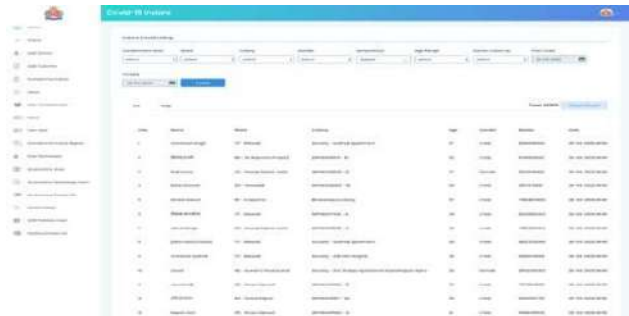
Dashboard for the Control Room
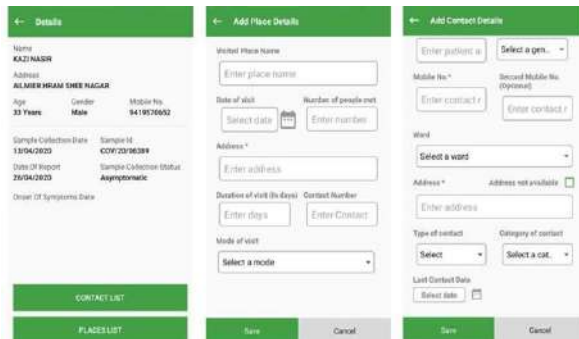
Mobile app screenshots

Indore

Dedicated operators conduct follow-up calls
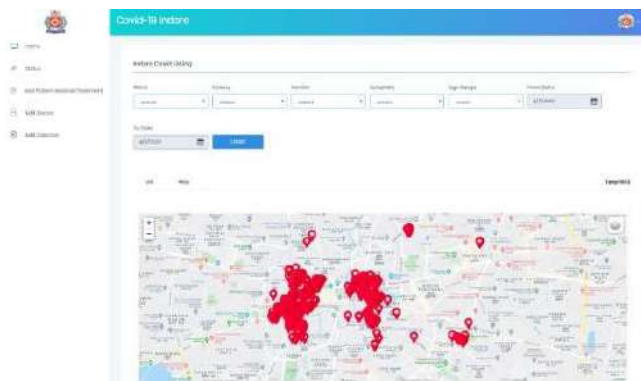
Dynamic, graphical representation of relevant geospatial data in easy to access map format

Itanagar

City: **Itanagar**
State: **Arunachal Pradesh**
Population: **59,490 (2011 census)**
Area: **200 sq.km.**
Round: **4**

Itanagar, capital of Arunachal Pradesh, is known as the land of dawn-lit mountains. The city has a unique cultural identity, scenic natural beauty, immense hydro-power potential and robust health and education sectors. To combat the spread of the pandemic, Itanagar Smart City Development Corporation Ltd. (ISCDCL) turned its Integrated Command and Control Centre (ICCC) into its State Control Centre (SCR) for COVID-19 and deployed an array of software applications to aid in tracking, monitoring and containment.

TRACKING & MONITORING

SCR for COVID-19
SCR is the hub of surveillance, information, and implementation of all COVID-19-related activities. A specialized team developed multiple software applications to ensure effective monitoring and decision making. The main applications developed were the COVID-19 Application System, a robust IVR System, Emergency Inter-District ePass app and Inter-state Data Login.

COVID-19 Application System
A Real Time Quarantine and Isolation Facility Management system was embedded into the COVID-19 Application

software. The system also captures Reverse Transcription-Polymerase Chain Reaction (RT-PCR) data provided by district medical officers across the state. This helped the administration to monitor the quarantined and to keep track of live cases, pending samples and discharged cases.

Inter-District and Inter-State Mobility Services

The Emergency Inter-district ePass app is meant for handling requests from people who need to travel across districts for medical purposes or for other vital work. The system is designed to verify and approve such requests and send mobile ePasses to the approved cases. Inter-state Data Login is a web application through which inter-state visitors' details are captured at entry checkpoints for subsequent tracking and follow-ups.

Contact Tracing at the State Level

A COVID-19 application is used by the control room to log call details related to personal information and health. This is the primary application used for contact tracing at the state level. The system also facilitates the registration of citizens stranded outside Arunachal Pradesh (AP) as well as migrant workers from other states stranded within AP.

DIAGNOSTICS

Tele-Health Center for Medical Consultations & COVID-19 Queries

A tele-health center (THC) was set up in association with the Indian Medical Association's Arunachal chapter. THC has 14 doctors on call who offer consultations in Pediatrics, Obstetrics and Gynecology, Medicine, General Medical Consultation and Psychiatry. Calls received by the center are directed to the respective doctors every day between 9am-5pm. Over 100 daily calls are received on an average.

Itanagar

Call log dashboard at the control room

COVID-19 related information and updates on the state portal

COVID-19 related information and updates on the state portal

Itanagar

RT-PCR information available on the dashboard

Online Inter-District Transit ePass facility

Jabalpur

City: **Jabalpur**
State: **Madhya Pradesh**
Population: **10,55,525 (2011 Census)**
Area: **367 sq.km.**
Round: **1**

jscljabalpur.org

Jabalpur city is the administrative headquarters of Jabalpur district. The first positive case in the state was registered in Jabalpur. Given this background, the city administration lost no time in acting, coordinating with various departments such as the police administration, health department etc. to establish a unified control room. Jabalpur Smart City Limited (JSCL) also developed a surveillance platform as well as a citizen centric online grocery solution among others.

TRACKING & MONITORING

The Jabalpur Smart Surveillance COVID Platform (JSS-COVID)

JSS-COVID is the one-stop solution for all activities of the control room, health, police, municipal corporation, district administration and citizens of Jabalpur.

JSS-COVID caters to a huge quantity of data including COVID-19 positive contacts, e-pass lists, entry-exit check-points, fever clinic information, details of symptomatic cases, data from the *Arogya Setu* app and call centre data. Daily calling and quarantine status checks are also made from the control room while symptomatic patients, from non-containment zones, have access to telemedicine

video calls which are done by doctors from the control room. All the complaints received through social media platform are also resolved through this platform.

Important orders issued by the district magistrate office are displayed on this portal for the public's convenience. The e-pass system of MAP-IT, which is mandatory to travel from one district to another, is also available on this portal. Volunteer registration and charity -on- wheels are other highlights of this platform.

Contact Tracing Tree
Once a positive case is confirmed, a team of community medicine doctors visit his/her place of residence and identify high-risk and low-risk contacts. These citizens are also kept under quarantine and monitored via the JSS-COVID platform that creates a tree of all the contacts and co-relates this with previously identified positives.

GIS Platform
All COVID-19 positive patients, their location and containment zones are marked on a GIS map integrated on the JSS-COVID platform. The containment zones are mapped according to demography, topography, accessible route etc. This dashboard is integrated to the Jabalpur Smart Surveillance app. This dashboard also showcases positive cases — date-wise, ward-wise and age-wise. A similar parallel dashboard is also created to map all the samples taken from different containment zones. This dashboard also compares the samples taken vs positive cases clocked. Actual barricading points are also given as inputs to police teams and the municipal corporation.

Border Checkpoint Monitoring

Gram rozgar sahayaks are deployed at various border check posts with visitors geofenced and their attendance marked daily on an app version of JSS-COVID. People entering various check posts are quarantined for 14 days and tracked through this app and symptomatic among those are recommended for testing.

Rapid Response Team Attendance

Jabalpur district has 79 wards and the district collector has deployed a senior officer for resolution of complaints at the ward level. The officer coordinates with the incident commander (SDM), municipal corporation (zonal officer) and concerned town inspector of police. Every officer is geofenced in his ward and he/she marks attendance on this platform twice a day which is monitored by the incident commander and the district collector.

DIAGNOSTICS

All the incoming calls and category B and C calls of the CM HELPLINE are given telemedicine facility and they are also recommended for testing. Check-in calls are also conducted to track a symptomatic person's status and testing is done accordingly by the health team.

Addressing Citizens' Grievances

All complaints are resolved through JSS-COVID. Complaints related to food packets and distribution of ration packets to poor and needy are also dealt with on the JSS-COVID platform. All junior supply officers and *nagar nigam* zonal officers are mapped according to their jurisdiction.

Jabalpur

Delivery of Essential Commodities & Services
The Jabalpur Mart app covers door-to-door supply of essential items including vegetables and fruits. Residents can also request for home appliance repair services including electric, plumbing, RO repair, mobile repair, laptop repair, AC repair etc.
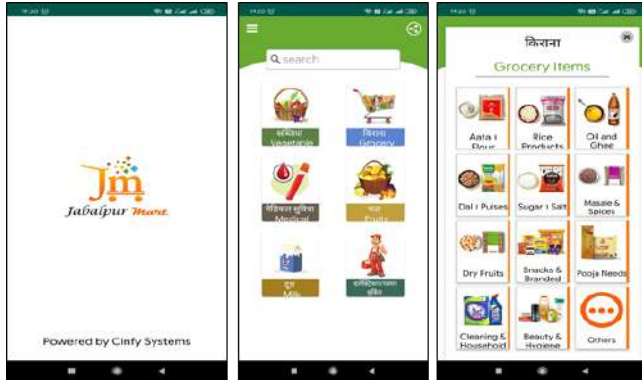
Jaipur

City: **Jaipur**
State: **Rajasthan**
Population:
30,46,163 (2011 Census)
Area: **484.6 sq.km.**
Round: **1**

jscljaipur.com

Jaipur holds the distinction of being the first planned city of India. The principal economic driver for Jaipur is tourism followed by trade. The administration is using technology such as drones to monitor containment zones and has created the JSCL HELP- COVID-19 web page with information about helpline numbers and food distribution points. Online consultation for symptomatic citizens and the setting up of shelter homes for the needy are other citizen support services being provided.

TRACKING & MONITORING

Tracking
Jaipur Smart City Limited (JSCL) has set up a 24x7 War Room and helpline for COVID-19 queries and lockdown support. Given the congested wall city areas, containment zones are under drone surveillance that gets monitored from the Abhay Command and Control Centre. Lockdown implementation was also undertaken using drones supplemented with the city's CCTV cameras with the entire surveillance being monitored from the control center.

Monitoring
Monitoring of citizens in quarantine is done through GIS using the COVID Info mobile app. If someone moves

away beyond the prescribed limits an alert is generated at the monitoring authorities' end and action is accordingly taken. Monitoring of migrant workers is also done and their health report is captured through the RAJNET app.

DIAGNOSTICS

Symptomatic patients and those with any other medical conditions can access online consultation with doctors through the *Sehath Sathi* App and receive prescriptions. A free follow-up for seven days is conducted by the doctor. Through the app, patients can also receive free home delivery of medicines from registered medical stores. In addition, movement passes could also be applied for, through the app with the user intimated if his/her pass is approved or rejected. To curtail spread, thermal sensors are being used to check people entering offices.

SANITIZATION

All societies across the city are sanitized periodically. Fire tenders are being used to spray sodium hypochlorite solution to ensure comprehensive surface disinfection.

AWARENESS

The JSCL HELP- COVID-19 web page lists helpline numbers, concerned officers' details, food distribution points etc. Donation to CM relief fund or donation of food/essential items can also be done through this interface.

CITIZEN SUPPORT

E-Bazaar COVID-19 App
The Department of Information Technology &
Communication (DOIT), Rajasthan, along with Dealshare
has made an E-bazaar app to link *kirana* stores,
wholesalers and distributors. This app enables citizens to
purchase essential items online by locating the nearest
retailers while retailers can locate the nearest wholesalers.

Helpline
A COVID-19 helpline was set up for citizens that answers
queries around the pandemic and the lockdown.

Food Distribution
GIS based mapping of food distribution points was done
to optimize allocation of resources. The Government
of Rajasthan provided food at the doorstep of needy
persons. A web page was created to collect food
distribution data, and monitor demand, quality and
quantity of food being distributed by the government
and various non-government organizations (NGOs). This
ensured real-time, dynamic mapping of food requirements
at distribution points along with capturing the views of
officers working in the field.

Social Distancing and Care
Social distancing is being maintained at all public
places with proper demarcation and officials have been
nominated in each zone for strict implementation and
reporting. Shelter homes for migrants and the homeless
have been set up with proper facilities, sanitization and
food.

Jalandhar

City: **Jalandhar**
State: **Punjab**
Population: **8,62,196 (2011 Census)**
Round: **2**

Jalandhar is the third largest city of Punjab with a rich history and many mythological tales connected to its inception and rise. It is Punjab's leading center for education as well as a print and electronic media hub. Jalandhar Smart City Limited (JSCL) has taken several steps to counter COVID-19 which includes exploring innovations through its technological institutes, a cloud-based web interface for tracking, GIS mapping and thermal scanning among others.

TRACKING & MONITORING

GIS-based Mapping

GIS-based maps are being generated by the JSCL team daily to help make informed decisions. JSCL uses the daily department of health updates and other open source data to geocode case information and strengthen its COVID-19 databases. The GIS-based maps are helping local authorities understand better the spread and reach of the virus. Census-based demographic data linked with GIS further helps identify communities that are susceptible to the pandemic allowing officials to target public health interventions and cut the spread of the infection.

Containment Zone Monitoring

Strict movement restrictions are put in place in containment zones and hotspots with Rapid Response Teams (RRT) deployed on ground. JSCL ensures geo-tagging of all containment zones in their GIS maps to inform citizens on movement restrictions.

Door-to-Door Surveys

Village-wise and ward-wise door-to-door surveys are being conducted by Accredited Social Health Activist (ASHA) workers to identify individuals who are suffering from cough, fever and other COVID-19 linked symptoms. The ASHA team also disseminates information about COVID-19 during their visits.

DIAGNOSTICS

Detecting COVID-19 from Radiology Reports

Lovely Professional University has developed an easy-to-use, cloud-based web interface to detect COVID-19 quickly from radiology reports such as CT scans or X-Rays. The team took over a month to develop the framework which has been tested on 13,000+ chest radiography images, according to the researchers. This system enables doctors and medical staff to get quick results on the COVID-19 status of a patient. Powered by Artificial Intelligence (AI) technologies, this cloud-based interface does not need any high-tech device or technicians to operate, as it can be accessed by an authorised healthcare professional anywhere in the world via a basic mobile device with internet connectivity and a web browser. The patient's scan needs to be uploaded on the website and the diagnosis is received within a few seconds for further analysis.

Testing and Treating

The administration has established dedicated COVID-19 Centers and other hospitals for testing and treatment. In addition, creation of ICT-based smart infrastructure, for disaster or emergency management, is also being considered and will be established under the Smart City Mission in the near future.

CITIZEN SUPPORT

Food for All

Many volunteers came together to feed the needy during the lockdown. For example, Golden Temple Transport Company Private Ltd. with the support of local taxi unions, ensured meals were given to daily wage workers, the homeless, migrant laborers and the destitute. Many individuals and corporates have also donated in cash or kind to ensure the poor are fed.

National Institute of Technology (NIT) Innovations

Dr. B.R. Ambedkar NIT, Jalandhar in collaboration with Bharat Herbals has developed a low-cost hand sanitizer that has more than 70% alcohol and is effective in destroying the virus. The institute has also designed COVID-19 medical protective face shields using adaptive manufacturing, an ultra-violet exposure box to sanitize office files and self-healing silver nano composite antiviral films.

Dr Lalit Kumar Awasthi, Director, BR Ambedkar NIT, Jalandhar showing the hand sanitizer to Shri. Navjot Singh Mahal and SSP-Jalandhar, Rural

Jalandhar

Volunteers spread awareness

Village-wise and ward-wise door-to-door surveys by ASHA workers

Infrared IR sensors and thermal cameras at SSP Office, Jalandhar

Jalandhar

Distributing food following social distancing norms
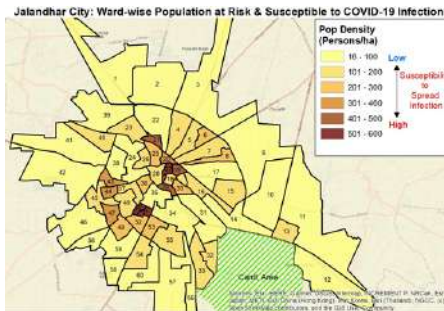
Geo-tagging of containment zone

Time-enabled maps can reveal how infections spread over time and where you may want to target interventions.

Mapping of health facilities

Jammu

City: **Jammu**
State: **Jammu and Kashmir**
Population: **5,03,690 (2011 Census)**
Area: **26.64 sq.km.**
Round: **3**

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jammusmartcity.org

Jammu is the winter capital of Jammu district and one of the largest cities in the UT of Jammu and Kashmir. Innumerable temples and shrines, with glittering shikhars soaring into the sky, dot the city's skyline, giving the city its moniker City of Temples. Over the past three months, the city has ramped up tracking and contact tracing by ensuring comprehensive testing of all who enter the city and capturing their details. It has also worked towards developing an online platform for generating travel passes, a call management system and a 24X7 control room among others.
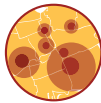
TRACKING & MONITORING

Passenger Registration Management System (PRMS)
The system was put into place to create an accessible, centralized database of all passengers de-boarding at Jammu Railway Station. Details of all passengers received by IRCTC the day before their journey is entered into the backend daily. This data is then made accessible through a mobile friendly dashboard for easy update and check. A dedicated control room at the station also monitors this data real-time.

Airport Transit Management Information System
A multi-level, multi-user dashboard system that is also

mobile app enabled, ensures data of all passengers is captured district-wise for quarantine monitoring purposes. Symptomatic data is captured and integrated with sampling data along with integration of bus/forward travel reports.

DIAGNOSTICS

The administration is ensuring 100% sampling and testing for COVID-19 for all passengers arriving via rail, road or air. Bulk SMS services are facilitated to inform people about test results.

CITIZEN SUPPORT

Emergency and Essential Travel ePass
During the lockdown citizens could apply for an online ePASS online by visiting the official website - *http://jammu.nic.in/covid19*. The ePass was integrated with SMS/Email and was embedded with a QR code for easy tracking.

Call Records Management System
A Call Records Management System (CRMS) was set up keeping in mind the large volume of calls being received by the District Control Room. The system integrates all the data related to a caller in a single centralized database and the issues are mapped to relevant officers and departments. Details of every call are manually entered into the CRMS and gets linked to a case officer who can address the same and close the call through the system.

Jammu

100% sampling and data capture at Jammu Railway Station

100% sampling and data capture at Jammu airport

Jhansi

City: **Jhansi**
State: **Uttar Pradesh**
Population: **5,07,293 (2011 Census)**
Round: **3**

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jnnjhansi.com/ smart_city.php

Jhansi is the administrative headquarters of Jhansi district and Jhansi division in Uttar Pradesh. Called the 'Gateway to Bundelkhand', the original walled city of Jhansi grew around its stone fort which crowns a neighboring rock. The city is taking steps to counter the pandemic by checking people at entry points to the city and upgrading medical infrastructure and facilities. During the extended lockdown, Jhansi Smart City Limited (JSCL) and Jhansi *Nagar Nigam* ensured the unhampered flow of essential commodities, created shelters for migrant laborers and issued online passes to essential workers and to citizens with emergencies.

TRACKING & MONITORING

National Lockdown Enforcement

As per the Center's guidelines, the city strictly enforced the national lockdown and ensured all norms were adhered to.

Monitoring of Entry Points

The arrival of migrant laborers in huge number at Jhansi railway junction was a big challenge for the administration. While about 20% of them were from Jhansi the rest were from other districts and cities. Dedicated teams of doctors

were deployed at the railway and bus station 24X7 to ensure all arrivals were screened while those with symptoms were routed to the District Hospital for testing and treatment. All train and bus arrivals were listed and facilitated by the Divisional Railway Manager's (DRM) office, Assistant Regional Transport Officer (ARTO) office, etc., and shared with district magistrates of respective districts.

DIAGNOSTICS

Health Teams on Duty

Four health teams each in eight blocks and 12 health teams for the city are currently on duty. The city's strategy included upgrading existing medical facilities and infrastructure to enhance preparedness. Primary contacts and those with mild symptoms must undergo a mandatory 14-day home quarantine.

CITIZEN SUPPORT

Distribution of Essentials

The administration ensured that supply of groceries, food grains, vegetables, fruits, milk and other essential commodities remained unaffected during the lockdown. Passes for essential goods and services providers/distributors were issued from the Additional District Magistrate (ADM) office.

E-Pass for Citizens

After 2 April, an e-pass service was initiated for citizens seeking to move about.

Helping Migrants

Temporary shelters were set up for migrants wishing to stay back. Most migrants in Jhansi are from Madhya Pradesh and other districts of UP. After the requisite medical screening, they were facilitated to the neighboring districts of UP and Madhya Pradesh like, Chattarpur, Tikamgarh, Niwadi, Shivpuri, Panna and Ashok Nagar among others.

Kakinada

City: **Kakinada**
State: **Andhra Pradesh**
Population: **3,25,985 (2011 Census)**
Area: **227.4 sq.km.**
Round: **1**

139.162.51.246/p/

Kakinada is the headquarter of East Godavari district that is known as the Rice Bowl of Andhra Pradesh (AP). With its lush paddy fields and coconut groves, this area is also known as AP's Kerala. Kakinada is part of a Special Economic Zone (SEZ) and a proposed Petroleum, Chemical and Petrochemical Investment Region (PCPIR). The administration is leveraging its smart city infrastructure to ensure effective tracking and monitoring of cases and hotspots.

TRACKING & MONITORING

Tracking using Mapping and Geographic Information System (GIS)

All COVID- 19 positive and suspect cases and containment zones are marked in an accessible Google Maps app that helps in daily tracking and monitoring of positive and quarantined cases within city limits. The maps use GIS to generate hotspots, heat maps and red zone areas. These are also shared on social media to alert citizens to take appropriate care. The source of transmission (primary, secondary, and tertiary contacts) along with other demographic details, are analysed using smart analytic tools to inform planning and decision-making.

Kakinada

CONTAINMENT ZONE

Containment zone area in Kakinada (11th ward)

Ward-wise COVID-19 cases

Comparison of COVID-19 cases vs Sources of Transmission

COVID status dashboard

SANITIZATION

A special sanitation drive has been initiated by the Kakinada Municipal Corporation Commissioner with the help of the Additional Commissioner, Medical Health Officer, sanitary inspectors, and ward secretariats. All government offices and prominent public places are being cleaned and sanitized regularly.

AWARENESS

Education and Communication
The latest hotspot alerts and dos and don'ts are shared on official social media channels to raise awareness and ensure that public take required precautionary measures. The city's Command and Communication Centre (CCC) has been playing an important role during this pandemic displaying key messaging on Variable Message Display (VMD) system and making regular broadcasts via the city's Public Addressing System (PAS). A dashboard carries regular updates as released by the city's health department while government officials and elected public representatives regularly address the residents.

CITIZEN SUPPORT

24X7 Toll-Free Helpline
One round the clock toll-free helpline offers citizens guidance and support. It is managed by CCC as well as the city health department.

Vegetable Market Decentralization
Decentralization of crowded main markets has been adopted to ensure social distancing norms. CCTV camera live footage is monitored from the CCC and field staff ensure people follow the advisory while visiting public places.

Kakinada

Social distancing at the local market

Posters and stickering communication

District Collector and Municipal Commissioner observing COVID testing

Kalyan Dombivli

City: **Kalyan Dombivli**
State: **Maharashtra**
Population: **12,47,327 (2011 Census)**
Area: **7137.2 sq.km.**
Round: **2**

Kalyan is a city in Thane district of Maharashtra and a part of the Mumbai Metropolitan Region. An important neighboring city of Mumbai, the city corporation and Smart Kalyan Dombivli Development Corporation Ltd. (SKDCL) have taken several measures to offset the pandemic, such as setting up of a central War Room, GIS dashboards for tracking, drone monitoring and establishing helplines for the vulnerable and emergency transportation services for citizens during the lockdown.

 TRACKING & MONITORING ──────

24X7 War Room at KDMC HQ

The Kalyan Dombivli Municipal Corporation (KDMC) and Smart Kalyan Dombivli Development Corporation Ltd. (SKDCL) teams are working round the clock like a disaster management cell and are monitoring all activities on ground while simultaneously routing complaints from citizens to respective departments for speedy addressal.

GIS Dashboard

SKDCL is using an ESRI-based dashboard for real-time tracking of the situation on ground. The platform also acts as a single interface for easy coordination between different teams such as the emergency teams, the KDMC

teams, the PWC teams, the communication and PR teams etc.

Contact Tracing and Containment

KDMC has started quarantine facilities at two locations. If any COVID-19 positive individual is detected, then all residents living within 200 meters are surveyed and primary contacts are traced.

Drones for Crowd Monitoring

KDMC, in conjunction with the police department, used drone surveillance for detecting crowds and unwarranted gatherings.

DIAGNOSTICS

Leveraging Healthcare Infrastructure

There is a fever clinic in each ward, and reserved beds for COVID-19 in all government/KDMC hospitals and across most private hospitals. ICUs and beds at R.R Hospital, MIDC Dombivli and Holi cross Hospital, Kalyan have been taken over by KDMC and advance static fans have been installed in the ICU to provide natural air. A web application has been developed that allows health officials to record patient details that get captured at the back end and can then be tracked from the War Room.

COVID-19 Hospital and Health Care

A dedicated COVID-19 hospital has also been started by KDMC along with two dedicated COVID-19 health care centers. Alcohol rub, surface disinfectant, PPE kits, triple layer marks, N 95 mask, sodium hypo chloride etc. have been made available to frontline staff.

SANITIZATION

Regular Disinfection

With the help of the waste management teams and fire brigade, the administration is ensuring fumigation/sanitization is being done across all wards regularly.

AWARENESS & CAPACITY BUILDING

Tapping into Public Address Systems
Smart Kalyan Dombivli Development Corporation Limited (SKDCL) has tapped into its Public Address System (PAS) and all public announcements/messaging is being announced through the centrally managed system controlled through the War Room. All vehicles of ward officers and heads of departments are equipped with PAS that are used to warn citizens and make other key announcements as needed.

CITIZEN SUPPORT

Provision of Free Food to the Needy
KDMC and the police department provided stranded daily wagers with food and water and later with the help of social organizations/NGOs set up a shelter during the lockdown. On an average, 27,000 food packets were distributed daily in the KDMC area at 75 food distribution centers with food prepared in 8 network kitchens.

Apple *Mandi* App
Developed by the Nagari Sahakari Seva Sanstha Ltd., the administration tied up with 40+ medical stores and 115+ grocery stores in the KDMC area for home delivery of groceries and medicine. More than 500 volunteers from different NGOS also helped in this initiative. On the instructions of the KDMC commissioner Zomato was also allowed to home deliver groceries.

Auto On-call
KDMC partnered with the Deputy Regional Transport Officer to start an auto online service for citizens in case of emergencies. The rickshaws have special permits that allowed them to ply in the Kalyan and Dombivli area during the lockdown.

Kalyan Dombivli

Helpline for Special Needs

A total of 11 helplines were started during the lockdown for senior citizens and disabled persons. Around 150 volunteers were roped in for the job of ensuring doorstep delivery of essentials.

मनपा द्वारा 75 भोजन वितरण केंद्रों के माध्यम से भोजन की व्यवस्था

कल्याण, चेपा, दैनिक मजदूर एवं अन्य राज्यों के फिसआपिन मजदूरों के लिए कल्याण डोंबिवली मनपा द्वारा खाने का पैकेट प्रतिदिन उपलब्ध कराया जा रहा है। प्रतिदिन हजारों पैकेट भोजन वेबसारा लोगों को दिए जा रहा है। गौरतलब रही कि बंदी की वजह से मजदूर व दैनिक मजदूरों को इस समय भोजन ही खाली प्राथमिकता है जिसे ध्यान में रखते हुए मनपा द्वारा का व्यवस्था की गई है। मनपा क्षेत्र के 10 प्रभाग क्षेत्रों में 75 ऐसे भोजन वितरण केंद्र बनाए

गए हैं, जिसके माध्यम से अब तक 2 लाख 58 हजार 360 से ज्यादा भोजन के पैकेट वितरित किए जा चुके हैं। कल्याण डोंबिवली मनपा क्षेत्र में कोई भी भोजन से वंचित न रहे इस संबंध के साथ मनपा आयुक्त डॉ. विजय सूर्यवंशी की अध्यक्षता में निगरानी समिति का गठन किया गया है का समिति प्रधान क्षेत्र अधिकारियों से सम्पर्क में रहते हैं तथा संबंधित प्रभाग में जिनके पैकेट की आवश्यकता है उनकी पूर्ति करती है। इसी समिति की अध्यक्षता में 5

कम्युनिटी किचन तैयार किए गए हैं जिसकी प्रतिदिन 50 हजार फूड पैकेट तैयार करने की क्षमता है। हर तरह आवश्यकता के अनुसार ये पकवानाएं भोजन उपलब्ध करा रही हैं। इसी तरह पर छोटे बिछुओं के लिए आहार तथा महिलाओं के लिए सैनिटरी नैपकिन का भी वितरण किया जाएगा। इन सभी कार्यों को करते समय सोशल डिस्टेन्सिंग का भी विशेष रूप से ध्यान रखा जा रहा है जिससे किसी भी तरह का संक्रमण प्रसारित न हो सके।

महापालिका आयुक्त डॉ.विजय सूर्यवंशी यांच्या अध्यक्षतेखाली 'सनियंत्रण समिती'

७५ अन्नवाटप केंद्रातून आजपर्यंत १,३६,३६० फूड पॅकेट वाटप

मुख्यमंत्री सहाय्यता निधीस ४१ हजारांचा धनादेश सुपूर्द

कल्याण, डोंबिवलीतील भाजीपाला बाजार सुरू

नियमांचे उल्लंघन केल्यास कायदेशीर कारवाई

'एपीजपालीत' आजपासून खरेदीदारांना प्रवेश

Kanpur

City: **Kanpur**
State: **Uttar Pradesh**
Population:
**27,65,348 (2011
Census)**
Area: **403.7 sq.km.**
Round: **2**

kanpursmartcity.org

Kanpur is the biggest city of the state and the main centre of commercial and industrial activity. Once dubbed the 'Manchester of India', the city is famous for its known for its textile industries (cotton and woollen) and leather industries. Kanpur Smart City Ltd (KSCL) rose to the COVID-19 challenge by taking a wide range of measures from sanitization and keeping common areas clean, to city-wide surveillance, a toll-free helpline number for citizens in distress and telemedicine care. An app for citizens grievances, a website for home delivery, and several other citizen centric initiatives are some of the other ways the administration is reaching out to residents and ensuring their well-being.

TRACKING & MONITORING

Integrated Command and Control Center
KSCL's Integrated Command and Control Center (ICCC) is the central control room for the entire district. During the lockdown, city wide surveillance was conducted using CCTV cameras, across 122 locations, that relayed live footage on to a 7.75 m x 1.74 m large digital screen. Activities of the city administration, the police and the city municipal corporation (KMC), along with health facilities, water and electricity supply, are monitored from the ICCC.

The city's single toll-free number 18001805159, which has 32 parallel lines of incoming and outgoing calls, is also monitored from the ICCC.

At the ICCC

 DIAGNOSTICS

Telemedicine Services

Since many of the calls being received at the ICCC ended up being for medical purposes, KSCL launched a dedicated telemedicine center, in association with the Indian Medical Association (IMA). The video call facility for patients, available on 8429525801, was made operational on 28 March. In addition to diagnosis and medical advice, the telemedicine center also gave patients the contact information of chemists near them.

Medical Facilities by Kanpur Municipal Corporation

Doctors who are engaged by the municipality on honorarium have been deployed at the main Kanpur

Municipal Corporation (KMC) hospital and at 12 dispensaries across the city to provide outpatient services.

SANITIZATION

Sanitization and Disinfection Activities

Sanitization is being carried out using sodium hypochlorite solution. Each ward has been given one 16 litre machine to attend to their respective areas. Each zone has four such machines. Ten such machines and eight 8,000 litre jetting machines are being used centrally for all quarantined areas and public spaces. In addition, regular fogging is also being carried out using malathion spraying throughout the city based on a fixed roster plan.

Waste Management and Cleanliness Competition

KMC has started an additional second shift garbage collection (4pm to 7pm) targeting areas prone to garbage dumping. Empty tracts of land and vacant plots, which are vulnerable to garbage dumping, are being cleaned during the evening shift. The administration has also launched a *Swacch Kuda Adda* competition wherein each zone must submit a geotagged using time-stamped photo (before and after photos) with the best being selected as a winner and felicitated.

Sanitization activities

AWARENESS & CAPACITY BUILDING −

Information, Education and Communication (IEC) Activities

The city launched an intensive social media campaign to spread awareness on the official city channels. A media briefing is held daily with a press note being released by the municipal commissioner at 5pm every day. The city's Public Address System (PAS) and Variable Sign Boards (VSBs) are being used to communicate vital information and raise awareness, while door-to-door garbage collection vehicles are also equipped with sound systems to disseminate precautions and alerts.

Honouring Sanitation Workers Social Media Campaign

The city launched a social media campaign #weareproudofyou to highlight sanitation worker's efforts by sharing their stories and first-person accounts. Many media houses also picked up the stories and printed it. This not only helped in making citizens aware of the role sanitation workers play but it also instilled a sense of pride among workers, motivating them to continue working through the pandemic.

IEC activities on the ground and on social media

CITIZEN SUPPORT

Shelter Homes
KMC runs a total of 32 shelter homes across the city which includes free meals to all residents.

App and Portal for Citizens
KSCL has launched the Kanpur Smart City app for citizens. An informative android based mobile application, the platform also registers citizens' grievances. The app can be downloaded from the Play Store. Residents can also visit the official website of KMC — *http://kmc.up.nic.in/knncovid.htm* — to register a grievance or place a request for services.

Feeding Stray Animals
The city made provisions to feed stray animals during the lockdown by arranging for distribution of bread and dog food.

Free Fertilizer Distribution to Farmers
The city is planning to get *mandi* officials to distribute free fertilizer, to farmers, that is being produced at the local garbage processing plant.

Scheme for Daily Wage Earners
Payment to 15,634 beneficiaries was done on 10 April by the Honourable Chief Minister. To simplify the process, beneficiaries are being asked to apply through a WhatsApp number (8429525829). Applicants are verified by KMC staff for processing.

Free Food Distribution
A central control room was established at Kanpur Development Authority (KDA) to coordinate the efforts of various organizations involved in the preparation and distribution of food packets. This resulted in optimization and rationalization of the process that involved over 90 organizations. The food packets were distributed to the needy by the city police during the extended lockdown.

Social Distancing Circles

Circles of white paint were painted outside general stores, medical stores, PDS shops and shelter homes to ensure social distancing when in queues.

Home Delivery

The KMC website *Kmc.up.nic.in* hosted a link for general provision stores to register for home delivery. After registration, their verification was done by state GST officials. KMC then ensured that the verified stores and their delivery staff were issued movement passes during the extended lockdown.

Bulk Messaging

The ICCC placed a request to the Department of Telecom for bulk messaging. These messages were used to convey important information and raise awareness about COVID-19.

Self-Help Groups for PPE and Mask Making

To leverage the strong network of National Urban Livelihoods Mission (NULM) Self-Help Groups (SHGs), and to meet the demand of masks and PPEs, the city livelihood centre mobilised SHGs to produce these products. The SHG's triple layered face masks cost ₹20 each while a PPE kit is priced at ₹350 each.

Low-Cost Handwashing Facilities

Old scrap drums in the city workshop were converted to hand washing drums with soap dishes attached to them. These have been placed at various locations around the city. The Jalkal Department ensures daily filling and replacement of soaps.

Kanpur

Old scrap drums converted to handwashing drums

NULM SHGs being trained to spread awareness in slums

Karimnagar

City: **Karimnagar**
State: **Telangana**
Population: **2,60,899 (2011 Census)**
Area: **40.50 sq.km.**
Round: **3**

karimnagarsmart-city.in

Karimnagar is the fifth largest city in Telangana, serving as a major educational and health hub for the northern districts of the state. The city is working to combat the pandemic through the provision of a mobile application for pharmacies, website for donations, geo-tagging of positive cases and primary contacts, e-commerce and m-commerce facilities, foot pedal hand washing systems and by involving volunteers to raise awareness and help in maintain social distancing in crowded places.

TRACKING & MONITORING

Contact Tracing & Containment

The administration employed geo-tagging of all contacts and cordoned off potential hot spots/impact areas. As soon as the first primary contact tested positive on 23 March, the decision was taken to cordon off the area which showed maximum presence of the primary contacts' homes. All 62 primary contacts were mapped and the area which had the maximum concentration was cordoned off using barricades. Police monitored the areas round the clock while simultaneously health teams carried out fever surveys to ensure quarantining and to contain the spread.

Doorstep delivery of essentials to households in contain

zones was undertaken in conjunction with the corporator of the division. All households received pamphlets that carried information about key service providers and helplines.

Mobile Application for Pharmacies

Municipal Corporation Karimnagar (MCK) developed an app 'Pharmacy' that allows pharmacists to key in details of citizens procuring medicines for influenza-like illnesses (ILI) symptoms. Using this data, rapid fever surveys are conducted to track and check any potential COVID-19 cases.

CITIZEN SUPPORT

Delivery of Essentials

Vendors identified through self-help groups could sell vegetables via push carts in identified localities. Mobile *rythu bazaars* for sale of vegetables and fruits and home delivery of groceries were some of the other services extended to citizens with a focus on containment zones. Pamphlets with the list of identified vendors who undertake home delivery are supplied to all households in containment areas.

Foot Pedal Operated Handwashing Units

The Municipal Corporation Karimnagar (MCK) tapped a local inventor in the city to deploy his innovation of a foot pedal operated handwashing unit. The unit comprising a water tank, and a sink with the soap dispenser and tap operated by foot pedals at the base of the unit. Two such units have been set up at the main vegetable market and at the MCK office.

Decentralizing Markets and Recruiting Volunteers

A total of 16 mini-vegetable markets have been set across the city to prevent crowding at main markets and avoid the travelling hassles. To maintain social distancing at public places, MCK took the innovative route of involving citizen volunteers. MCK utilized social media to connect

with interested citizens who were then deputed to ensure social distancing across various markets. All volunteers were provided with t-shirts, ID cards, masks, sanitizers and gloves and were awarded certificates for services rendered.

Donations in Cash or Kind

The website *http://karimnagarsmartcity.in/Covidsupport/* was launched for issuing permissions to NGOs and for receipt of donations. All NGOs in the city are urged to take prior approval from MCK before launching any social activity. This is being done to ensure better coverage of services and to make sure that all precautionary measures are adhered to, such as wearing of masks and gloves, sanitization, social distancing, etc.
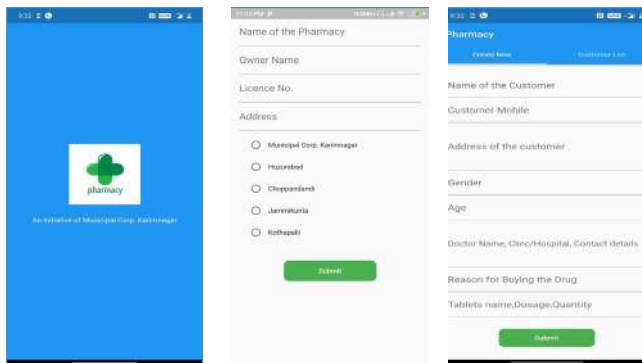
Mobile app developed for pharmacies

Website soliciting donations – in cash or kind

Karimnagar

Geo tagging or positive cases and primary contacts

Volunteers helped with maintaining social distancing at markets

Karimnagar

Foot pedal operated handwashing units

Posters with details of mini-vegetable markets, mobile vegetable vendors, mobile *rythu bazaars* and details of home delivery of groceries

Karimnagar

Social distancing at various markets

Karnal

City: **Karnal**
State: **Haryana**
Population: **2,86,974 (2011 Census)**
Round: **3**

smartcity.karnal. gov.in

Karnal, an agricultural-industrial district in the north-central part of Haryana, lies midway between Delhi and Chandigarh. Replete with lush Basmati rice fields, the city is today synonymous with the National Highway 44 (NH–44) or GT Karnal Road.

To tackle the dearth of Personal Protective Equipment (PPE) kits during the pandemic, Karnal took the decision to manufacture them within city limits. A Karnal live tracker app for the home quarantined, a tie-up with a local aggregator for home delivery of essential goods and the launch of the Home Fix Karnal portal, to facilitate key services, are some of the other initiatives the city has rolled out, to combat the pandemic.

 TRACKING & MONITORING

Karnal Live Tracker App

The Karnal Live Tracker app monitors the home quarantined with citizens needing to report in six times a day from 10am to 10pm along with regularly recording their body temperature. The app using GPS to track the citizen's location and offers features such as tele-counselling for mental health.

CITIZEN SUPPORT

Manufacturing of Personal Protective Equipment (PPE)
PPE kits are essential for doctors and frontline workers who face the brunt of exposure. The administration set up its own PPE kit manufacturing plant that readies 300 kits a day while reusable masks are being produced in collaboration with Self Help Groups (SHGs). Till date 250 such groups are involved, averaging an output total of 4,000 masks per day. PPE and masks are also being made available to adjoining districts.

PPE Kit Manufacturing Plant

300+ PPE kits/day

Masks Produced by Self Help Groups

65000+	Total Mask Production
4000	Average production per day
250+	Self Help Group Members involved
52000	Total Sale till Date

Delivery of Essential Goods

The city collaborated with Needs on Wheel (NOW) for localized delivery of essential items and facilitated linkage of *kirana* shops and diaries with online aggregators such as Zomato and Swiggy. The district administration also identified retailers, grocery distributors, fruit and vegetable mobile vendors, etc., as their designated vendors and made their details available to citizens.

Availability of Essential Services

District Administration Karnal ensured citizens were not inconvenienced, during the extended lockdown, by launching a portal *https://homefixkarnal.in/* that offers services by electricians, plumbers, etc. All service providers receive health and safety training, undergo daily health checks and are provided with a surgical mask, sterile gloves and a hand sanitizer.

Karnal

DOORSTEP DELIVERY OF ESSENTIALS

ONLINE DELIVERY:

Linkage of kirana shops and dairies

Facilitated linkage of kirana shops and dairies with online platforms such as Zomato, Swiggy and Needs On Wheels for delivering ration.

brought on board 150 Volunteers

Collaboration with Needs On Wheels wherein more than 150 volunteers have been brought on board and necessary linkages with wholesalers have been facilitated.

10,000 Orders Delivered

More than 10,000 orders have been delivered successfully with approx 1500 orders being placed every day. "Digital Karnal is cutted in the light against COVID-19. Stay at home, order from home & stay safe!"

LOCALIZED DELIVERY:

Effectively Implementation

Localized delivery of essentials effectively implemented.

Vendor Designated By District Administration

345 retailers
97 distributors for grocery
428 mobile vendors for fruits and vegetables
116 retailers for milk

NEED ON WHEELS (NOW)

App launched in Karnal with the basic plan to tap all the small cities in Haryana. Provides vegetable and fruits at the minimal rate prescribed by the government

Total 2 Godowns

We have two godowns for managing orders and packaging.

20-25 Delivery Boys

there are 20-25 Delivery boys to deliver the received orders.

Assured Delivery

They are committed to deliver the product with in 90 minutes.

200-300 Orders Per Day

Approx. 8000 Orders Have been delivered by NOW.

● LINKING OF ESSENTIAL SERVICE PROVIDERS WITH CITIZENS

Kavaratti

City: **Kavaratti**
State: **Lakshadweep**
Population: **11,210 (2011 Census)**
Area: **3.93 sq.km.**
Round: **4**

kscl.utl.gov.in

Kavaratti is the capital of the Union Territory of Lakshadweep in India. Located at the center of the Lakshadweep archipelago, Kavaratti is known for its beautiful beaches and lagoons that abound in star fish, anemones, countless multi-hued fishes and astounding coral formations. To counter the pandemic, Kavaratti Smart City Ltd. (KSCL) has enforced a mandatory quarantine for all travelers and launched a walk-in kiosk for sample collection.

TRACKING & MONITORING

Mandatory 14-Day Quarantine for Returnees
As part of the standard operating procedure to bring back stranded Lakshadweep residents, all returnees have been asked to obtain COVID-19 (negative) certificates from their nearest ICMR (Indian Council of Medical Research) approved lab. All who arrive must undergo mandatory home quarantine of 14 days and their residence is marked with appropriate signage along with the start and end date of quarantine.

DIAGNOSTICS

COVID-WISK — Walk-in Sample Collection Kiosk

To boost and strengthen the testing infrastructure, the Department of Health, UT of Lakshadweep has launched a COVID-WISK (Walk-in Sample Collection Kiosk). Its main objective is to protect healthcare works from infections and make the procedure less cumbersome. This also helps minimise the use of PPE and other protective equipment and is cost effective. The COVID-Wisk is designed to be mobile so that it can be installed in ships and ported to other islands as required. This innovation is also helping in the RT-PCR testing of residents returning from the mainland and abroad.

Kochi

City: **Kochi**
State: **Kerala**
Population: **6,02,046 (2011 Census)**
Area: **94.88 sq.km.**
Round: **1**

csml.co.in

Kochi (also known as Cochin), in Kerala's Ernakulam district, is a picturesque city that is very popular tourist destination. Known as the 'Queen of the Arabian Sea' Kochi is the top supplier of aromatic spices to global markets and one of the leading commercial centers of southern India. As part of its COVID-19 response initiatives, the district administration has set up mobile clinics, community kitchens and night shelter facilities for the needy. 'Doctor at Home' free telemedicine consultation and Walk-In Sample Kiosks (WISKs) are other innovations that is helping the city counter the pandemic.

DIAGNOSTICS

Mobile Clinic Facility for Migrant Laborers

As per the govt survey, the Ernakulam district administration estimates around 92,930 migrant workers are living in the district in 2,017 labour camps. The district administration has embarked on a major initiative to check whether the virus has spread among guest workers. The tests are being conducted in mobile clinics led by the National Health Mission and NGO, Center for Migration and Inclusive Development. The mobile clinic is named *Bandhu* and each is staffed with one doctor, two nurses and one pharmacist and travels to areas where guest

workers live. Symptomatic cases are immediately flagged for follow-up and testing.

Telemedicine Consultancy

The administration has launched *E-Sanjeevani*, India's first national OPD system. A citizen-friendly telemedicine consultancy, this free service eliminates the need to visit hospitals for minor ailments and check-ups. Doctors can check the medical records online and recommend treatment or testing as needed. This service is accessible to all with a focus on the quarantined who need to be monitored regularly.

Walk-In Sample Kiosk (WISK)

Due to the unavailability of PPE kits, and the associated difficulties in usage, the government has introduced Walk-In Sample Kiosks (WISKs) in different parts of the city. The key feature of WISK is complete protection for the health worker and the ability to collect a sample in less than two minutes.

Bandhu mobile clinic facility for migrant laborers

Walk-In Sample Kiosks (WISKs) have been installed in different parts of the city

CITIZEN SUPPORT

Ensuring Food for All

Community kitchens have been set up to ensure the needy, and those left jobless, do not go hungry during the lockdown. Most of the food packets are distributed free of cost to guest workers, the homeless and the destitute. Each packed meal comprises rice, two dishes and a pickle and is delivered at a minimal cost to other citizens. The central kitchens are run by local self-governing bodies in association with the state's poverty alleviating *Kudumbashree* project and employs women. More than 30,000 food packets are distributed daily through these community kitchens with the help of local volunteers. A total of 113 community kitchens have been set up by the district administration with the support of corporation, municipality and *panchayaths* while 10 community kitchens have been set up by the Kochi Municipal Corporation.

Night Shelters

Two night shelters have been set up under the Kochi Municipal Corporation. Catering to guest workers and the homeless, during the lockdown, the administration ensured food and basic requirements were met.

Promoting Mask-Making

The Kerala state government is promoting mask making with students, self-help groups through *Kudumbashree* and prisoners coming together to make masks in bulk. These masks are distributed to corporate staff and frontline workers and sold to other citizens at a nominal cost.

Making of Hand Sanitizer

The district administration is also involving different colleges, organizations, departments, and groups to make hand sanitizers.

More than 30,000 food packets are distributed daily through these community kitchens

The Kerala state government is promoting mask making

Kohima

City: **Kohima**
State: **Nagaland**
Population: **99,039 (2011 Census)**
Area: **20 sq.km.**
Round: **2**

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kohimasmartcity. com

Kohima is the second largest city in the state of Nagaland. Established as the headquarters of the Naga Hills by the Britishers, it became the state capital in 1963. Kohima Smart City Development Limited (KSCDL) is working on combating COVID-19 not just within the city, but in neighbouring districts as well. Tie-ups with local farmers to procure and home deliver vegetables, lockdown surveillance using drones and deployment of smart ambulances are some of the ways the city is tackling the ongoing crisis.

TRACKING & MONITORING

Drones for Monitoring

Kohima Smart City Development Limited (KSCDL) used drones to analyse and monitor crowds and traffic congestion in the city, during the lockdown period, to provide analytic reports to policy makers.
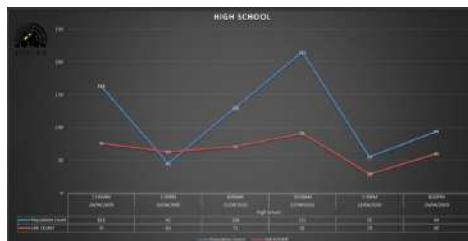
DIAGNOSTICS

Smart Ambulances

Kohima Smart City handed over two smart ambulances to the Naga Hospital Authority, Kohima (NHAK) for use during the COVID-19 pandemic. These ambulances are equipped with oxygen cylinders, ventilator, ECG machine, monitor, Ambu bag, defibrillators, stretchers, laryngo-scope, etc., and have an in-built AC and 5KVA online UPS. The ambulances are also fitted with GPS machines and can be tracked by KSCDL for quick deployment.

Smart Ambulance

SANITIZATION

KSCDL carries out regular disinfection of the city roads using city cleaning vehicles.

CITIZEN SUPPORT

Home delivery of Essentials

Citizens could access home delivery apps (Green caravan, Freshpack, Drift Basket) or visit the business' website or directly call to place orders for essential goods, medicines, and food. The administration facilitated an online registration process to issue home delivery permits. Delivery firms receiving a QR code-based permit upon submitting a valid trade licence and a self-declaration that they intend following all social distancing and sanitization protocols.

Promoting Local Farmers

With the main supply of produce and livestock from Assam cut off, due to lockdown, the administration decided to create new opportunities for local rural entrepreneurs. A collaboration with farmer self-help groups and the National Rural Livelihood Mission led to the procurement of organic vegetables in partnership with permitted firms such as Entrepreneur Associates, Green Caravan and other local NGOs such as Business Association of Nagas. The Chief Minister granted ₹25,000 to each firm in recognition of their services in the collective fight against COVID-19.

Kohima

This ad was published on social media

Chief Secretary Nagaland, Temjen Toy giving away cheques to registered home delivery companies at his office on 30th April 2020. (DIPR)

Kota

City: **Kota**
State: **Rajasthan**
Population:
10,01,694 (2011 Census)
Area: **527 sq.km.**
Round: **2**

***

smartcitykota.com

Kota is the 25th largest district in Rajasthan and is known for its coaching institutes that prepare students for competitive exams. About 2 lakh students, between 15-19 years, flock to Kota every year. The COVID-19 pandemic saw Kota Smart City Limited (KSCL) tying up with healthcare platform MedCords to tackle the situation. The city focused on ensuring the needs of the student community were met along with the repatriation of coaching students during the lockdown period.

 DIAGNOSTICS

Aayu App: Home Consultations
The *Aayu* App offers citizens secure free consultations with specialist doctors. Callers can also instantly share their prescription with nearby medical stores to order medicines. Kota city is also enabling this app in corresponding smart cities and tapping the hyper local digital health ecosystem to improve the experience.

Sehat Sathi App: Connecting for Medical Help
Geared towards non-smartphone users, the *Sehat Sathi* app connects all medical stores, *e-mitra* centres and other customer service points to extend *Aayu* healthcare services. This app also connects citizens for consultations

with specialists and registered doctors. Users without smartphones also have access to the National Healthcare Helpline: 7816811111.

Free Doctor Portal: Consulting Verified Professionals
A free patient-doctor portal for registered practitioners has been created — practitioners are verified by their degrees and experience certificates.

Thermal Screening: While Boarding Buses and Trains
Medical screening of students heading out of the city was done by deploying medical teams from the Chief Medical and Health Officer (CMHO) who used thermal guns for screening. One team was deployed for every three buses and twenty medical teams were on standby for every train.

SANITIZATION

Kota *Nagar Nigam* ensured proper sanitization and disinfection of buses and trains with sodium hypochlorite before students began the boarding process.

CITIZEN SUPPORT

Student Helpline and Counselling
Dedicated student helplines were set up to address students' queries. Student counsellors were deputed for every 50-100 students to ensure their psychological care and well-being.

Supplying Food to Students
Dedicated teams were set up to ensure students residing in Kota's numerous hostels received adequate food. Provision of food, water and masks were made for all students boarding buses/trains for their hometowns.

Facilitating Movement of Students
An online form gathered information about students seeking to go back to their hometown. The form was

publicized in newspapers, prominent social media channels, by various local personalities and by coaching institutes. Students received SMS alerts regarding boarding times and social distancing was followed with 25-30 students in a 50-seater bus once the coaching ID-card, SMS and address were verified. Volunteers and civil defense members assisted students in the boarding procedure and in luggage storage.

A total of 1048 buses and 16 trains were used, to send 28,491 and 18,196 students, respectively. Every student was medically screened at the time of departure and a line list was prepared. Kota city united a total of 46,687 students with their families using state-sponsored trains and buses.

Screening of students before boarding

Students waiting, flagging off train to Bihar

Kota

Medical screening, social distancing while boarding, seating

Leaflets distributed to every household.

Media coverage

Accurate live information for users

Lucknow

City: **Lucknow**
State: **Uttar Pradesh**
Population:
28,17,105 (2011 Census)
Area: **349 sq.km.**
Round: **2**

lucknowsmartcity. com

Lucknow is a multi-cultural city famed for its beautiful gardens, poetry, and fine cuisine. Lucknow Smart City Limited (LSCL) has adopted various measures to fight COVID-19. LSCL is using the 3T MEM approach of Test, Trace and Treat followed by Monitor, Engage and Mobilize. The city has incorporated the Integrated Command and Control Centre (ICCC) dashboard metrics to create a platform that offers real-time updates of COVID-19 cases. Creation of the Lucknow One mobile app for citizens, a Field Responder mobile app for staff and free telemedicine are a few of the technological solutions being deployed.
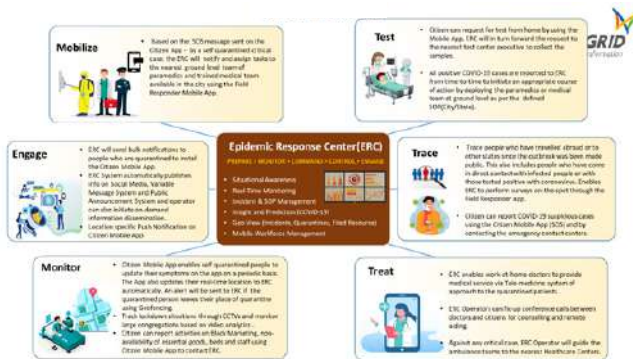
3TMEM Approach

	CITIZEN FACING		ADMINISTRATIVE FACING
1.	Self-quarantine registration and health status updates through the Lucknow-One mobile app and citizen portal.	1.	The ICCC COVID-19 dashboard provides a Common Operating Picture (COP) to enable timely decision and action support by city authorities.
2.	SOS-based incident reporting through Lucknow-One mobile app and helpline for emergencies, test requests etc.	2	Field Responder mobile app for handling sanitization, isolation, survey of effected areas etc. on a real-time basis for immediate action.
3.	Citizen can report civic issues through the Lucknow-One mobile app such as non-availability of essential goods, unavailability of beds and staff in hospital etc.	3.	ICCC spatial view for hotspot related activities through monitoring activities, sanitization, isolation and surveys. ICC also uses prediction forecasting for the upcoming 14 days for decision-based actions.
4.	Notifications and announcements on the Lucknow-One mobile app, visual media displays, social media etc.	4.	Automatic classification of self-quarantine citizens as mild, moderate and critical. Accordingly arranging conference calls between doctors and citizens for counselling and remote aiding.
5.	Hello Doctor helpline enables citizen to consult doctors online for free.	5.	ICCC dashboard shows the doctor availability based on the online consent taken from the doctor.

TRACKING & MONITORING

Integrated Command and Control Centre (ICCC): Common Operating Picture

The COVID-19 dashboard provides a Common Operating Picture (COP) to enable timely decision and action support. The COP covers key data points such as active, confirmed and recovered COVID-19 cases, the deceased and quarantined trends, age, gender and location-wise distribution of positive cases and real-time classification of quarantined citizens' health status along with notifications of zone-wise citizen grievances such as improper food supply, black marketeering of essentials etc.

The COVID-19 dashboard also highlights the number of COVID-19 tests being conducted with a breakdown of positive, negative, discharged and awaited cases. The monitoring of isolation wards, COVID-19 hospitals and

hotspots (covering information such population, number of households, positive cases in that area) are also done from the ICCC.

The ICCC platform triggers a standard operating procedure (SOP), against any incident, automatically notifying the nearest health, sanitation or police team. The field staff have access to a Field Responder mobile app that gives them real-time task updates to ensure quick action.

Standard Operating Procedures (SOPs) for Emergency and Civic Incidents

Lucknow Smart City Limited (LSCL) has set SOPs that are being adhered to for the following situations: COVID -19 positive cases, hotspot isolation, medical emergencies, COVID-19 suspect cases, self-quarantine cases, test requests, medical staff being attacked, improper food supply and gatherings that flout social distancing.

COVID-19 Prediction Model

The ICCC dashboard enables real-time prediction or forecasting for 14 days by considering city-level historical data. This enables Lucknow city authorities to plan ahead, and make decisions regarding testing and provision of beds and ventilators along with ensuring required inventory is put in place.

Monitoring Self-Quarantined Citizens

LSCL's Lucknow One citizen mobile app and portal enables self-quarantined citizens to submit their symptoms on a periodic basis and the same is updated real-time on the ICCC dashboard by tracking the user's GPS coordinates. The ICC platform also triggers an alert if a self-quarantined person moves beyond the prescribed geofence. The dashboard visualizes real-time geo-tagging data of self-quarantined persons such as their location and their health condition with appropriate classifications of mild, moderate and critical markers on a map. Authorities can drill down further to know more about the quarantined person such as their name, mobile number and exact symptoms that includes a one-click provision to call the person as well.

Action Taken Reporting (ATR): Medical, Police and Sanitation

Police, medical and sanitation staff use the Field Responder mobile app to take an audio/video recording or an image of the response undertaken along with appropriate remarks. The areas covered for ATR include hotspot containment, sanitization, crowd control at hotspots etc. Hotspot areas are clearly marked up to a distance of 1 km and entry/exit points have barred gates. Furthermore, all citizens in the area are examined for COVID–19 symptoms.
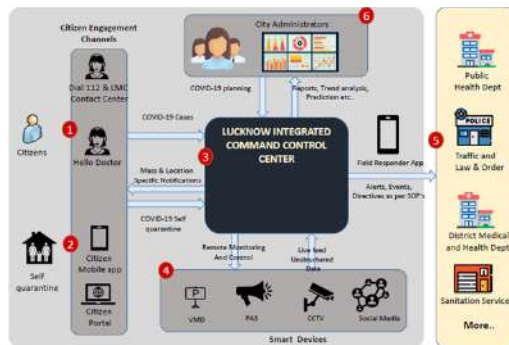
Lucknow ICCC Map view

Monitor Hotspots

Mobilize Resources

COVID-19

Lucknow ICCC network analysis of COVID-19

Hotspot, Positive and Quarantine cases

Lucknow

Lucknow ICCC COVID-19 prediction model
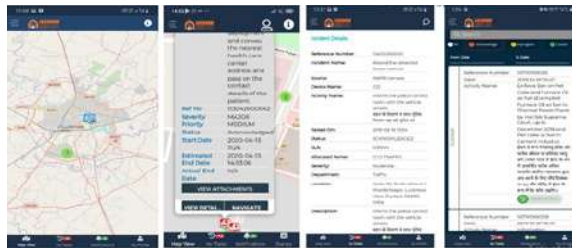
View new incidents & task details

Hotspot sanitization activity update on Lucknow ICCC

DIAGNOSTICS

Actilligence COVID-19 Survey Form

Public health ground level team undertake risk assessment surveys within a 3-kilometer radius of a hotspot. The data collected is matched against possible contacts using the Field Responder mobile app or the ICCC dashboard platform.

Hello Doctor Program

Connecting top doctors from the city's most trusted hospitals, LSCL's Hello Doctor program is a free of cost service for non-emergency medical care. This special telemedicine facility is a single number multi-channel IVR system that offers consultations from 150 doctors across 22+ specialties via chat, audio and video call. The program also offering dedicated psychological care and consultation and citizens are urged to call the toll-free number 0522-3515700. The number also offers home delivery of medicines by connecting users with their nearest pharmacies. Citizens can also book a consultation online by logging onto LSCL's official website - *www. lucknowsmartcity.com*

Hello Doctor - Web page

Hello Doctor - Web page

Allopathic - 791
Homeopathic - 185
Ayurveda - 289
Yoga - 54
Unani - 63
General OPD – 122
Total Cases - 1504
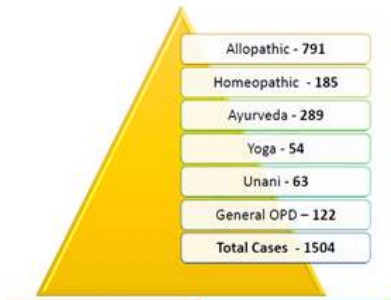
Specialty wise citizens call detail

AWARENESS

LSCL regularly updates their social media channels and uses the ICCC to tap public announcement systems for on-demand information dissemination.

Target KPIs	Target	Achieved		
Overall Reach	15,00,000	Facebook + Instagram	16,13,316	32,52,352
		Twitter	4,78,182	
		App Promotion	9,30,076	
		YouTube	2,30,778	
Overall impressions	20,00,000	Facebook + Instagram	20,83,024	37,22,060
		Twitter	4,78,182	
		App Promotion	9,30,076	
		YouTube	2,30,778	
Overall Engagement	1,50,000	Facebook + Instagram	2,51,048	3,81,138
		Twitter	52,415	
		App Promotion	21,218	
		YouTube	56,457	
Video Views	50,000	YouTube (Skippable Ads)	56,457	2,85,111
		Facebook + Instagram (3- Seconds Ads)	2,28,654	
Social Media Creatives per Month	150	Total Social Media Creative Published	250+	
Total Video Ads in 90 Days	24	Total Video Ads Published	5 Published	19 Remaining
App Installs	Maximum	Total Confirmed App Installs	1,616	

Fluentgrid Limited

Social media campaign overview 13th April-12th May 2020

Ludhiana

City: **Ludhiana**
State: **Punjab**
Population:
16,18,879 (2011 Census)
Area: **310 sq.km.**
Round: **1**

Ludhiana is the largest city of Punjab, both in terms of area and population. An important industrial and educational center in north India, Ludhiana is known for its hosiery goods, woolen garments, and leather industries. To contain the COVID-19 spread, the city administration established an effective command center and has undertaken drone surveillance of hotspots and ensured the quarantined use the *Itihas* and the *Arogya Setu* app. The city also made efforts to reach out to its migrant base of over 2 lakh and helped them reach their hometowns by arranging trains.

 TRACKING & MONITORING

Central Command Centre
Ludhiana Smart City Ltd. (LSCL) has established a central command centre to monitor the institutional/home quarantined cases. They also ensured regular follow ups to check on the quarantined citizens' health status.

Drone Surveillance during Lockdown
During the extended lockdown, LSCL conducted drone surveillance in containment zones, hotspots and micro-containment zones to ensure all residents complied with the rules.

Mobile Apps for Effective Tracking

The city administration promoted the use of the *Itihas* and *Arogya Setu* app to effectively monitor emerging hotspots and take pre-emptive containment measures.

 CITIZEN SUPPORT

Helping Migrants get Home

The administration arranged for trains to send more than 2 lakh migrants to their native states. A dedicated control room was set up to coordinate the entire effort and ensure all precautionary measures were undertaken prior to the journey.

Madurai

City: **Madurai**
State: **Tamil Nadu**
Population:
**14,65,625 (2011
Census)**
Area: **148 sq.km.**
Round: **2**

**maduraicorpora-
tion.co.in**

Madurai City is synonymous with the Meenakshi Sundareswarar twin temple — the pivot around which the city has evolved. The administrative headquarters of the district, the city administration of Madurai, in its fight against COVID-19, has barricaded all the entry points of containment zones. Vehicles are arranged to supply vegetables and proper sanitization and medicine distribution is being done throughout the city.

TRACKING & MONITORING

A 24X7 control room has been established for COVID-19 monitoring with containment areas being under constant surveillance. Minute-by-minute updates and follow-up of activities are done through the control room by staff exclusively deputed by Madurai Corporation. An Android application called *Namma Madurai* has also been developed to serve people in all aspects. All containment zones are being barricaded using metal sheets to restrict movement and curtail spread.

DIAGNOSTICS

Citizens in containment zones are tested daily for respiratory infections such as influenza-like illness (ILI) and severe acute respiratory infections (SARI). *Kapasura kudineer*, zinc 150 mg, vitamin C 500 mg and arsenic album tablets are being distributed to the public and staff working in containment zones. Medical checkup for all sanitary workers is being done twice in the week while special vehicles are deployed to ensure sanitary workers can commute to their place of work without any trouble.

In the non-containment areas, mobile clinics have been formed for the screening of influenza-like symptoms. Treatment of minor ailments and free of cost distribution of drugs for hypertension and diabetes mellitus is also being done. A dedicated mobile sample collection vehicle is used in the field for lifting ILI samples from containment zones and other areas.

To counter the stigma around COVID-19, patients' family members are being counselled by trained counselors and doctors. Psychiatric counseling is also being given to all who have been treated and discharged. Furthermore, a helpdesk has been set up in every containment zone.

SANITIZATION & WASTE MANAGEMENT

Disinfection is carried out in three shifts in containment zones using spraying machinery. Separate solid waste management (SWM) vehicles are being used in containment zones for collection of biowaste garbage with proper precautions. Yellow bags are being used for collection of used gloves and masks. Sanitary workers in containment zones have been given safety equipment such as masks, gloves, gumboots etc. and are screened daily with a thermal scanner. Disinfection teams have also been provided with PPE kits consisting of full cover, safety glasses, masks, shoes and gloves.

AWARENESS

Hand washing awareness stickers with the telephone number of the control room and contact details of medical teams have been pasted in all houses. Public addressal systems have been fitted in 100 Madurai Corporation vehicles and these are used to raise awareness continuously in the morning and in the evening. Flex banners, posters and notices have been posted in key areas to create awareness on COVID-19. Best hand washing practices are being explained at many public locations in collaboration with volunteers.

CITIZEN SUPPORT

Supply of Essential Commodities

A fleet of light commercial vehicles have been engaged to supply vegetables and fruits in all the wards — thus avoiding congestion in the market and on the roads. Groceries, RO water, milk and medicines are also being supplied door-to-door to all households in containment zones.

Food Distribution & Community Kitchens

Community kitchens have been established in corporation schools and laborers are being given shelters in the schools' classrooms. Hot and hygienic food is provided free of cost to all sanitary workers, migrant laborers and the needy, thrice a day through the food program *Amma Unavagam*. Hand washing and social distancing is ensured at all *Amma Unavagam* locations.

Social Distancing Practices

The city vegetable market has been temporarily shifted to 18 different locations. Proper barricading has been set up and a social distance of 1 meter is being maintained. People can enter the market only after washing their hands with soap/sanitizer. The entry points of all departmental stores, Banks, ATM centers and *Amma Unavagams* have been marked with white circles to ensure adequate social distancing.

Mangaluru

City: **Mangaluru**
State: **Karnataka**
Population: **4,99,486 (2011 Census)**
Area: **132.4 sq.km.**
Round: **2**

mangalurusmartci-ty.net

Mangaluru (also known as Mangalore) is the chief port of Karnataka. The city developed as a port in the Arabian Sea during ancient times and has since become a major hub of seafaring activity handling 75% of India's coffee exports and the bulk of the nation's cashew exports. Mangaluru repurposed its Integrated Command and Control Center (ICCC) in its fight against COVID-19. Real-time tracking of positive cases and primary contacts, emergency addressal and reporting, GIS mapping of quarantined and monitoring of health infrastructure all takes place from the ICCC via the COVID-19 dashboard.

TRACKING & MONITORING

Real-Time Monitoring through ICCC

The ICCC's COVID-19 dashboard offers a real-time view into the on-ground situation. *Taluk*-wise GIS mapping of recent foreign returnees/quarantined and a Mangaluru Smart City Ltd. (MSCL) approved Emergency Reporting and Response platform allow the administration to tackle any emergencies or violations smoothly and efficiently.

Mangaluru
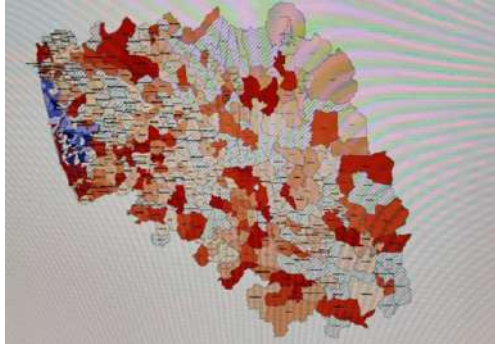
GIS mapping of recent returnees

DIAGNOSTICS

Health Infrastructure
Mangaluru Smart City set up a state-of-the-art 37-bed COVID-19 ICU at Wenlock Government Hospital in just 21 days.

37-bed COVID-19 ICU set up in just 21 days

CITIZEN SUPPORT

Daily Updates and Helpline

The city government issues a daily bulletin that details out number of tests conducted, total discovered cases, current active cases, cases recovered and deceased till date. A dedicated helpline and email id to address queries and complaints has also been set up to ensure citizens are not inconvenienced in any way.

Moradabad

City: Moradabad
State: Uttar Pradesh
Population: **8,89,810**
(2011 Census)
Area: **149 sq.km.**
Round: **4**

moradabadsmart-city.in

Moradabad is famous for its traditional brass handicrafts industry earning it the moniker *Pital Nagri* or Brass City. Like other Indian cities, businesses have taken a hit in Moradabad too and artisans have lost jobs. To counter the same, Moradabad is ensuring that the neediest are not deprived of household essentials or health intervention. A 24-hour helpline, a complaint redressal system and a WhatsApp helpdesk are some of the ways the city is reaching out to citizens in their hour of need.

 TRACKING & MONITORING

A COVID-19 War Room has been set up that is equipped with a 24X7 helpline. Hotspot management, grocery-vegetable helplines, home isolation and institutional quarantine of COVID-19 positive cases and suspect cases, water supply, sanitation and sanitization are all being managed from here. With the help of software team experts, the Google map view of Moradabad city is regularly updated to display hotspots, containment areas and red zones etc.

CITIZEN SUPPORT

24X7 Support
Telemedicine, food for the needy, community kitchen management, and animal welfare has been part of the overall management and is available round the clock.

Complaint Redressal System
One can lodge any complaint on the website of *Nagar Nigam* Moradabad to receive a status check token. Officials address complaints within 24 hours.

WhatsApp Helpdesk
Moradabad city tapped the most common social media platform WhatsApp to convey useful information. The WhatsApp number is being advertised on social media platforms and in newspapers with citizens able to choose their language option (Hindi or English) to get their needs addressed. This platform has been developed for a larger reach and includes options such as checking for COVID-19 symptoms, telemedicine, free food, ration, home delivery providers etc. For example, if a user selects 03, he/she can get information on the availability of free food and community kitchens near them.

Mohalla Nigrani Samiti for Migrants
Nagar Nigam Moradabad has also set up facilities for migrants who have come from other places. Chaired by the local councilor, the *Mohalla Nigrani Samiti* includes a sanitary inspector and a sanitary supervisor. This platform helps all migrants with food, quarantine advisories etc.

Muzaffarpur

City: **Muzaffarpur**
State: **Bihar**
Population: **3,54,462 (2011 Census)**
Area: **3,173 sq.km.**
Round: **3**

Muzaffarpur is the fourth most populous city in Bihar and is famous for its *Shahi* lychees, earning it the title of the country's 'Lychee Kingdom'. To combat the pandemic, the city has adopted the HCM strategy of quarantining, ensures regular disinfection of public spaces, facilitated home delivery of essentials during the extended lockdown, distributed rations to needy, trained healthcare providers and engaged prisoners to produce masks.

TRACKING & MONITORING

HCM Strategy for Quarantining

Muzaffarpur Municipal Corporation (MMC) has adopted an HCM strategy of Home quarantine, Centralized quarantine, and Mass quarantine. Dedicated teams are entrusted with the responsibility of monitoring those under quarantine and strict actions are taken against violators which include moving them to a centralized quarantine facility, collection of fine of ₹1,000 and registration of a FIR.

Monitoring of Containment Zones

Barricades are placed to demarcate containment zones and to restrict movement with the same being closely monitored.

SANITIZATION & WASTE MANAGEMENT

Sanitization Initiatives
Sanitization is carried out in conjunction with the Vector Borne Disease Control (VBDC) team and fire fighters with teams regularly disinfecting quarantine centers, hospitals, vegetable markets, slaughterhouses, fish/meat markets, government offices and cremation grounds, etc. MMC uses fumigation pumps (hand compression), fire engines and spray pumps to carry out its sanitization activities.

Solid Waste Collection and Disposal
MMC has a fleet of tippers, tractors, tricycles and pushcarts, and collects waste from quarantined households in separate door-to-door vehicles with bio medical waste being collected and processed as per guidelines. Volunteers also conduct door-to-door education and awareness on the importance of waste segregation at source. MMC has provided all households with two plastic bins — green for biodegradable and blue for non-biodegradable waste. All bio-medical, sanitary, or hazardous waste is handed separately while biodegradable waste is routed to aerobic composting facilities.

Sewer Maintenance
Along with solid waste collection and disposal special care is being taken with cleaning and scrapping. Special provisions have been made to clean sewers given that the lifespan of the virus was found to be at least 20 days basis the fecal matter from COVID-19 positive patients.

CAPACITY BUILDING

Training for Frontline Workers
Due emphasis is being given to increase capacity building of healthcare providers and other frontline staff. MMC

offers special training to all medical officers, specialists, public health workers, Auxiliary Nursing Midwives (ANM), pharmacists, sanitary staff, etc. A COVID-19 response taskforce team has been identified and has been allocated specific tasks including training with nodal officers. The administration also has a grievances redressal system is in place for quick response.

CITIZEN SUPPORT

Availability of Essentials
MMC has tied up with APMC for home delivery of groceries, vegetables and fruits and facilitated home delivery of essentials by typing up with retailers, courier services and aggregators. Movement passes were issued to all essential goods providers and distributors.

Shelter Homes and Food for the Needy
MMC has tied up with various NGOs and has made special arrangements, in collaboration with UMMID Foundation, to set up special relief centers to accommodate the homeless people and migrants. All relief centers offer free food and accommodation. Prepared food packets are also being distributed to needy people across the city.

Mask-Making by Prisoners
Prisoners in Muzaffarpur's central jail have been employed to make facemasks. In addition to providing protection to fellow inmates and prison staff, the masks are also being distributed in nine district and sub-jails that fall under the Muzaffarpur Central Prison.

Nagpur

City: **Nagpur**
State: **Maharashtra**
Population:
24,05,665 (2011 Census)
Area: **227.4 sq.km.**
Round: **2**

nsscdcl.org

Nagpur city is the winter capital of Maharashtra and was recently ranked as the second most green city in India. It is also a major commercial and political hub of the *Vidarbha* region in Maharashtra and is a major trade centre of oranges that are cultivated in the region. Nagpur Municipal Corporation (NMC) deployed a unique three-layer approach to tackle the pandemic and break the chain starting from door-to-door healthy surveys and aggressive contact tracing to institutional and mass quarantine.

TRACKING & MONITORING

Three-Layer Approach to Tracking and Containment

Nagpur Municipal Corporation (NMC) employed a COVID-19 response strategy that stems from proactive measures such as early detection, isolation, testing and treatment. A task force, headed by the NMC Commissioner, operates from the 'COVID-19 War Room' that serves as the nerve centre for the formulation of all response strategies and implementation. The daily War Room deliberations help to innovate proactive measures and ensure quick and effective decision-making.

NMC uses a three-layer approach to tackle the pandemic. The first layer is **Proactive and Aggressive Contact Tracing,** leading to identification of COVID-19 suspects; strict containment zone demarcation and comprehensive surveys of the total population of the city. The second layer is early isolation of high-risk contacts by **Institutional Quarantine** and the third layer is **Mass Quarantine** where super spreaders were traced.

Proactive and Aggressive Early Tracking, Isolation and Treatment

NMC followed a Triple T strategy of Tracing, Testing and Treatment of COVID-19 suspects to control the spread of disease, testing right from day one that lead to early detection and prompt treatment and isolation.

Proactive and Aggressive Contact Tracing

Three teams get activated within 10-15 minutes of a COVID-19 positive case being diagnosed. One team is deputed for history taking, the second team starts tracing and tracking close contacts of the patient and the third team executes a containment plan.

Institutional Quarantine and Mass Quarantine

NMC has adopted a policy of compulsory institutional quarantine and this proved to be the gamechanger in restricting community spread. When the first death occurred in a crowded containment area, NMC discovered that incomplete contact history could result in a rapid spread of the virus and resorted to 'Mass Quarantine' for people who were found exposed in the containment zone but who did not display symptoms.
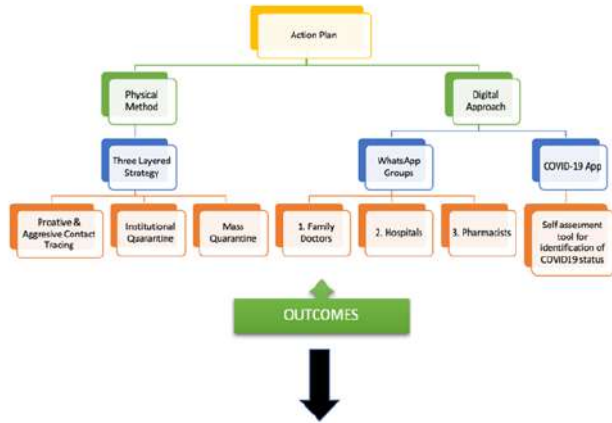
Part A:
1. Early identification of suspect cases
2. Swift and quick testing of suspect cases
3. As a result, early treatment
4. High recovery rate
5. Low Mortality Rate

Part B:
1. Early tracking and isolation lead to breaking of chain
2. Lesser number of confirmed and active cases
3. Lesser growth rate

Identification

NMC collects information from multiple sources to identify any suspect or confirmed patient of COVID-19. These sources are —

If any suspect is identified, NMC team reaches there within 10 minutes and appropriate action is taken as per the guidelines defined in the Action Plan.

For every positive case, the team can trace all the people who had come in contact with the patient within 2 hours.

DIAGNOSTICS

Comprehensive Survey of the Total Population

NMC acted swiftly and early in this respect as well. The comprehensive survey of the total population started on

27 March 2020 to identify and track high-risk and co-morbid population. The strategy was developed with a dual purpose of raising awareness about COVID-19 and identifying symptomatic people early on. Door-to-door surveys were conducted to gather citizens' travel and medical history. High-risk citizens with Influenza-Like Symptoms (ILI), Pneumonia, Severe Acute Respiratory Infection (SARI) were identified as were senior citizens with co-morbidities such as Chronic Obstructive Pulmonary Disease (COPD), Tuberculosis (TB), Cancer, etc., and expectant mothers in need of antenatal care. The data captured allows the administration to follow up with this high-risk population and ensure their well-being.

CITIZEN SUPPORT

Corona Control Room
NMC has set-up a Corona Control Room for effective management of health and civic issues faced by citizens. Citizens can call in with queries and complaints and also avail of mental health counselling, elder care support and specially abled support.

Counselling and Well-Being
NMC has established dedicated medical camps and instituted door-to-door health check-ups with a focus on vulnerable population and those who are suffering from other serious ailments. All on ground activities are monitored from the Corona Control room.

Namchi

City: **Namchi**
State: **Sikkim**
Population: **12,190 (2011 Census)**
Round: **2**

namchismartcity. co.in

Namchi or Namtse is the capital of the district of South Sikkim in the Indian state of Sikkim. A picturesque destination, the name Namchi, literally translates to 'top of the sky' — Sky *(Nam)* High *(Chi)* — in Sikkimese. Namchi city offers an unmatched view of the Khangchendzonga range and the Rangit valley and is fast emerging as a key tourist destination. Along with following the state mandates on COVID-19 response, Namchi installed an energy efficient street lighting solution for efficient monitoring and to ensure citizens' safety.

 CITIZEN SUPPORT

Solar PV Integrated Energy Efficient Street Lighting

During the first phase of lockdown, the Namchi Smart City Ltd. (NSCL) was approached by the District Collectorate's office with the request of illuminating all streetlights within Namchi Municipal Corporation (NMC). The district authorities in turn had been approached by the police department and various local level field functionaries who were finding it difficult to monitor the lockdown. NSCL immediately swung into action and with contingency planning, all installed streetlights were switched on at night. The well illuminated streets led to NSCL considering the societal benefits of LED streetlights in the urban context.

The design consists of solar PV integrated energy efficient LED luminaries with telecom grade GI streetlight poles controlled by a centralized Control and Monitoring System (CCMS). In its final phase of implementation, the trial run of CCMS has been completed and the administration is waiting for approvals from the Energy and Power department to provide dedicated service connections to the networks.

Nashik

City: **Nashik**
State: **Maharashtra**
Population: **14,86,053 (2011 Census)**
Area: **2,681 sq.km.**
Round: **2**

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nashiksmartcity.in

Nashik is an ancient city in the northwest region of Maharashtra and is an important Hindu pilgrimage site, best known for the *Kumbh Mela* which is held once in 12 years. Nashik is also known as the "Wine Capital of India" as half of India's vineyards and wineries are located here. During the ongoing pandemic, the city has deployed localized testing, quarantine tools such as the *MahakKavach* app and a citizen centric app along with converting schools into shelter homes for stranded migrant laborers, ensuring regular sanitization and facilitating e-learning for school students.

TRACKING & MONITORING

NMC COVID-19 Mobile Apps Data: Citizen Tracker

Nashik Municipal Corporation (NMC) in collaboration with the Smart City team deployed the *MahakKavach* app to boost contact tracing of quarantined COVID-19 patients. The app was jointly developed by Maharashtra State Innovative Society, Nashik District Innovative Council, NMC and National Health Authority. This app is used by individual(s) as directed by their doctor(s) or medical worker(s) and helps effectively identify, test and isolate suspected persons, to contain the spread of infection. The platform also features geo fencing, which allows the

quarantined to be restricted within a digitally mapped area and in case of any breach an alert is generated. The administration has access to a real-time dashboard that tracks the patient and thus helps in primary contact tracing.

DIAGNOSTICS

Setting up a Local Laboratory
Samples were initially sent to Pune and Dhule for testing. Local testing was started to speed up the process. The laboratory has a capacity of 180 samples per day and is accredited to the All India Institute of Medical Sciences (AIIMS).

Door-to-Door Surveys
NMC conducts house-to house surveys in and around COVID-19 positive individuals' homes.

SANITIZATION

Sanitizing Cremation Grounds
Regular sanitization is carried out across the city. Nashik is situated on the banks of the river Godavari and Hindu families carry out the last rites on the ghats. The administration paid special attention to the sanitization of cremation facilities and ensured a strict protocol for hygiene, especially keeping in mind the COVID-19 departed.

AWARENESS & CAPACITY BUILDING

IEC Activity via Social Media
Information, Education and Communication (IEC) is being done via official social media channels. Posts on

awareness, initiatives and myth-busting, ensure that verified and correct information is disseminated.

CITIZEN SUPPORT

NMC COVID-19 Mobile App for Citizens
NMC COVID-19 is a mobile application jointly developed by NMC and Kodwell Technology — a Nashik-based technology startup. It provides 11 services to citizens such as enlisting all essential services and helpline numbers, reporting stranded people and home delivery of medicines, groceries, meals, vegetables and fruits, etc.

Support to Migrants
The administration used a three-pronged strategy of Identification, Location and Transfer, coordinating with local police and field officials to identify and locate stranded people. Schools were transformed into shelter homes with provision for meals and other essentials. All shelter homes strictly adhered to COVID-19 guidelines such as sanitization and social distancing; and residents were checked periodically along with being educated on dos and don'ts.

Home away from Home
To ensure mental health of migrant laborers each shelter home had psychiatrists on call and along with counselling. They can also avail of lectures, yoga classes and free calls to their family members. Breakfast, tea and two square meals were provided daily with the food being prepared by NMC's community kitchens in conjunction with local NGOs.

Doorstep delivery of Food to Students
Courtyard Shelter students receive doorstep delivery of an immunity-boosting diet consisting of groundnuts, jaggery, sprouts and banana. The Courtyard Shelter staff, along with medical staff, also conducts health surveys among the students and collected data.

Frontline Staff Safety & Life Insurance

The on-ground deployed staff are equipped with sanitizers, masks, gloves, and PPE kits. Due to the high risk they face when in the field, all receive insurance up to a sum of ₹25 lakh.

Educational Infrastructure Initiatives
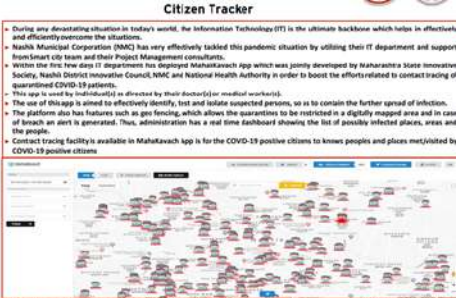
An app has been deployed for government school students, who receive counselling and training to familiarize themselves with online tools. The administration uses facial recognition and audio visual media for content dissemination.

Construction Sites

The city has facilitated an online process for permissions to resume construction at sites in the NMC area. Use of hand sanitizers, and social distancing by workers is mandatory.

NMC COVID-19 Mobile apps data

Health infrastructure initiatives

Nashik
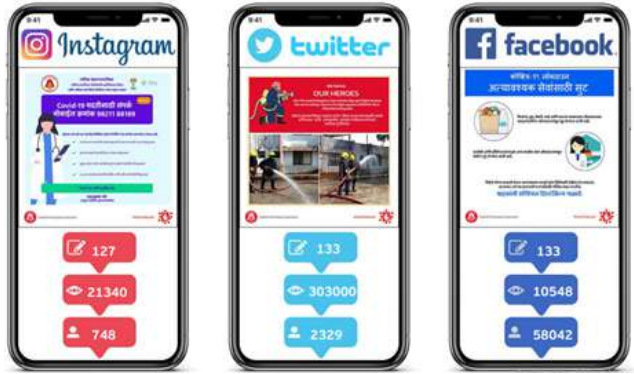
Community sanitization in Nashik

COVID-19 Care Centres in Nashik (CCC) facilities provided

Nashik

Making & Life at Shelter Homes

Strict adherence to COVID-19 guidelines at Shelter Homes

Depature of migrant labours and newspaper articles

Solid waste management

Nava Raipur

City: **Nava Raipur**
State: **Chattisgargh**
Population:
**10,10,433
(2011 Census)**
Round: **3**

During the ongoing COVID pandemic situation, Nava Raipur Atal Nagar Smart City continued to follow its existing best practices through its Integrated Command and Control Centre (ICCC) and smart governance solutions. Citizens could continue to avail of a host of services online thus eliminating the need to visit Nava Raipur office while the ICCC monitors all public spaces and utilities. Nava Raipur, which comes under Raipur district, is following all the COVID-19 response norms as laid out by the state government.

TRACKING & MONITORING

Monitoring and Surveillance
Nava Raipur, through its ICCC, managed the lockdown effectively by continuously monitoring the situation on-ground through its pan-city network of CCTVs. All water and electrical utilities are also centrally managed, and monitored, from the ICCC cutting down on the need for authorities to make field/site visits.

CITIZEN SUPPORT

Smart Governance through Online Citizen Services
Through its ICCC Nava Raipur ensured its citizens pay
bills, get building permission, file an RTI application/
grievance, etc., online, thus eliminating the need to
physically visit the NRANVP (Nava Raipur Atal Nagar Vikas
Pradhikaran) office.

New Delhi Municipal Council (NDMC)

City: **New Delhi Municipal Council (NDMC)**
State: **NCT of Delhi**
Population: **2,57,803 (2011 Census)**
Area: **43.7 sq.km.**
Round: **1**

smartcity.ndmc.gov.in

New Delhi is the capital of India and the seat of all three branches of the Government of India. The National Capital Territory of Delhi (NCT) comprises three local bodies—MCD, NDMC and Cantonment Board. New Delhi Municipal Council (NDMC) was selected as one of the first 20 cities under the Smart Cities Mission. New Delhi Municipal Council Smart City Ltd. (NDMC SCL) set up 24X7 flu centers to ensure timely checks and contain the spread of the virus.

 DIAGNOSTICS

New Delhi Municipal Council (NDMC) set up a 24x7 'Flu Corner' at Charak Palika Hospital in Moti Bagh that offers contactless screening and complete protection to the healthcare workers manning the booth while saving on the use of Personal Protection Equipment (PPE) used. All visiting patients are initially screened and those found symptomatic are segregated from asymptomatic patients and referred for COVID-19 confirmatory test. Asymptomatic patients are advised treatment as per needs.

The Flu Corner is constructed in an open area, away from the main hospital. A CCTV camera installed monitors the

centre and the feed is monitored by Unified Command
and Control Centre of NDMC Smart City Ltd. (NDMC SCL).

The design involves a glass partition with microphone
facility while the patient sits in a separate enclosure. The
enclosure is prepared by switching on the lights and fans
and is regularly sanitized with a 1% sodium hypochlorite
solution. The patient is made to undergo basic sanitiza-
tion before the Healthcare Provider (HCP) examines the
patient through the glass screen. Post examination, the
patient collects his/her prescription slip, uses the hand
sanitizer and departs. Patient investigations are undertak-
en as per the guidelines issued by The Ministry of Health
and Family Welfare (MoHFW) and Centralized Ambulance
Trauma Services (CATS) ambulances are on standby to
transfer referrals as needed.

New Town Kolkata

City: **New Town Kolkata**
State: **West Bengal**
Population: **4,02,844 (2011 Census)**
Area: **30 sq.km.**
Round: **2**

newtowngreencity.in

New Town Kolkata, in the eastern outskirts of Kolkata, was created as a residential business center to meet the increasing demand for housing and to reduce the mounting pressure on the existing central business districts. To combat the pandemic, the city rolled out a line of initiatives ranging from drone surveillance to map-based monitoring of sanitization activities and an innovative volunteer-based networking platform, among others.

TRACKING & MONITORING

Drone Surveillance

New Town city authorities have introduced drone surveillance as a decongesting mechanism. A drone is programmed to alert authorities upon spotting crowds following which prompt action is taken. The drone operates for five hours a day, in two shifts, and monitors 14 community markets, 22 green verges, popular areas prone to over-crowding and concern areas flagged by citizens.

DIAGNOSTICS

Telemedicine

The city authorities have launched a telemedicine center that allows New Town residents to consult doctors from the comfort and safety of their home. The Skype-based service has doctors offering citizens advice about health, hygiene, and other precautionary measures that must be considered if symptomatic or if under self-imposed quarantine.

SANITIZATION

Map-based Monitoring of Sanitization Activities

New Town city authorities have employed Google-map based monitoring of sanitization activities. City officials can keep tabs from their mobile or computer, thus leading to better management of sanitization activities across the city. The names and locations of all sanitized places are tagged and updated regularly on Google Maps, with images. Clicking on a tagged location opens a window that contains the address, images and date of sanitization.

AWARENESS & CAPACITY BUILDING

Information Education and Communication Activities

New Town city authorities have been making regular announcements on precautions to take against COVID-19; along with putting up awareness posters/standees on hand sanitization and social distancing at public places, markets, and offices, and stickering public vehicles and waste collection vehicles. New Town Smart City's website and social media handle are being used to disseminate latest updates and information while a citizen focused COVID-19 awareness camp was also conducted by the administration.

CITIZEN SUPPORT

Facial Recognition Attendance and Other Modifications in Government Offices

The government offices in New Town have introduced a facial recognition-based attendance system, hand washing/hand sanitizing arrangement at entrances, thermal gun screening at entry points and spacing of at least 1 meter between workstations. Seats in the conference room have also been restricted and most meetings are being conducted virtually.

Neighborhood Volunteers

During the lockdown, the city authorities invited citizens to join hands with them as volunteers to effectively deliver services to fellow citizens. Citizen volunteers reached out to their neighbors, especially the elderly, and arranged to deliver essentials at their doorstep, along with addressing any emergency requirements.

24X7 COVID-19 Helpline and Information Centre

New Town's 24X7 Helpline has been made into a 24X7 COVID-19 Helpline and Information Centre and provides information on the nearest medicine shops along with their timings, quarantine centers, nearest shops/markets and their operational timing, sanitization request placement, availability of doctors and their timing, etc.

Handwash Provisions in Markets

Wash basins have been installed at the entrance to every New Town market, and people can enter the market only if they wash their hands with soap and water.

Enagagement Activities for Children

New Town Smart City launched an online talent competition to engage children during the lockdown. The young participants uploaded photographs/videos of performances (dance, music, art, poetry, etc.) directly to the New Town Smart City website or shared via email. The best entries were awarded certificates and were featured on New Town's social media pages.

Free e-books from New Town Smart Library

Given mobility restrictions, New Town Smart Library introduced a collection of e-books that can be accessed on devices. Residents can sign up for free on the Smart Library website to view/download the e-books.

Radio for Entertainment and Information

New Town has launched an internet-based radio station for its citizens' entertainment. New Town Radio, available on Google Play, plays songs, broadcasts audio plays, talk shows, chats with doctors, etc. The channel is also used by the authorities to make public announcements.

Panaji

City: **Panaji**
State: **Goa**
Population:
1,14,759 (2011 Census)
Area: **21.01 sq.km.**
Round: **2**

imaginepanaji.com

Panaji, formerly Panjim, is the capital of Goa and headquarter of North Goa district. One of the best planned cities in the country, Panaji is a charming city with a network of main avenues and connecting roads, gardens and picturesque Indo-Portuguese architecture. The pandemic saw Imagine Panaji Smart City Development Limited (IPSCDL) rising to the challenge by deploying different tools to track, monitor and contain the spread from a mobile app to a chatbot. A grocery scheduling app and vendor management app, an information dashboard and telemedicine assistance were some of the other ways the city tapped technology in its time of need.

TRACKING & MONITORING

Dashboard Application Tracking
The administration used a methodical system to track and monitor the virus' spread by deploying an application which included visibility into quarantined and a self-assessment test. The application helped in spatial information-based decision making as it integrated a dashboard and enabled interdepartmental data sharing and coordination.

Door-to-Door Surveys

The state government conducted door-to-door surveys to identify potential patients and collate citizens' recent travel history. The survey recorded basic information and collected comprehensive data that helped identify persons with symptoms of Influenza Like Illness (ILI) and Severe Acute Respiratory Infection (SARI).

DIAGNOSTICS

Tele-medical Assistance

A pilot project by Medical Tele Consultation has been initiated to provide free medical support so that citizens do not need to step out for minor ailments. Citizens can call in to avail of specialist consultations from the comfort of their home.

CITIZEN SUPPORT

Home Delivery of Essentials

A Grocery Scheduling app and Vegetable Hawker Scheduling and Management app were launched during the lockdown to cut down on unnecessary traffic and markets/*mandis* footfall.

Answering Queries via Chatbot

The administration launched an online chatbot on the official site to provide timely updates and answer queries.

Pasighat

City: **Pasighat**
State: **Arunachal Pradesh**
Population: **24,656 (2011 Census)**
Area: **14.6 sq.km.**
Round: **3**

Pasighat is the headquarters of East Siang district and Arunachal Pradesh's oldest town. Developing an app to track COVID-19 positive cases, online data management of patients, online healthcare deployment and online delivery of essentials are some of the measures the city is currently considering.

Smartpasighat.in

TRACKING & MONITORING

Tracking App and Traveler Registration Portal
The city is considering a mobile app to track the movement of COVID-19 positive cases along with incorporating geo-fencing alerts to help the administration in ensuring patients maintain their quarantine conditions. Along with the app, a custom-build online portal, for registration of recent returnees, that captures all passenger details from name, date of journey, vehicle.

DIAGNOSTICS

Online Healthcare Services
The city administration is looking at online healthcare, via

a website or a mobile app, to prevent clustering at clinics and cut down on unnecessary movement.

CITIZEN SUPPORT

Online Supply Chain for Groceries

The city is looking at doorstep delivery of groceries using a mobile app or by tying up with aggregators/restaurants for home delivery.

Patna

Patna is the capital of Bihar and is the largest town and headquarters of Patna district, Patna division and Bihar state. In the ongoing pandemic, the city's prime focus has been to cater to the most vulnerable population – i.e. the poorest of the poor in slums. A joint initiative of Patna Smart City Limited (PSCL) and Patna Municipal Corporation (PMC) 'WeCare' helped enforce an effective lockdown and offers essential services to the needy.

TRACKING & MONITORING

A joint initiative of Patna Smart City Limited and Patna Municipal Corporation (PMC) the dedicated combat cell 'WeCare' was set up with technical support from the United Nations Population Fund (UNFPA) to ensure lockdown norms were followed and to offer 24X7 services including delivery of essentials to the needy. This platform also acted as a transport service referral to the vulnerable population residing in slums with a focus on ill, pregnant and elderly citizens.

DIAGNOSTICS

Identification of vulnerable households was done through door-to-door visits with a focus on expectant mothers, ultra-poor households, the differently abled, the seriously ill and sanitation workers.

SANITIZATION & WASTE MANAGEMENT

Sanitization
PMC regularly undertakes sanitization in slums.

Segregation of Used Masks & Gloves
At source collection and disposal at the household level has been initiated with the installation of yellow bags in all door-to-door PMC garbage collection vehicles. The segregated used masks and gloves collected are incinerated as biomedical waste.

Training and Sensitization of Sanitation Workers
Community trainers have been appointed by UNFPA and PMC for all six circles. These trainers visit all six circles daily to teach mandatory prevention measures to sanitation workers such as the use of gloves, masks and the need for frequent handwashing.

AWARENESS

Door-to-Door Awareness
The dedicated response work team ensures that sanitation workers, while collecting door-to-door garbage, convey how used masks and gloves should be separated and correctly bagged.

Awareness in Slums

The community trainers of UNFPA and PMC visit slums within the allocated circles to generate awareness on COVID-19 symptoms and prevention with a focus on precautionary measures.

 CITIZEN SUPPORT

Tele-Counseling

Counselors identified by UNFPA and PMC reach out to identified vulnerable communities to provide psychological counseling.

Counseling to Pregnant Women

Expectant mothers are counselled for birth preparedness. Identification of high-risk pregnancies, family planning and institutional deliveries are linked to the combat cell of PMC or to doctors as needed.

Support Calls for Elderly Citizens

During the lockdown phase, counselors called the elderly population daily to identify needs and ensure facilities were made available to them.

Counselling for Family Planning

Counselors also connected with people in the reproductive age group to discuss family planning and home deliver commodities based on identified needs.

Pimpri Chinchwad
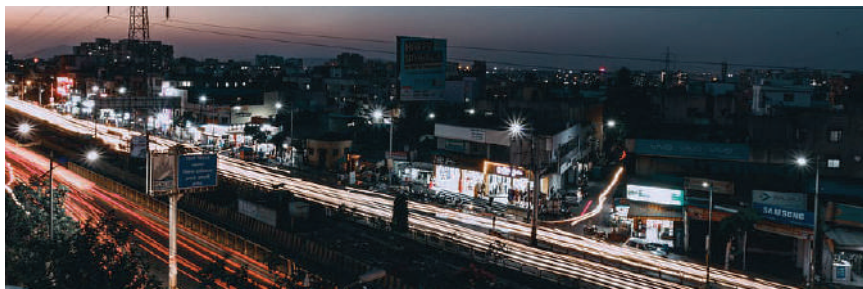
City: **Pimpri-Chinchwad**
State: **Maharashtra**
Population:
17,27,692 (2011 Census)
Area: **181 sq.km.**
Round: **3**

smartpcmc.org

Pimpri Chinchwad is often called the Detroit of the East on account of the many national and multi-national automobile companies based in the district. With the pandemic hitting industries, Pimpri Chinchwad Municipal Corporation (PCMC) set up a 'COVID-19 War Room' to collate, analyse and act upon COVID-19 related data. The War room takes a multi-pronged approach, covering all the aspects of COVID-19 management from healthcare and lockdown to assisting citizens through helplines and a handy mobile application.

 TRACKING & MONITORING

Integrated Commend and Control Center (ICCC)
Pimpri Chinchwad Municipal Corporation (PCMC) has set up an 'Integrated Command and Control Center' (ICCC) as the 'COVID-19 War Room' to aid in decision making. The ICCC is being used as the central control room for collection, collation, analysis and dissemination of COVID-19 related data. This has led to a significant reduction in coordination time helping PCMC take prompt decisions based on the most recent data points. The COVID-19 War Room uses a multi-pronged approach covering all the aspects of COVID-19 management from lockdown management to healthcare management,

tracking and assisting citizens the *Sarathi* helpline and PCMC Smart *Sarathi* mobile app.

Healthcare and Patient Tracking Dashboard

PCMC constituted a core team comprising of in-house doctors and IT team members to conceptualize and set up the COVID-19 Dashboard. Doctors brought in useful functional knowledge of workflow systems at hospitals and COVID-19 treatment processes, which assisted the IT Team in preparing the architecture. The dashboard, prepared in just two days, provides real-time information on COVID-19 related cases, testing and healthcare arrangements. The key features of the dashboard are real-time tracking of patients as details are entered in by hospitals, COVID-19 Care Centers, Dedicated COVID-19 Health Centers, Test Labs etc. Each patient is provided with an ID number and their identity is kept confidential. Key information is visible for a quick read, with additional details available in a dropdown. Given the utility and simplicity of the dashboard, it is now being adopted and replicated by other local governments.
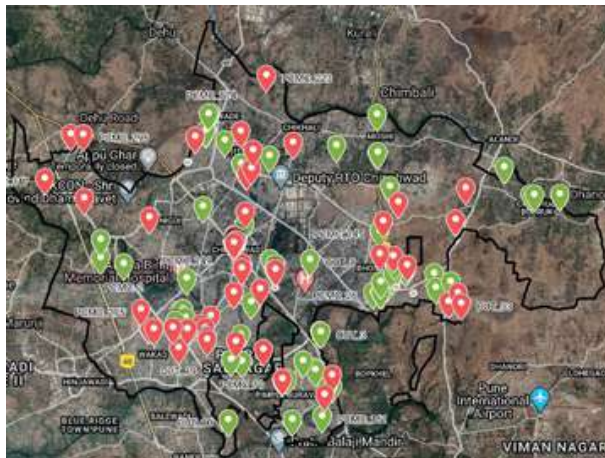
Monitoring: GIS Dashboard

The health care dashboard is supplemented with a GIS dashboard which provides location-based information system of geo-tagged home quarantined, COVID positive cases, recovered cases, deaths, containment areas

etc. The information is used to generate a heat map which helps classify areas from low-risk to high-risk. This dashboard is also used to identify epicentres of COVID-19 cases which helps the Health Department to identify locations for immediate spraying of disinfectants.

The same information is used by the medical department to send out special task forces for carrying out door-to-door campaigns and to identify contact cases. This geographical information assists in identifying the areas for condoning-off to contain any further spread. The GIS Dashboard and City Surveillance Dashboard both have pan-city reach.

Surveillance Dashboard
A total of 298 'Point-Tilt-Zoom' surveillance cameras installed at 85 locations across PCMC are being used to monitor the traffic and crowd movement. A dashboard of this surveillance system is set up at ICCC and is jointly monitored by PCMC and Pimpri-Chinchwad Police. The dashboard is video analytics enabled and sends alerts to authority for crowd management.

Smart *Sarathi* Mobile Application
The Smart *Sarathi* mobile application includes a COVID-19 self-assessment test, list of containment zones, 'Near Me' services (showing nearby COVID hospitals, fever clinics, market places, food distribution centers, shelters etc.), e-pass applications and volunteering forms.
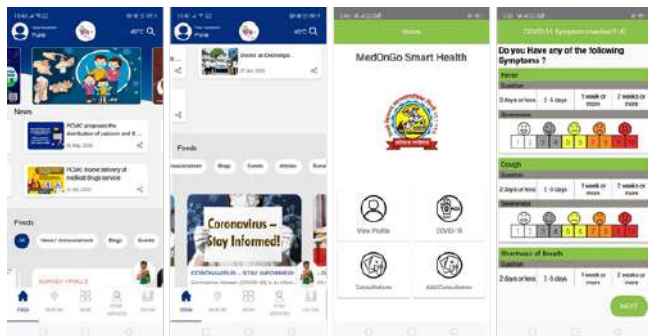
PCMC is also currently beta testing stage a telemedicine feature which will be integrated with the Smart *Sarathi* mobile application. This will enable free video consultations between patients and doctors with the prescription being sent over WhatsApp.

CITIZEN SUPPORT

Sarathi Helpline

The dedicated helpline platform *SARATHI* (System of Assisting Residents and Tourist Through Helpline Information) offers citizens assistance with service delivery and COVID-19 related queries. All calls received through the helpline are saved, documented, and tagged with the responsible department, zone, status of closure of request etc. The dashboard ensures optimal allocation of resources and zone-wise requests/complaints indicate which areas need the most urgent help.

Port Blair

City: **Port Blair**
State: **Andaman and Nicobar**
Population: **1,08,058 (2011 Census)**
Area: **94.34 sq.km.**
Round: **2**

Port Blair is the capital of the 350 odd islands that comprise the Andaman and Nicobar group. Known for its white sandy beaches and swaying palms combined with world-class diving, these lush green islands have a rich historical past with its most prominent structure being the Cellular Jail where hundreds of Indian revolutionaries were imprisoned during the Indian freedom struggle. In order to secure the islands from COVID-19, the administration has stopped the entry of all tourists from 22 March 2020.

TRACKING & MONITORING

To prevent entry of suspected, infected, or asymptomatic people, the administration took the radical step of restricting the entry of all non-residents.

CITIZEN SUPPORT

All employees of the Union Territory (UT) administration of Andaman and Nicobar Islands have been directed to 'work from home' with the exception of essential services like Health, Police, Transport, Civil Supplies, Electricity,

Port Blair

Sanitation, Water Supply, Civil Aviation, Fire Services, Disaster Management, etc.

No. COVID-19/CA/2019-20
ANDAMAN AND NICOBAR ADMINISTRATION
DIRECTORATE OF CIVIL AVIATION
PORT BLAIR – 744101.
*****

Dated 21st March, 2020

CIRCULAR

In order to securing the islands from the COVID-19 and to augment the measures that have been taken to prevent the entry of suspected / infected corona cases into the islands, the Competent Authority in Andaman and Nicobar Administration has decided as follows:

1) To restrict the entry of individuals who are normally not residents of the islands into the islands from 22nd March, 2020, except with the prior approval of the Deputy Commissioner (South Andaman); and

2) To restrict the entry of people into the islands from mainland India or otherwise, except with the prior permission of the Deputy Commissioner (South Andaman) with effect from 25th March 2020 upto 31st March, 2020.

All concerned are requested to take necessary action for strict compliance of the above orders.

(ASHA CHAUDHARY MALHOTRA)
DIRECTOR (CIVIL AVIATION)

Prayagraj

City: **Prayagraj**
State: **Uttar Pradesh**
Population: **11,12,544 (2011 Census)**
Area: **82 sq.km.**
Round: **3**

prayagrajsmartcity. org

Allahabad, officially known as Prayagraj, is the administrative headquarter of Allahabad district and the judicial capital of Uttar Pradesh (UP) with the Allahabad High Court being the highest judicial body in the state. Among the largest cities of UP, Prayagraj is rich in historical and religious significance as it is situated at the *Triveni Sangam* - the "three-river confluence" of the Ganges, Yamuna and the mythical Saraswati. The city has taken on COVID-19 headlong by establishing real-time monitoring of key junctions and sensitive locations, doctor on call facilities for the convenience of citizens, a 24X7 helpline and a public awareness campaign.

 TRACKING & MONITORING ─────

CCTV Surveillance
The 24X7 real-time monitoring of city junctions and sensitive locations is being done to ensure social distancing compliance, smooth traffic flow, crowd management and surveillance of isolation centers and containment zones.

DIAGNOSTICS

Doctor on Call Facility

Based on their location citizens get connected with nearby doctors. As per the doctor's guidance citizens are referred to the nearest hospital or isolation ward.

AWARENESS

VMDs for Communication

The city raised awareness and conveyed dos and don'ts through 30+ Variable Messaging Displays (VMDs) located across the city.

CITIZEN SUPPORT

1920 24X7 Citizen Helpline

A helpline (1920) that is monitored from the ICCC addressed citizen grievances during the lockdown. The operators' food and transportation needs were handled by the city with an emergency vehicle on standby and food packets from PDA ration. The helpline addressed all queries and complaints ranging from utility-led, and food/ration supply related to disinfection requests and medical help. All requests were routed to the appropriate team for quick resolution.

The SOP of 1920 for action related grievance

Prayagraj Smart City

COVID-19 Precautionary Measures

COVID-19 testing of Employees at CCC

Sanitization in CCC

PEP Talk to Municipal Officials in ICCC War Room

Prayagraj Smart City

Puducherry

City: **Puducherry**
State: **Puducherry**
Population: **2,41,773 (2011 Census)**
Area: **202.3 sq.km.**
Round: **3**

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pondicherrysmart-city.in

Puducherry (also known as Pondicherry) is the capital of the Union Territory of Pondicherry. An erstwhile French colony, Puducherry is a very popular tourist destination in South India. The city launched mobile applications for citizens and local health agencies to track, trace and contain COVID-19. Self-evaluation assessments, services for vulnerable citizens and an online portal to bring back out-of-station residents are some of the many initiatives being undertaken.

TRACKING & MONITORING

Mobile Application Platform for Tracing and Tracking
In a bid to trace, track and contain the spread of the virus, the Government of Puducherry launched a mobile application platform NAADI developed by C-DAC, which consists of two apps namely 112+ India App for citizens and nCOV Statrk app for health agencies respectively. The NAADI platform offers comprehensive multi-level, multi-model and multi-lingual tracing, tracking and containment of COVID-19 quarantined/under observation/infected individuals.

House Quarantine for Recent Returnees/Suspect Cases

The list of persons who returned from affected countries was obtained from the concerned agency and field officials comprising of Health and Revenue were deputed to each house to test the persons for symptoms and to ensure house quarantine as a safety measure. Stickers were affixed on the houses for identification and follow-up.

DIAGNOSTICS

COVID-19 Management System

The Government of Puducherry has partnered with Innovaccer, Inc., a healthcare technology company, to provide patients with self-evaluation assessments and to monitor vulnerable citizens. With Innovaccer's 'COVID-19 Management System' and its evidence-based self-evaluation assessments, the government can identify the at-risk patient population based on details such as patients' travel history, chronic conditions and more.

The application also empowers patients with relevant information such as prevention guidelines and offers details on quarantine facilities and assists them in taking the next step without having to visit a healthcare facility physically.

AWARENESS

Social Distancing in Public Spaces and Markets

Markings in front of the milk booth and other essential shops have been made to ensure social distancing. The social distance marking at Ponlait Milk Booth was largely appreciated by the Honorable Union Minister for Information and Broadcasting Shri. Prakash Javadekar.

Intensive Awareness Campaign

Right from day one, the administration involved Auxiliary nurse midwives (ANMs), *Anganwadi* workers, Revenue, Municipality, and local bodies to raise awareness and sensitize the populace on the importance of wearing a mask and social distancing.

CITIZEN SUPPORT

E-Pass Paperless Governance

Eliminating the need for personal visits and paperwork, citizens could avail of an e-PASS during lockdown by applying through a dedicated WhatsApp number. Upon approval the respondent received the e-PASS with QR Code via the WhatsApp platform.

Self Help Groups (SHGs) for Masks and Sanitizers

In coordination with District Rural Development Agencies (DRDA) and municipalities, SHGs have been roped in to make masks and sanitizers at an affordable price. The groups were trained by college professors and the raw material was supplied by the excise department. Through this effort, the district administration could effectively manage the demand for the two essential items. Furthermore, based on this success, many SHGs under National Rural Livelihoods Mission (NRLM), National Bank for Agriculture and Rural Development (NABARD), vocational training institutes and prisons have expressed interest in similar partnerships.

Stay Home for Stranded Workers

A municipal complex at Gorimedu was converted as a stay-home facility for migrants and food was arranged through by a local NGO and the district administration.

Doorstep Delivery of Essential Provisions

The Government of Puducherry, in association with the Puducherry Traders Federation, allows people to place their orders for essential items through a website or through a WhatsApp number. These essential goods are delivered to their doorstep within 24 hours without any additional charge.

Free Milk Supplies

Pregnant women (3rd trimester), lactating mothers, orphanages and old age homes received free milk based on donations received and the same was facilitated by the Karaikal Co-Op Milk Producers Union (Colait) and *Anganwadi* workers (supervised by the Child Development Project Officer).

Donors Helpline

Donors and philanthropists have been advised not to distribute any material directly to the needy and were urged to reach out to the administration as the apex point for food distribution and other services. The donated grocery items were collected from the doorstep of the donors by district administration officials.

Portal for Stranded Residents

The Government of Puducherry launched *http://welcomeback.py.gov.in* through the National Informatics

Centre to help residents stranded in foreign countries and other states. Stranded citizens could register themselves on the portal and necessary arrangements were made to facilitate their return.

e-PASS facility during lockdown

Portal for stranded residents of Puducherry

Puducherry

Social distancing at shops

Pune

Pune is a bustling metropolis and an important education and industrial hub for the state. The Pune Municipal Corporation (PMC) extended its smart city infrastructure, namely its Integrated Command and Control Centre (ICCC) to make it a war room for COVID-19 response. All monitoring and tracking activities are conducted from the ICCC including surveying hotspots and containment zones, deployment and tracking of ambulances/mobile dispensary vans and overseeing of all relief operations and outreach programs.

TRACKING & MONITORING

Integrated Command Control Center (ICCC) as a War Room for COVID-19 Response
Pune Smart City Development Corporation Ltd (PSCDCL) has collaborated with PMC to develop an integrated online dashboard that is accessible from a mobile as well. Positive cases are mapped using geo-spatial information systems which keep track of patients' health, quarantine cases, contact tracing and helps plan out resources such as quarantine facilities, isolation beds and staffing. Using heat-mapping technologies and predictive analytics, the city administration develops containment plans for containment zones which also get reflected on the

dashboard. The healthcare operations at the city's 'Naidu Infectious Disease Hospital' are also tracked from the War Room.

Contact Tracing and Surveys

The first COVID-19 positive case emerged in Pune on 9 March 2020 and PMC immediately created a COVID-19 response team and launched an isolation facility with ventilator facilities. Ward-wise PMC adopted different means to trace patients and primary contact tracing and home surveys was found to be the most effective in locating and isolating patients for treatment. Besides tracking high-risk and low-risk contacts, door-to-door surveys are regularly conducted by civic teams, across 105 clusters. An average of 50,000 houses and 1.5 lakh people are being surveyed every day for the past two months. A central team oversees operations.

Integrated Command Control center (ICCC) as a War Room for COVID-19 response

Pune

City wise door to door survey details (Started from 16 March 2020)

As of May 26, 2020

Total clusters
139

Total survey team on ground **726**

100% houses has been visited in PMC and more then 50% houses are resurveyed for precautionary measures.
(Repeated survey count- 35.83lakh)

Average 50,000 No. houses are visited daily since last 10 days

100% population has been visited in PMC and more then 50% population are resurveyed twice for precautionary measures.   (Repeated survey count- 1.21 Cr.)

Average1.5 lakh People are visited daily since last 10 days

Flu like symptoms detected = 3755+ Patients

Positive cases = 497

Contact Tracking : High Risk Contacts and Low Risk

As of May 28, 2020

Contacted & traced through D2D survey &High Risk Survey and Mobile Ambulance Van van check up

High risk — 24367
Low risk — 49585
Total — 73952

Home Quarantined — 49542
Institution Quarantined — 9040
Hotel Quarantined — 571

पुणे महानगरपालिकेच्या पथके शहराच्या विविध भागांमध्ये करोना संदर्भात सर्वेक्षणाचे काम करत आहेत. श्रवणी पेठ भागातील सर्वेक्षणादरम्यानची काही छायाचित्रे .
#PMC #Pune #CoronaSurveyPmc #Awareness

#PMC #Pune #Survey #Corona

DIAGNOSTICS

Doctor at the Doorstep

Due to the lockdown, residents were unable to travel to get treatment for minor ailments. PMC, in partnership with RSS *Jankalyan Samiti*, Force Motors and *Bhartiya Jain Sanghatan* launched 100+ mobile dispensaries to ensure medical services are made available at residents' doorsteps. The vehicles mostly visit identified hotspots, containments zones and economically weaker localities to carry out tests and distribute medicines as needed. The mobile dispensaries can screen, on an average, 8,500 people daily and are staffed with a doctor, a nurse, an attendant and a volunteer. The data collected also helped the administration to create a bank of the COVID-19 tested.

Testing and Medical Support

PMC has made provisions for swab testing in hotspot areas through a dedicated COVID Care booth and ambulances have been deployed ward-wise. The administration has adopted standardized systems for molecular testing, supported by assured access to reagents and kits. Immunity enhancing medicines have been made available as per symptomatic guidelines and every negative patient is discharged with a hygiene kit comprising of masks, sanitizer, soap, and disinfectant. All positive cases receive comprehensive medical, nutritional, and psycho-social care.

Mobile Dispensary Seva (PMC and supported by NGOs)

Doctor at your doorstep

SANITIZATION

WASH Services and Sanitization

PMC is ensuring support access to water, sanitation, and hygiene (WASH) services in public places and community spaces most at risk. Regular sanitization is done across the city with a focus on hotspots and containment zones.

AWARENESS & CAPACITY BUILDING

PMC is displaying the COVID-19 helpline number and disaster cell number everywhere and communicates public information via hotlines (SMS/Call), official social media platforms and radio shows with systems in place to detect fake news and counter misinformation. Orientation and training of municipal staff is also regularly conducted, to ensure all safety norms are adhered to.

"COVID FREE PUNE" ACTION PLAN FOR HOTSPOTS

CITIZEN SUPPORT

Helping the Needy
Schools are being used as night shelters for migrants and the homeless. The administration has also tied up with donors and community groups to mobilize resources and capacities for food distribution with a central kitchen in place.

Police Support
The Commissioner of Police, Pune has formed 7,500 Special Police Officers (SPOs) to manage micro-clusters. The teams operate in a pyramid structure and share daily updates via WhatsApp groups. Micro-clusters are places with high population density and over five positive cases. SPOs are helping provide essential services to citizens in these areas along with making people aware about social distancing and other current COVID-19 related policies.

Raipur

City: **Raipur**
State: **Chattisgarh**
Population: **10,10,087 (2011 Census)**
Area: **226 sq.km.**
Round: **2**

Raipur is the capital of Chhattisgarh and is one of the largest steel markets in India. Mining industries and agriculture are the other chief economic activities in and around the city. Raipur Smart City Limited (RSCL) introduced several responsive measures such as educating citizens on physical distancing and mask-wearing, regular sanitization of public spaces, social welfare initiatives, strict quarantine rules, ensuring availability of essentials, and a coordinated central control system to oversee it all.

TRACKING & MONITORING

Joint Central War Room
The Joint Central War Room at RSCL's Integrated Command and Control Center (ICCC) monitors the on-ground situation real-time. All joint efforts of the district administration, police, and the Raipur Municipal Corporation are coordinated from the War Room and a central taskforce has been deputed to oversee the War Room functioning at all times.

GIS-based Dashboard (ESRI's ArcGIS software)
A GIS-based dashboard has been formulated using ESRI's ArcGIS software, which assists the authorities in effectively integrating all monitoring, preventive initiatives

and supply network services on to a single platform. This platform not only helps resolve key challenges speedily but also ensures all departments remain on the same page. The visual insights, as displayed on dashboard, are easy to understand thus eliminating any scope of doubt.

24x7 Surveillance with Drones and PTZ Cameras

Raipur implemented a 24x7 surveillance mechanism supplemented by 25 aerial drones and 300+ Pan–Tilt–Zoom (PTZ) cameras. The technological surveillance team regularly supplies the Joint Central War Room with ground reports that largely focus on the movement of essentials and other relief material/resources.

Analysis of the situation at the Control Center

Regular monitoring and official meeting

Surveillance of roads and traffic movement

DIAGNOSTICS

GIS-based Tracking and Contact Tracing

The GIS-based tracking of COVID-19 positive patients helps authorities in identification of first and second circles of contact persons. Any potential carrier gets identified in advance and the individual is advised self-isolation. In the eventuality they develop symptoms, the medical and administration teams instantly take prescribed measures. Early detection of cases significantly reduces further dissemination of the virus. Additionally, potential patients are regularly monitored, with teams checking in twice a day. Home quarantined persons are instructed to post stickers outside their premises to ensure neighbors take note and stay away. Any violation entices strict action and even seizure of vehicles, in the case of non-compliant movement.

SANITIZATION

Sanitization using Drones

Raipur was among the first Indian cities to introduce disinfectant spraying using drones. As part of the exercise, 25 drones operate in the city. The drones are loaded with liquid disinfectants and access even the most restrictive

parts of the city. These drones cover large areas quickly and the data gathered from them is calibrated and integrated with the Joint Central War Room's COVID-19 dashboard.

AWARENESS & CAPACITY BUILDING −

Awareness and Inter-Departmental Knowledge Sharing

The city's Public Announcement System (PAS) is being used to keep citizens informed about the latest guidelines and preventive measures. The concerned departments are updated regularly with a daily briefing. This ensures timely redressal of grievances received from the departments and the public. Based on this, officials work together to chart a course of action or re-calibrate their existing approach if any of the implemented strategies were not fetching effective results.

CITIZEN SUPPORT

App for Citizens

Chhattisgarh was the first state in India to develop an Android-based app to inform the public about the safety measures and to issue electronic movement passes. The e-pass service for people traveling within the state, incoming passengers and stranded people from other states eliminated physical contact and manual verification at entry/exist check posts.

Availability of Essentials

The Joint Central War Room maintained a close check on all inventories from food items to medicines, PPE kits, masks, sanitizers, etc., and any drop in supplies was instantly identified and essential stocks were optimized and replenished so that citizens did not face any difficulties in procuring essentials. RSCL also constantly checked for and discouraged the hoarding of essential supplies.

Free Mask Distribution through SHGs

RSCL collaborated with Self Help Groups (SHGs) and in a month and produced 1.5 lakh masks that were distributed free of cost to the public.

Meals for the Needy

RSCL worked with around 130 NGOs to supply nutritious meals to the vulnerable and poor sections of society. A special food distribution cell was created to maintain continuous food supply and to ensure food quality and proper distribution.

Screenshot of an e-pass issued on a smart phone

The Chhattisgarh Chief Minister monitoring the app service

Rajkot

City: **Rajkot**
State: **Gujarat**
Population:
**12,86,678 (2011
Census)**
Area: **129.21 sq.km.**
Round: **3**

smartcityrajkot.in

Rajkot was the former capital of the princely state of Sau-rashtra. Now it is the administrative headquarters of Rajkot District. COVID-19 management here was centered on three basic principles: effective lockdown, efficient sam-pling, and engagement with citizens. In addition, Rajkot Municipal Corporation (RMC) took the timely decision to create the first containment zone in the state as a struc-tured response to the crisis.

TRACKING & MONITORING

Monitoring for Compliance and Home Quarantine

Surveillance was conducted through the 1000+ CCTV cameras dotting the city and e-memos were served for people not compliant with directions like fining people for not wearing masks, etc. Rajkot Municipal Corporation (RMC) also developed an inhouse app to monitor the home quarantined. The app has two modules — one is filled up by the recent traveler while the other is maintained by the RMC employee assigned to visit the house.

GIS Map Tagging for Sample Collection

RMC created a GIS map to tag all locations where samples

were collected. This enabled in more focused planning and to formulate action plans for containment zones, etc.

CITIZEN SUPPORT

Auto-Rickshaws for Delivery of Essential Commodities

While aggregators like Swiggy and Zomato and super-market home delivery prevailed, RMC decided to increase the reach of essentials by catering to home delivery via auto-rickshaws. Every grocery, chemist and milk shop were assigned one or more auto-rickshaws and all numbers were displayed on the RMC website. A customer only needed to identify the shop to place an order over a call. The auto-rickshaw drivers were also trained in sanitization to ensure basis hygiene criteria were met.

Tying up with auto-rickshaw drivers for delivery of essential commodities

Ensuring Adequate Stocks and Medicine Delivery

RMC saw to it that stores displayed prominent green colored stickers to clearly communicate that it had the needed stock. This was done to prevent panic buying and hoarding during the lockdown. A local courier association was also roped in, to home deliver medicines for chemist shops that lacked a home delivery distribution system.

Rajkot

Stores prevented hoarding and panic buying by displayed stickers to indicate availability of stocks

Ranchi

City: **Ranchi**
State: **Jharkhand**
Population:
10,73,427 (2011 Census)
Area: **652 sq.km.**
Round: **2**

Ranchi, in its modern form, is the capital city of Jharkhand and is popularly known as the 'City of Waterfalls'. It used to be the summer capital of the state of Bihar until Jharkhand was carved out the southern part of the state in 2000. In its fight against the pandemic, Ranchi Smart City has created a dashboard to track migrants and has tapped its existing Integrated Command and Control Centre (ICCC) infrastructure to convey key information to residents. The city has also arranged for 10 shelter homes to serve its migrant populace and the homeless.

 TRACKING & MONITORING —————

Dashboard Tracker

Ranchi Smart City is association with M/S iQuantela Technologies has created a dashboard to track and assess the migrant workers in the city. This dashboard captures data district-, block- and panchayat-wise and showcases granular information right down to the individual worker's name, address, age, skill sets, official ID if any, etc.

AWARENESS

VMS and PAS Messaging

The existing Public Address System (PAS) was tapped to communicate precautionary measures regarding COVID-19 and lockdown instructions as suggested by the district administration and local police. Visual Media Services (VMS) installed as part of Ranchi's smart city infrastructure displays important messaging and instructions through the day at all key junctions. The door-to-door waste collection vehicles are equipped with loudspeakers and audio messaging to further convey important information.

CITIZEN SUPPORT

Shelter Homes

The district administration has set up ten shelter homes for the destitute and those without homes.

Rourkela

City: **Rourkela**
State: **Odisha**
Population: **5,52,734 (2011 Census)**
Area: **200 sq.km.**
Round: **2**

Rourkela is an important commercial center of the state and has a huge iron and steel manufacturing base. Rourkela Smart City Limited (RSCL) along with the Rourkela Municipal Corporation (RMC), is following a multi-pronged approach to tackle the pandemic. Localized sanitization, contact-less delivery of essentials to patients, free cooked food distribution to the needy, setting up of quarantine facilities and 24-hour surveillance and tracking are some of the emergency and safety measures the city has deployed to contain and manage the spread of the virus.

TRACKING & MONITORING

Central Dashboard for Real-Time Monitoring

Rourkela Smart City Limited (RSCL) is implementing a technology-based solution to contain the pandemic by deploying a central dashboard supported with mobile applications for field officers and citizens. The central dashboard shows real-time city-specific COVID-19 updates to enable the administration to take necessary actions. The dashboard reflects reported, recovered, active cases and COVID-19 deaths along with highlighting zones, zone-wise cases, hospitals, and fever clinics. The dashboard also shows updates on the quarantined, status of PPEs, hospital/clinic beds, ICUs, ventilators etc.

Door-to-Door Surveillance

Door-to-door monitoring and surveillance of areas where positive cases have been diagnosed are being carried out, complete with thermal screening and detailed surveys.

Tracking Returnees

Rourkela Municipal Corporation (RMC) has formulated teams to trace all overseas or interstate returnees. The travelers are required to home quarantine for 14 days which is tracked by the administration. Prominent message signboards indicate which house is under self-quarantine to ensure other citizens take the necessary precautions.

Dashboard Monitoring of Essential Services

RMC is also tracking and monitoring the delivery of select essential services such as social security pension, public distribution system, sanitation activities, assistance to migrant laborers etc. As part of this solution, the RSCL central dashboard provides real-time location updates and contact information of all field officers along with a graphical representation of their status of disbursement of essential services. This includes disbursement within due date, pending disbursements and alerts for deviations and leverages data analytics to display graphs, charts etc. To enable real-time updates on the dashboard, the field officers update the status of the services provided through their mobile application along with capturing a snapshot/ video of themselves disbursing the services.

INNOVATIVE MEASURES

1	Sanitisation through BHEL prepared BHELMISTER, Tractor mounted Sprayer, Drone based spraying.
2	Use of ROBOT for contactless delivery/service of medicines & food to patients in COVID Hospitals and Quarantine Centres.
3	Monitoring/ Tracking/ Settlements of migrant labourers through mobile application.
4	Monitoring and Supervision of service delivery, sanitisation activities, waste management, Hospitals etc. through Dashboard monitoring.
5	E- Doctor Seva facilities has been ensured in the citizen application whereby doctors come online for a fixed time to answer the queries of citizens

DIAGNOSTICS

Quarantine and Temporary Medical Center (TMC)

RSCL along with RMC has set up a TMC center at the Biju Patnaik University of Technology (BPUT) campus, a COVID-19 hospital including isolation wards at the Hi-Tech Medical College and 17 quarantine centers or isolation wards across the city. Periodic health checkups and counselling is conducted at all quarantine centers.

SANITIZATION

Mass Sanitization using BHELMISTER Sprayers

Sanitization is being done through tractor mounted BHELMISTER sprayers and drones with a special focus on containment zones. RSCL proposes to install disinfectant sprayers at strategic locations such as marketplaces, parking spaces, government offices etc. to ensure all entering the premises are properly sanitized to curtail spread.

Mass Sanitization using Drones

Drone-based spraying is being done to prevent unnecessary human activity in containment and buffer zones. The same is employed for the more constricted parts of the city as well where manual outreach is difficult. Before starting sanitization, the drone team conducts a visual survey of the buildings, the terrain, and surrounding areas. This helps them in chalking out a flight path for the drone. The path is controlled and recorded in a handheld device with GIS Maps at the backend which is plugged to the remote controller.

AWARENESS

COVID-19 symptoms and safety measures are being broadcast/displayed in English and Odia at various

strategic locations across the city. Door-to-door leaflet distribution, posters in slums and jingles on vehicle mounted public addressing systems are some of the ways RMC is raising awareness across the city. Accredited Social Health Activists (ASHA) and the local *Mahila Arogya Samiti* (MAS) are conducting sanitation and hygiene awareness programs across slums along with distribution of masks, soaps and other essentials.

CITIZEN SUPPORT

Contact-less Delivery using Robots
Use of robots to deliver food and medicine to patients in hospitals and quarantine centers to minimize the risk of transmission.

Free Cooked Food Distribution
The destitute, homeless and beggars are receiving hot, cooked food to ensure they meet their nutritional requirements during the lockdown.

Social Security Schemes: Financial Assistance
The beneficiaries of various government schemes such as old age/widow pension programs, social assistance programs etc. received financial assistance at their doorstep. The financial district disbursement team travelled by GPS tagged vehicles and the disbursement was accordingly monitored and tracked.

Financial Assistance to Building and Construction Workers
With daily wage workers being the hardest hit, the Rourkela administration ensured construction workers were provided financial assistance by checking their labor cards.

Financial Assistance to Street Vendors through Direct Bank Transfer
Delhi based M/S NF Infratech Services Pvt. Ltd. had earlier carried out a GPS survey of urban street vendors under the *Deendayal Antyodaya Yojana* - National Urban Livelihoods

Mission (DAY - NULM) scheme. RMC and RSCL utilized the same survey data to provide financial assistance to vendors – giving them ₹ 3000/- each through direct bank transfers.

Citizen Mobile Application

A Rourkela citizen mobile application offers real-time COVID-19 updates, listing of hospitals and testing centers and key helpline numbers. The app also disseminates health information and precautions, hosts a COVID-19 self-assessment test and highlights the containment and buffer zones where public movement is restricted.

Sagar

City: **Sagar**
State: **Madhya Pradesh**
Population: **2,73,357 (2011 Census)**
Area: **49.763 sq.km.**
Round: **3**

sagarsmartcity.org

The city of Sagar derives its name from the Hindi word *sagar* (sea) because of the large lake around which the town was built. One of the hundred Indian cities to be developed as a smart city, Sagar was listed as the safest Indian city in 2018. To combat the virus, Sagar Smart City Limited (SSCL) harnessed its existing infrastructure to actively monitor hot spots and track quarantined citizens' health and movement. SSCL also prepared a real-time COVID-19 dashboard to aid in decision-making and to act as a support system for the district administration.

TRACKING & MONITORING

Tracking & Monitoring the Quarantined

SSCL made its Integrated Command and Control Centre (ICCC) the nerve centre for all operations related to tracking, prevention, and control of COVID-19 cases. Through the ICCC, SSCL actively monitors the home quarantined using a mix of real-time tracking, e-surveillance, analytics and alerts. This tracking system is compatible with both smart phones and feature phones.

The SSCL administration not only gets updates on the health of the quarantined but can also track their movements. Any breach is immediately flagged to the

State Disaster Emergency Response Force (SDERF) team and a flying squad is dispatched for quick action. The home quarantined receive regular telemedicine calls and if citizen starts exhibiting symptoms, he/she is immediately referred for a lab test.

Dashboard on ESRI GIS platform

SSCL set up a dashboard, with the help of Environmental Systems Research Institute (ESRI), which is acting as a decision support system as it offers multiple analysis of the data captured that aids in crucial decision-making. All information and data related to COVID-19 positive patients, from their personal details to sample result and current status, is entered into a database and tracked. The dashboard offers detailed analysis of cases which includes: Active Cases, Recovered Cases, Deaths and Male/Female Cases which can be further drilled down to ward-wise, week-wise and age-wise data. Heatmap generation coupled with the ability to track a positive patient's residence helps the administration take appropriate containment area measures and other necessary actions as needed.

Dashboard

Heat map

Sagar

Live view of quarantined citizens
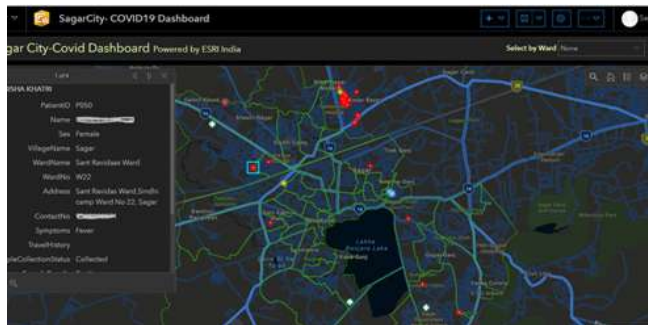
Patient location

Saharanpur

City: **Saharanpur**
State: **Uttar Pradesh**
Population: **7,03,345 (2011 Census)**
Round: **4**

saharanpurnagar-nigam.in/smartcity.html

Saharanpur's Saharanpur *Nagar Nigam* is the 13th municipal corporation in Uttar Pradesh. It is the administrative headquarters of Saharanpur district as well as Saharanpur division. Primarily an agricultural district, it is famous for its wood carving cottage industry. In its fight against COVID-19, Saharanpur has established a telemedicine service that allows patients to consult doctors remotely.

 DIAGNOSTICS

Saharanpur Municipal Corporation (SMC) has operationalized a Telemedicine Service Center which offers medical consultations via telephone and video calls. The service which started as a two-hour service has been scaled up rapidly to accommodate the increasing requests for consultation. The dedicated helpline number (8477008058) is now open to citizens daily between 9am to 2pm and 5pm to 9pm. About 80 senior doctors of the Indian Medical Association (IMA) are associated with this service. Along with quality medical consultations across different specialities, a facility of getting patients admitted to the district hospital is also available if symptoms are detected during the consultation.

Saharanpur

Volume of calls since inception
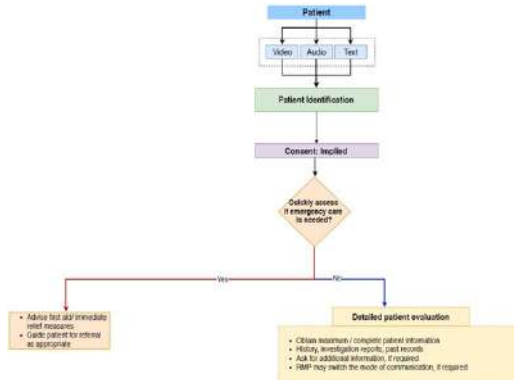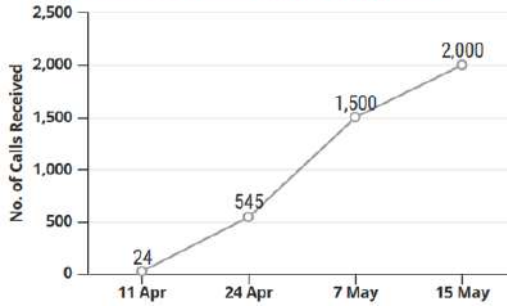
Flow chart of the telemedicine service

- Physicians
- Dental Surgeon
- Surgeon
- Gynaecologist
- Pediatrician
- Orthopaedics
- Skin Specialist
- Eye Specialist
- ENT
- Neurologist
- Neurosurgeon
- Psychiatrist
- Urologist
- Cardiologist
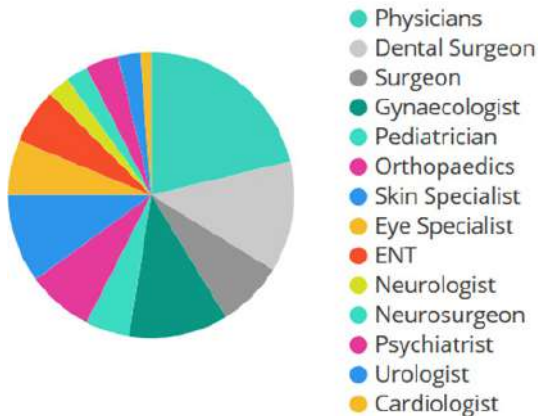
Specialist doctors available on call

निगम की टेली मेडिसिन सेवा को सराह रहे हैं लोग

हिन्ट संवाददाता

सहारनपुर। नगर निगम द्वारा टेली मेडिसिन सेंटर के माध्यम से शहर के लोगों की वरिष्ठ चिकित्सकों से फोन पर इलाज की सुविधा को लेकर लोगों में काफी उत्साह है और ये निगम ब आईएमए के इस प्रयास को खूब सराह रहे है। रविवार को शहर के तीन दर्जन लोगों ने निगम की इस सेवा का लाभ उठाते हुए शहर के दस प्रतिहित डाक्टरों से चिकित्सकीय परामर्श किया है।

नगरायुक्त ज्ञानेन्द्र सिंह के अनुसार लॉकडाउन के कारण विभिन्न बीमारियों से ग्रस्त जिन लोगों को चिकित्सकों से चिकित्सकीय परामर्श व चिकित्सा सुविधा नहीं मिल पा रही है ऐसे लोगों को वरिष्ठ चिकित्सकों से चिकित्सकीय परामर्श दिलाने के लिए नगर निगम द्वारा निगम परिसर में ही एक टेली मेडिसिन सर्विस सेंटर की स्थापना की गई है। उन्होंने बताया कि इसमें आईएमए से संबद्ध हृदय रोग, अस्थि रोग, नेत्र रोग, दंतरोग, त्वचा रोग, न्यूरोलॉजिस्ट, ईएनटी, सर्जन, महिला रोग, बाल रोग आदि विशेषज्ञ चिकित्सकों सहित 60 से अधिक

दूसरे दिन 36 मरीजों ने लिया सेवा का लाभ

वरिष्ठ चिकित्सक हर रोज क्रमानुसार इसके लिए अपनी निःशुल्क सेवाएं दे रहे हैं।

उन्होंने बताया कि सेवा के दूसरे दिन आज रविवार को डॉ.रजनीश दहूजा, डॉ. अरुण जैन, डॉ. अमित पाण्डेय, डॉ.सीमा अग्रवाल, डॉ.डी के गुप्ता, डॉ. शादाब अंसारी, डॉ. महेश चंद्रा, डॉ. अजय सहगल, डॉ. विजय अग्रवाल व डॉ. समित जैन से विभिन्न रोगों के 36 मरीजों ने चिकित्सकीय परामर्श लिया है। गत दिवस करीब दो दर्जन मरीजों ने इस सेवा का लाभ उठाया था।

वरदान बनी निगम की टेली मेडिसन सेवा

● वरिष्ठ संवाददाता, सहारनपुर

नगर निगम की टेली मेडिसन सेवा लोगों के लिए वरदान साबित हो रही है। सीमाबार जो इस सेवा के माध्यम से एक सरत्त वर्णित ऐसे बुजुर्ग को उपचार मिला जो गत तीन से पेशाब में रक्तस्राव के कारण परेशान था। उक्त बुजुर्ग सहित सोमवार को भी करीब तीस मरीजों ने निगम की टेली मेडिसन सेवा का लाभ उठाते हुए शहर के एक दर्जन प्रतिहित डाक्टरों से चिकित्सकीय परामर्श लिया।

गौरतलब है कि लॉकडाउन के कारण विभिन्न बीमारियों से ग्रस्त जिन लोगों को चिकित्सकों से चिकित्सकीय परामर्श व चिकित्सा सुविधा नहीं मिल पा रही है ऐसे लोगों की वरिष्ठ चिकित्सकों से चिकित्सकीय परामर्श दिलाने के लिए नगर निगम द्वारा निगम परिसर में ही एक टेली

टेली मेडिसिन सेवा से 70 वर्षीय बुजुर्ग को गंभीर रोग में मिला उपचार

दूसरे दिन एक दर्जन वरिष्ठ चिकित्सकों से 29 मरीजों ने लिया परामर्श

मेडिसिन सर्विस सेंटर की स्थापना की है। जिसके माध्यम से आईएमए से संबद्ध हृदय रोग, अस्थि रोग, नेत्र रोग, दंतरोग, त्वचा रोग, न्यूरोलॉजिस्ट, ईएनटी, सर्जन, महिला रोग, बाल रोग आदि विशेषज्ञ चिकित्सकों सहित 60 से अधिक वरिष्ठ चिकित्सक हर रोज क्रमानुसार इसके लिए अपनी निःशुल्क सेवाएं दे रहे हैं।

सेवा के तीसरे दिन सोमवार को डॉ.शरद अग्रवाल, डॉ. हिमांशु मेहता, डॉ. प्रवीण मित्तल, डॉ.पूनम मखीजा, डॉ.जैड ए कैसर, डॉ. रविकांत निरंकारी, डॉ.राजेश बिरमानी, डॉ. सुभाष सहगल, डॉ. साहृद हसन, डॉ. प्रियांशु जैन, डॉ. अनुपम मालिक व डॉ अमरजीत पोपली से मस्तिष्क, शुगर, हृदय की तेज धड़कन, बार बार चक्कर आकर गिर जाना, त्वचा रोग के अलावा गर्भवती महिलाओं ने भी उक्त चिकित्सकों से परामर्श लिया है।

इस सेवा के लिए निगम द्वारा दो हेल्पलाइन नंबर 8077008058 व 8077008057 जारी किये गए हैं, इन नंबरों पर सुबह दस बजे से दोपहर बारह बजे तक केवल मेडिकल हेल्प के लिए कॉल की जा सकती है।

Media coverage

Salem

City: **Salem**
State: **Tamil Nadu**
Population: **8,31,038 (2011 Census)**
Area: **124 sq.km.**
Round: **2**

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salemcorporation. gov.in

Salem is the fifth largest urban agglomeration in Tamil Nadu and is rich in magnesite, bauxite and mineral reserves. An important textile center, industries form the backbone of the city. The first COVID-19 positive case was reported on 26th March 2020 and the city administration immediately swung into action, ensuring regular sanitization of roads and communities, decongesting of marketplaces, increasing vigilance and tracking of the COVID-19 positive and their contacts.

TRACKING & MONITORING

Ward Vigilance Committees
Ward Vigilance Committee teams have been formed at the ward-level of Salem Municipal Corporation (SMC) and team members are actively taking down the details of those with a travel history and tracking secondary contacts of COVID-19 positive cases who then undergo swab testing.

24X7 Surveillance at Check posts

Entry points to Salem city are under constant 24-hour surveillance and are staffed with a medical team and a police team. The teams are always under high alert and are successfully able to prevent COVID-19 positive cases from venturing within the city.

All who enter the city are taken directly to the quarantine facility for testing and then quarantined according to norms. A total of 11 college hostels are being used as quarantine facilities.

Vee Trace App

Developed by Sona College of Tech and Engineers of Vee Technologies, the Vee Trace app tracks COVID-19 positive individuals and alerts citizens who are within a 1km to a 100 metres radius of a COVID-19 positive citizen.

Launch of Vee Trace

SANITIZATION

SMC has procured four BHELMISTERS for disinfection activity across the city, with each having the capacity to pump out 2000 litres of disinfect in an hour. All houses in containment zones are disinfected thrice a day using the misters that are mounted on goods vehicles.

AWARENESS

Information about the importance of hand washing, wearing of face masks and maintaining proper social distance are regularly broadcast through public address systems at vegetable markets.

CITIZEN SUPPORT

Decongesting Vegetable Markets

The vegetable markets and *Ulavar Sandhai* (farmers' markets) were divided and established at twelve different places in the city. Spacious bus bays and platforms, temple grounds, state government grounds and private parties' vacant lands are being used to ensure social distancing and to avoid overcrowding whilst shopping. Hand sanitizers are installed at the entry to the markets while SMC field staff are always at hand to check if compliance norms are being followed.

Delivery of Essentials

SMC has arranged for 30 vehicles to service containment areas. These provide groceries and daily essentials to people within hotspots.

Free Food for the Needy

During the lockdown period the needy were provided free food from seven community kitchens and 11 *Amma Unavagam* – the food subsidisation program run by the Government of Tamil Nadu. Food was also home delivered to the poor living in containment areas.

Satna

City: **Satna**
State: **Madhya Pradesh**
Population: **2,80,248 (2011 Census)**
Area: **79.01 sq.km.**
Round: **3**

satnasmartcity.org

Satna is the district headquarters of Satna district and was selected as a smart city in the third round under Smart Cities Mission of the Government of India. Satna Smart City Development Limited (SSCDL) deployed its Integrated Command and Control Center (ICCC) as the single source of all COVID-related data including monitoring and tracking. The administration collects block-wise data of the quarantined and their contacts, and have deployed on ground medical personnel along with hospitals as preventive measures, among others.

 TRACKING & MONITORING ————

Integrated Command and Control Center (ICCC)
SSCDL's ICCC operates 24X7 and serves as the single point for all COVID-19 related data: from tracking the quarantined and their contacts to keeping tabs on health infrastructure. Surveillance cameras, controlled from the ICCC, help administration monitor unauthorized vehicular movement and crowding.

All arrivals at Satna are screened by a medical team. Data of recent arrivals, along with their travel history, and health status is accessible via a video-wall dashboard.

A district level task force is deployed at the ICCC and team members trace suspected cases through telephonic/video calls. Contact details are shared with relevant teams for action with key personnel from different departments such as Health, Food, Transport, Labour, etc., reporting it directly to the ICCC for speedy addressal.

ICCC Integration with CM Helpline

The COVID-19 Control Centre is integrated with the District CM helpline. All helplines are segregated departments-wise as well as block-wise and funnelled to the concerned departments for quick resolution. Each query is then closed on the online portal after due telephonic confirmation by the ICCC operator.

DIAGNOSTICS

Online Screening and Telemedicine

The ICCC Situation Room is used as a COVID-19 screening and tele-video consultation facility. A team of doctors have been appointed by the district medical department for expert consultation and screening.

AWARENESS & CAPACITY BUILDING

Information Education and Communication

General awareness advisories are announced through Public Addressable (PA) systems installed across major junctions in the city. Awareness advisories are also displayed on variable message signboards installed across the city.

SSCDL also tapped its social media platforms (Facebook and Twitter) to raise awareness and keep citizens updated on the situation.

CITIZEN SUPPORT

Making Data Available to All

The daily situation report, a summary of COVID-19 data captured at the backend, is collated and prepared by SSCDL and presented to the District Collector Satna and subsequently updated on the Satna Smart City portal for citizens to access.

Distribution of Essentials

A Google form was created by SSCDL for volunteers to register and help with essentials distribution to the needy. A food distribution action plan was prepared by analyzing area wise data received through registration and accordingly ground teams were deployed for methodical distribution of food and other essentials. A contact-free, paperless smart form was also uploaded that could be accessed for grocery registration in containment areas.

Satna Smart City Integrated Toll-Free Number

A toll-free number was established with 16 operators working in separate shifts 24X7. The helpline was integrated with the ICCC and answers queries and addresses complaints along with flagging emergencies to the medical team. Recent arrivals and other suspect cases are immediately screened by the Satna medical team and a follow up is conducted after 24 hours and then 48 hours.

Volunteer Form and Grocery Registration Form

Satna

ICCC: Dashboard and Staff

Updates & Awareness on the Satna Smart City portal

Satna
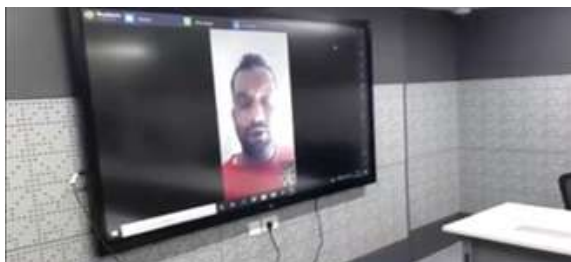
Telemedicine sessions

Raising awareness on ground and on social media

Shillong

City: **Shillong**
State: **Meghalaya**
Population: **1,43,229 (2011 Census)**
Area: **64.36 sq.km.**
Round: **4**

Shillong is the capital city of Meghalaya as well as the district headquarter of the East Khasi Hills district. It is the only hill station in the country that is accessible from all sides and derives its name from U-Shyllong — a local deity. A popular hill station from the *Raj* era, the city is also the hub of education for the north-east part of the country. While all initiatives on COVID-19 are directly handled by the local health department, the city has also roped in volunteers and deployed public awareness campaigns and other forms of assistance for residents.

TRACKING & MONITORING

Thanks to awareness campaigns coupled with strict monitoring, the city was able to enforce an effective lockdown. A curfew was also imposed during the lockdown prohibiting the assembly of five or more people in public spaces.

SANITIZATION

Sanitization of the city is being done regularly using sprays.

AWARENESS & CAPACITY BUILDING −

Along with public awareness campaigns, the Meghalaya Government has released a popular music video song *Stop Corona*, sung by a group of children, to further spread awareness on the dos and don'ts.

CITIZEN SUPPORT

The administration has set up two student shelter homes for out-of-station students stranded in the city during the extended lockdown.

GOVERNMENT OF MEGHALAYA
OFFICE OF THE DIRECTOR OF HIGHER & TECHNICAL EDUCATION
MEGHALAYA

No. DHTE/ESTT/MISC/22/2010/PF/169   Dated Shillong the 26ᵗʰ March 2020

PUBLIC NOTICE

This is for information of concerned students hailing from outside Meghalaya who are studying in the State and stranded on account of COVID – 19 lock down, that **Student Shelter Homes** have been set up at the following Education guest houses:

1. **MBOSE Guest Houses**
   Laitumkhrah, Shillong
   Kennel Worth Road

2. **Education Guest House (DSEL)**
   Laitumkhrah, Shillong
   Kennel Worth Road

Any stranded students from outside the State of Meghalaya, who requires assistance and who has ran out of stock can come and stay at the above notified Guest House. Further, it is informed and notified that 2 (two) meals will be provided in a day apart from Tea and Snacks in the morning.

Sd/-A. Ch. Marak, MCS
Director of Higher & Technical Education,
Meghalaya, Shillong

Shimla

City: **Shimla**
State: **Himachal Pradesh**
Population: **1,69,578 (2011 Census)**
Area: **35.34 sq.km.**
Round: **3**

shimlamc.org/page/ Smart-City.aspx

Shimla (also known as Simla) is the capital and largest city of Himachal Pradesh. The erstwhile summer capital of British India, the city remained an important political center post-independence, hosting the Simla Agreement of 1972. Shimla is known for its colonial architecture, churches and scenic spots and views. Shimla Smart City Ltd (SSCL) and Shimla Municipal Corporation (MCS) began efforts to stop the spread of COVID-19 right in March when the first case emerged in the state. Initiatives being carried out include the sanitization of public spaces, raising public awareness and the establishment of a central control room and helpline numbers among others.

TRACKING & MONITORING

All public parks and *suvidha kendra* were closed from 16 March while all unauthorized fruit/vegetable street vendors were removed to avoid street congestion. MCS Chief Sanitary Inspector was appointed as a nodal officer to ensure smooth coordination between the police department and MCS.

Deployment of Nodal Officers
Five senior officials have been deployed as Zonal Nodal Officers and 34 Assistant Engineers/Juniors Engineers

have been deployed as Ward Nodal Officers for surveillance of quarantine households and monitoring.

DIAGNOSTICS

MCS constituted a committee to visit various community centres and Tutikandi's car parking facilities to explore the possibility of converting existing spaces to isolation centers in the event of heightened emergency.

SANITIZATION

Appointment of Zone Nodal Officers
All 34 MCS wards have been divided into five zones with one Nodal Officer deputed to each zone to ensure cleanliness, road sweeping, door-to-door garbage collection and sanitization measures are being undertaken.

Sanitization of Public Places
All public places such as *sabzi mandis* (vegetable markets), marketplaces, railway station, bus stands and other areas undergo regular sanitization in a planned manner. Sanitization began well before the government lockdown was issued. Directions have been issued to all sanitary inspectors of MC Shimla to ensure cleanliness of public toilets and other public spaces and government institutions in their respective areas. All field staff receive appropriate gear while carrying out their duty ranging from masks and gloves to PPEs depending on their assignments and potential exposure.

Involvement of Local Area Committees
Local Area Committees, framed by the respective Councilors, are also engaged in the monitoring of sanitization and cleanliness activities and are available to citizens on WhatsApp.

Hill Challenge Cleaning Campaign
Orders have been issued to all sanitary inspectors to

undertake a drive to clear litter from hill slopes and to clean choked *nallahs* and drains. MC Shimla cleaned 246 hill slopes under the Hill Challenge Cleaning Campaign within a record 2 months.

Waste Collection from Quarantined Homes & Isolation Centers

MCS has dedicated PPE clad workers and vehicles to collect waste from quarantined households and isolation centers.

MCS field staff sanitizing public places

Shimla Bus Stand being sanitized by MCS workers

AWARENESS & CAPACITY BUILDING —

Staff Training

The MCS sanitation staff have been sensitized about the spread of COVID-19 and the importance of wearing PPEs, gloves, caps, masks, boots, etc., while going about their work.

Communication via Hoardings

Hoardings across the city are being used to spread awareness about the pandemic and how to keep oneself safe. Messages on hoardings are in Hindi to ensure maximum outreach. All helpline numbers are displayed prominently on every hoarding.

Ensuring Sanitation and Awareness in Slums

MCS and Shimla Jal Prabandhan Nigam Limited (SJPNL) officials have been deputed to ensure availability of basic sanitation services and quality water in slum areas of the corporation. Along with monitoring, the staff are also raising awareness amongst the residents by communicating dos and don'ts and other COVID-19 precautionary measures.

COVID-19 awareness hoarding and WhatsApp complaint redressal example

CITIZEN SUPPORT

Control Room and WhatsApp Number for Citizen Grievances

A control room has been established in the MCS office for better coordination between different departments, field staff, and general public. While citizens can call the control room directly on 0177-2812899, a dedicated 1916 *Swachhta* Helpline also operates 24X7. A WhatsApp number 78765-78935 has also been set

up to address complaints regarding sanitation, water supply and sewerage, etc. MCS staff members ensure social distancing is maintained in the office premises and dedicated teams conduct daily visits in all 34 wards to keep tabs on the home quarantined.

Safety and Security of Sanitation Staff

Gear like PPE kits, gloves, masks, sanitizers, soap, reflective jackets, etc., have been provided to garbage collectors, street sweeping staff and sanitization staff. PPE is given to all who work in containment zones or pick up garbage from quarantined homes. Ration is distributed to these staff members and workers deployed in operation and maintenance of the municipality's public toilets and Waste to Energy plant. All staff members undergo health checkups and receive a health insurance cover of ₹50 lakh. An incentive of ₹1500 for two months has been provided to all sanitation staff while ensuring that the advance salary is paid in full.

Honoring CORONA Warriors

'CORONA warriors' were honored, by the Honoroble Governor of Himachal Pradesh and other distinguished government officers, for services rendered during ongoing COVID-19 pandemic.

Waiving off Penalties

MCS has waived off penalty and interest on delayed payments of various services.

Feeding Stray Dogs during the Lockdown

Along with requesting citizens to provide food and water to the stray dogs in their locality, MC employees too worked to provide food and water to stray dogs in their respective localities.

Reaching out to Laborers

A committee has been set up to inspect labor hostels in Ashiana colony at Dhalli and Rehan Basera at Auckland Tunnel to take stock of the situation and propose measures for redressal of grievances, if any, related to food, health, safety and sanitization of the inmates.

Shimla

Corona Warriors being felicitated

Special drive by MCS to feed stray dogs during the lockdown period

Hill cleanliness drives

Garbage separately collected from quarantined households/centers being sanitized before being picked up

Shivamogga

City: **Shivamogga**
State: **Karnataka**
Population:
3,22,428 (2011 Census)
Area: **70.01 sq.km.**
Round: **2**

shivamoggasmartcity.co.in

Shivamogga city is known for its culture, education and commerce and serves as the district headquarters. The city has taken several steps to tackle the pandemic from launching COVID-19 awareness campaigns and regular sanitization to waste segregation and free distribution of food and milk to the needy. A refugee center has also been set up for counselling and health checkups and caters to those who lack a means of livelihood.

SANITIZATION

Application of bleaching powder and regular spraying of sodium hypochloride is being done at the ward-level with a focus on quarantined homes, hotspots and containment zones. Waste is collected from quarantined homes and containment zones with the medical waste being disposed separately.

AWARENESS

The city administration raised COVID-19 awareness and made key announcements through posters/banners and the city's Public Announcement System (PAS).

CITIZEN SUPPORT

Assistance to the Needy

During the lockdown free food kits were distributed by Booth Level Officers to the families of laborers, widows, masons, and those below the poverty line. On an average 8,600 liters of Nandini milk was distributed per day in slums and homeless shelters while food grains were made available to the needy through donor partnerships.

Availability of Essentials

Door-to-door collaboration with street vendors through the Agricultural Produce Market Committee (APMC) and Hop Comms saw citizens receiving quality vegetables and fruits during the lockdown. Frontline personnel also received hygiene kits that included sanitizers, safety mask, gloves, soap etc.

Refugee Center

The Refugee Center, which is set up in the policy area, conducts regular health check-ups and offers counseling by mental health experts in addition to free meals.

Shivamogga

Awareness campaign through posters, banners and loudspeakers

Safety gear and other material supplied to all personnel

Shivamogga

Delivery of food and essentials to the needy

Doorstep sale of vegetables

Shivamogga

Sanitization activities

Quarantine centers

Medical screening

Sanitization activities with PPE gear

Silvassa

City: **Silvassa**
State: **Dadra and Nagar Haveli**
Population: **98,265 (2011 Census)**
Area: **16 sq.km.**
Round: **4**

Silvassa is the headquarters of Dadra and Nagar Haveli in the UT (Union Territory) of Dadra and Nagar Haveli and Daman and Diu. Formerly under Portuguese rule, the city is known for its rich heritage, colonial charm, flora and fauna and handicrafts industry. The city has taken several steps to counter the pandemic. Measures include launching a COVID-19 tracking app and website, ensuring home delivery of essentials, distribution of safety kits and food to the needy along with disseminating information and raising awareness among citizens.

 TRACKING & MONITORING ⎯⎯⎯⎯

Corona Tracer Mobile App and Website
The UT administration of Dadra and Nagar Haveli (DNH) has launched a Coronavirus Tracking App Corona Tracer available for download on *http://dmcgov.in/*. The app tracks home quarantined people and contacts of any suspected or infected person. In addition, it offers the latest statistics, comprehensive COVID-19 related information and a self-assessment test. To increase downloads, and expand coverage, the administration also issues movement permits through this app.

Silvassa Municipal C
@SMC_SIL
Replying to @SMC_SIL
ALL Home Delivery Numbers of permitted shops in Dadra and Nagar Haveli

Jun 20, 2020

AWARENESS

Awareness Generation among Citizens
Reached out to the citizens with precautionary measures through social media as well as through print.

CITIZEN SUPPORT

Home delivery of Essentials
To ensure a successful lockdown, the Silvassa Municipal Council (SMC) through its website *http://smcdnh.nic.in/* and social media platforms shared the contact details of all essential service providers and registered vegetable, fruit and grocery vendors. An e-Pass facility was provided to all registered vendors/service providers to facilitate their movement.

Food Delivery to Poor and Migrants
With the support from civil societies in and around Silvassa, SMC in conjunction with district authorities ensured distribution of food to the poor and homeless. Additionally, the Dadra and Nagar Haveli BOCW (Building and Other Construction Worker) Welfare Board, Silvassa, distributed meals under the *Shramyogi Prasad* scheme to registered

workers and their families at various construction sites during the lockdown.

Distribution of Masks and Sanitizers

The administration ensured free distribution of hand sanitizer and masks to the health department and to each household in the *panchayat* areas of the district.

Solapur

City: **Solapur**
State: **Maharashtra**
Population: **9,51,558 (2011 Census)**
Area: **180.7 sq.km.**
Round: **1**

Solapur, a major city in southern Maharashtra, is Solapur district's administrative headquarter. The city is famous for its textile manufacturing industries, its quality *chaddars* (blankets), and homegrown *bidi* business. Solapur Municipal Corporation (SMC) has largely focused on health and hygiene by disinfecting public spaces, ensuring separate collection of biomedical waste, installing handwashing facilities at public places, and giving staff protective gear. SMC has also worked towards increasing public awareness through various Information, Education and Communication (IEC) activities.

 SANITIZATION

Sanitization of Public Places
SMC regularly disinfects all commercial and public areas with the help of sodium hypochlorite as per guidelines set by the Ministry of Health and Family Welfare (MoHFW). All sanitization workers receive PPT in the form of masks, hand-gloves, sanitizers, soaps, etc.

Waste Collection
SMC deploys separate vehicles for collection of solid as well as biomedical waste from quarantine facilities and containment zones.

AWARENESS

Information, Education and Communication (IEC) Activities

SMC is raising awareness through hoardings at key junctions and public areas (commercial markets, bus stands, railway station, etc.) and by sticking posters detailing precautionary measures at stores, medical shops, etc. In addition, the municipal corporation distributed over 2 lakh handbills that detail out COVID-19 related information. Apart from the visual communication, audio messaging is carried out through speakers on ghantagadis and IEC vans. SMC is also raising awareness through its official social media channels as per designs received from the state government.

CITIZEN SUPPORT

Ensuring Hand Hygiene

SMC has set up 70+ handwashing stations, each consisting of a water tank, a washbasin and soap, at government hospitals, commercial areas, vegetable markets, etc.

Relocating Markets to Spacious Grounds

The city's fruit and vegetable markets which were in congested areas have been relocated to open grounds/school playgrounds. Vendors are allocated marked areas 3 meter apart from each other and all shoppers must wear masks and follow social distancing norms, etc.

फोन करा आणि किराणा माल, भाजीपाला मिळवा

प्रशासनातर्फे जिल्हा पुरवठा अधिकारी उत्तम पाटील यांनी केली दुकानदारांची यादी जाहीर

घरपोहोच किराणा माल व भाजीपाला देणाऱ्या दुकानांची नावे व संपर्क

शहरासह जिल्ह्यात विविध ठिकाणी धुराळणी, फवारणी

महापालिकेकडून शहरातील नागरी वस्तीत धुराळणी, फवारणी करण्यात येत आहे. मंगळवारी मुस्लिम धुराळणी करण्यात आली. महापौर श्रीकांचन यन्ना यांनी तसे आदेश दिले होते. वंचित विकास आघाडी व एम.अवयमयच्या वतीने निवेदन देण्यात आले होते.

महापालिका आरोग्य विभागाच्या माध्यमातून आरोग्य निरीक्षकाकडून धुराळणी व फवारणी तसेच मास्क, हॅण्डग्लोव्हजची मागणी सर्वपक्षीय नगरसेवकांनी महापौर यन्ना व आयुक्त दीपक तावरे यांच्याकडे केली होती. त्यानुसार महापौर यन्ना व आयुक्त तावरे यांची सोमवारी बैठक झाली. त्यानुसार मंगळवारपासून शहरात धुराळणी व फवारणी सुरू करण्यात आली. कोरोनापिषयी जनजागृतीसाठी डिजिटल फलक

लावलेल्या रिक्षा शहरातून फिरवण्यात येत आहेत.

शासकीय कार्यालयांतही फवारणी

मोहोळ | कोरोनाच्या प्रादुर्भाव रोखण्यासाठी नगरपरिषदेने शहरातील शासकीय कार्यालयांसह सार्वजनिक ठिकाणी औषध फवारणी सुरू केली आहे. शहरातील पेठिस्मशानी, तहसील कार्यालय, न्यायालय, नगरपरिषद कार्यालय यांसह सर्वजनिक ठिकाणी वर्दळ असते. त्यामुळे तेथे औषध फवारणी करण्यात आली. या वेळी आरोग्य विभागाचे अभियंता अमित लोमटे, मुकादम राजू शेख यांच्यासह आरोग्य कर्मचारी उपस्थित होते. नागरिकांनी कोरोनापासून स्वतःचे संरक्षण करणे गरजेचे आहे. त्यासाठी घराबाहेर पडू नये. मास्क, निर्जंतुकीकरण द्रव्याचा वापर करावा, असे आवाहन मुख्याधिकारी एन. के. पाटील यांनी केले.

जुळे सोलापूर परिसरात मंगळवारी धुराळणी करण्यात आली.

IEC van

Social distancing at vegetable markets

Solapur

Handwashing unit in use

Ready for street sanitization

Posters in shops

Srinagar

City: **Srinagar**
State: **Jammu and Kashmir**
Population: **11,80,570 (2011 Census)**
Area: **294 sq.km.**
Round: **3**

srinagar.nic.in/ srinagar-smart-city

Srinagar City is the summer capital of Jammu and Kashmir (UT) famous for its picturesque sweet water lakes, houseboats, tulips and stunning valley views. Like other smart cities, Srinagar Smart City Limited (SSCL) has deployed a series of IT interventions to tackle the virus and contain its spread. From real-time tracking and monitoring to a health survey app and an e-pass app, the administration has also set up a 24X7 COVID call centre to help people tide the crisis.

 TRACKING & MONITORING

Apps for Tracking and Monitoring
To combat the COVID-19 emergency, the SSCL has launched several apps that they say are Corona Warriors in their own right. The administration has deployed a real-time COVID-19 management system for quarantine centres and control room in the form of a mobile app to monitor the quarantined and vulnerable, and an app to monitor positive cases. SSCL has also created apps for door-to-door health surveys and an app for self-assessment and reporting of recent travels.

CITIZEN SUPPORT

Ensuring Essential Services

SSCL in collaboration with the Srinagar administration has set up a 24X7 COVID call centre to help citizens. From ration to ambulance and from medicines to utility services, the call centre receives an average of 1,800 calls daily. During the lockdown, the government also facilitated an e-pass mechanism for essential movement and for conducting marriages.
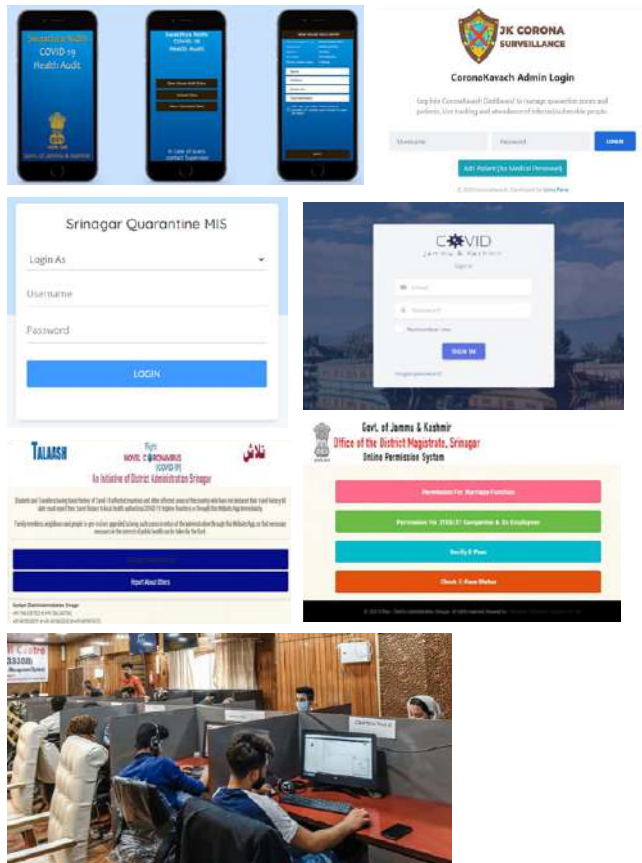
Surat

City: **Surat**
State: **Gujarat**
Population: **44,67,797 (2011 Census)**
Area: **326.5 sq.km.**
Round: **1**

suratsmartcity.com

Surat is the 8th largest city of India in terms of population. Hub to a booming diamond and textile industry, the city accounts for nearly 90% of the world's total rough diamond cutting and polishing. With the pandemic hitting industries hard, Surat Municipal Corporation (SMC) and Surat Smart City Development Limited (SSCDL) have deployed a series of measures for its residents. The city has adopted the rigorous TTT-IQ Strategy of Track, Test, Treat, Isolate and Quarantine. This is supplemented with IT interventions such as the SMC COVID-19 tracker app and active and passive surveillance along with extensive sanitation & disinfection measures and ensuring food for all.

TRACKING & MONITORING

COVID-19 Quarantine Reporting App

Surat Municipal Corporation (SMC) has launched a quarantining app that has to be downloaded by all international and inter-state returnees, COVID-19 positive contacts and those reporting ARI symptoms. The citizens' health condition is monitored through their quarantine period and necessary health care support is extended as needed. On completion of the quarantine period, healthy individuals receive an SMS to discontinue app usage and reporting.

Smart City Command & Control Center (ICCC) - COVID-19 War Room

The home quarantine adherence is monitored from the ICCC. The system generates an alert on violation. A strict warning, followed by punitive action, is initiated for home quarantine violations. The health of quarantined individuals is monitored based on their daily health reporting. Citizens with acute respiratory infections are identified through active and passive surveillance (through private clinic, hospitals etc.) and are home quarantined if needed. Their daily health status is then tracked and monitored via the COVID-19 Quarantine Reporting app and the War Room.

Active Surveillance by Health Workers

Surat Municipal Corporation (SMC) is undertaking active surveillance through a network of Auxiliary Nurse Midwives (ANMs), Accredited Social Health Activists (ASHAs) and other primary health workers. These teams carry out house-to-house visits and identify individuals with Acute Respiratory Infection (ARI), reporting the same using the SMC Employee Connect app. The team also disseminates information about hand hygiene, wearing of masks, social distancing and ways to increase immunity. The door-to-door survey is also conducted across slums with a focus on high risk patients and those with co-morbidities.

Furthermore, random sampling is also carried out for ARI patients in slums. Considering the rising number of Coronavirus cases in crowded slum localities, around 20

Mobile Fever Clinics (MFCs) have been set up, staffed with a doctor and health staff. The health staff is equipped with a thermal temperature gun and samples are collected for COVID-19 testing.

Passive Surveillance: Common Platform for Reporting

All COVID-19 and ARI reports across the city are being shared on a common web-based platform. All private hospitals and practitioners have been notified to report all cases with Influenza-Like Symptoms (IIS) or Severe Acute Respiratory Syndrome (SARI) etc. The follow-up of these cases is done from the War Room and COVID-19 testing is then deployed as needed.

Surveillance in Slums

Barricades were set up in crowded slum areas to ensure there is no unchecked and unnecessary outward movement of people during the lockdown. Details of people moving out were recorded in the movement register maintained by SMC staff/local leaders deployed for surveillance.

 DIAGNOSTICS

Tracking Acute Respiratory Infection Cases

Follow up visits of all ARI cases is done by *Rashtriya Bal Swasthya Karyakram* (RBSK) doctors. Intern doctors from Surat Municipal Institute of Medical Education and Research (SMIMER) are also appointed for regular telephonic follow-up of ARI patients. They also provide counseling facilities and share information related to social distancing and respiratory etiquette.

Augmentation of Health Care Facilities

SMC has augmented the existing bed facilities of SMIMER hospital with additional beds including COVID-19 isolation and ICU wards. They have also converted a 4-story parking facility of SMIMER Hospital, into a massive isolation ward spread over 2 lakh square feet, in just a few days.

SANITIZATION & SOLID WASTE MANAGEMENT

Sanitization and Disinfection

SMC regularly undertakes disinfection and sanitization of all government offices, public places, roads and cluster and hotspot areas. Disinfection is also carried out at all hospitals, health centers, vegetable markets, fish/ meat houses, slaughterhouses, food distribution centers, cemeteries etc. Residential areas of confirmed cases are disinfected as soon as a case is identified. Considering the case as an epicenter, mapping of the area, as a contaminant zone of up to 3 kms and a buffer zone, is carried out. SMC is also taking steps to disinfect people visiting hospitals.

Solid Waste Management

With respect to the guidelines issued by the Central Pollution Control Board for 'Handling, Treatment and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 patients' SMC is ensuring biowaste from hospital and isolation wards is segregated and placed in yellow colored bags. These are then collected by authorized biowaste haulers who then ensure it is incinerated at common biomedical waste treatment facilities.

AWARENESS & CAPACITY BUILDING —

Capacity Building of Frontline Staff

Due emphasis is being given to increase the capacity building of all staff involved in COVID-19 activities. Taskforce teams have been identified, with nodal officers at the helm, and training is being provided for all healthcare providers including medical officers, specialists, pharmacists, sanitary staffs etc. A grievances redressal system has also been implemented to ensure speedy resolution of complaints.

Information Education and Communication (IEC)

SMC is using both conventional and modern IEC media for raising awareness. SMC is extensively using popular social media channels such as WhatsApp and Instagram etc. to educate citizens. Some of the other activities include pamphlet distribution, messaging on mass media (TV, radio, newspapers), door-to-door information dissemination by healthcare providers and bulk SMS alerts regarding confirmed cases in the neighborhood. Furthermore, an audio briefing is released by the Surat Municipal Commissioner, every day at 5:30 pm, highlighting the current situation.

Raising Awareness in Slums

Various awareness campaigns (IEC activities) are regularly carried out through inter-personal communication, mass communication by loudspeakers, distribution of awareness pamphlets, banners etc. SMC has also carried out

awareness exercises in slums through paintings on walls and *rangoli* art at entry points.

CITIZEN SUPPORT

Toll Free Helpline
A toll-free number 1800-123-8000 has been set up to report inter-state and international returnees and to answer COVID-19 related queries.

Samvedna Surat – Ensuring Food and Shelter
16 community kitchens, 91 major food distribution centers and 90+ distribution points provide food to the needy. SMC has also tied up with various donors and NGOs such as the *Akshypatra* Foundation among others. Relief centers have been created to accommodate migrants and the homeless, and ration kits are being distributed to poor households.

SMC is also distributing food packets and dry rations in slums so that there is no unwanted movement of people. To enhance the body's natural defense system (I.e. building immunity) SMC also distributes ayurvedic drinks and homeopathy medicines to slum dwellers.

Distribution of Essentials
SMC has tied up with the Agricultural Produce Market Committee (APMC) for home delivery of groceries, vegetables and fruits. Vegetables carts are being allowed and facilitated in societies along with a home delivery system that is integrated with courier services.

Making of Masks
SMC is employing Self-Help Groups (SHGs) to make masks with nearly 30,000 masks being made daily. This also ensures SHGs of a steady income.

Hands-Free Handwashing Facilities in Slums
Over 150 foot press handwashing facilities have been installed along with the formation of a Corona Warrior Committee at the slum-level to monitor the local situation.

Surat

Heat map of positive cases of Surat
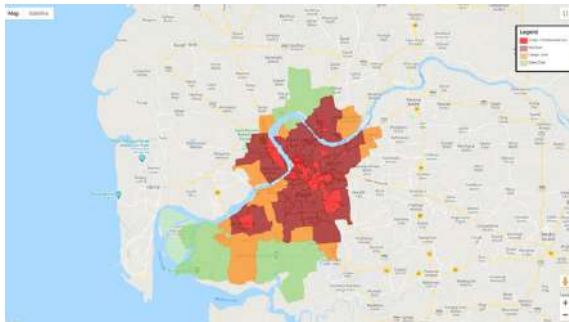
System driven SOP based Red, Orange and Green zones
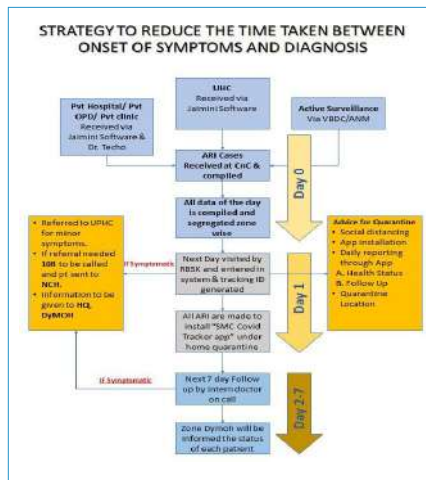
Surat
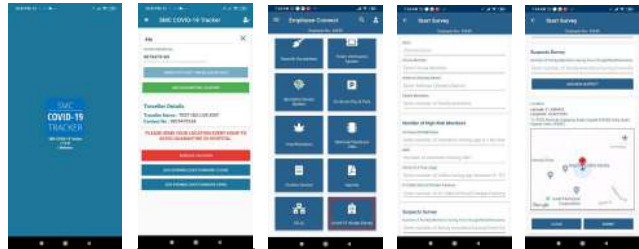
Surat

Screenshots of the citizen mobile app
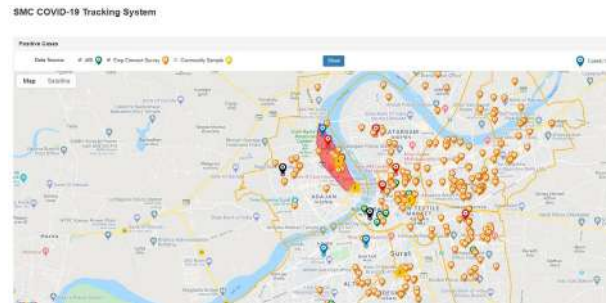
Mapping of positive cases with ARI and door-to-door surveillance
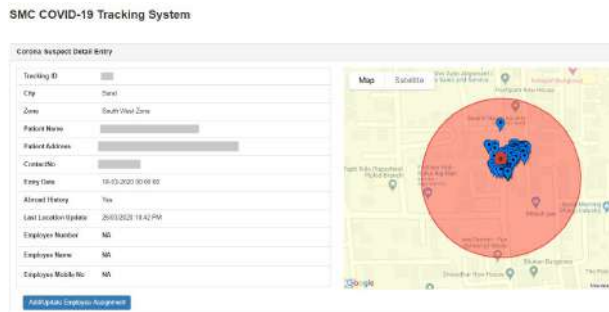
Tracking of individual in home quarantine in Surat

Thane

City: **Thane**
State: **Maharashtra**
Population:
18,41,488 (2011 Census)
Area: **147 sq.km.**
Round: **2**

thanecity.gov.in

Thane is one of the most industrially advanced districts in the state of Maharashtra. Third in the state in terms of population, Thane harnessed technology to its benefit, in its fight against COVID-19, by deploying a mobile app, monitoring traffic control and using its existing DigiThane platform to reach out to citizens. Free online medical consultations, easy visibility of home delivery service providers and drive-through testings were some of the measures that helped citizens during the lockdown.

TRACKING & MONITORING

COVIGUARD Mobile App
The COVIGUARD mobile app has been developed to track the number of COVID-19 confirmed cases, active cases, recovered cases and fatalities. It also tracks home quarantine suspects, number of symptomatic & asymptomatic patients, number of patients on ICU & ventilators and availability of beds across Thane's hospitals.

Integrated City Data Centre & Command Control and Room Facility (ICDCF) War Room
Thane's ICDCF War Room helped the Thane Municipal Corporation (TMC) monitor lockdown measures by

tracking measures taken for public spaces, crowd management and traffic movement.

Video wall in ICDCF war room
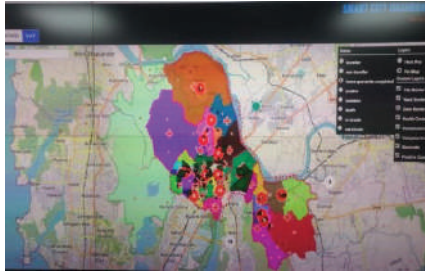
Thane City Map with dynamic information tracking in war room
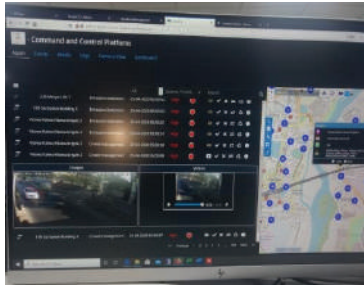
CCTV alarm for crowd & movement monitoring

 DIAGNOSTICS

Through the DigiThane COVID-19 Dashboard, there is consistent analysis, identification and depiction of hotspot and containment areas. Based on this information Thane Municipal Corporation (TMC) officials are deployed. Fever

outpatient department (OPD) clinics have been set up across Thane, along with drive-through testing booths.

Thane's existing DigiThane digital platform hosts an online COVID-19 self-assessment test and offers free online tele-consulting/video-consulting by 40+ doctors in association with the Indian Medical Council.

SANITIZATION

Regular sanitization of the roads, colonies and public spaces is being conducted. 82,000 liters of disinfectant is sprayed everyday using fire brigade tankers, fabricated vehicles, small tractors and handpumps.

AWARENESS & CAPACITY BUILDING

TMC has set up a dedicated COVID-19 toll-free number that addresses COVID-19 queries while DigiThane's social media platforms often showcase experts sharing their views on the current situation. The social media platforms also give the latest COVID-19 information, rules, and regulations of the municipality, state government and central government. The reach of social media was extensive. For example, when there was a blood requirement, the DigiThane platform was tapped and there were 150+ donors within 20 minutes.

CITIZEN SUPPORT

TMC's COVID-19 toll-free number and email id addresses ration allotment, grievance redressal, pandemic related queries, and helping senior citizens and persons with disabilities.

Thane

During the lockdown, TMC tied up with Zomato as a home delivery partner for essential products and Wellness Forever as the home delivery partner for medicines. Residents could also access the public dashboard on the DigiThane platform to look up other home delivery essential products vendors. In addition, the DigiThane platform also features regular live webinars for the benefit of homebound citizens with classes on zumba, yoga, health, wellness, hair care, hobbies etc.

Fever OPDs and drive-through testing

Anganwadi workers

Thane

COVID/Ration Helpline

Type of Equipment/Vehicle	Capacity (l/trip)	Quantity	Disinfectant Sprayed per day (ltr.)
Fire Brigade Tankers	5,000	10	50,000
Small Tractors	500	10	5,000
Fabricated Vehicles	1,000	15	15,000
Handpumps	100	120	12,000
Total			82,000
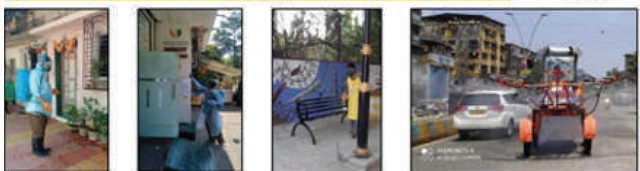
Community Sanitization

Thanjavur

City: **Thanjavur**
State: **Tamil Nadu**
Population:
2,22,943 (2011 Census)
Area: **36.31 sq.km.**
Round: **2**

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tnurbantree.tn.gov. in/thanjavur

Thanjavur (formerly Tanjore) is an important center of south Indian religion, art and architecture. Famed for its temples, agriculture-based trading is the city's economic mainstay, earning it the title 'Rice Bowl of Tamil Nadu'. During the ongoing pandemic, Thanjavur focused on the mental and physical well-being of its residents and front-line workers. The administration is also pushing for basic hygiene and has deployed low cost handwashing facilities across the city.

CITIZEN SUPPORT

Yoga for Sanitation and Health Workers

Thanjavur Medical College Hospital – Department of Yoga & Naturopathy – organized a yoga program for all sanitary workers, health workers and corporation officials. The program was designed to reduce stress and anxiety and offer improved respiration, energy and vitality.

Medical Camp for Sanitary Workers

The district administration, in conjunction with the Indian Medical Association (IMA), arranged for a special medical camp for sanitation workers and other health workers. These medical camps offered a complete physical examination along with an assessment of functioning of

vital organs like the heart, lungs, digestive system, liver, kidneys and the immune system. The sanitary workers were also provided counselling and were given free medical kits. All workers received a prevention kit daily.

Distribution of Homeopathy Medicine
Through the Department of Indian Medicine and Homoeopathy, Corporation officials along with volunteers distributed 'Arsenicum Album' to 42,000+ households within the Thanjavur Corporation limits. This homeopathic preparation purportedly improves the immune system and mitigates COVID-19 symptoms.

Immunity Boosting Drinks for Workers
A special health drink was prepared for sanitary workers, health workers, corporation officials and public at large to boost their immune system. Main ingredients of the drink were *amla* (Indian gooseberry), ginger and coriander or mint leaves along with lime.

Low Cost Handwashing Facilities
The Thanjavur Corporation officials designed low cost handwash facilities and installed units in various government offices and other public access facilities. Individuals and institutions showed an interest in purchasing the unit. The Corporation also received funds from sponsors to expand the reach of the handwashing facilities.

Volunteer Work
Many citizens actively volunteered to offer their services in containment zones/areas, residential areas, and to assist senior citizens, etc.

Nourishing the undernourished
Bananas procured from local farmers/vendors were supplied to the public through the *Amma* canteens. The Thanjavur Corporation, along with volunteers/NGO at Rajah Serfoji Government College, adopted 96 orphans and provided necessary livelihood measures to them.

Thanjavur

Low cost handwashing facilities

Yoga program for sanitary & health workers

Medical camp for sanitary workers

Thiruvananthapuram

City: **Thiruvanantha-puram**
State: **Kerala**
Population: **7,52,490 (2011 Census)**
Area: **214 sq.km.**
Round: **3**

smartcitytvm.in

Thiruvananthapuram, capital of the state of Kerala, is a beautiful seaside city built on seven hills. The city is characterized by its undulating terrain of low coastal hills with narrow winding lanes and busy commercial alleys. The city has rolled out several measures, during the ongoing pandemic, such as creating a 24X7 help desk, comprehensive tracking and tracking of positive cases and suspect cases, triple lockdown and walk-in testing kiosks. Keeping citizen's safety and convenience in mind, the city is disinfected regularly while community kitchens see to the needs of the poor, the homeless and the citizens in containment zones.

TRACKING & MONITORING

To effectively monitor and contain the spread, the city administration worked across three critical phases, the last of which is ongoing:

PHASE ONE	PHASE TWO	PHASE THREE
30 January to 4 May 2020	4 May to 30 June 2020	01 July 2020 onwards
Duration prior to easing of the national lockdown	International and domestic transit permitted	Tackling community spread

Phase One: Lockdown

On 23 March, the National lockdown was in place. Safety and containment protocols were swung into action starting with identification of travelers (particularly from hotspots), who were put in 28 days of isolation on arrival. Mobile Health Squads reached out to primary contacts of the infected through route mapping and placed them in immediate isolation. The state was able pull down the number of active cases to zero and practically flatten the infection curve, but it started peaking again as travel restrictions eased.

Phase Two: Influx of Returning Residents and NRIs

The second wave of cases started with the influx of Keralites from other parts of the world and India. A huge number of NRIs had registered on the NORKA website numbering more than 4 lakh. The government and state focused on minimizing mortality rate and local spread (flattening the epidemic curve). The methodology adopted was: Trace, Quarantine, Test, Isolate and Treat.

Passengers were subjected to institutional quarantine (symptomatic cases) and some were put under home quarantine (mostly asymptomatic cases) under strict vigil. Committees were formed in each *panchayat* ward with the help of local self-government representatives, elected representatives, Accredited Social Health Activist (ASHA) workers and policemen, to ensure strict compliance of quarantine principles and rules.

Phase Three: Triple Lockdown

The Police department employed a technique for contact tracing dubbed 'Triple Lockdown' which was first piloted in Kerala's Kasargod district. The objective of this triple lockdown is to gain more time for departments to trace the contacts of active cases when the source is unknown. Triple lockdown essentially means three levels of vigilance:
• Lock 1: Movement of all people restricted in the district
• Lock 2: Mandatory for people in hotspots to stay at home
• Lock 3: Compulsory home quarantine for identified primary and secondary contacts of COVID-19 patients

Strict Surveillance of the Quarantined

The database of people under quarantine is constantly monitored. In congested areas, guards are posted outside houses of those in quarantine and the area is constantly monitored by patrols and aerial surveillance (using drones). Physical verification of those under quarantine is done thrice a day and all CCTV feeds in the area are routed to the Police Control Room.

Monitoring Community Transmission

Epidemiological investigations are being carried out in every case and primary and secondary contacts are being traced for effective containment of further transmission of disease. Many cases with unknown sources leading to multiple clusters have been identified in the city.

DIAGNOSTICS

Walk-in Testing and Health Infrastructure

In the first phase, the administration set up walk-in testing kiosks and 10% of wards in *taluk* hospitals and primary health centers and community health centers, that had in-patient facilities, were converted to isolation wards.

Quarantine Wards

In the second phase, many hotels and buildings were converted into makeshift quarantine zones and medical teams along with ASHA workers were given standard operating procedures to tackle influx of returning NRIs and other out-of-station residents.

Swab Testing and Antigen Tests

Swab testing and antigens tests have been ramped up in the city and the strategy is to make the best use of available test kits focusing on pool tests among health workers, bulk tests from hotspots and to conduct more sentinel surveillance tests.

Recovering and Future Prevention

The city and state are continuously revamping testing, increasing available ventilators and beds and procuring PPE kits for its frontline staff.

SANITIZATION

Spraying disinfectants and cleaning public areas is done regularly across the city.

AWARENESS & CAPACITY BUILDING

Break the Chain Communication Initiative

A new initiative 'Break the Chain' was introduced by the Government of Kerala on 15 March. The campaign aimed to educate people about the importance of public and personal hygiene.

CITIZEN SUPPORT

24X7 Helpline and Support

The city runs a 24x7 call centre and help desk at the Corporation headquarters and ensures all containment zones and hotspots receive access to essentials.

Janakeeya Kitchen (People's Kitchen) and Migrant Shelters

Community kitchens have been established to serve food to needy guest workers and other vulnerable groups. Shelter homes for guest workers have also been set up across the city. The government distributes free dry ration to the needy stuck in containment zones.

Break the Chain Handwash Facilities

Under the 'Break the Chain' communication Initiative, the government has installed water taps with soap and sanitizer at public spots such as at entry and exit gates of hospitals, railway stations, bus stops, offices, etc.

Thoothukudi

City: **Thoothukudi**
State: **Tamil Nadu**
Population:
**2,37,374 (2011
Census)**
Area: **90.663 sq.km.**
Round: **3**

**tnurbantree.tn.gov.
in/thoothukudi**

Thoothukudi, formerly Tuticorin, is an important port and industrial city in Tamil Nadu. Known as the Pearl City on account of the pearl fish that was once in abundance in the area, Thoothukudi is working to combat COVID-19 by extending support to its residents through a mask vending machine, low-cost pedal-operated sanitizer dispensers, a sample collection van and by facilitating food distribution and providing alternative sources of livelihoods to beleaguered auto rickshaw drivers.

 DIAGNOSTICS

COVID-19 Sample Collection Van
To avoid unnecessary movement of suspected cases, Thoothukudi has introduced a sample collection van that serves as a mobile collection kiosk. The vehicle picks up samples at source thereby cutting on the need to travel to get tested.

COVID-19 sample collection van

SANITIZATION

Cleaning Public Toilets

To ensure hygiene, and to help sanitary workers in their work, a mechanized water jet system has been deployed to clean all public toilets.

Cleaning public toilets using water jets

CITIZEN SUPPORT

Mask Vending Machine

Mask Vending machines have been installed in public places such as markets, medical colleges, hospital, etc., to ensure all confirm to mask usage. Masks are available for ₹5.

Mask vending machine

Low Cost Pedal Operated Sanitizer Dispenser

To avoid the need to depute staff for dispensing sanitizer at the entrance of banks, offices, etc., the Thoothukudi Corporation designed low cost pedal operated sanitizer dispensers for ₹350. These have been installed in different locations across the city and individuals and organizations have evinced an interest in purchasing the same for personal needs.

Low cost pedal operated sanitizer dispenser

Water Supply Lorry Delivery Pipe Modification

Some areas of Thoothukudi Corporation receive water supply through tankers. The Corporation redesigned the delivery pipe to maintain social distancing.

Water supply delivery pipe modified to maintain social distance

Facilitated Auto Drivers as Vegetable Vendors during Lockdown

To ensure auto rickshaw drivers' livelihood during the lockdown, the Corporation enabled drivers to sell vegetables which proved to be a win-win for residents and drivers alike.

Water supply delivery pipe modified to maintain social distance

Delivery of Essentials to Containment Zones

To ensure containment zone guidelines are met, the Thoothukudi Corporation supplied essential commodities to barricaded zones through the *Amma Pasumai Pannai* co-op society. Vehicles procured by the Corporation are used to deliver commodities in combo packs.

Mobile ATM in Containment Zones

To ensure people from containment zones did not face financial difficulties, the Thoothukudi Corporation arranged for a mobile ATM, in collaboration with TMB Bank, along with the availability of disinfectant and PPE clad staff.

Mobile ATM in containment zones

Tiruchirappalli

City: **Tiruchirappalli**
State: **Tamil Nadu**
Population: **8,47,387 (2011 Census)**
Area: **167.23 sq.km.**
Round: **3**

trichycorporation. gov.in

Tiruchirappalli or Trichy is the fourth largest city of Tamil and is famous for its temples and historic monuments. The Tiruchirappalli City Corporation has taken two main steps towards combating COVID-19. It quickly de-centralized busy vegetable markets to prevent overcrowding and converted all fingerprint-based biometric attendance at corporation offices to face-reader systems.

CITIZEN SUPPORT

Servicing the Needy
The city offers medical check-up facilities and free food to the homeless, beggars and waste pickers.

Transportation and Movement
During the lockdown, urban primary health centers were provided with transportation so that medical officers and nurses could attend to COVID-19 patients, the aged and expectant mothers without any hassle. A colour coding card pass system was also initiated and the same was distributed to the public on a ward basis.

Ensuring Social Distancing
The popular Gandhi Market vegetable *mandi* was closed and the markets were decentralized to eight different

locations across the city. The wholesale vegetable market was shifted to the spacious G-Corner railway ground to ensure social distancing. Tiruchirappalli City Corporation also purchased vegetables on wholesale rates and distributed it for ₹100/- across the city on a non-profit basis using staff or hired vehicles.

Ensuring Social Distancing

The fingerprint biometric attendance at Tiruchirappalli City Corporation offices was converted into a face-reader attendance system. A total of 125 face reader attendance machines have been installed in the corporation's main office, zonal offices, ward offices etc.

ER SCHOOL GROUND SRIRANGAM BOYS SCHOOL SIT COLLEGE GROUND CHATHIRAM BUS STAND

MADHURAM HR.SEC. SCHOOL ANNANAGAR ULAVARSATHAI Bishop Heber College Ground ANNA STADIUM

Social distancing circles at all vegetable markets and other public areas

G-Corner Railway ground Wholesale Vegetable Market

Tirunelveli

City: **Tirunelveli**
State: **Tamil Nadu**
Population: **4,73,637 (2011 Census)**
Area: **189.9 sq.km.**
Round: **3**

tirunelvelicorpora-tion.in

Tirunelveli is an ancient city and became the chief commercial town in the period of the Arcot *Nawabs* and *Nayaks*. The name Tirunelveli has been composed from three Tamil words '*Thiru – Nel – Veli*' meaning Sacred Paddy Hedge. To combat the pandemic the city focused on hygiene and deployed innovative handwashing systems across the city.

CITIZEN SUPPORT

The Tirunelveli city administration set up innovative hands-free handwashing facilities across all corporation offices and primary health care centers. Citizen used foot pedals to operate the tap and soap dispensing, thus, avoiding touching surfaces that cause contamination or spread.

Tirupati

City: **Tirupati**
State: **Andhra Pradesh**
Population: **3,74,260 (2011 Census)**
Area: **27.44 sq.km.**
Round: **2**

Tirupati lies at the foothills of the Tirumala hills – home to the revered Sri Venkateswara Temple. Hindus consider the city to be the seat of Lord Vishnu and Tirupati is surrounded by a host of temples. The city has worked extensively to ensure all health and sanitization measures are met from regular disinfection to safe disposal of biowaste collected in containment zones. Door-to-door surveys to monitor health conditions and distribution of essentials to the needy are other initiatives that are underway.

TRACKING & MONITORING

Door-to-Door Surveys
With one team for every five houses, door-to-door health and fever surveys are being conducted by ward volunteers, Auxiliary Nursing Midwives (ANMs) and Accredited Social Health Activist (ASHA) workers among others.

DIAGNOSIS AND TESTING

Every ward has one supervisory health team comprising of a doctor, staff nurse and ward health secretary to monitor and test citizens.

SANITIZATION

Disinfectant Spraying

City streets, public spaces and public vehicles are disinfected with a sodium hypochlorite mix using vehicle mounted sprayers and butterfly sprayers.

Sanitation for Quarantined Homes

Separate garbage collection vans have been designated for quarantined house/quarantine centers. All bio medical garbage is safely segregated and disposed in collaboration with AWM Bio Medical Waste Management.

CITIZEN SUPPORT

Shelter for the Homeless

Five shelters have been set up in collaboration with TTD. All recipients receive three meals free of cost and a place to sleep along a hygiene kit consisting of masks, gloves, soaps, etc. Migrants from the north receive food to their taste with facilities catering for the availability of localized food such as *roti* and other north Indian dishes.

Personal Protection for Workers

Sanitation workers receive special health insurance and PPE kits and their health is checked and monitored on a regular basis. All municipal employees receive masks, gloves and sanitizers while protective gear was also provided to all police personnel implementing the lockdown or posted to monitor containment zones.

Delivery of Essentials

All households in containment zones can avail of the Public Distribution System (PDS) to receive essentials at affordable prices.

Fodder for Cattle

The city administration rounds up stray cattle and sends them to a designated area where they are provided with fodder.

Tiruppur

City: **Tiruppur**
State: **Tamil Nadu**
Population: **8,77,778
(2011 Census)**
Area: **159.35 sq. km.**
Round: **3**

**tnurbantree.tn.gov.
in/tiruppur**

Tiruppur is the administrative headquarters of Tiruppur district and a major textile and knit wear hub. The city contributes to nearly 90% of India's total cotton knit wear exports. Like other cities, industries here too ground to a halt, during the pandemic, affecting lives and livelihoods. To combat COVID-19, Tiruppur took several measures including active surveillance of containment zones, regular disinfection activities, social distancing in marketplaces, mobile clinics in non-containment zones, food distribution for the needy and setting up of a mask vending machine.

TRACKING & MONITORING

Sector-Wise Surveillance by Medical Teams
Each containment zone is divided into sectors, comprising of 50 houses in each sector. *Anganwadi* workers, domestic breeding checkers, volunteers etc. are allotted to each sector for conducting active surveillance in containment zones.

A paramedical team visits each house to check for influenza symptoms and the same is carefully recorded. They also record information about senior citizens and persons with co-morbid conditions such as hypertension as well as details about expectant mothers. Influenza-like

symptoms are referred to the associated medical officer for COVID-19 testing and treatment.

DIAGNOSTICS

Free Tele-Counselling

A tele-counseling wing is operating out of the Tiruppur Corporation main office. The center is staffed with a doctor, staff nurse and an Integrated Counselling & Testing Center (ICTC) counselor all of whom attend calls and answer queries.

Mobile Clinics

Free of cost mobile clinics operate in non-containment zones for the screening of influenza-like symptoms, treatment of minor ailments and distribution of drugs for hypertension etc. These mobile clinics have been arranged by Tiruppur Corporation in collaboration with private hospitals and NGOs.

SANITIZATION

BHELMISTERS (3000L) mounted on heavy vehicles, tractor trailer mounted jet sprayers, tractor mounted turbo sprayers and light commercial vehicle mounted power sprayers are being used to disinfect containment zone streets twice a day. A disinfectant solution of hypochlorite 1% is being utilized as per guidelines. Internal spraying is being carried out in all houses within a containment area using hand/power sprayers and a disinfectant such as Lysol. The sanitization team wears a full body cover, gloves, shoes, masks and glasses.

AWARENESS

Handwashing awareness stickers, along with Control Room/Community Health Officer (CHO) details, are pasted in all houses in Tiruppur Corporation. Public addressing systems have been fitted in vehicles and announcements are made to raise awareness and share vital information about solid waste management activities being carried out in the locality.

Flex banners, posters and notices are pasted across key locations to raise awareness while handwashing best practices are explained across the city in conjunction with SBM Animations and voluntary organisations such as Lions Club and NGOs. The public is continuously appraised about activities being undertaken by the corporation.

Handwashing is strictly followed as per guidelines at the entry points of bus stands, the Collectorate, *Amma Unavagam* centers, the corporation office, hospitals, medical shops etc.

CITIZEN SUPPORT

Mask Vending Machine
Tiruppur Corporation has installed a mask vending machine at their main office to ensure availability of masks at a nominal price.

Social Distancing in Vegetable Markets

The main city vegetable market has been shifted to the spacious central bus stand while other vegetable markets have also been shifted to more spacious areas such as college and school grounds. At every marketplace proper barricading, social distance markings and hand washing facilities are being maintained. People can enter the market only after they wash their hands with soap.

Amma Unavagam - The Government Food Subsidisation Program

The city's 10 *Amma Unavagam* centers have been upgraded to provide hot and hygienic food, thrice a day, to over 10,000 people daily. Additionally, food is being given to sanitary workers, migrant laborers, and senior citizens free of cost. Handwashing and social distancing are ensured, and disinfection work is done frequently through the day. The administration makes periodical inspections to check hygiene standards and other COVID-19 precautionary measures.

Social Distancing Alerts and Announcements

The Tiruppur Corporation has installed a Social Distancing Alert Device (SDAD) at the front of the Corporation's main office. At regular intervals, the device captures images and calculates the number of people gathered in the vicinity. When social distancing norms are flouted, an instant alert is triggered for the administrators to act on. The public address systems are also used to issue warnings in English and Tamil.

Tumakuru

City: **Tumakuru**
State: **Karnataka**
Population:
3,02,143 (2011 Census)
Area: **48.60 sq.km.**
Round: **2**

smartcitytumakuru. in

Tumakuru is an industrial city and the headquarters of the Tumkur district. The city is also known as *Shaikshanika Nagari* (City of Education) and *Kalpatharu Nadu* (Land of Coconut Trees). To stem the tide of the COVID-19 epidemic, Tumakuru Smart City Limited (TSCL) is utilizing its Integrated City Management Control Center (ICMCCC) to implement all monitoring and containment strategizing — not just for within the city limits but for the entire Tumakuru district. Along with geo tagging of recent travelers, a Smart Tumakuru mobile app has been deployed while the Digital Nerve Center's (DiNC) Health-X application is being used to create a database of patients/suspect cases visiting fever clinics.
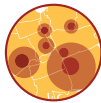
TRACKING & MONITORING

Geo tagging of Quarantined Citizens
The Integrated City Management Control Center (ICMCCC) monitors recent returnees and quarantined residents. Different colors are used to identify the status of the people/containment zone/buffer zone as per the containment plan given by the Ministry of Health and Family Welfare (MoHFW). Active surveillance and contact listing and tracing are also being done to isolate potential COVID-19 positive cases and curtail the spread.

Video Surveillance and Monitoring

Tumakuru Smart City Limited (TSCL) used its ICMCCC to tap into the city's extensive network of CCTVs to monitor the situation on ground – especially during the lockdown. A host of 24X7 Mobile Surveillance vehicles (MSVs) were deployed to monitor the situation. The vans were equipped with a Public Address System (PAS) for announcements/alerts as well as dashboard cameras and Pan–Tilt–Zoom (PTZ) cameras.
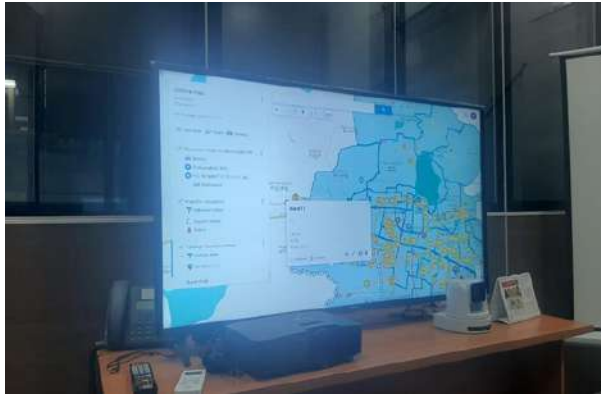
COVID-19 map at ICMCC

PA system being used by police personnel

ICMCC conducts surveillance

Usage of Drones

TSCL procured drones that is used by the police to monitor and alert. Each drone has the option to attach a PAS to convey information in hotspots and containment zones.

S.NO	COLOR	STATUS
1	Yellow	Within 1 to 14 days of quarantine period
2	Orange	Within 15 to 28 days of quarantine period
3	Brown	Quarantine period completed
4	Blue	Suspected person not traceable
5	Red	COVID-19 Positive who is under treatment
6	Green	COVID-19 Positive person recovered after treatment

Table: Color Coding being employed by the Command Center

Tumakuru

Tumakuru map with *taluk* wise mapping of the quarantined.

DIAGNOSIS AND TESTING

Digital Nerve Center's (DiNC) Health-X Application

DiNC's Health-X application is being used to create a database of positive cases as well as suspected cases — i.e. people visiting fever clinics in the city. Patient Care Coordinators (PCCs) have been deputed across all fever clinics that have been established across the city. The PCC staff do the screening and key in the patient's details in the Health-X application and resulting analytics can be obtained as per need. In case of home quarantine/isolation, follow-ups are done through DiNC Command Center that operates from Kolar.

AWARENESS & CAPACITY BUILDING

Digital Display Boards

Along with the extensive use of PAS, TSCL has been using digital display boards, to communicate key information, dos and don'ts and other government measures, well before the lockdown.

Tumakuru

Digital Display Board displaying COVID-19 related videos

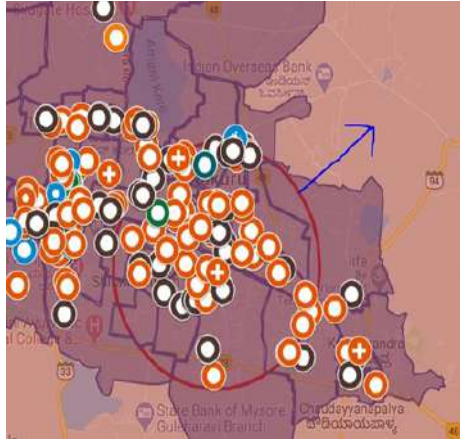## CITIZEN SUPPORT

The Smart Tumakuru Mobile Application

TSCL has developed a handy mobile application for citizens called 'Smart Tumakuru' that now includes a Corona section that gives citizens COVID-19 related information and videos, as well as helpline numbers, etc.

Smart Tumakuru mobile application

Tumakuru

Containment zone created which shows city wards

DiNC data entry being done

Udaipur

City: **Udaipur**
State: **Rajasthan**
Population: **4,51,735 (2011 Census)**
Area: **37 sq.km.**
Round: **1**

Udaipur popularly termed as the 'City of Lakes' is a popular tourist destination known for its history, culture, scenic locations and architecture. The administrative headquarters of Udaipur district. Udaipur Smart City Limited (USCL) has undertaken various initiatives as part of its fight against the pandemic notable which are public awareness campaigns and drills, tracking and distribution of ration to the needy and mapping immediate assistance requirements to donors/NGOs.

TRACKING & MONITORING

Tracking and Monitoring Recent Returnees
USCL is monitoring and mapping all areas that have an influx of recent travelers through heat mapping. The homes of such citizens are clearly marked with stickers and data is collected at the backend for constant monitoring and surveillance.

AWARENESS

Information and Education Communication
Social media campaigns raised public awareness while

on ground training and other awareness initiatives were conducted at key locations.

 CITIZEN SUPPORT

Food Distribution
Creating a Food Control Room with provisions for cooked and packed food for distribution. The administration has implemented a tracking system for ration supply to the poor and destitute by mapping daily high intensity requirement areas and assigning these high demand areas to different donor.

Udaipur

Covid-19 Awareness Programme at WTP
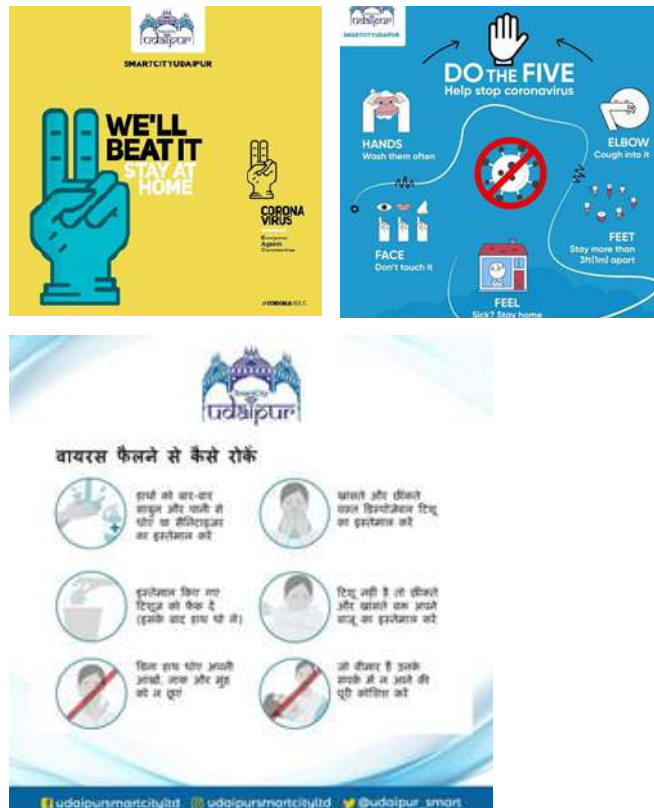
Ujjain

City: **Ujjain**
State: **Madhya Pradesh**
Population: **5,15,215 (2011 Census)**
Area: **157 sq.km.**
Round: **2**

ujjainsmartcity.com

Ujjain serves as the headquarters of both Ujjain District and Ujjain Division and exerts a significant impact upon commerce, finance, media, art, research, technology and education, in the region. Ujjain Smart City's Integrated Command and Control Center (ICCC) has come to the fore, during the ongoing pandemic, coordinating services and spearheading site monitoring, telemedicine services and critical call center management, along with acting as a one-stop management information system (MIS).

TRACKING & MONITORING

COVID-19 War Room

The district administration of Ujjain has established its War Room Command Center in Ujjain Smart City's Integrated Command and Control Center (ICCC) facility. The ICCC is playing a pivotal role in data collection and collation that is then used to make strategic decisions.

The War Room monitors the city's entry-exit points and traffic junctions, deploys Rapid Response Teams (RRTs) and Mobile Medical Units (MMUs), analyzes the COVID-19 growth trend, patient recovery and hospital bed occupancy, and offers telemedicine support and other citizen services. Suspect tracing of contacts, monitoring of

containment zones in collaboration with Madhya Pradesh Agency for Promotion of Information Technology (MAP_IT) and Department of Telecommunications (DoT) and geotagging of positive cases is also monitored from here.

Monitoring Public Spaces and Entry-Exit Points

Ujjain District has been flagged as a red zone and the district administration closely monitors the city's entry and exit points. Vehicle plates are being captured by Automatic Number Plate Reader (ANPR) cameras and speed detection cameras to curtail movement and ensure supply of essentials in the city.

A dedicated team has been assigned to monitor all city junctions. This is done through CCTV cameras with the ICCC team coordinating closely with the ground monitoring team to ensure compliance. All containment areas have dedicated CCTV cameras as well and are being monitored by on-site police teams as well as from the ICCC. A loudspeaker is also installed, along with the camera, enabling police personnel to provide voice instructions to people in containment areas.

Monitoring App for Citizens

Ujjain Smart City Limited (USCL) has created an app to ensure public awareness and to monitor containment zones. The app marks COVID-19 positive cases and containment areas so that citizens can avoid travel to those areas of the city. This platform also helps in identifying the risk sensitivity of areas that are near containment zones.

Ujjain

DIAGNOSTICS

Telemedicine Services

Ujjain Smart City Limited (USCL) has implemented a telemedicine facility at ICCC in coordination with the Chief Medical and Health Officer of Ujjain. More than 20 doctors, many of whom are specialists, have been onboarded for consultation purposes.

Rapid Response Teams (RRTs) and Mobile Medical Units (MMUs)

14 RRTs and MMUs have been established, with ICCC assets and personnel providing the necessary coordination support. Data collation, data entry and MIS services are done at the ICCC so that the doctors can focus on diagnosis and medical care. Administrative units have also been formed to support the RRTs.

CITIZEN SUPPORT

Dedicated Call Centers

Three dedicated call centers have been set up, using the ICCC infrastructure, to monitor the health and nutrition/food status of citizens. 14/28-day quarantine calls are also placed through the call center to check on the health of recent travelers.

Food Distribution

The administration has onboarded vendors to deliver vegetables and fruits to all 54 wards of the city. 12 NGOs have been enlisted to distribute 20,000+ food packets to needy people daily.

Vadodara

City: **Vadodara**
State: **Gujarat**
Population:
16,70,806 (2011 Census)
Area: **410 sq.km.**
Round: **2**

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vmc.gov.in

vadodarasmartcity. in

Vadodara, formerly also known as Baroda, is the cultural capital and third largest city in Gujarat. Administrative headquarters of Vadodara district, the city is home to many medium- and large-scale industries. In its bid to contain the pandemic, the city has launched a tracking and monitoring dashboard, set up cameras to monitor public spaces and is actively tracking all recent returnees to the city. The administration is also taking care of high-risk patients and ensuring efficient waste collection and public awareness.

TRACKING & MONITORING

Vadodara Municipal Corporation (VMC), the police department and the Collector's office are all collectively responding to the emergency with Vadodara Smart City's Integrated Command and Control Center (ICCC) acting as the focal point of all activities. Vadodara has adopted a 9-pronged strategy (Dashboard, Containment, Self-Reporting, Communication, Buffer Zone, FAQ Dissemination, Video Sharing, Urban Primary Health Centers and Collective Efforts).

Surveillance
Vadodara's eye in the sky model helps the police keep vigil from the ICCC through 900 cameras installed across the city.

Tracking Foreign Returnees

The administration started a WhatsApp service and a toll-free number for gathering details about foreign returnees with the health department following up and ensuring citizens take the necessary steps of quarantine, treatment, etc. Self-declaration forms for foreign returnees are also available on the VMC website: *www.vmc.gov.in*

DIAGNOSTICS

Isolation and Medical Facilities

All home quarantined citizens receive regular calls to check on their health status. The state government has launched a Home Quarantine Tracking app deployed by the city administration while all Urban Health Centers (UHCs) have been mapped, along with quarantined citizens' location on a GIS based map to ensure efficient monitoring. All self-isolating or home quarantined residents must share daily updates via the app.

Containment and Buffer Zones

The city's four zones have been divided into 539 sections, catering to 11,421 households and a population of 46,747 each. Teams of doctors and health officials are deputed to each zone and each containment and buffer zone is closely monitored on the GIS map with specific colour coding employed for each one to ensure easy identification.

Health Infrastructure

Health care facilities have been segmented into three types - Segment I: Hospitals designated for COVID-19 treatment, Segment II: Large corporate hospital infrastructure with ICU facilities and Segment III: Centers and other hospitals designated for COVID-19 treatment. Bed availability information is updated on VMC's website and shared via the city's official Twitter handle.

Care for High-Risk Patients

The city is also focusing on high-risk patients, namely people above the age of 60 with high blood pressure/

sugar and other chronic diseases. The city has an estimated 3.5 lakh senior citizens, and the administration is ensuring they receive regular SMSes and follow-up calls. In case of symptoms or other medical issues, senior citizens receive immediate attention. Furthermore, all UHC doctors, designated private doctors and government schoolteachers have been deployed to check-in on high-risk residents.

SANITIZATION

Monitoring Garbage Collection and Public Hygiene

VMC is closely monitoring all sanitation activity, including unhygienic activities, such as spitting and dumping of garbage, with penalties being levied for the same. VMC is also tracking door-to-door garbage collection tracking using GPS.

AWARENESS & CAPACITY BUILDING

On-ground Communication Channels

The administration has been raising awareness about COVID-19 through campaigns on the city's Variable Message Display Boards (VMDBs). All other messages and advertisements have been removed for the time-being. Corona related announcements are being made every 15 minutes on the city's Public Address System (PAS).

Digital Communication

All VMC official social media official handles are updated with latest information from Police, Corporation and the Collector's office. Citizens are urged to follow @ vmcvadodara on Twitter, Facebook and Instagram where communication is shared through creative ways using memes and popular television characters. Updates are also sent regular to the media, radio channels, etc. VMC has also recently launched a YouTube channel to communicate verified information, dos and don'ts, etc. All queries and complaints received via social media are

immediately routed to the correct department for speedy addressal.

CITIZEN SUPPORT

Provision and Supply of Essential Services
VMC has published a form on the city website to facilitate donations in cash or kind by individuals/companies/social organizations. The procured provisions are distributed, ward-wise, by dedicated teams.

Doorstep Delivery of Essentials
VMC published home delivery numbers of local vegetable, fruit and grocery vendors.

COVID-19 VADODARA CITY

3219 Positive Cases	785 Active Cases	2374 Patient Recovered	60 Total Death

COVID 19 - Hospital Bed Occupancy Chart

COVID-19 Total Beds		
Total 2511	Occupied 1255	Vacant 1256

COVID-19 - ICU - Beds		
Total 370	Occupied 294	Vacant 76

COVID-19 - O2 SUPPLY - Beds		
Total 913	Occupied 486	Vacant 427

COVID-19 - Mild Symptomatic Case - Beds		
Total 1096	Occupied 475	Vacant 621

Bed availability and the latest COVID-19 updates are accessible from the city website
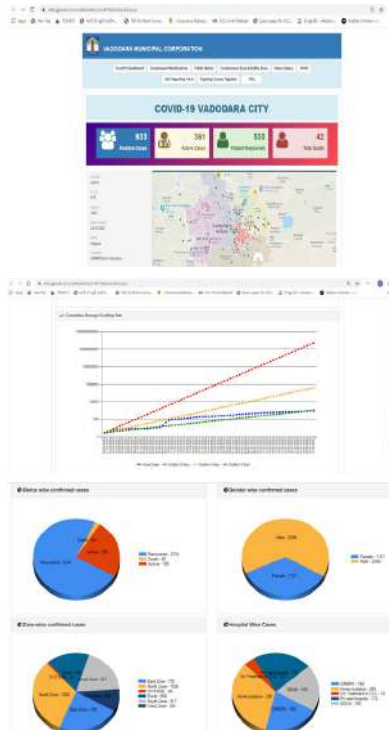
Vadodara

Communication on digital display boards and social media
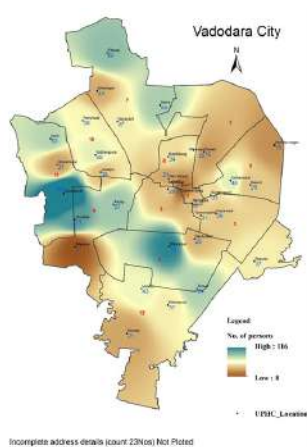

Dedicated COVID-19 section on the city website

Vadodara

Data and graphs for analysis

Concentration of the quarantined persons

Varanasi

City: **Varanasi**
State: **Uttar Pradesh**
Population:
11,98,491 (2011 Census)
Area: **112.1 sq.km.**
Round: **2**

Varanasismartcity. gov.in

Varanasi or Benaras (also known as Kashi) is one of the oldest living cities in the world and is considered the ultimate pilgrimage spot for Hindus. To counter the pandemic Varanasi Smart City quickly converted its Kashi Integrated Command and Control Centre (KICCC) to a COVID-19 War Room to bring all emergency services and activities under one roof. Software tracking vehicles, video call facilities, video analytic software systems, and information security and surveillance systems were some of the measures deployed.

 TRACKING & MONITORING ———————

Kashi Integrated Command and Control Centre (KICCC) turns into a War Room

Rising to the occasion, Varanasi Smart City quickly converted its KICCC into a COVID-19 War Room to ensure all actions are handled and monitored effectively by the district administration. The War Room controls surveillance cameras (40 junctions/100 locations), public address systems (55 locations) and variable messaging systems. It also tracks deployed vehicles using GPS. The CCTV cameras were actively used for enforcing the lockdown and to monitor violations. The police control room which was earlier operating from Police Lines now operates

from within the War Room handling general law and order issues as well as COVID-19 related complaints and compliance issues.

Police Control Room

GIS Mapping and Analytics

All services running in Varanasi Smart City have already been integrated with the Geographic Information System (GIS) base map. COVID-19 cases, as received from the Chief Medical Officer (CMO) and other departments, have also been mapped in GIS. These maps are used for various analytics and to provide real-time feedback to the concerned officials. For example, in the case of home delivery of medicines, the spatial analysis can show the areas currently not covered by the delivery system which is then conveyed to the respective zonal officers for them to take corrective action.

Map showing the COVID-19 affected Persons and Home Quarantined persons

COVID-19 Safe Kashi Mobile App

Varanasi Smart City Limited has developed an android based mobile app for citizens. Features of the app include health advisories, a COVID-19 cumulative case tracker, incident reporting, details for home delivery of essentials, e-pass for movement, facility for medical consultations and options to volunteer. While citizens do not need to register to use the app, authorities can log in at the backend to access the data.
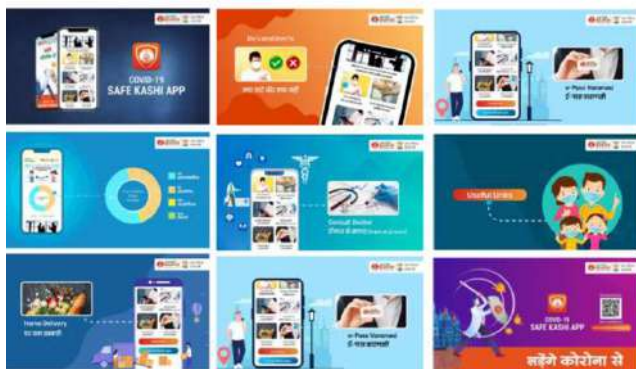
DIAGNOSTICS

Doctors in the War Room are addressing the health concerns of citizens. Doctors also take the patients on video calls and when required evaluate, diagnose and treat patients at a distance via telemedicine.

SANITIZATION

The COVID-19 War Room coordinates with Varanasi *Nagar Nigam's* Quick Response Team (QRT) to carry out on-ground sanitization drives in identified areas. Drones are used to spray disinfectant in hot spots, quarantine and containment areas. Spraying by drones is also done in isolation wards, shelter homes and other places where manual spraying is difficult.

The drone team surveys the area to chalk out a safe flight path. The drones are then filled with a chemical solution consisting of 1% Sodium Hypochlorite, [NaOCl] and are carefully calibrated for the flight path. The entire operation is centrally monitored from the COVID-19 War Room.

Drone in action in a narrow street

Crew preparing the Drone for Flight

AWARENESS

Public Address Systems for Quick Communication
Public Address System (PAS) are installed in 55 locations throughout the city and are centrally controlled from the War Room. Besides public messaging and health advisories, PA systems are also used to communicate mobile app downloads and instructions to police personnel, health and sanitation workers.

Variable Messaging System (LED Signs) at Prominent Locations

LED signboards at 10 locations across the city are controlled from the War Room. These act as visual advisories conveying key COVID-19 related messages and warnings. These are also used to disseminate emergency messaging to police personnel, health or sanitation workers who can then rush to specified spots.

CITIZEN SUPPORT

Food Distribution

Based on requests received from the War Room, cooked food is distributed among the needy, destitute and migrant workers by a team of Varanasi *Nagar Nigam* officials and NGOs. Two community kitchens have been set up from where packed food is distributed across the city and in various shelter homes.

Quarantine Centres

Migrant workers returning from metropolitan cities, unemployed migrant families and other destitute people have all been accommodated in shelter homes for the purpose of quarantine and isolation. The location of the shelter homes is plotted on the Geographic Information System (GIS) map and some critical locations are monitored through CCTV cameras as well. Through the United Nations Children's Fund (UNICEF), a team of psychologists visit these shelter homes and provide counselling to the mentally depressed inmates to boost their morale.

Vellore

City: **Vellore**
State: **Tamil Nadu**
Population: **1,85,803 (2011 Census)**
Area: **87.915 sq.km.**
Round: **2**

tnurbantree.tn.gov.in/vellore

Vellore is the main city and the administrative headquarter of Vellore district. Vellore boasts of some of the most prestigious educational and medical institutions in the state and the city's medical fraternity has been involved with fighting the virus right from the start. Along with providing due care to patients, primary and secondary contact tracing is being done while door-to-door surveys are being carried out as well. Decongestion of marketplaces, public awareness announcements and free food distribution to the needy are other measures being employed to support citizens.

 TRACKING & MONITORING ───────

Ward Vigilance & Surveillance Committee

A team of sanitary supervisors, domestic breeder checkers, paramedical staff, police and revenue department members have been formed, in each ward of Vellore Corporation.

The team tracks all who enter Vellore City from other states and districts and work towards tracing secondary contacts of COVID-19 positive cases. They also oversee disinfection activities, social distancing, and other surveillance activities.

24X7 Surveillance of Entry/Exit Checkpoints

All checkpoints of Vellore city are under constant surveillance by medical and police teams. All people entering the city are taken directly to the quarantine facility for testing and are then quarantined according to norms.

SANITIZATION

Vellore Municipal Corporation uses a BHELMISTER, mounted on a vehicle, to disinfect houses, main roads and streets quickly and efficiently. All the houses in containment zones are disinfected five times during the day.

AWARENESS

Public Address Systems (PAS) at all vegetable markets broadcast the importance of handwashing, wearing of facemasks and the need to maintain proper social distance while shopping. PAS across the city, with a focus on containment zones, are used to popularize the Vellore Helpline numbers (Hello Vellore) and the *Aarogya Setu* app.

CITIZEN SUPPORT

Hello Vellore Helpline
The 'Hello Vellore' helpline (0416-2251641, 0416-2255383), managed through the control room, offers 24X7 medical care and ensures delivery of essential commodities to affected areas.

Food for the Needy
During the lockdown period the needy were provided food at a community kitchen, a central kitchen and 10 *Amma Unavagam* (Tamil Nadu's food subsidisation program) outlets. Food was provided to all migrants stranded in the Vellore Corporation area and poor people in containment zones received free food at their doorstep.

Supply of Essential Commodities
All streets to containment areas are barricaded and citizen movement is greatly restricted. The Vellore Municipal Corporation has deployed vehicles to provide essential commodities and medicines to people in containment zones. People are also urged to reach out to the Hello Vellore helpline for specific requests or help.

Decongestion of Vegetable Markets
The first COVID-19 case in Vellore was detected towards the end of March and within the first week of April itself Vellore Municipal Corporation took steps to decongest

vegetable markets & *Ulavar Sandhai* (farmers' markets) as a precautionary measure. Nethaji Market was shut down and temporary markets were opened, in spacious grounds, across the city. Vellore Corporation field staff monitor markets and handwashing facilities have also been provided at all entry points to each market.

Helping Migrants and Tourists

Special train arrangements were made, in coordination with the district administration, to ensure migrant laborers and tourists were sent to their native place post checkups.

Visakhapatnam

City: **Visakhapatnam**
State: **Andhra Pradesh**
Population: **17,28,128 (2011 Census)**
Area: **698 sq.km.**
Round: **1**

gvsccl.com

Visakhapatnam is a picturesque coastal port city that is often called 'The Jewel of the East Coast'. Visakhapatnam or Vizag is the administrative headquarters of Visakhapatnam District and home to the Eastern Naval Command of the Indian Navy. To support the district administration in COVID-19 related measures, Visakhapatnam Smart City (VSC) is one of the four smart cities of Andhra Pradesh that is functioning 24x7 — repurposing its tech-infrastructure to counter the pandemic.
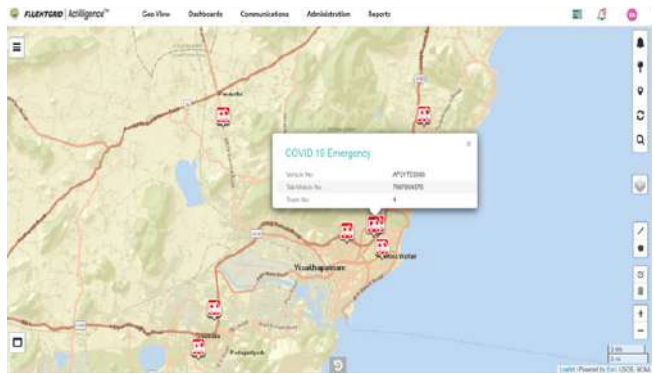

TRACKING & MONITORING

The City Operation Centre (COC)

The COC geo view is enabled with COVID-19 hotspots at the city-level and the same are regularly published in social media by the COC team to ensure citizens are aware of the situation. The geo view is also enabled with foreign returnees and self-quarantine citizens' details corresponding to a COVID-19 dashboard.

The COC team monitors their condition after duly verifying their symptoms. Post validating incidents, actions are floated as per set standard operating procedures (SOPs). SOPs for COVID-19 have been prepared for Preparedness,

Responsiveness & Relief, Mild & Moderate Symptomatic cases, Critical Symptoms and Suspected Cases.

The COC team trains the staff team and the Rapid Response Team (RRT) of doctors on how to use the COVID-19 app and interacts with migrant labours to identify their requirements and share action points. The COC platform tracks ambulances in geo view and the same is conveyed real-time to the RRT to ensure speedy action.

Ambulance tracking in geo view

Visakhapatnam

COVID-19 hotspots

COVID-19 dashboard

Lockdown Surveillance

As part of the Visakhapatnam Smart City (VSC) infrastructure, 500 CCTVs have been set up at important locations and key junctions. During the lockdown, surveillance video analytics triggered overcrowding alerts that were immediately conveyed to the concerned police officials of the area.

Alert Name	Type	Severity	Category	Source	Date
OverCrowdin...	Alert	Major	Surveillance	Fixed Camera	23-Apr
OverCrowdin...	Alert	Major	Surveillance	Fixed Camera	23-Apr
OverCrowdin...	Alert	Major	Surveillance	Fixed Camera	23-Apr
OverCrowdin...	Alert	Major	Surveillance	Fixed Camera	23-Apr
OverCrowdin...	Alert	Major	Surveillance	Fixed Camera	23-Apr
OverCrowdin...	Alert	Major	Surveillance	Fixed Camera	23-Apr
OverCrowdin...	Alert	Major	Surveillance	Fixed Camera	23-Apr
OverCrowdin...	Alert	Major	Surveillance	Fixed Camera	23-Apr
OverCrowdin...	Alert	Major	Surveillance	Fixed Camera	23-Apr
OverCrowdin...	Alert	Major	Surveillance	Fixed Camera	23-Apr

M Governance App

Accessed by the field staff, this mobile app collects data from surveys conducted in containment areas along with data captured from foreign/out of state returnees. The app also covers the spraying activities being conducted by the Greater Visakhapatnam Municipal Corporation (GVMC) and connects the field team to the Rapid Response Team (RRT) of doctors who attend to emergency cases.

DIAGNOSTICS

Rapid Response Teams (RRTs)

As many as 20 RRTs have been deployed in Visakhapatnam. These teams are accessible via mobile tabs fixed in their ambulances. An RRT application has been developed wherein doctors of each team upload data of possible cases from the field directly. This is monitored in real-time by the concerned authorities. Four mobile teams are also formed for sample collection form symptomatic citizens. The teams are monitored through a mobile tab-based tracking platform.

Mobile App with Home Quarantining Features

A mobile app for citizens has been created that integrates the COVID-19 home quarantine feature. Users can take a self-assessment test and the results and GPS location details are monitored with symptomatic cases being geofenced to curtail movement and transmission. Citizens need to submit their condition every few hours during the day when in the quarantine period. Citizens can also use the inbuilt SOS feature to report possible cases or get emergency help.

SANITIZATION

The City Operation Centre's Geographic Information Systems (GIS) layers are enabled with spraying activity status. This provides real-time inputs to authorities on the areas which are, yet to be sanitized.
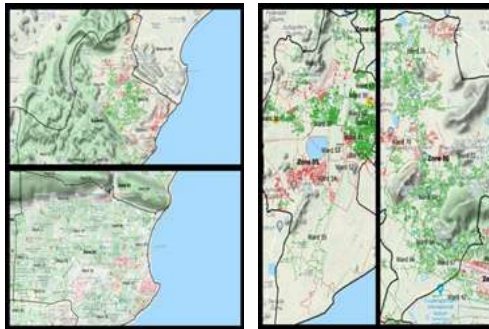
COVID-19 spraying activity in geo view

AWARENESS

Public announcement systems have been deployed at 90 locations to disseminate COVID-19 related information. Digital signboards/variable message display boards have also been installed at 10 key locations across the city for communication purposes and for monitoring the situation across the city.

CITIZEN SUPPORT

The COVID-19 helpdesk and contact center (0866-2410978, 08645-247185/246600) functions round the clock to coordinate with the public health department and district level officers. The center traces and monitors people with foreign travel history. Public grievances are also registered here.

Warangal

City: **Warangal**
State: **Telangana**
Population: **8,11,844 (2011 Census)**
Area: **406.87 sq.km.**
Round: **2**

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smartcitywarangal. org

Warangal is one of the two metropolitan cities of Telangana serving as the district headquarters of both Warangal Urban District and Warangal Rural District. A heritage city, as declared by the Government of India, Warangal's COVID-19 management strategy comprised of GIS based dashboard monitoring of positive cases and containment zones, drone disinfection, door-to-door surveys and ensuring the basic needs of its citizenry are met among others.

TRACKING & MONITORING

Monitoring Active Cases

Positive cases and containment zones are monitored through a COVID-19 GIS-based dashboard which was developed by Scan Point Geomatics. Daily door-to-door surveillance, medical screening of residents in hotspots and effective barricading of containment zone are some of the other measures being employed to monitor and contain the spread of the virus.

Door-to-Door Surveys

Joint inspection teams of Accredited Social Health Activist (ASHA) workers under the District Medical and Health Organization (DMHO), Community Organizers & Community Resource Persons under the Mission for Elimination of

Poverty in Municipal Areas (MEPMA) and Sanitary *Jawans* of the Greater Warangal Municipal Corporation (GWMC) formed teams who reported in to the Sanitary Inspector of the area. These groups were divided ward-wise for each of the 58 wards. The teams conducted door-to-door surveys to collect information on people with foreign travel history, symptomatic cases, vulnerable asymptomatic persons, etc.

Dashboard Tracking

Rapid fever surveys are being conducted daily at the household level coupled with geotagging of positive cases, mapping of containment zones, etc., all of which is reflected on the dashboard and monitored at the state level.

 SANITIZATION

Drone Sanitization

GWMC uses drones for disinfecting containment zones which reduces the risk of the frontline workers being exposed to the virus.

 CITIZEN SUPPORT

24X7 Helpline

A 24X7 helpline, manned by Revenue, Municipal and Police personnel was established for medical emergencies and to check on the home quarantined. Citizens were also encouraged to share information on suspected cases in their locality, report violation of lockdown norms, etc.

Delivery of Essentials

GWMC collaborates with start-ups, retailers and pharmacy shops to home deliver daily essentials to residents in containment zones. The essentials are being delivered by mobile *rythu* vans equipped with public address systems. The contact details of the mobile team are printed on the pamphlet and distributed to all the houses in the containment zones.

Cash at the Doorstep

GWMC collaborated with banks and the postal department for disbursement of cash through mobile ATMs and Aadhar enabled payment systems of the postal department's Point of Sales (POS) machines.

Home delivery of essentials

Mobile *rythu* vans

Disclaimer

Post announcement of the nation-wide lockdown on 25 March 2020, responses to the pandemic were influenced by the unprecedented nature of the public health concern. Soon the crisis took bigger proportions and lives and livelihoods were affected in ways unimagined. Whereas States like Maharashtra, Delhi, Kerala and Gujarat saw the onset of the disease right from March 2020, others like Madhya Pradesh, Tamil Nadu, Andhra Pradesh, Karnataka etc. saw the wave of high intensity in subsequent months. The pandemic continues to unfold across the country.

The current publication is based on city responses to the crisis from March 2020 up to June 2020, as they grappled with the initial seismic shock of the challenge. As this compilation gets published in September 2020, cities are still responding to the ever-changing contours of the pandemic. It would be our endeavor to document their later initiatives as a sequel to this publication in the next calendar year.

"The COVID-19 pandemic has required decisions to be made on the go and India's 100 Smart Cities have hit the ground running, learning along the way. Over the past four months, civic administrations in these cities have demonstrated adaptive leadership by efficiently deploying innovative ideas and tools in a bid to save lives and minimize adversity.

Smart Cities have been at the forefront of this fight, be it testing, isolation, treatment, enforcing lockdown or using technological innovations for information collection, crisis management, effective communication, and predictive modelling. This beautiful compendium captures some such innovative practices employed by these 100 cities with the spotlight on technology enabled, people-centric responses across five key categories of action - tracking & monitoring, diagnostics, sanitization, awareness & capacity building and citizen support. These best practices can act as learnings for many other cities as they grapple with the crisis and prepare themselves for the new normal."

smartcities.gov.in
smartnet.niua.org

www.facebook.com/smartcitiesmohua

twitter.com/SmartCities_HUA

India Urban Observatory (IUO) - iuo.mohua.gov.in
Open Data Portal - smartcities.data.gov.in