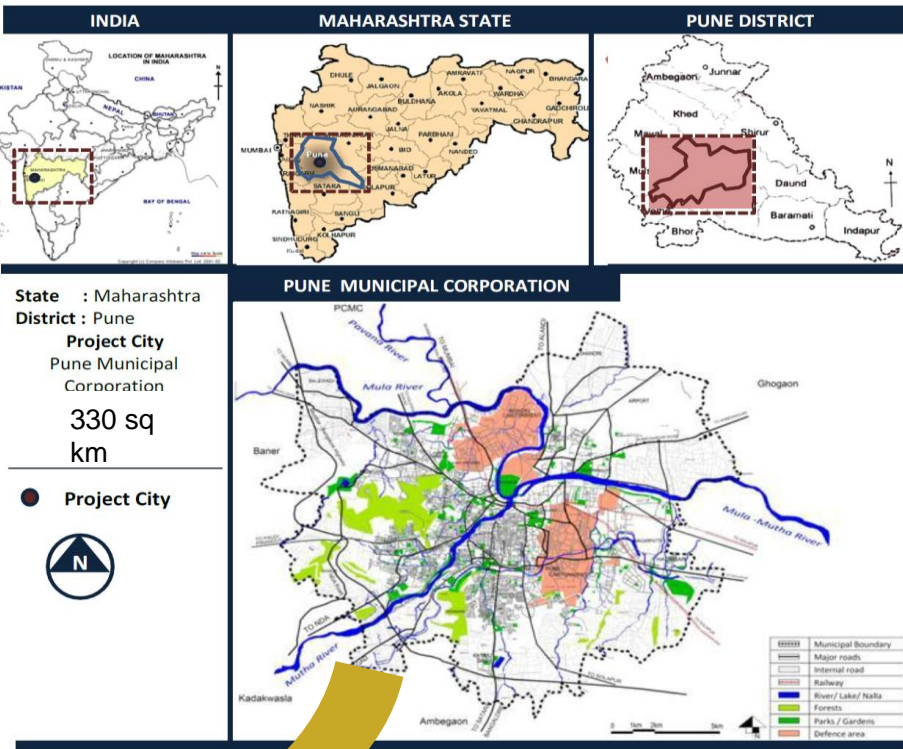
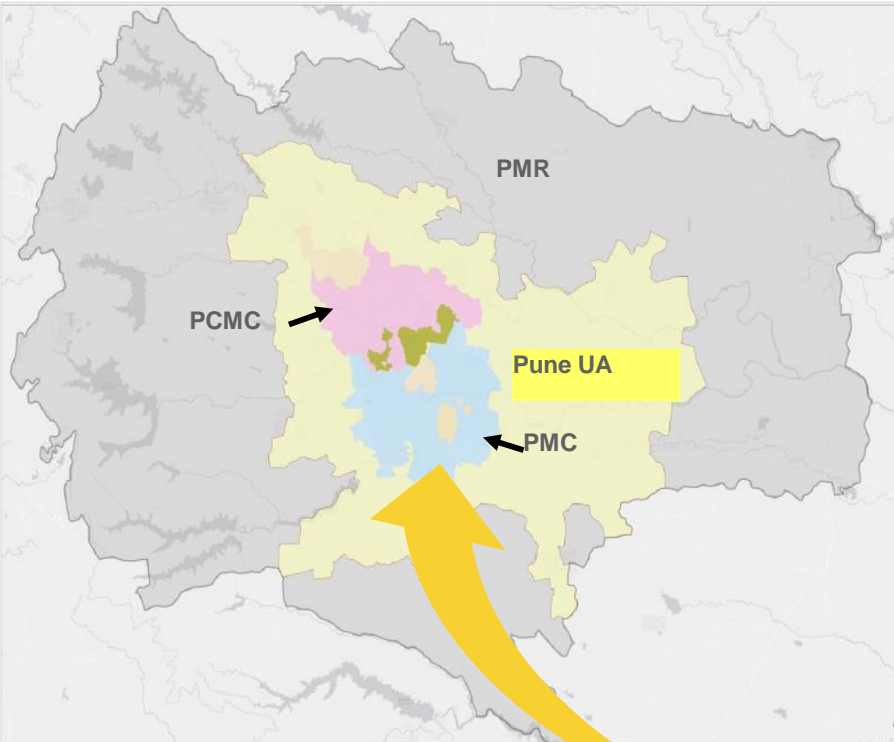
An aerial, black and white photograph of a city, likely Pune, India. The image shows a dense urban landscape with numerous multi-story apartment buildings and smaller structures. A river flows through the middle of the city, with a concrete embankment on one side. The foreground is dominated by the dark, silhouetted branches of trees, framing the view. The overall scene is a mix of urban development and natural elements.

**Response to COVID-19
Informed Decision making
- Case study of Pune**

**- Mahesh Harhare,
CRO, Pune**

Pune – regional setting



- *PMC : Pune Muni. Corp.
- *PCMC: Pimpri Chinchwad Muni. Corp.
- *Pune UA: Urban Agglomeration
- *PMR: Pune Metro Region

Pune – salient features

- Pune Municipal Corporation (PMC) administers Pune City
- Population of Pune is **> 5 mn (2020 estimates)**
- Around **40% population resides in 564 no. of slums**
- Recently developed GIS map of Pune city
- Like many other Indian cities **focus is more on creation of physical infra. facilities** and lesser on digitalisation, use of data for decision making
- Still Pune is among **one of the few top reform-oriented cities** in India

Pune – past disasters and pandemics

2010 Swine flu pandemic in India

> 144 casualties reported in Pune



2019 Swine flu

~ 34 casualties reported in Pune
(Till June 2019, news reports)

2019 Cloud Burst and flooding

~ 22 casualties reported in Pune
(news reports)



Lack of timely forecast of monsoon data

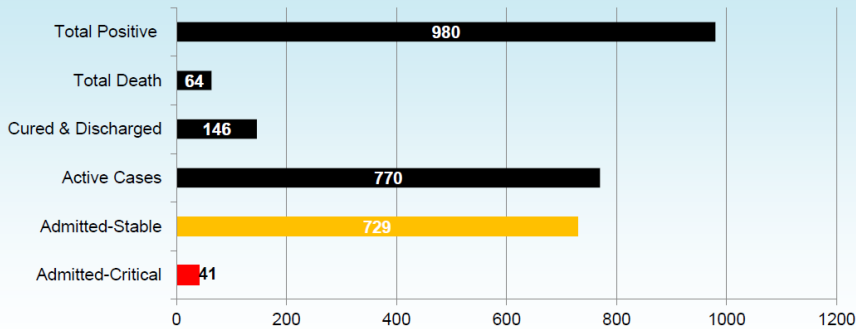
Interagency coordination challenges

- Lack of data processing, mapping
- Decision making based on Institutional memory

Corona outbreak – data was still analysed in traditional way

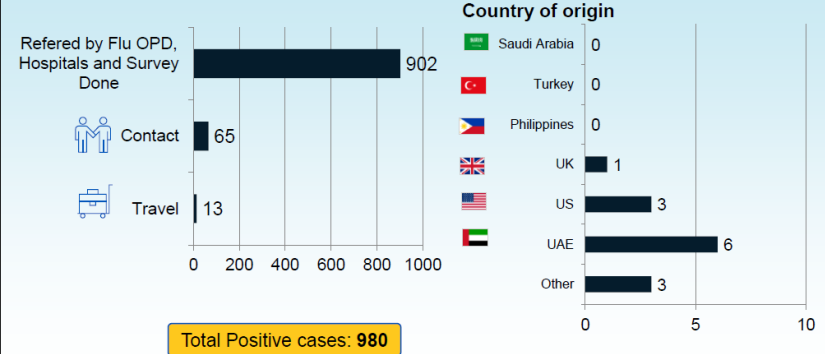
Case summary for PMC Area

As of April 24, 2020



Transmission source of patients

As of April 24, 2020

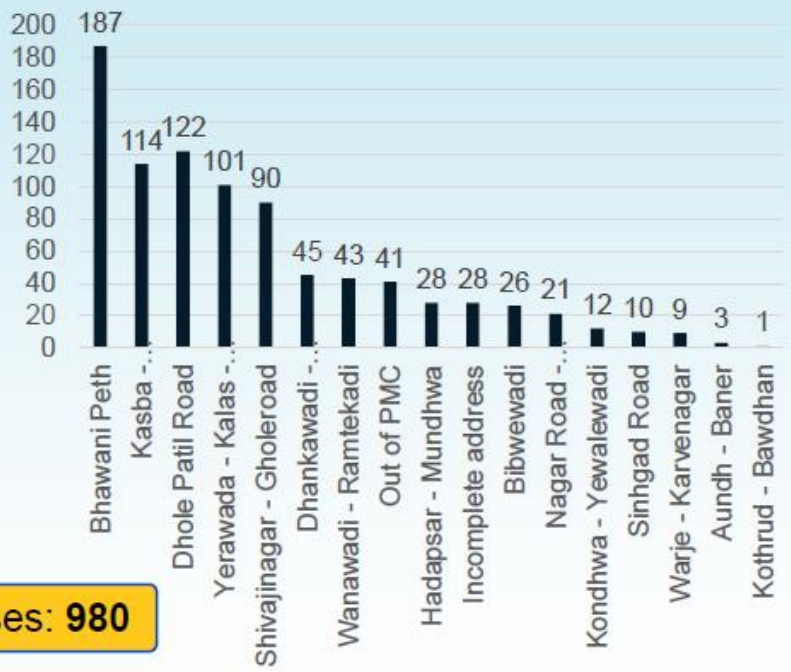
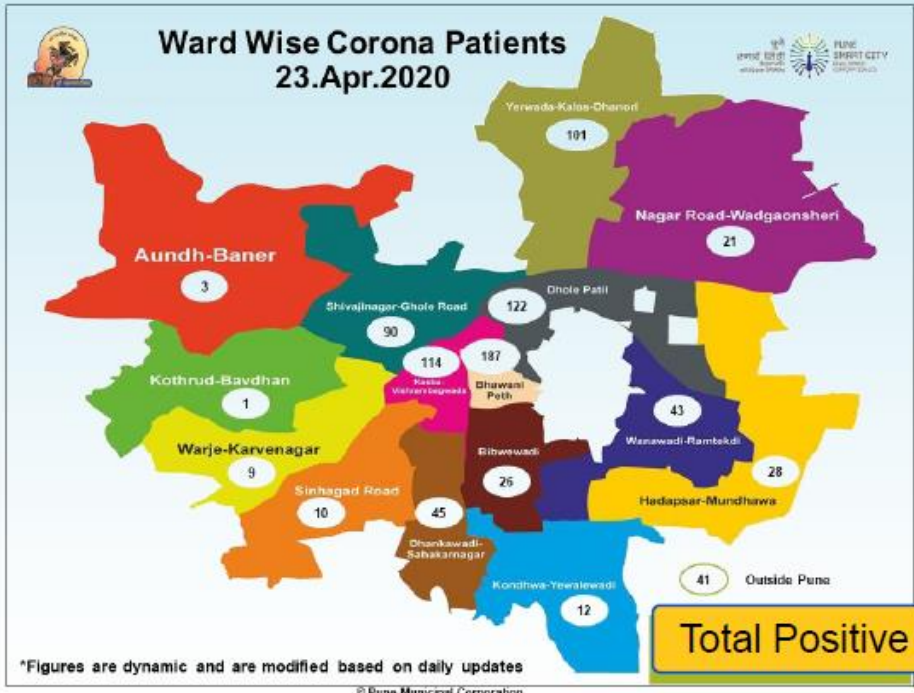


- City level data and information was analysed and communicated
- It was unnecessarily putting lot of pressure on limited resources like manpower, health workers, hospital facilities, police, providing relief measures etc.
- Communication reaching to citizens (within and outside Pune city) was not clear, entire city was perceived to be **HOTSPOT** of COVID- 19

First time city attempted use of spatial tools for mapping ward wise data

Ward-wise breakdown of Positive Patients

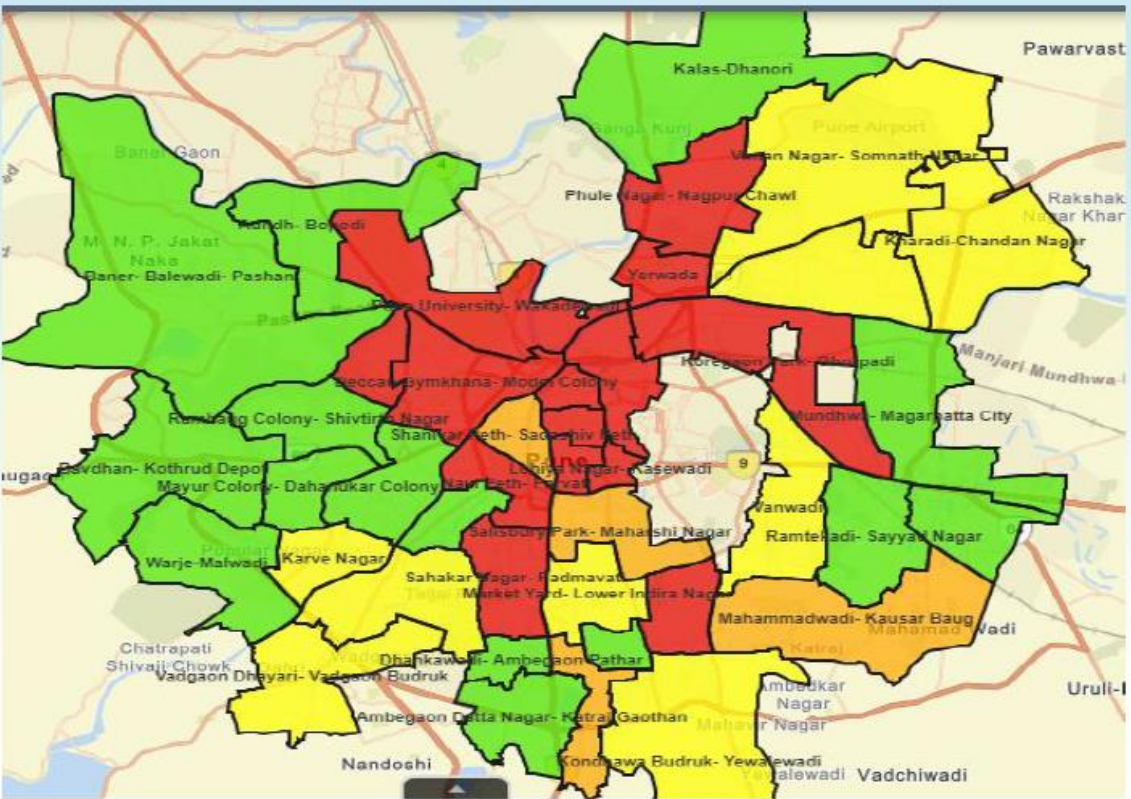
As of April 24, 2020



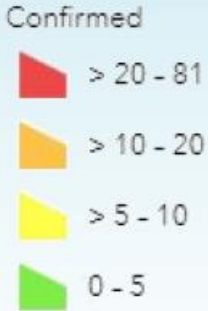
Source: As published by PMC, for representation only

Spatial mapping helped in analyzing dynamic changes in COVID-19 cases across wards and sub wards within Pune city

Prabhag level Mapping of cases...as on 23 April 2020



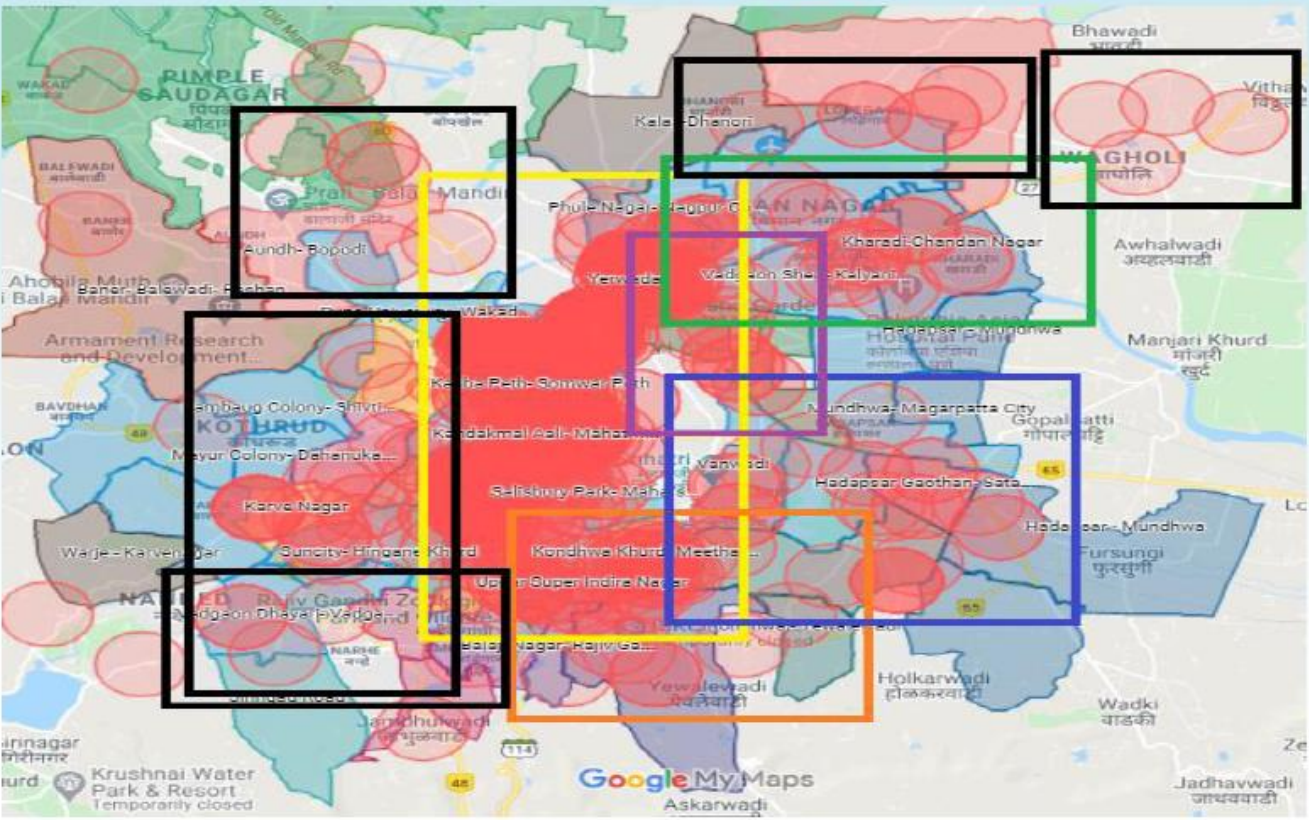
Prabhag Wise Confirmed Cases



Source: As published by PMC, for representation only

It further helped in delineating containment zone and allocating critical resources in an efficient manner

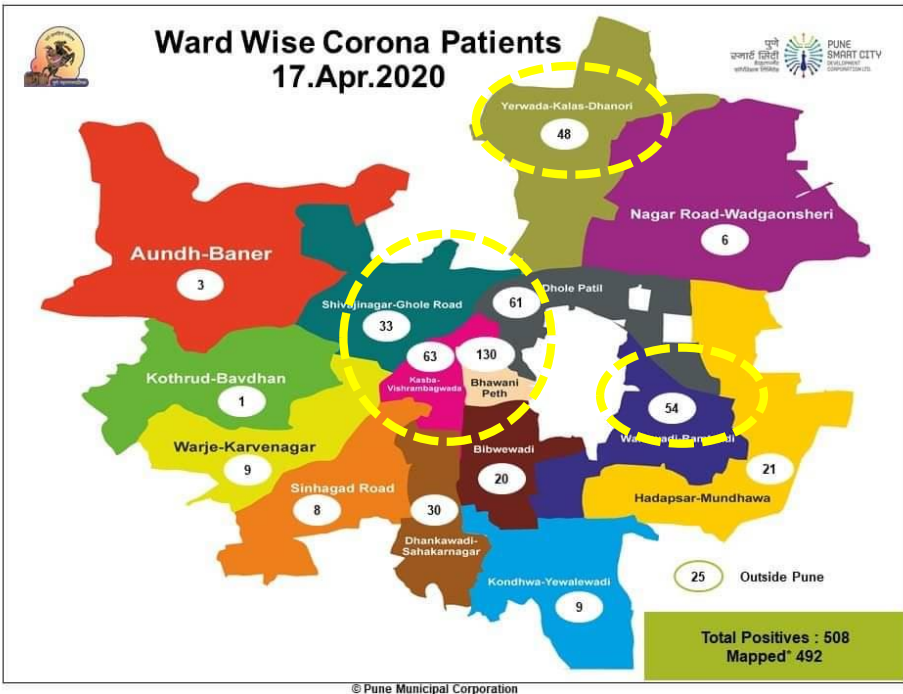
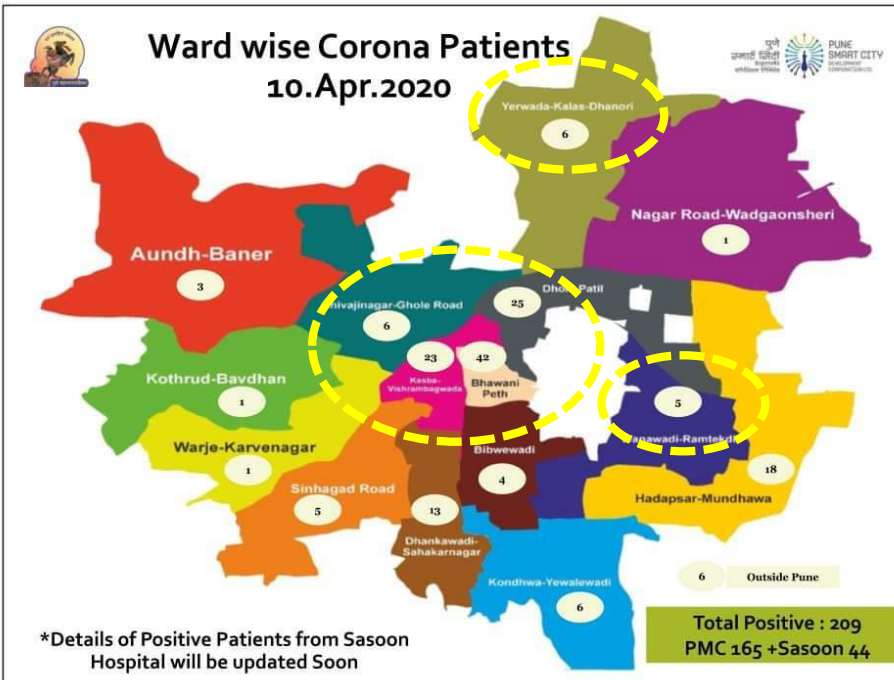
Containment Zone Buffer Analysis



- Containment Zone 1
- Containment Zone 2
- Containment Zone 3
- Containment Zone 4
- Containment Zone 5
- New Containment Zone

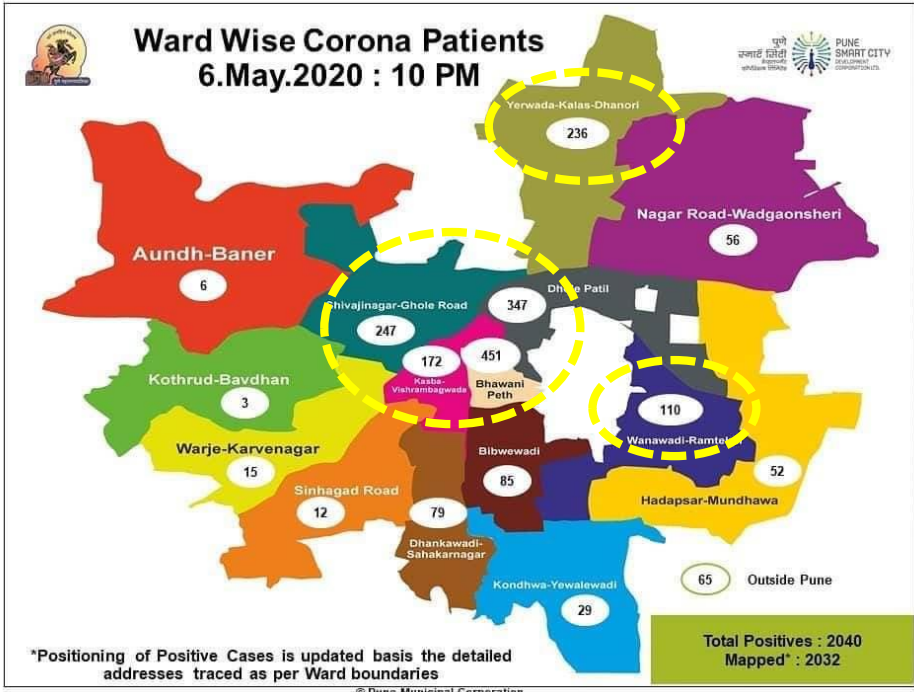
Source: As published by PMC, for representation only

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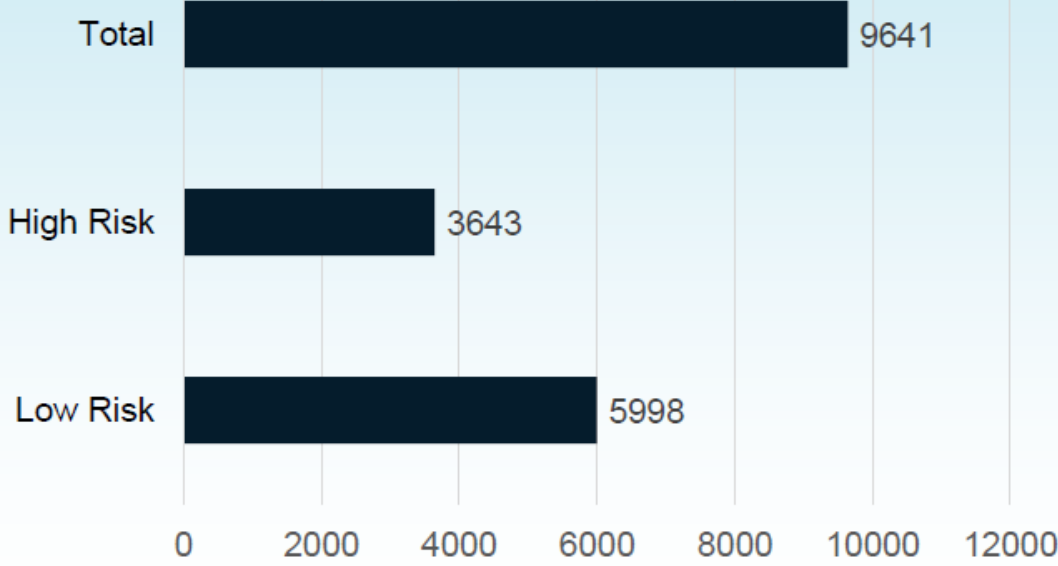
In the initial stage, contact tracing i.e. identification and tracing of high-risk contacts is very critical. The spatial mapping helped in reducing the crucial time required in this activity.

Contact Tracking : High Risk Contacts and Low Risk



As of April 23, 2020

Contact & traced through survey and house to house mobile van check up

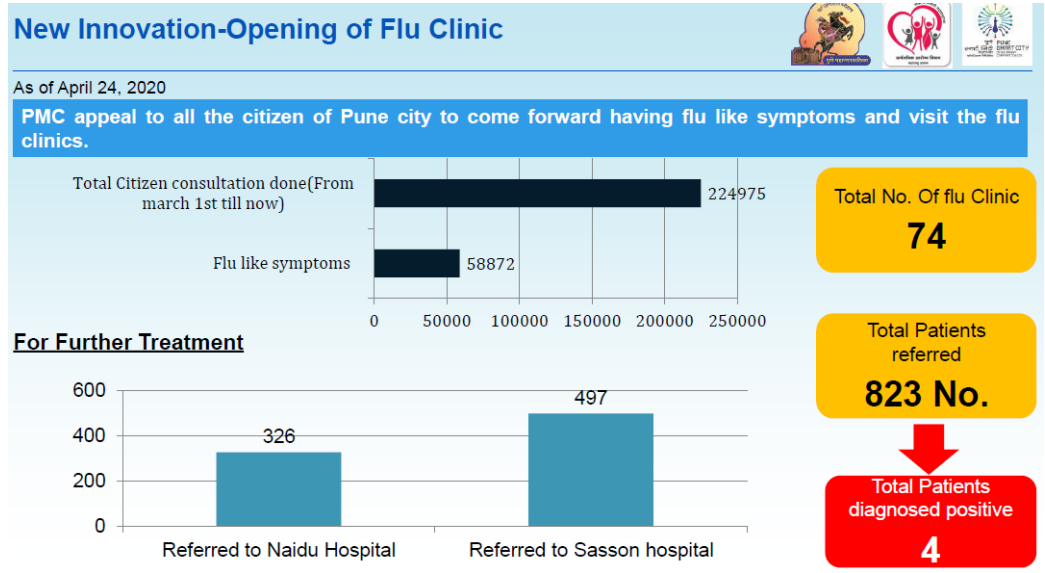
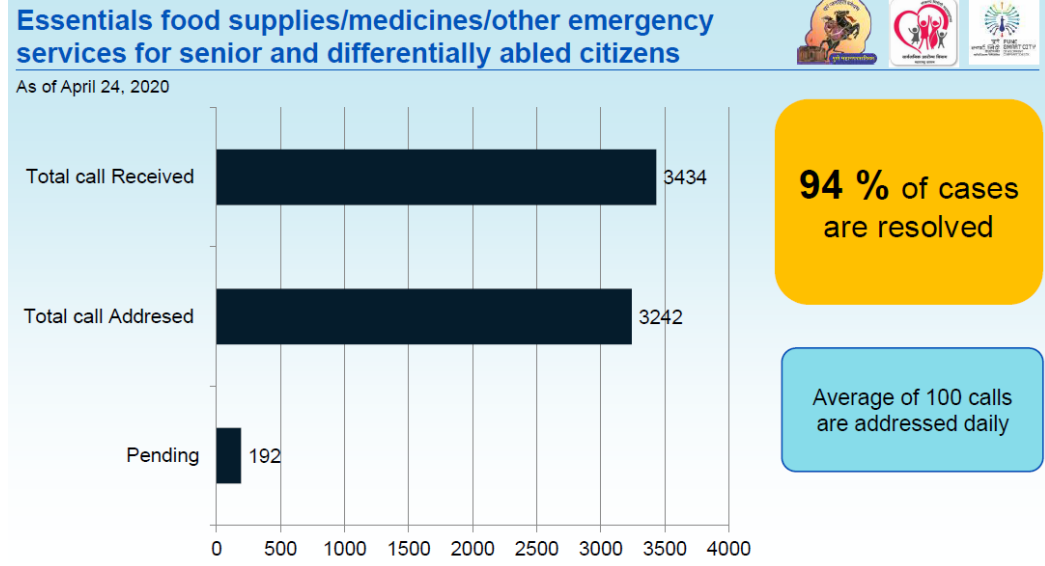


Total No. of High risks contacts
37.7%

Total No. of Low risk contacts
62.2%

Source: As published by PMC, for representation only

Now PMC is better oriented and focused to respond the pandemic



Source: As published by PMC, for representation only

Now PMC is better oriented and focused to respond the pandemic

Manpower Deployed for Door To Door survey



As of April 24, 2020

Sr. No.	Officers	Number
1	Divisional Health officers	5
2	Area Health officers	15
3	Nurses	133
4	Clerks	200
6	Asst. Teachers	979
7	Food Inspector	7
8	Samuh Sanghatika	95
9	ASHA workers	90
10	Total	1524

Total 1524 manpower staff are deployed in the Field

Apart from this, PMC included support of all ward officers level DSI, SI and Mukaddams

City wise door to survey details (started from 16 march 2020)



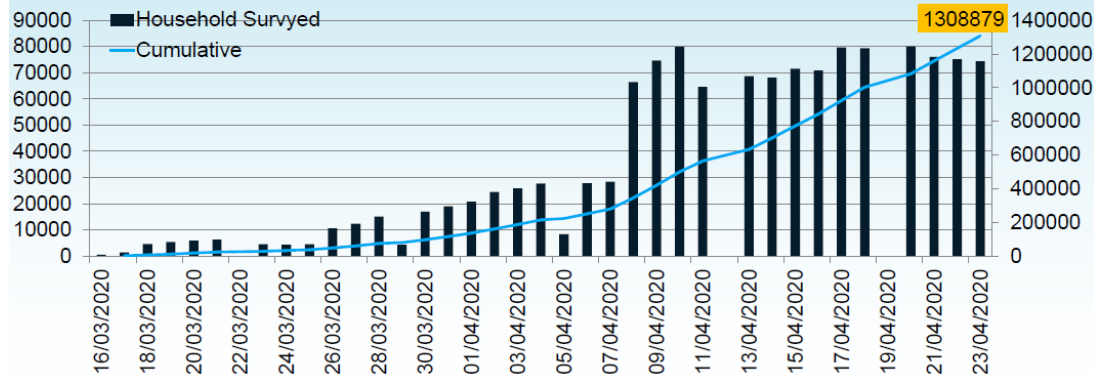
HOUSEHOLD COVERED(1/3)

As of April 24, 2020

Total cluster
59

Total survey team on ground
747

No. of houses visited till now
13.08 lakh



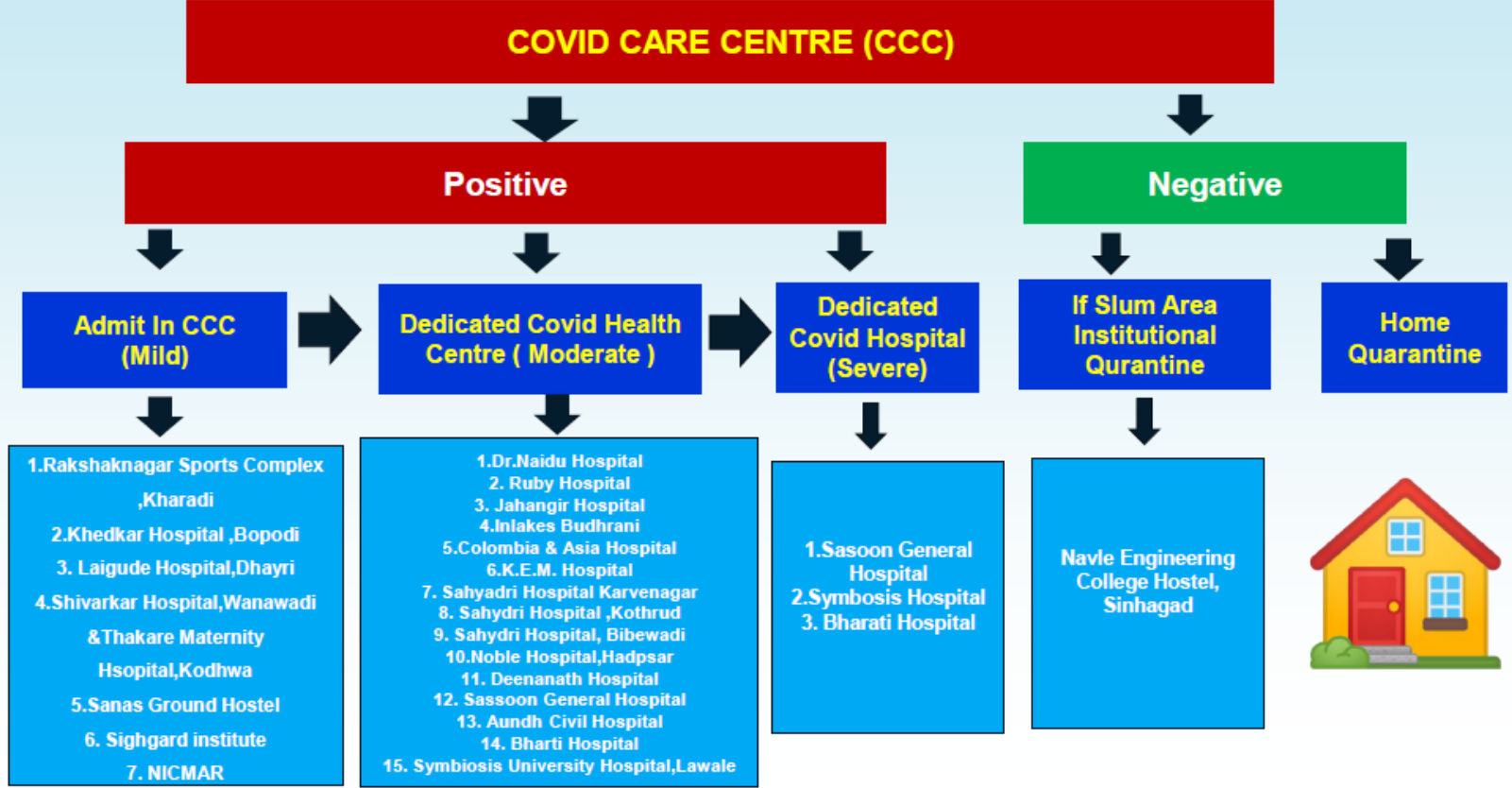
Average 32,722 No. houses are visited daily since last 10 days

Helped in identification of pvt. treatment facilities closer to hotspots, creation of a flow chart and develop a protocol

FLOW CHART OF COVID-19 PATIENT FLOW

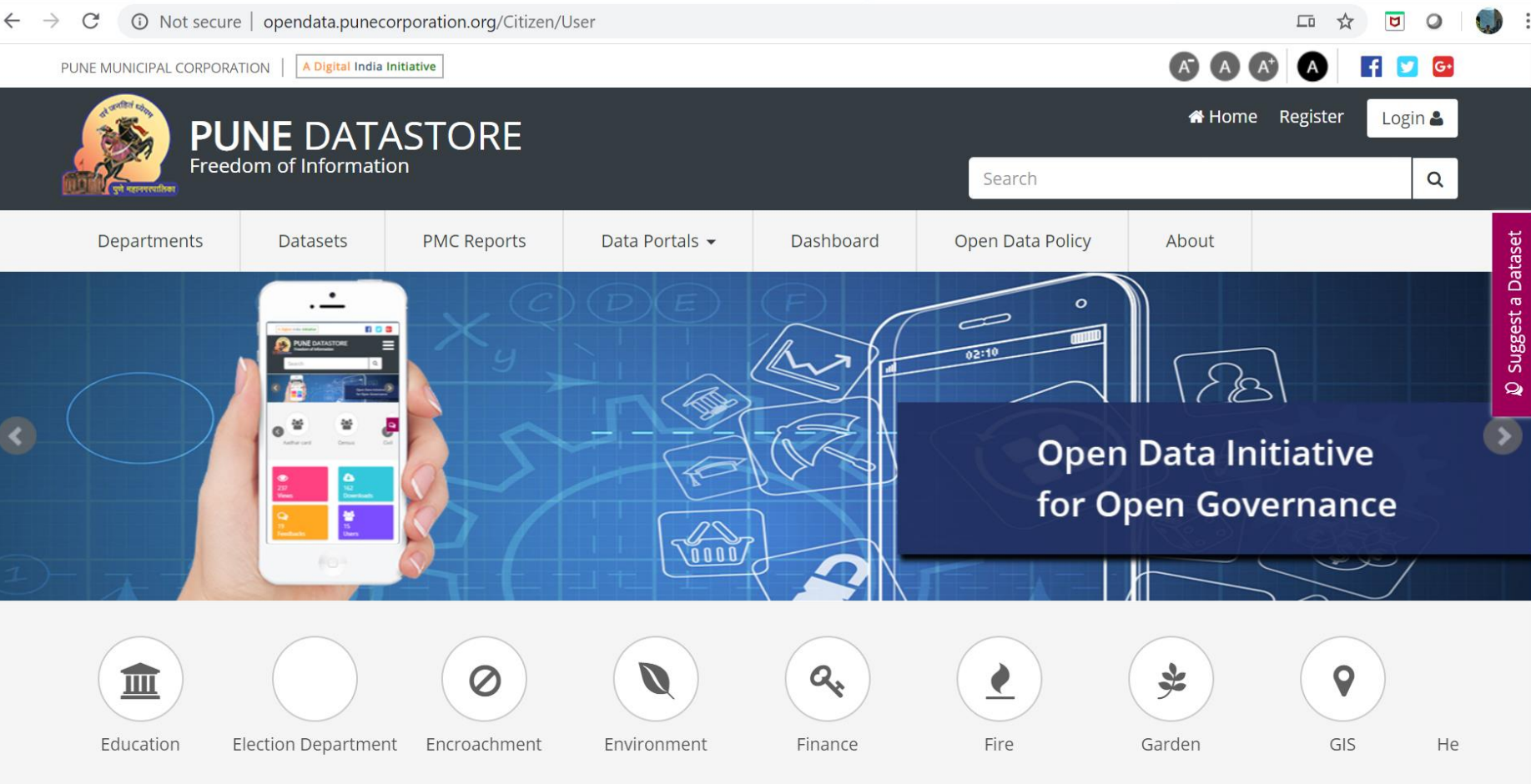


As of April 24, 2020



Source: As published by PMC, for representation only

Pune is one of the very few Indian cities which have Open data portal where substantial data is available for different stakeholders



Source: As published by PMC, for representation only

COVID -19 Impact – Urban Planning need to be relooked

Planning & Decision making

- Redevelopment of slum areas, to provide better access to housing, and services
- Self sufficient neighbourhoods with open spaces, food supplies, health facilities
- Decentralisation of Agri Produce Markets (APMC)
- Smart Affordable Solutions for effective operations management and city planning.



Partnering & Collaboration

- Role of open spaces, especially in high density areas
- Collaboration with NGOs and partners, sharing of data
- Collaboration with researchers
- Innovative solutions for Citizen engagement & Collaboration





Thank You