



2021

PROGRESS REPORT

APR 2020 - DEC 2021

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ACRONYMS

BP	Blood pressure
BPHC	Block primary health centre
CHC	Community health centre
CVHO	Cardiovascular health officer
DH	District hospital
GH	General hospital
GOI	Government of India
HCTZ	Hydrochlorothiazide
HT	Hypertension
HWC	Health and wellness centre
ICMR	Indian Council of Medical Research
IHCI	India Hypertension Control Initiative
LTFU	Lost to follow up
MP	Madhya Pradesh
NCD	Non-communicable disease
NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke
PHC	Primary health centre
SDH	Sub-district hospital
STS	Senior treatment supervisor
UPHC	Urban primary health centre
WHO	World Health Organization

GLOSSARY

Blood pressure under control
Systolic BP <140 mmHg and diastolic BP <90 mmHg
Blood pressure not under control
Systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg
Community-level blood pressure control
Proportion of estimated population with hypertension in a given geographical area (district or state), with controlled blood pressure (measured annually).
Lost to follow up
Registered patients with hypertension who did not have a single follow-up visit over 12-months before the reporting date.
Missed visit
Registered patient with hypertension who had no recorded visit in one reporting quarter (3-month period).
Patients under care
Patients with hypertension who had at least one visit (new or follow-up) to a health care facility over 12 months before the reporting date.
Quarterly blood pressure control
Proportion of patients registered for hypertensive treatment during a quarter (cohort) whose blood pressure is controlled 3-6 months after registration (measured quarterly).
Registrations
Number of patients with hypertension enrolled under the program in a given reporting period after being diagnosed by the Medical Officer. This includes patients already on treatment and patients who are newly diagnosed during screening.

It is estimated that at least **one in four adults in India has hypertension, but, only about 10% of them have their blood pressure under control.**

To achieve India's target of a 25% relative reduction in the prevalence of raised blood pressure, approximately 4.5 crore additional people with hypertension need to get their blood pressure under control. The **India Hypertension Control Initiative (IHCI)** was launched in November 2017 to help achieve this goal.



EXECUTIVE SUMMARY

By December 2021, the IHCI program was implemented in 101 districts across 19 states and enrolled more than 20 lakh patients in 13,000+ health facilities. In the 26 initial Phase I districts, nearly one-fifth (22%) of the estimated total number of people with hypertension in the district were enrolled. The enrollment slowed in 2020 due to COVID-19 pandemic. The states implementing IHCI and number of districts in each state are: Punjab (10), Madhya Pradesh (6), Kerala (9), Telangana (20), Maharashtra (13) West Bengal (10), Chhattisgarh (5) Karnataka (2), Andhra Pradesh (2), Sikkim (4), Goa (2), Bihar (4), Rajasthan (2), Jharkhand (2), Tamil Nadu (1), Uttar Pradesh (4), Puducherry (1), Nagaland (2), Gujarat (2).

We analysed annual indicators for five Phase I and three Phase II states where the project was operational for six or more months as of 31 December 2020. Documentation was easier during the pandemic for the four states using the Simple app (Punjab, Maharashtra, West Bengal, Karnataka). However, in Kerala, Telangana, Madhya Pradesh and Chhattisgarh, there were challenges in documenting visits due to non-availability of staff and fear of COVID-19. Of the total 9,91,214 hypertensives registered in the health facilities since initiation of the project, 7,36,884 (73.4%) were under care (defined as having at least one visit in the last 12 months) in 4,505 health facilities between April 2020 – March 2021. Nearly one-fourth of the patients did not have any follow-up visits in the previous 12 months. Of 7,36,884 patients on treatment, 47% (n=3,44,038) had their blood pressure under control



BY THE NUMBERS

101 DISTRICTS **ACROSS** **19** STATES



20 LAKH PATIENTS ENROLLED



13,821 HEALTH CARE FACILITIES REACHED BY DECEMBER 2021

during the most recent visit in the first quarter of 2021. Nearly one-fourth (23%) had uncontrolled BP despite continuing to attend health facilities, and 27% did not have a documented visit in this period. Overall, blood pressure control was highest (55%) at Health and Wellness Centres and second highest (48%) at PHCs.

We compared the key indicators in 2020 and 2021 for the initial 26 Phase I districts. The quarterly cohort blood pressure control rates declined in the second and third quarters of 2020 due to COVID-19-related disruptions; control rates started improving in the first quarter of 2021. Community-level hypertension control improved in 21 project districts in 2021 compared to 2020. Among the estimated 46 lakh hypertensives across initial Phase I 26 districts, BP control increased more than four-fold, although from a very low baseline: 6.1% achieved BP control in Q1-2021 compared to 4.9% in Q1, 2020 and 1.4% in Q1-2019. Overall, the number of patients with controlled BP continued to increase over three years (2,83,457 in Q1-2021; 2,18,340 in Q1-2020 and 64,704 in Q1-2019). The numbers declined in Kerala due to poor documentation during the pandemic and inability to provide medication refills at the subcentre level. Six districts achieved more than 10% community level BP control.

Medication availability at the district level has improved in the initial 26 districts due to better planning, streamlining of procurement process and field-level monitoring. Punjab, Madhya Pradesh and Telangana had hypertension protocol drug stocks for nearly six months. Kerala had only a one-month stock and Maharashtra had a two-month stock available in May 2021. In several Phase II states, slow medication procurement up to one year in some states delayed implementation.

KEY IHCI OUTCOME INDICATORS



DECLINE IN QUARTERLY COHORT BLOOD PRESSURE CONTROL RATES in the second and third quarters of 2020 due to COVID-19 related disruptions

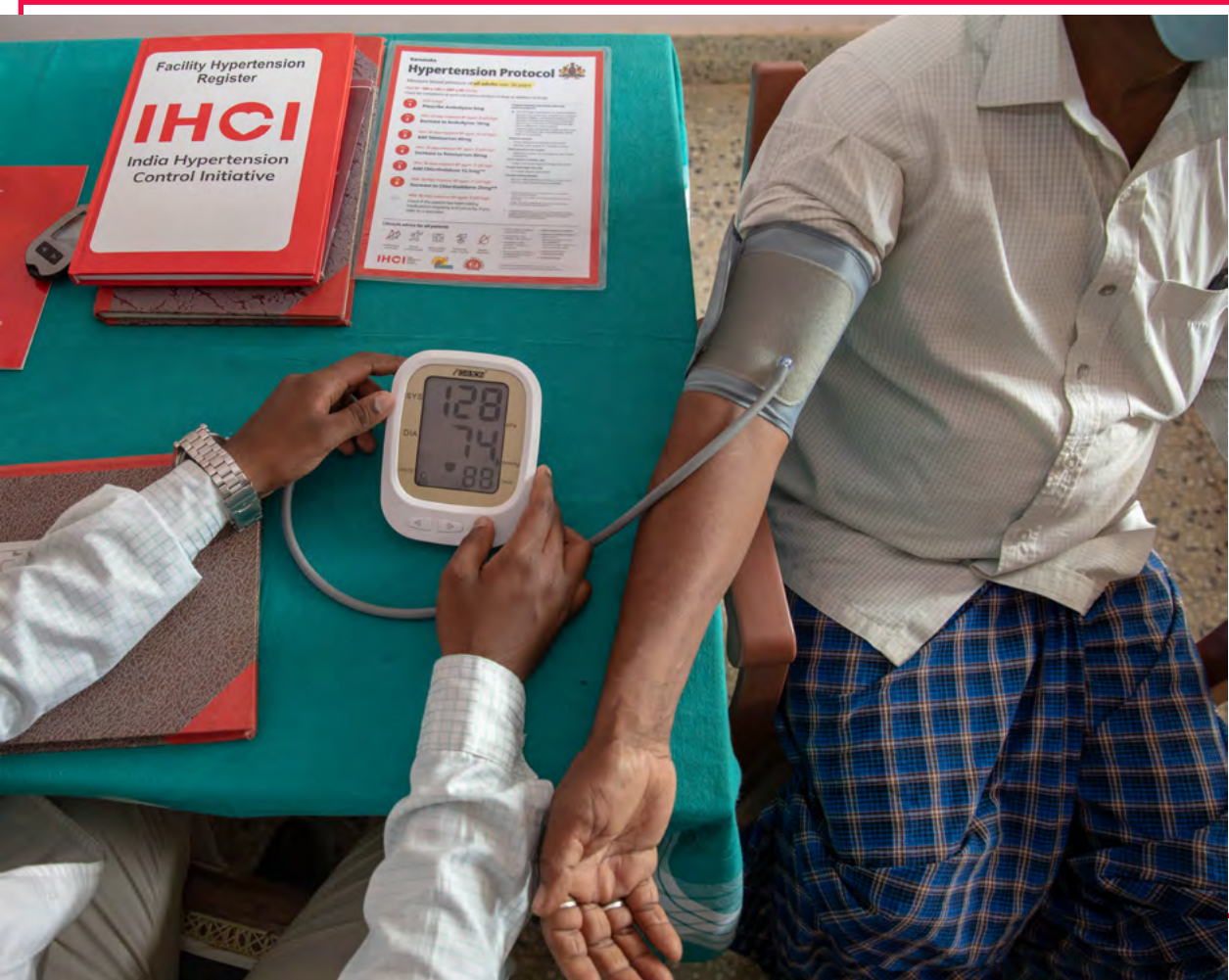
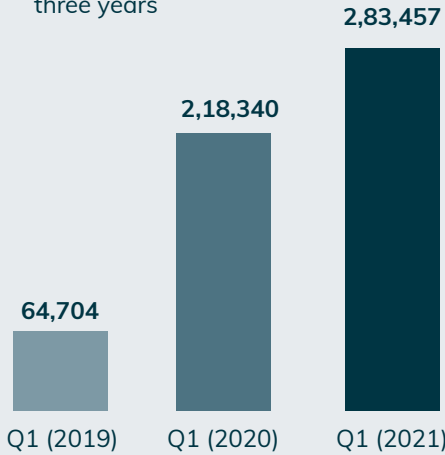


IMPROVEMENT IN COMMUNITY-LEVEL HYPERTENSION CONTROL in 21 project districts in the first quarter of 2021

4x

INCREASE IN COMMUNITY LEVEL BP CONTROL among ~46lakh hypertensives across Phase I 26 districts

INCREASE IN NUMBER OF PATIENTS with controlled BP over three years



Districts using the Simple App were able to document patient visits even during the pandemic, while states using paper-based systems faced challenges in retrieving and updating patient records.

One of the highlights of 2020-21 was the operationalisation of Health and Wellness Centres at the sub-centre level for blood pressure monitoring and provision of medication refills for hypertension patients. Overall, nearly half of all the implementing facilities were Sub-centre Health and Wellness Centres (SC-HWC).

The project demonstrated the feasibility of hypertension care at the most peripheral health facilities in context of the COVID-19 pandemic. The districts and states with functional HWCs improved blood pressure control and patient retention. Districts using the Simple App were able to document patient visits even during the pandemic while states

using a paper-based system faced challenges in retrieving and updating patient records. Progress in both the Phase I and Phase II districts was possible despite the pandemic, due to strong collaboration and coordination among the Indian Council of Medical Research, World Health Organization, NPCDCS and State governments; state and district health officials' commitment and international technical partnership. IHCI field teams consisting of Cardiovascular Health Officers, who are public health specialists (one for several districts and the state nodal office) and Senior Treatment Supervisors (1-2 per district) played a key role in implementation and coordination with state and district teams.

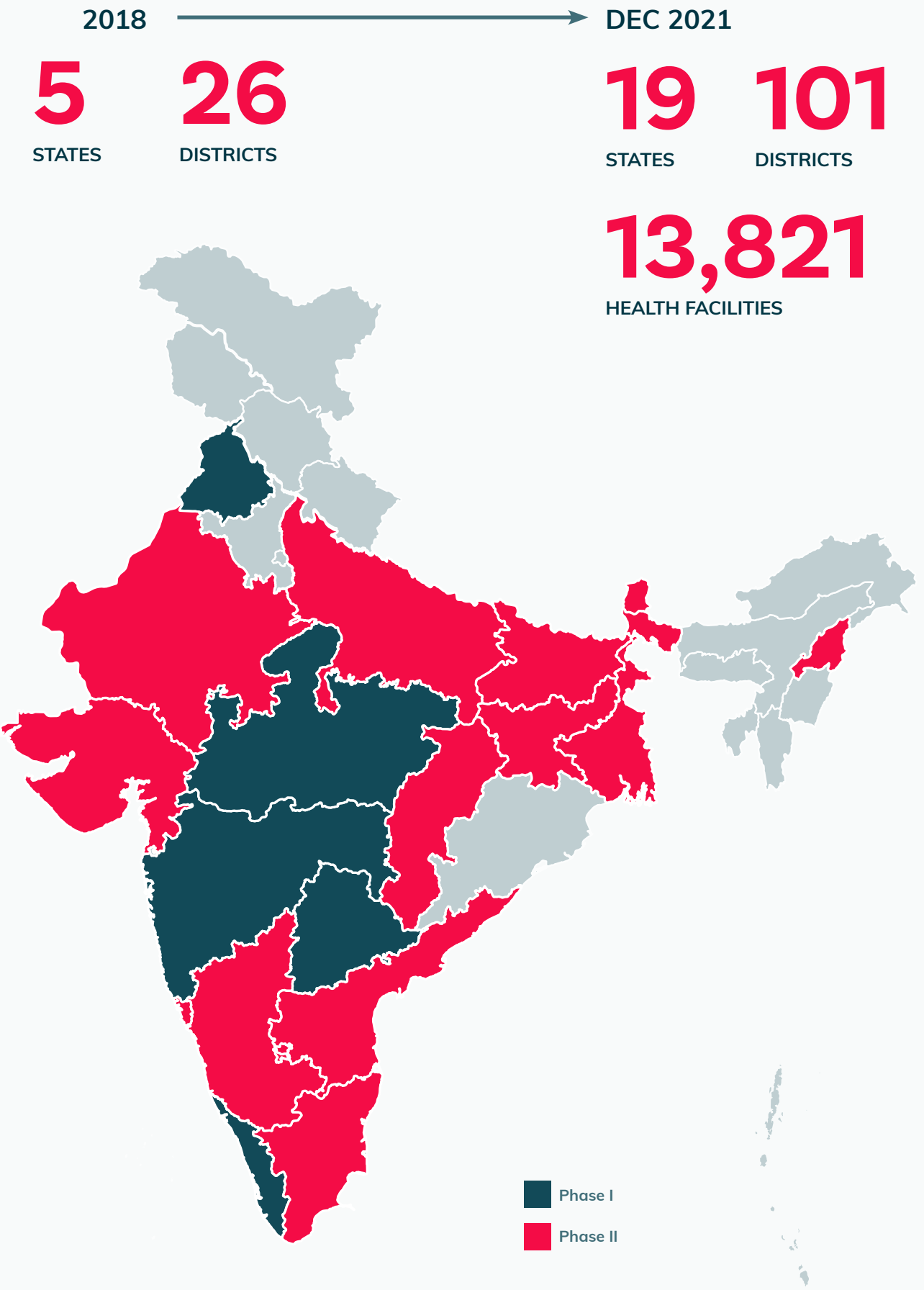
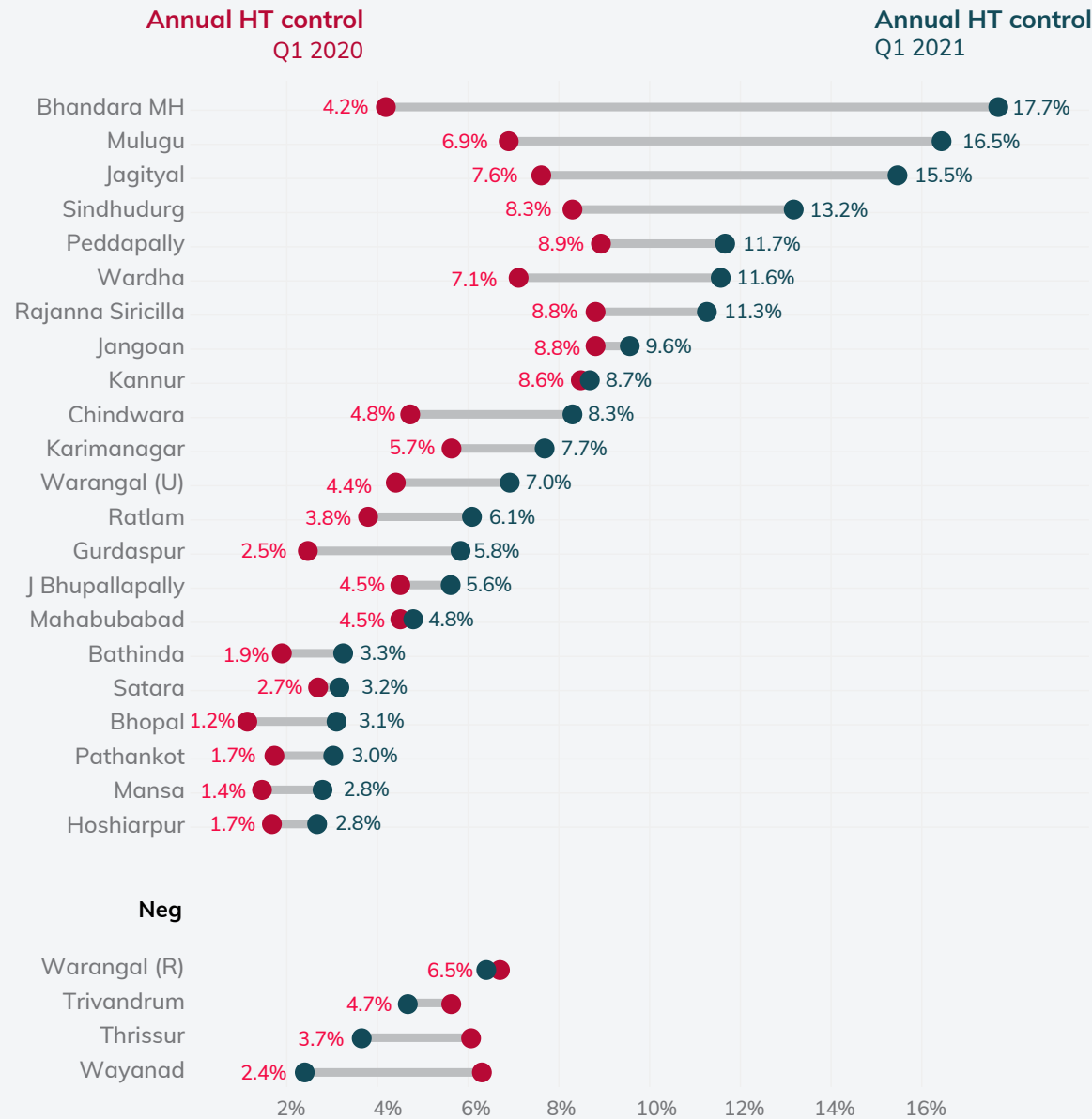
We learnt the importance of decentralised care and resilient health systems for sustaining essential services such as hypertension care during COVID-19 pandemic. To enhance coverage and control of hypertension care, the areas for improvement include:

- 1. Sufficient staffing at national, state, district and facility levels
- 2. Improved purchasing, supply and dispensation of medications and validated digital blood pressure monitors
- 3. Blood pressure screening of every adult

attending health facilities

- 4. Improving transfer of patient care from higher to peripheral health centres
- 5. Enabling monitoring and drug refills for patients with controlled BP at Health and Wellness Centres
- 6. Systems to retrieve patients to care
- 7. Treatment per protocol in public and private care.
- 8. Improve reliable, preferably digital data systems to facilitate tracking of the entire care cascade from enrollment to control

Community-level hypertension control by district in Jan-March 2021 among Hypertension patients in 26 Phase I districts across five states in India compared to Jan-March, 2020 (Estimated hypertensives N= 46,98,477, Number with BP control = 2,83,457 in Jan-March,2021, Number with BP control =2,18,340 in Jan-March 2020)





INTRODUCTION

It is estimated that at least one in four adults have hypertension in India. Still, only about 10% of them have their blood pressure under control.

To achieve and support the Government of India's goal of 25% relative reduction in raised blood pressure, the India Hypertension Control Initiative (IHCI) was launched in November 2017. IHCI is a multi-partner initiative with the Ministry of Health and Family Welfare Government of India, Indian Council of Medical Research (ICMR), and WHO Country Office for India. Resolve to Save Lives (RTSL) is an international technical partner. The team developed the project to strengthen the hypertension treatment and follow-up component of the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS).



In the first year, IHCI covered 26 districts across the five states of Punjab, Kerala, Madhya Pradesh, Telangana and Maharashtra. By October 2021, IHCI was expanded to 100+ districts across 19 states.

The initiative has had notable successes in the last two years, including effective coordination and commitment among multiple partners; selection of state-specific hypertension treatment protocols; improvement in drug logistics systems ensuring the availability of protocol drugs; recognition of the value of professional, validated digital blood pressure devices; provision of adequate training; distribution of 30-day supplies of medications to patients; and measurement of blood pressure control each quarter by establishing robust information systems allowing, for the first time, systematic and accurate information on treatment retention and hypertension control rates.

The other components include 1) Screening of every adult attending health facilities for hypertension; 2) Efficient patient flow at every facility; 3) Establishment of means to transfer patient care from higher centres to PHC and PHC to sub-centre/Health and Wellness Centres; 4) Encourage treatment in the primary care facilities

In the first year, IHCI covered 26 districts across the five states namely Punjab, Kerala, Madhya Pradesh, Telangana, and Maharashtra. By October 2021, IHCI was expanded to 100+ districts across 19 states.

closer to residence; 5) Enabling monitoring and drug refills for patients with controlled BP at sub-centre/Health and Wellness Centre; 6) Systems to retrieve the patients back to the care, and 7) Expansion of simple digital information systems to reduce paperwork and improve monitoring.

Overall, the project demonstrated the feasibility of a large-scale hypertension intervention within India's existing primary health care system. The strategies and lessons learnt were used to improve quality and scale the interventions to the other districts within the five Phase I states and Phase II states in India. The program is technically supported by 30 Cardiovascular Health Officers (CVHOs) and 72 Senior Treatment Supervisors (STSs) supported by WHO Country Office for India, and 30 STSs supported by ICMR in Phase I & II states, respectively.



KEY INTERVENTION STRATEGIES

1

Use of state-specific simple, standard drug and dose-specific algorithms for hypertension management.

2

Uninterrupted supply and availability of drugs as per protocol in all health facilities.

3

Training of staff at all levels in the management of hypertension as appropriate to enhance the health system's capacity.

4

Provision of high-quality services using patient-centric approaches such as blood pressure monitoring using validated digital BP monitors, minimum 30-day drug prescriptions, patient counselling, access to free drugs, and documentation of visits (Simple App and treatment card).

5

Opportunistic screening: Setting up of NCD corners at health facilities to promote opportunistic screening and streamline patient flow.

6

Team-based care for hypertension management by strategic redistribution of tasks among various health care staff within the public health clinics to enhance patient care efficiencies.

7

Decentralization of patient care by using Health and Wellness Centres and Sub-centres for follow-up visits, patient education and prescription refills.

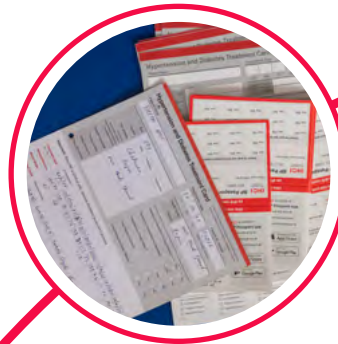
8

Monitoring systems (Simple App and paper-based) with standard indicators and documentation mechanisms that facilitate data collection and records maintenance.

9

Dedicated workforce (CVHOs & STSs) for supportive supervision and monitoring to accelerate IHCI implementation, strengthen program quality and enable rapid feedback to the stakeholders.

PROTOCOLS



MEDICATION SUPPLY



TEAM CARE AND TASK SHARING



PATIENT-CENTERED CARE



INFORMATION SYSTEMS



IHCI
KEY STRATEGIES

REGISTRATIONS AS OF DECEMBER 2021

More than 20 lakh patients were enrolled across 13,821 health facilities across 19 states implementing IHCI projects by December 2021. Enrollments were initiated across 58 districts in five Phase I states and across 43 districts in 14 Phase II states.

The states (with respective districts) where IHCI activities have been initiated are Punjab (10), Madhya Pradesh (6), Kerala (9), Telangana (20), Maharashtra (13) West Bengal (10), Chhattisgarh (5) Karnataka (2), Andhra Pradesh (2), Sikkim (4), Goa (2), Bihar (4), Rajasthan (2), Jharkhand (2), Tamil Nadu (1), Uttar Pradesh (4), Puducherry (1), Nagaland (2), Gujarat (2).

A total of 15,71,712 patients with hypertension were registered in 58 Phase I districts and 5,22,703 patients were enrolled in 43 Phase II districts. Due to the sudden surge of COVID-19 cases and disruption in health care service provision, there was a decline in registration during first and second waves of COVID-19.

In the 26 initial Phase I districts, nearly one fifth (22%) of the estimated patients with hypertension were enrolled. State proportions are as follows: Maharashtra (29.1%), Kerala (25.3%), Madhya Pradesh (22.4%), Telangana (21%) and Punjab (16%).

Of the 13,821 facilities enrolling patients with hypertension in Dec 2021, 66% were Health Wellness Centres and one fourth were Primary Health Centres.

Figure 1
State IHCI registration status in Phase I states since initiation of program until December, 2021 (n = 15,71,712).

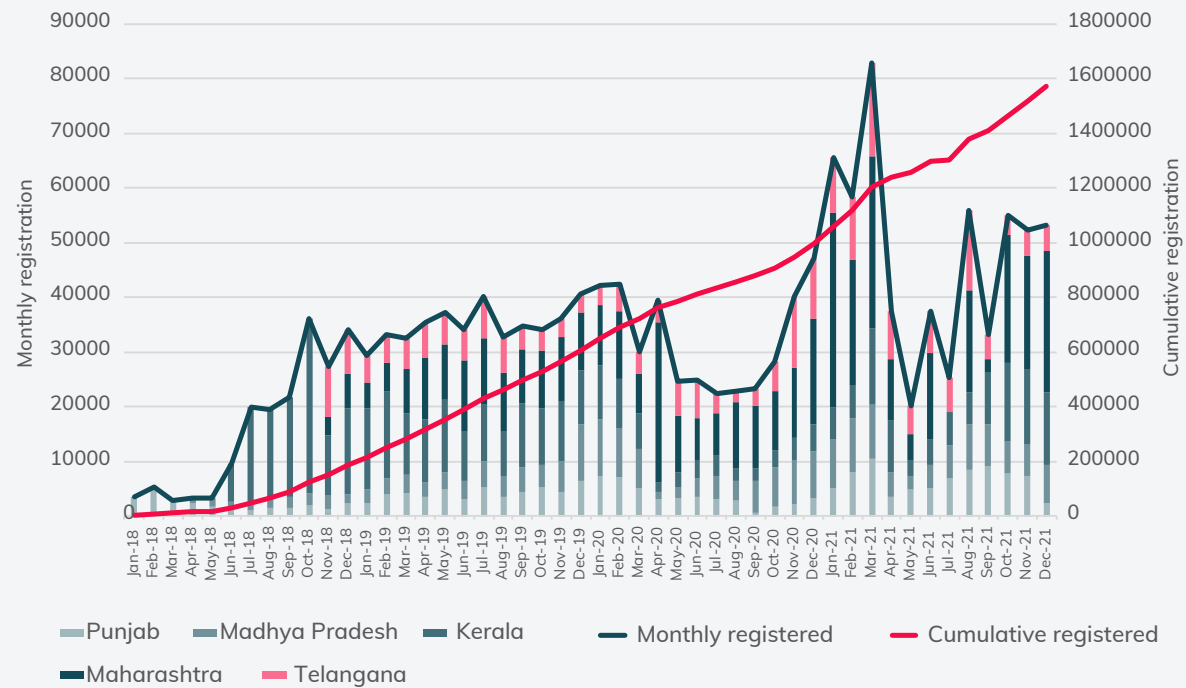


Figure 2
State IHCI registration status in Phase II states from March 2020- December 2021 (n = 5,22,703).

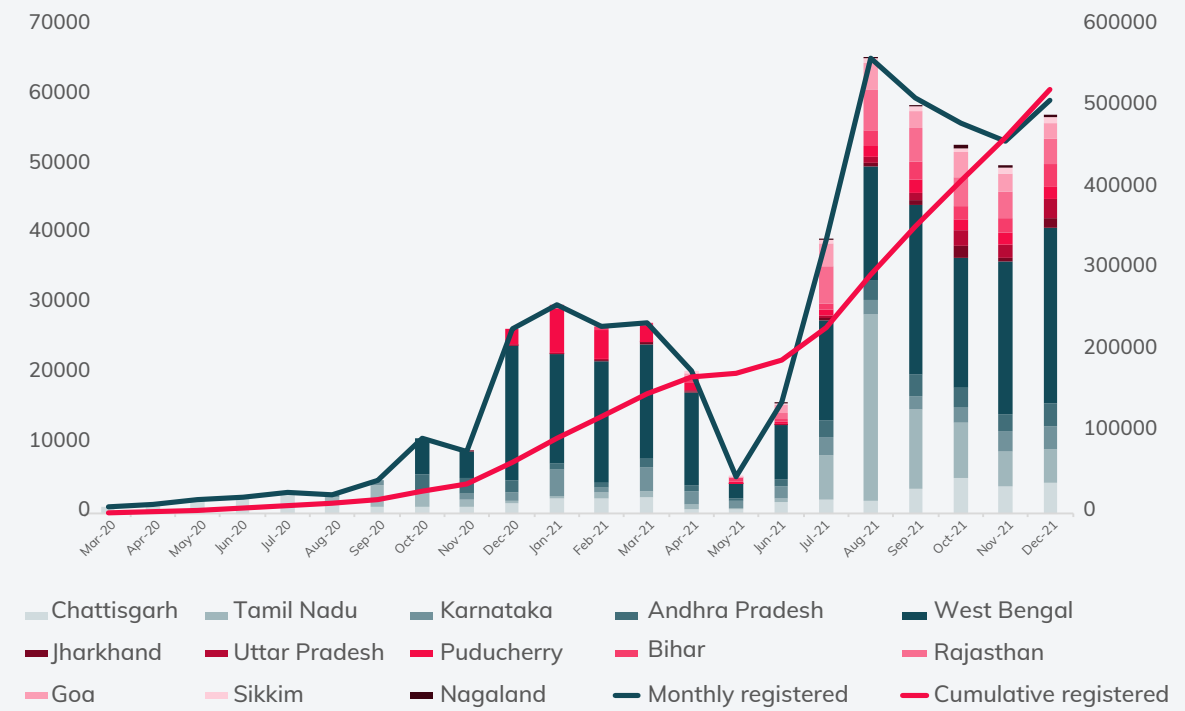


Figure 3
Proportion of estimated hypertension patients enrolled in 26 Phase I districts, December 2021.

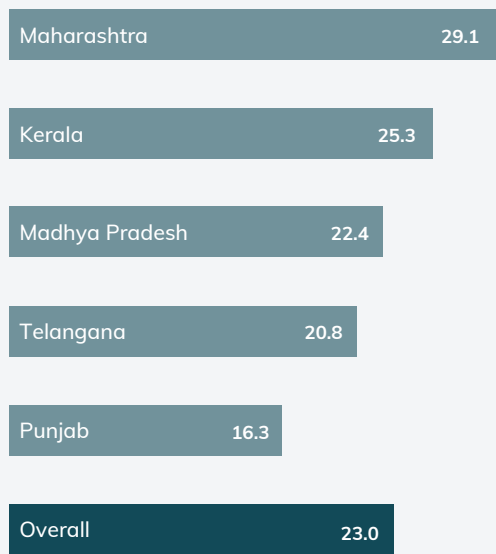
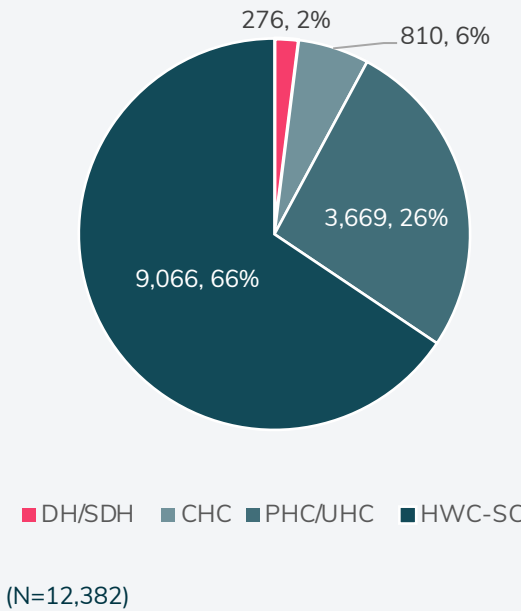


Figure 4
Number and proportion of health care facilities implementing IHCI by type, December 2021



HUMAN RESOURCES AND TRAINING

4.1 Training status in Phase II districts

We analysed the training status of doctors, staff nurses and pharmacists by district for Phase II states (Annex I, Table 1). The training load, or number of health care workers requiring training, was 9,600 in 30 districts across 14 Phase I states. (Training load refers to the number of health workers, planned to be trained.) In Phase II districts, 3,108 doctors, 4,856 staff nurses and 1,636 pharmacists had to be trained. Among them, 53% doctors, 39% nurses and 52% of pharmacists were trained.

4.2 Human resources in Phase II states

Out of 30 districts included in the analysis, 101 health facilities (PHC & UPHC) in 12 districts are functioning without any doctor (Annex II, Table 2). These constitute 8% of the total 1,339 functional PHCs and UPHCs. Lalitpur (Uttar Pradesh) and Ranchi (Jharkhand) were two districts where more than 50% of PHCs & UPHCs did not have any doctor. Data from all 30 districts shows that at least one doctor was available in all the 256 CHCs and Block PHCs (BPHC).

In seven districts (Annex II, Table 3), there were 167 PHCs & UPHCs functioning without any nurse. These constituted 12% of 1,339 functional PHCs & UPHCs. Nurses were available in all CHCs & BPHCs.

In these 30 districts, there are 71 district hospitals (DH) and sub-district hospitals (SDH) (Annex II, Table 4). A total of 226 doctors were available at OPD for hypertension treatment and 111 dedicated staff nurses are posted under NPCDCS. However, DH and SDH of Krishna, Visakhapatnam (Andhra Pradesh), Muzaffarpur (Bihar), Bikaner (Rajasthan), North & East Sikkim did not have dedicated staff nurses in place. A total of 257 pharmacists were posted in various DH and SDH.

In 256 CHCs & BPHCs, a total 486 doctors were available at OPD for hypertension treatment. But the number of dedicated nurses posted at CHC & BPHC under NPCDCS, were not adequate. Only 100 nurses were posted against the total 256 CHC & BPHC. No dedicated staff nurse was posted under NPCDCS in the project districts of Rajasthan, Andhra Pradesh, Bihar, North & East Sikkim, Mokokchung (Nagaland) (Annex II, Table 5).

There are 1,339 PHC & UPHC in 30 districts. At OPD, a total of 1,365 doctors were posted. The majority of districts did not have dedicated staff nurse under NPCDCS. Only Durg, Raipur (Chhattisgarh), South Goa, Puducherry, Chennai and Howrah (West Bengal) had dedicated staff nurses in place in at least one or more facilities. (Annex II, Table 6).



9,600

Training load in 30 districts across 14 Phase I states

Number of persons to be trained in Phase II districts

3,108

Doctors

4,856

Staff Nurses

1,636

Pharmacists

Only a few districts in Maharashtra and Kerala and the majority of the districts in Telangana had dedicated staff nurses posted in PHC for NCD-related work.

4.3 Human resources in Phase I states

In 58 IHCI Phase I districts, there are 186 district hospitals (DH) and sub-district hospitals (SDH) (Annex II, Table 7). A total of 386 doctors were available at OPD for hypertension treatment and 367 dedicated staff nurses were posted under NPCDCS. However, DH and SDH of districts Gondia (Maharashtra), Sangli (Maharashtra), Fatehgarh Sahib (Punjab), Pathankot (Punjab), Barnala (Punjab) and 10 districts of Telangana did not have dedicated staff nurses in place. A total of 503 pharmacists were posted in various DH and SDH.

Overall, 1,249 doctors were available across 468 Community Health Centers (CHC) and Block Primary Health Centres (BPHC) at OPD for hypertension treatment. But the number of dedicated nurses



posted at CHC & BPHC under NPCDCS, were not adequate. Only 205 nurses were posted against the total 468 CHC & BPHC. No dedicated staff nurse was posted under NPCDCS in the 3 districts of Maharashtra, 3 districts of Madhya Pradesh, 2 IHCI districts of Punjab, 7 IHCI districts of Kerala and 12 project districts of Telangana. Overall, 664 pharmacists were posted but few districts did not have any pharmacist at CHC/BPHC level (Annex II, Table 8).

There are a total of 2,195 PHC & UPHC in 58 IHCI Phase I districts. A total of 795 doctors and 2,103 pharmacists were available in the health facilities. Only few districts in Maharashtra and Kerala; and majority of the districts in Telangana had dedicated staff nurses posted in PHC for NCD related work (Annex II, Table 9).



386

In Phase I states 386 doctors were available at OPD for hypertension treatment and 367 dedicated staff nurses were posted under NPCDCS

AVAILABILITY OF PROTOCOL DRUGS AND BP MONITORS

Professional BP monitors were not available in any of the Phase I expansion and Phase II districts, hence district data is not presented here. Professional digital BP monitors were available in most hospitals and CHC in Phase I initial 26 districts which were provided under the project. Overall, 39% (1,118/2,849) health facilities in 58 Phase I project districts had a high quality validated BP monitor.

Availability of medications at the district level had improved in the initial 26 districts due to consistent monitoring and timely forecasting. Procurement for protocol drugs increased with better planning and streamlining of procurement process (Figure 5).

All phase I states had at least 60 days stock of all

three protocol medications (Figure 6). Amlodipine was available for more than 90 days in four states except for Maharashtra. In Maharashtra, due to lack of centralized supply under state procurement, supplies were inadequate in several health facilities.

Among the Phase II states, Karnataka, Andhra Pradesh, Goa, Rajasthan & Uttar Pradesh had all three protocol drugs available for more than three months (Figure 7). In Chhattisgarh, all three drugs were available for 60 days. In Jharkhand, Amlodipine and Telmisartan were available for more than a quarter and procurement of Diuretics was in progress. The drug supply was inadequate in West Bengal, Chennai and Puducherry and procurement was initiated.

Figure 5

Volume of procurement of antihypertensive drugs (in millions of tablets) by year and state for 2017-18, 2018-19, 2019-20

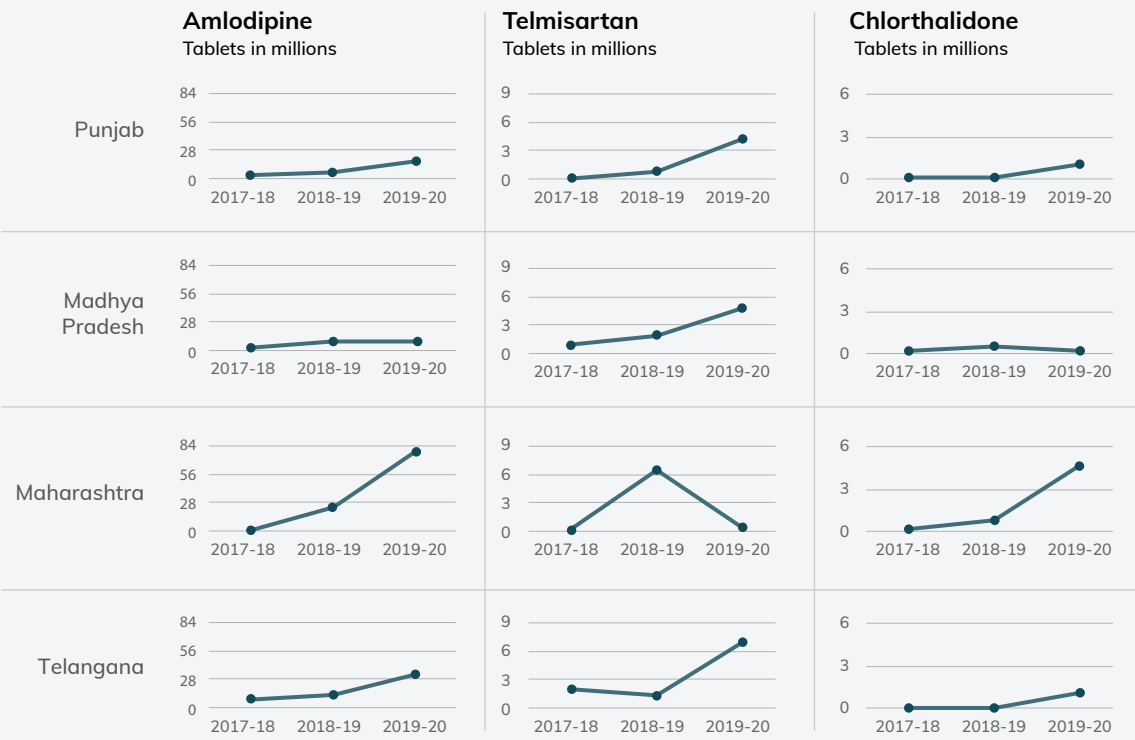


Figure 6

Drug availability in number of patient-days in Phase I districts, December 2021

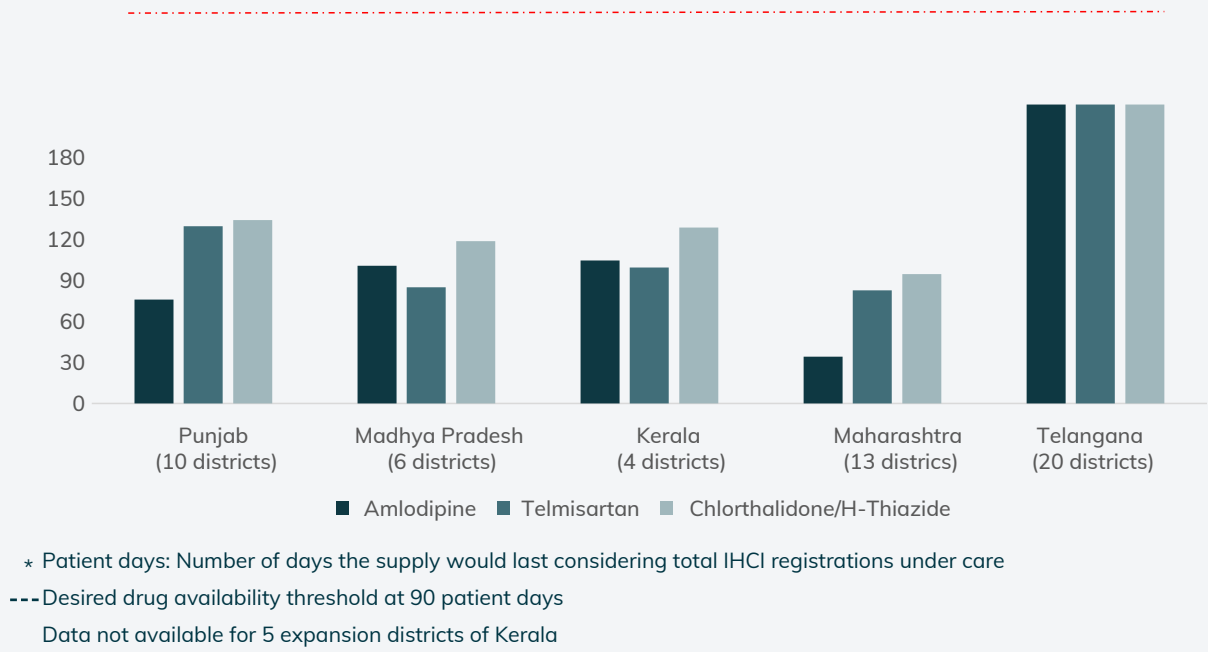
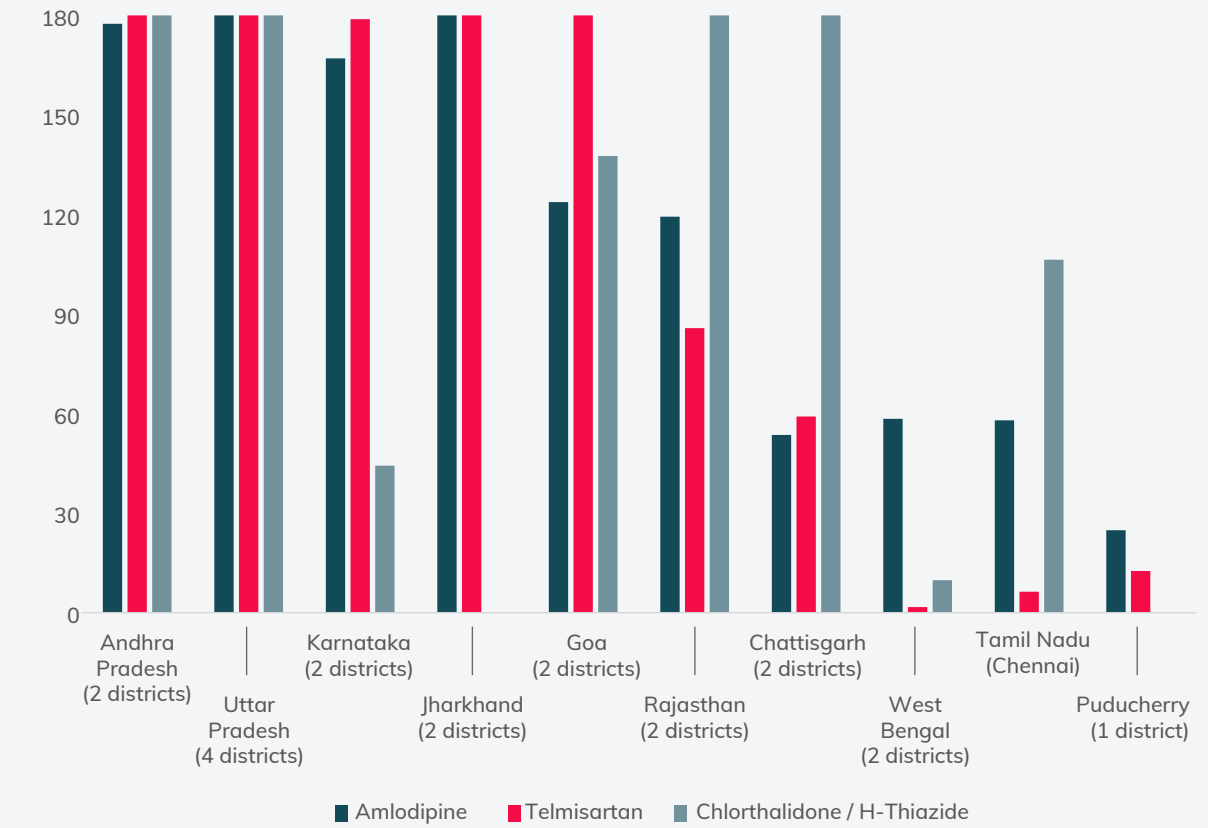


Figure 7

Drug availability in number of patient-days in Phase II districts, December 2021.



ANNUAL INDICATORS FOR FIVE PHASE I STATES AND THREE PHASE II STATES, JAN-MARCH 2021

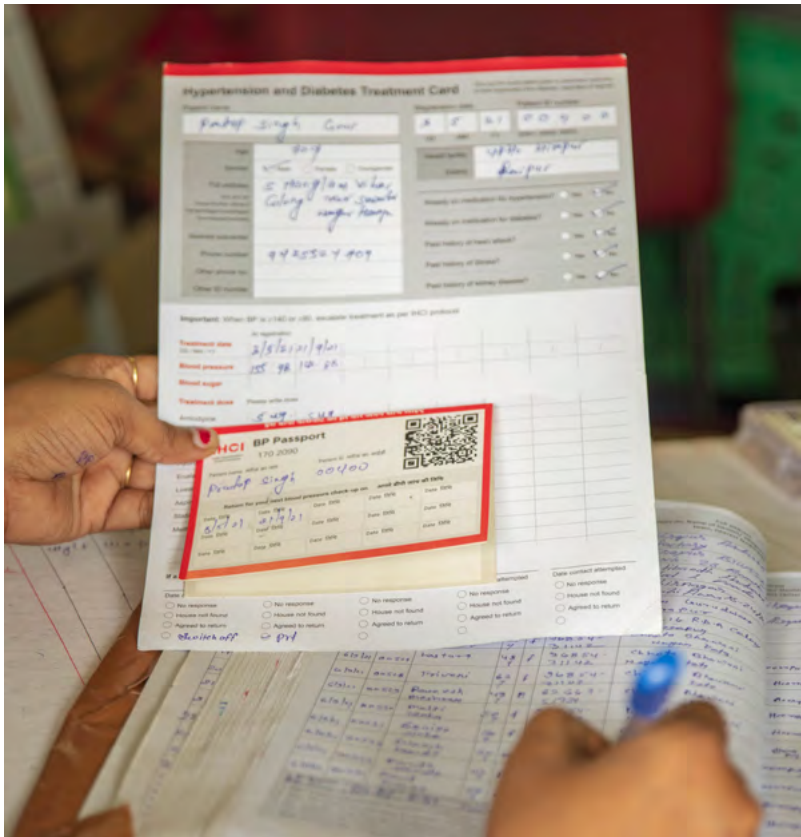
In our analysis of annual indicators, we included five Phase I and three Phase II states where the project was functional for at least 6 months as of 31 December, 2020. Of the eight states, four use Simple app, hence documentation was easier during the pandemic. In Kerala, Telangana, Madhya Pradesh and Chhattisgarh, there were challenges in documenting patient visits in the treatment cards in 2020-21 due to poor availability of staff and fear of COVID-19 transmission while using paper-based cards.

6.1. Registrations and patients under care

As of January 2021, the project had been implemented for nearly three years in Punjab and two and half years in MP, and nearly 2 years

in Telangana and Maharashtra. The project was initiated in West Bengal, Chhattisgarh and Karnataka in mid-2020. In Karnataka, implementation was initiated in only few blocks due to limited drug stocks. Of the total 9,91,214 hypertensive patients registered in the health facilities between Jan 2018 and Dec 2020, 7,36,884 were under care between April 2020 – March 2021. Nearly 2,54,330 (25.6%) were lost to follow up, i.e., did not have any follow up visit in this 12-month period between April 2020 – March 2021. See Figure 8 for the proportion of patients who were lost to follow up by state.

We are presenting analysis of data based on registrations up to December 2020 across 4,505 health facilities, of which 2,332 are Health and Wellness Centres (Figure 9).



In Kerala, Telangana, Madhya Pradesh and Chhattisgarh, there were challenges in documenting patient visits in the treatment cards in 2020-21 due to poor availability of staff and fear of COVID-19 transmission while using paper-based cards.

Figure 8
Total registrations between Jan 2018 to Dec 2020 and the total number of patients under care in five Phase I states and three Phase II states

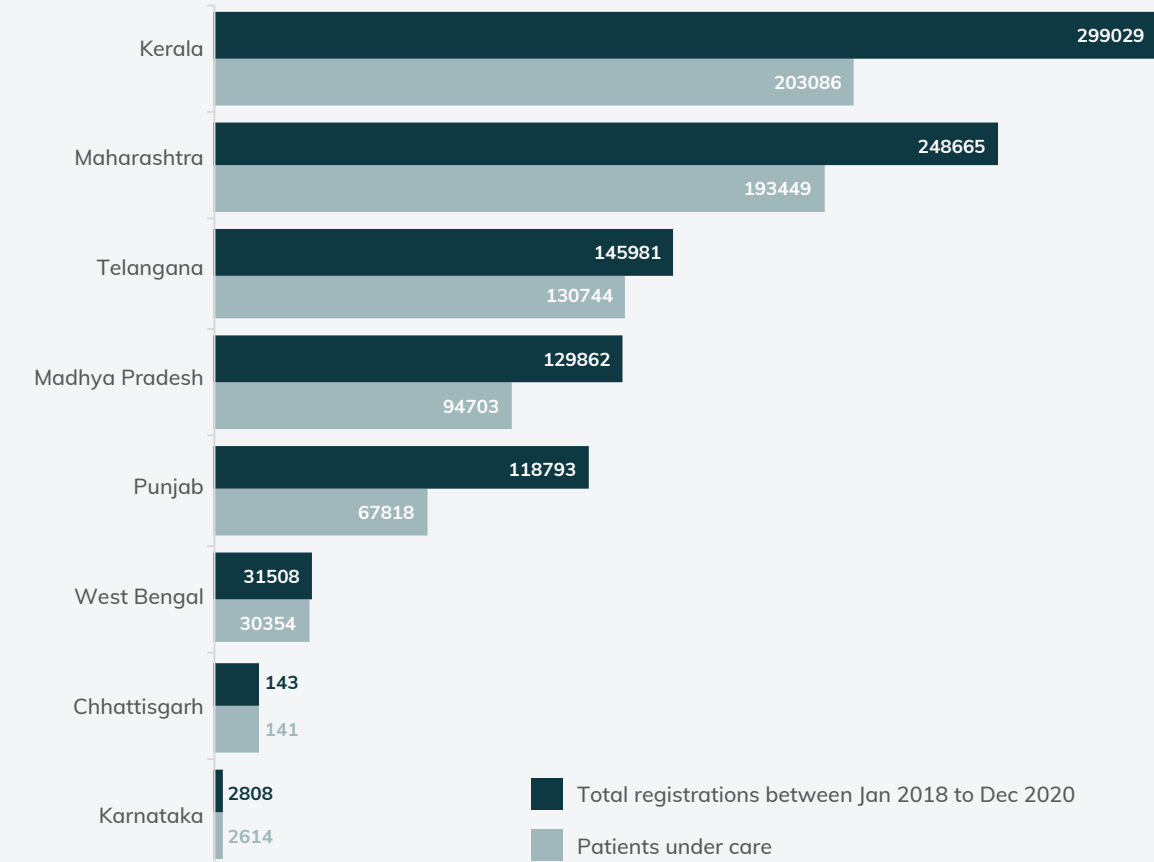
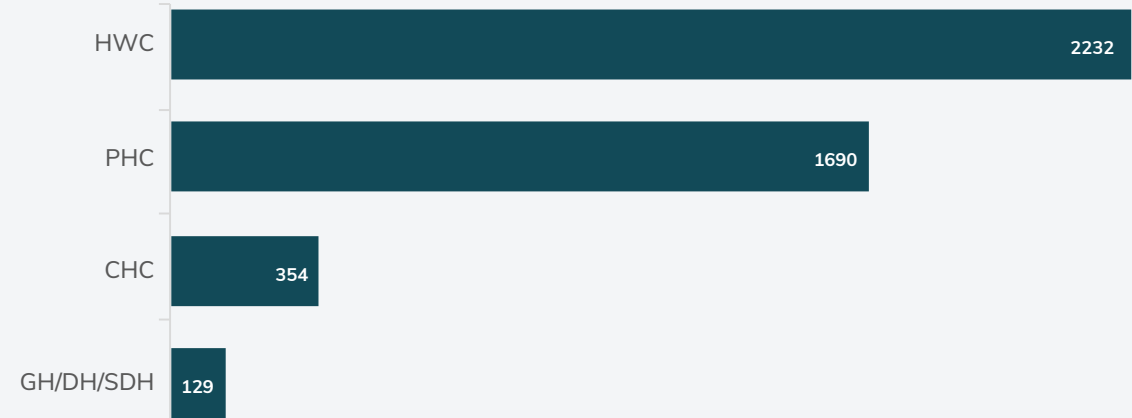


Figure 9
Number of facilities implementing IHCI as of December 2020 in five Phase I and three Phase II districts (Total, n=4505)



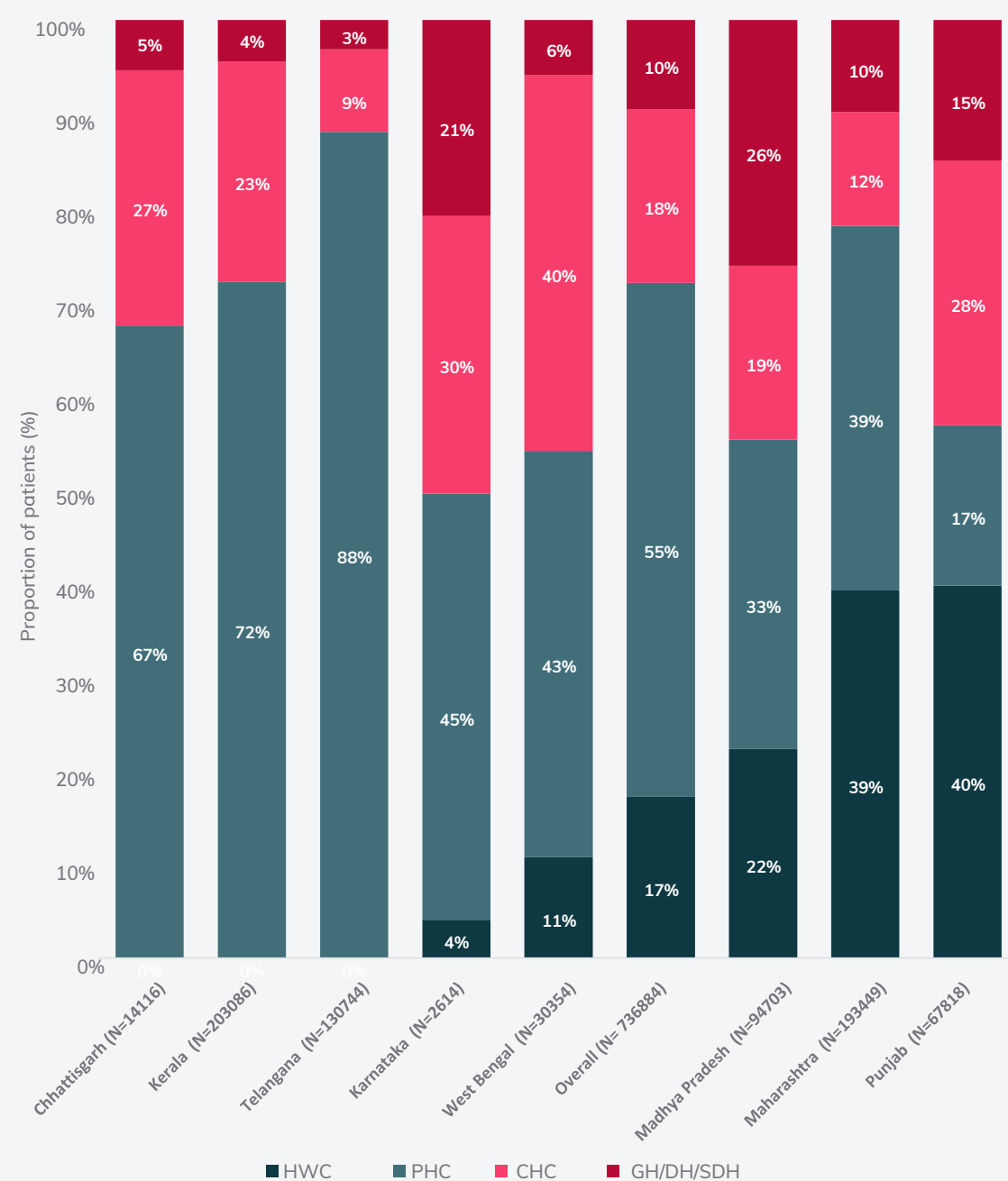
Patients under care by type of facility



- Of 7,36,884 patients under care, 17% (one in six) were taking drugs from HWCs.
- Nearly half (55%) took treatment in PHC, 18% in CHC and only 10% in the district/sub district hospitals.
- The proportion of patients on treatment in HWC was 40% in Punjab and Maharashtra and 22% in Madhya Pradesh.

Figure 10

Patients under care by type of facility, Jan-March 2021 in Phase I five states and Phase II three states, India (N=7,36,884).



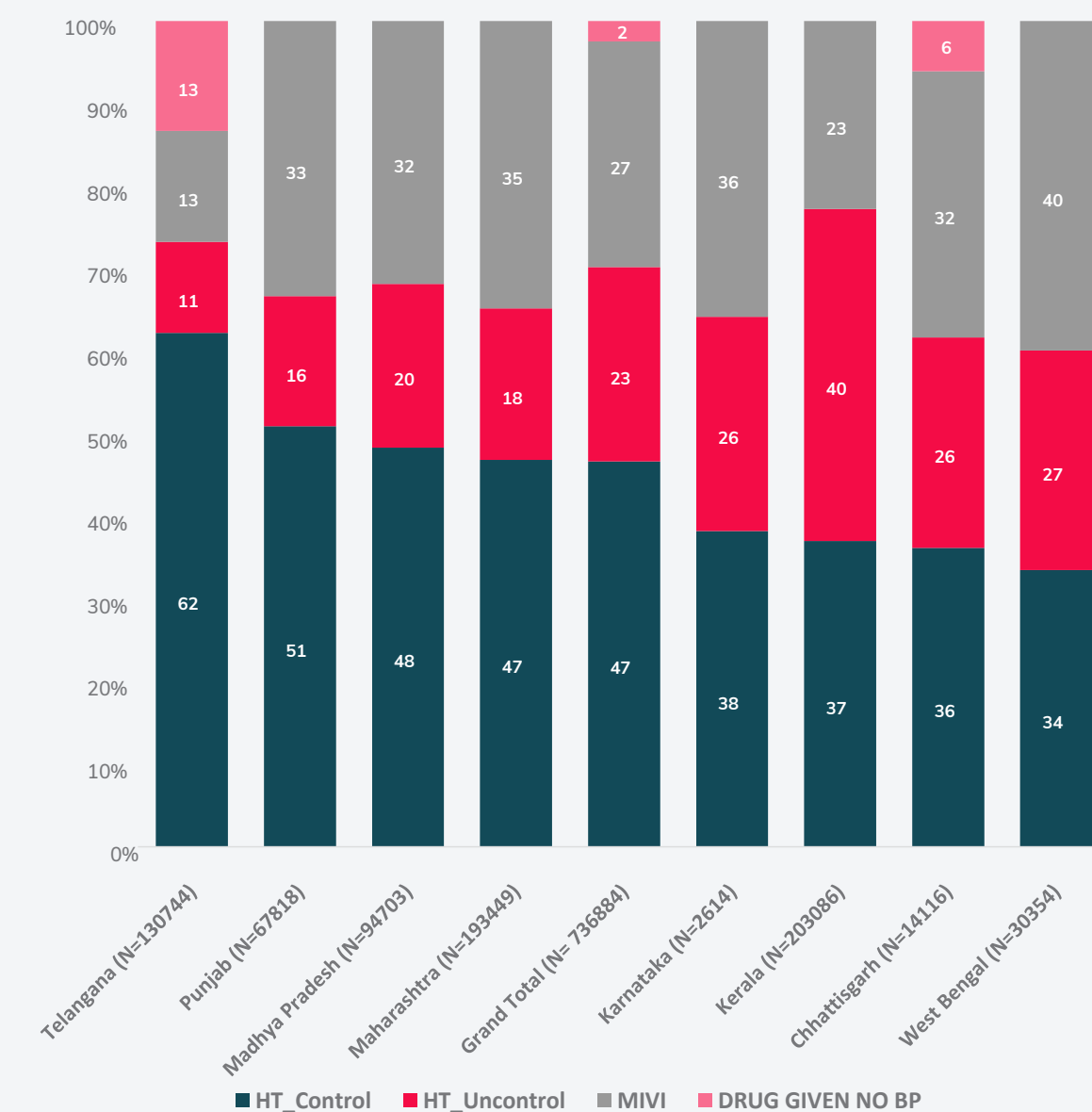
Treatment outcomes



- Of 7,36,884 patients on treatment, 47% (n=3,44,038) had BP under control during their most recent visit between 1 January and 31 March 2021.
- Nearly one-fourth (23%) had uncontrolled BP, and 27% did not have a follow-up visit documented in this period.
- The blood pressure control was lowest (34%) in West Bengal and highest (60%) in Telangana.
- The proportion of patients with uncontrolled blood pressure during the most recent visit was highest in Kerala (40%) and lowest in Telangana (11%).

Figure 11

Treatment outcomes in Jan-Mar 2021 among hypertension patients under care in Phase I five states and Phase II three states, India (N=7,36,884)



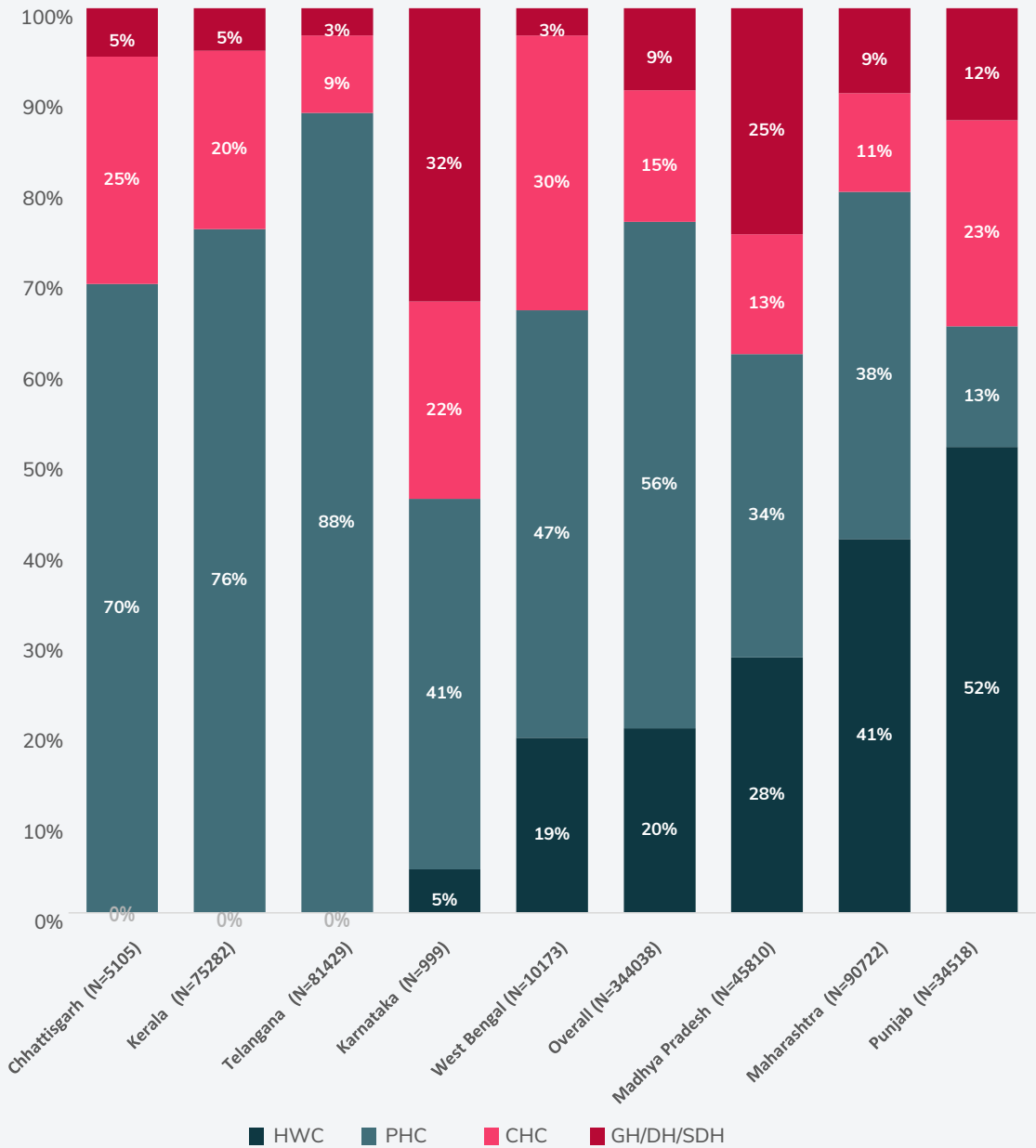
Blood Pressure under Control – Patient having Blood Pressure <140/90 mmHg
 Blood Pressure not under Control – Patient having Blood Pressure ≥140/90 mmHg
 Missed Visits – Patient who had no visit in the first quarter (Jan, Feb & Mar) of 2021

Distribution of patients with controlled blood pressure by type of facility



- Of 3,44,038 hypertensives who had BP under control, 20% were on treatment in HWC and 56% in PHC.
- Only 15% were taking treatment in CHC and 9% in district/sub district hospitals.
- About half of the controlled patients in Punjab (52%) took treatment HWC with 41% in Maharashtra and 28% in MP.
- The majority of patients with controlled BP took treatment in PHC in Telangana (88%), Kerala (76%) and Chhattisgarh (70%).

Figure 12
Distribution of patients with controlled blood pressure during their most recent visit in Jan-Mar 2021 by type of facility, in Phase I five states and Phase II three states, India (N=3,44,038)

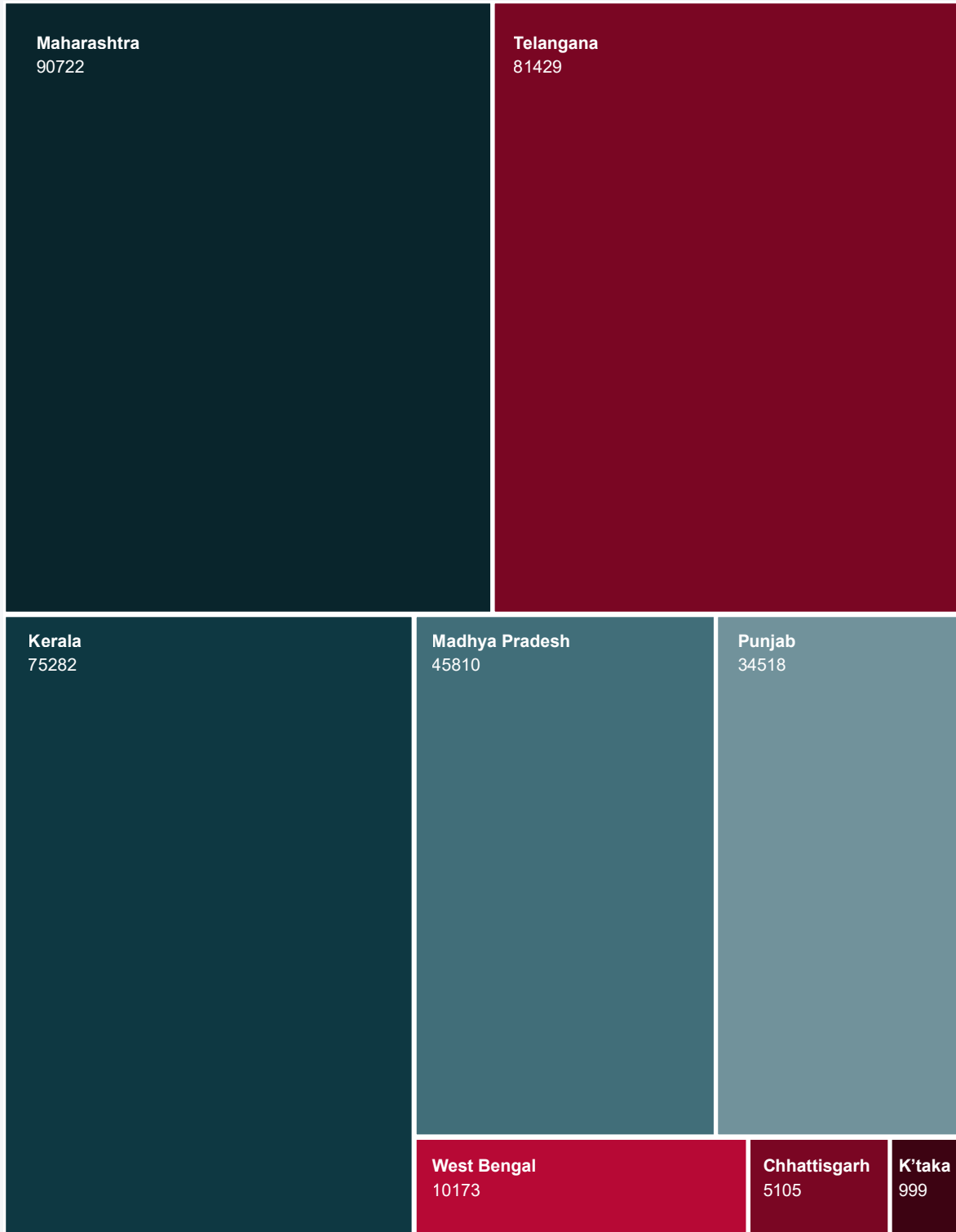


Number of patients with controlled BP



- In the Phase I states, 3,44,000 patients achieved BP control in Q1 2021, including 91,000 in Maharashtra, 81,000 in Telangana, 75,000 in Kerala, 45,000 in MP and 34,000 in Punjab (Figure 13).

Figure 13
Number of patients with controlled BP in Jan-March 2021 in Phase I five states and Phase II three states, India (N=3,44,038).



Treatment outcomes by type of facility



- Overall, blood pressure control was highest (55%) at HWC and second highest (48%) at PHC, followed by 44% in hospitals and 37% in CHC facilities (Figure 14).
- Uncontrolled BP was highest in CHC (28%) and lowest in HWC (16%) (Figure 15).
- The proportion of patients who missed visits was higher in CHC (34%) and hospitals (31%). The facilities closer to the patient's home, HWC (28%) and PHC (24%), had a lower proportion of missed visits (Figure 16).

Figure 14

Proportion with BP control during their most recent visit in Jan-Mar 2020 among hypertension patients under care in 26 districts of five Phase I states, by type of facility (N=5,10,856).



Figure 15

Proportion with uncontrolled BP during their most recent visit in Jan-Mar 2020 among hypertension patients under care in 26 districts of five Phase I states, by type of facility (N=5,10,856).

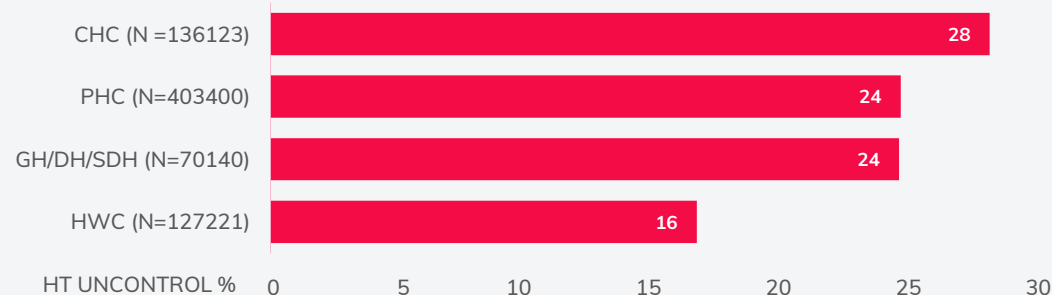


Figure 16

Proportion who missed their most recent visit in Jan-Mar 2020 among hypertension patients under care in 26 districts of five Phase I states, by type of facility (N=5,10,856).



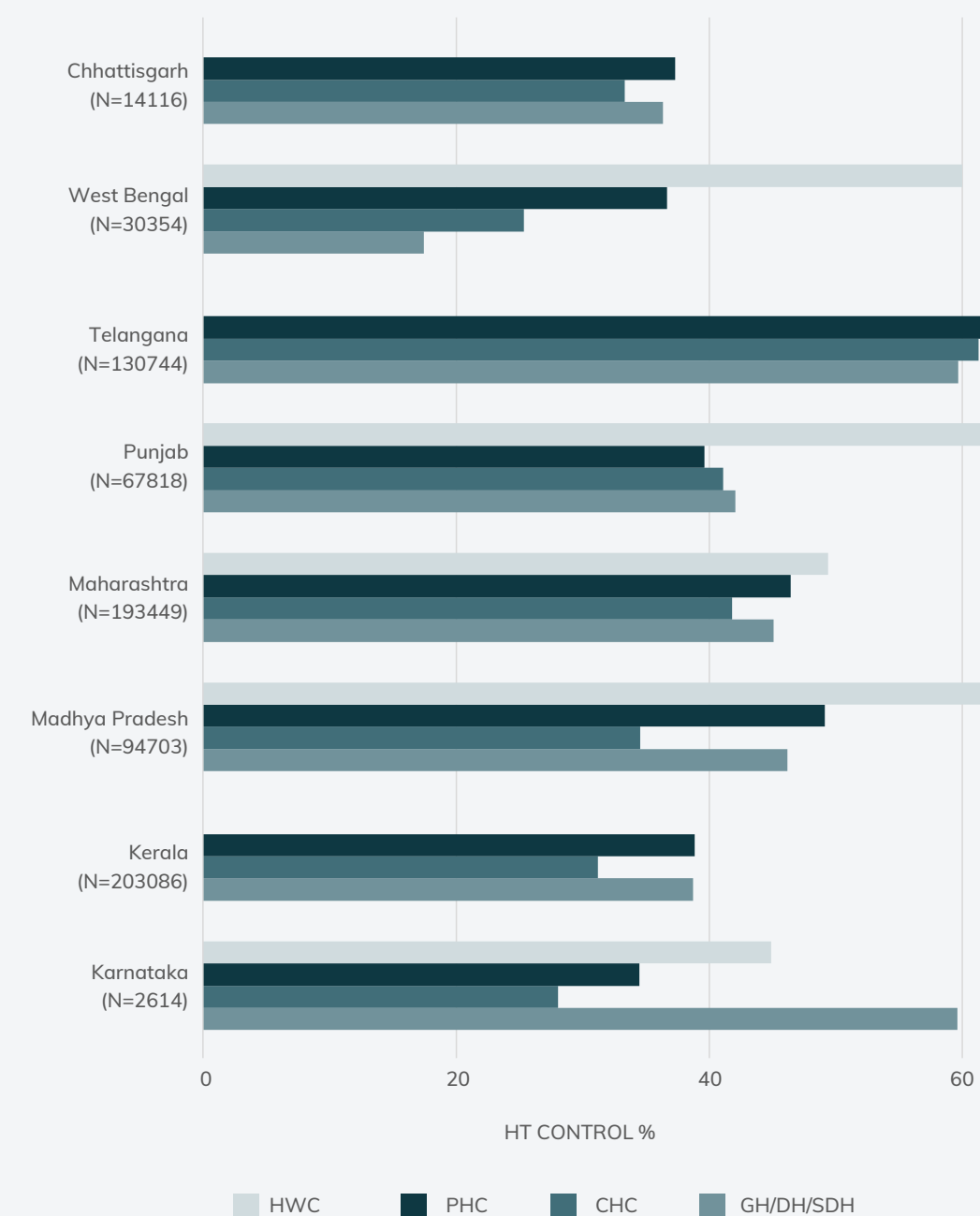
BP control rates by state & type of facility



- All five states with operational HWCs reported highest BP control in HWC compared to other types of facilities.
- In HWCs, BP control was highest (66%) in Punjab and lowest in Karnataka (45%).
- BP control in the PHC ranged from 62% in Telangana to 34% in Karnataka.
- BP control was similar in various types of facilities in Maharashtra, Kerala and Chhattisgarh.
- BP control was lowest in the CHC in all states except Telangana and West Bengal.

Figure 17

Proportion with BP under control by type of facility by State during a most recent visit in Jan-Mar 2021 among Hypertension patients under care in Phase I five states and Phase II three states, India (N=7,36,884)



ANNUAL INDICATORS BY DISTRICT FOR PHASE I FIVE STATES AND PHASE II THREE STATES, JAN-MARCH 2021

Treatment outcomes by district

BP control ranged from 72% to 19% among 7,36,884 patients on treatment in five Phase I and three Phase 2 states (Figure 18). Overall, 23 of 55 districts had BP control above 50%, including 15 of 16 districts in Telangana state. In Madhya Pradesh, 2 of 6 districts Ratlam (66%) and Chhindwara (52%) had control above 50%. The 4 of 10 districts with above 50% control in Punjab were Bathinda (58%), Barnala (58%), Gurdaspur (55%) and Mansa (51%). Sindhudurg (59%) and Bhandara (61%) were among districts with high control rates in Maharashtra. Overall, 11 districts had BP control in the 40% - 49% range, including one in Kerala (Kannur 44%), one in West Bengal (Birbhum 49%), one in Telangana, four in Maharashtra, two in Punjab and two in MP.

Uncontrolled BP ranged from 43% to 4% across districts calculated during the patient's most recent visit in Jan-March 2021 (Figure 19), excluding Jalandhar, which is an outlier due to small number of patients. Overall, 20 districts had uncontrolled BP above 25%. Uncontrolled BP was higher in all four districts of Kerala (43% - 37%) than other states. Other districts in top 20 with high uncontrolled BP included Raichur (Karnataka), Khammam (Telangana), Barnala (Punjab), Paschim Medinipur (WB) and Durg (Chhattisgarh).

Of 55 districts, 25 had more than 30% missed visits (Figure 20). The top five districts were Palghar (MH), Purba Mednipur (WB), Gadchiroli (MH), Gondia (MH) and Ujjain (MP). 10 districts in Maharashtra, five in MP, four in West Bengal, three in Punjab, two in Chhattisgarh and one in Karnataka were among the top 25 districts with a high proportion of missed visits.



Figure 18
BP Control (%) by district during Jan-March 2021 among hypertension patients under care in Phase I five states and Phase II three states (55 districts), India (N=7,36,884).

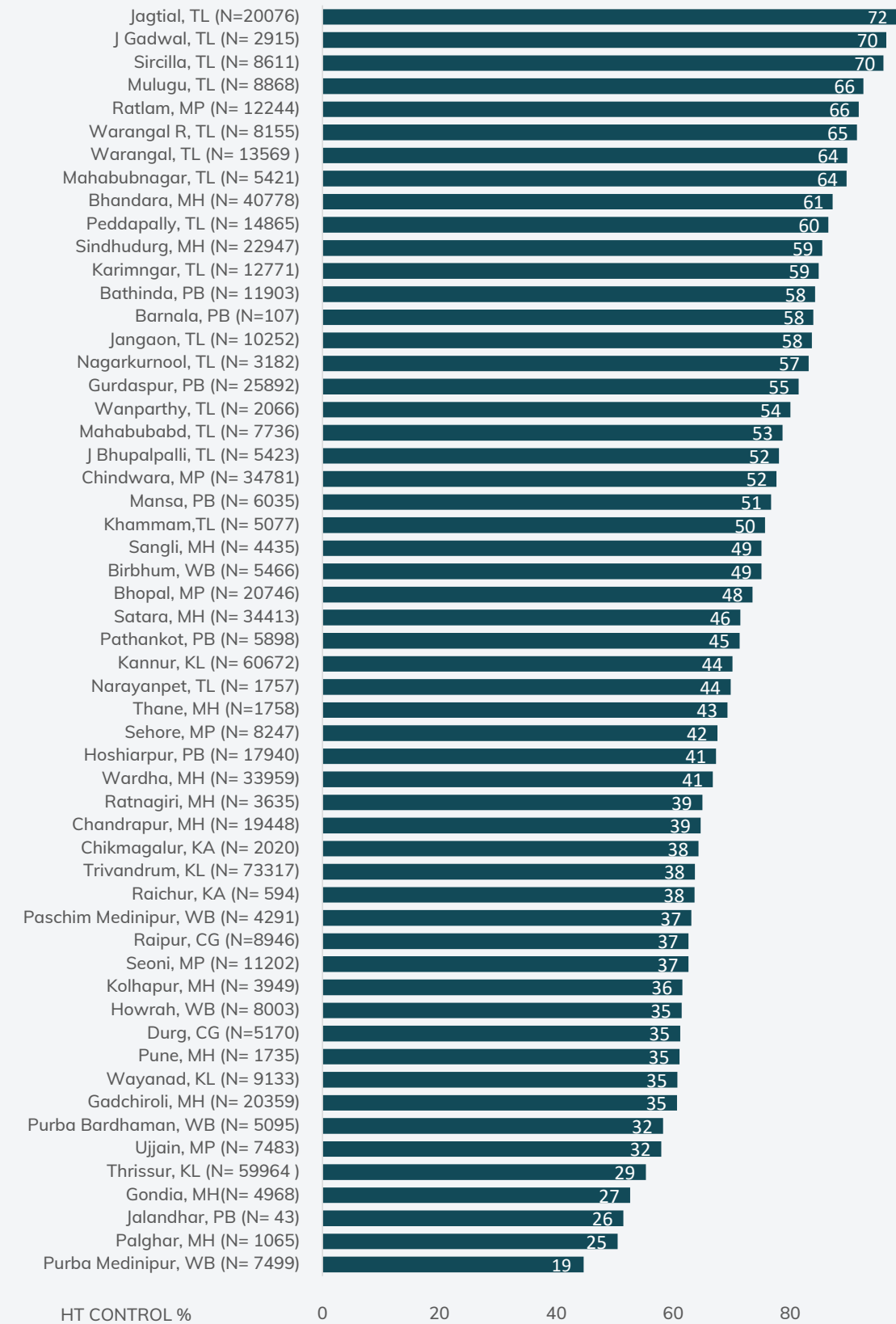


Figure 19

Uncontrolled BP (%) by district during Jan-March 2021 among hypertension patients under care in Phase I five states and Phase II three states (55 districts), India (N=7,36,884)

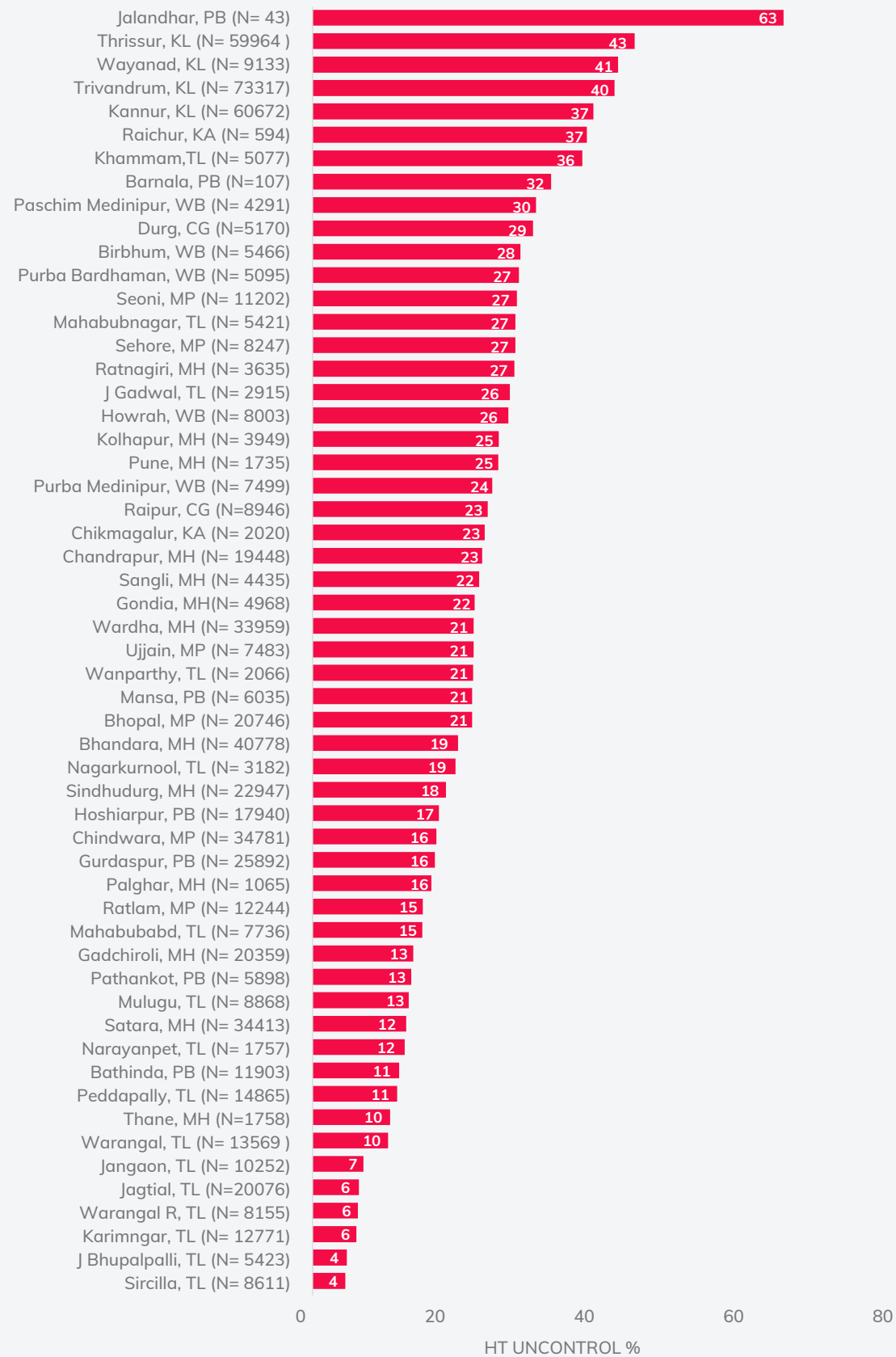


Figure 20

Missed visits (%) by district during Jan-March 2021 among hypertension patients under care in Phase I five states and Phase II three states (55 districts), India (N=7,36,884)

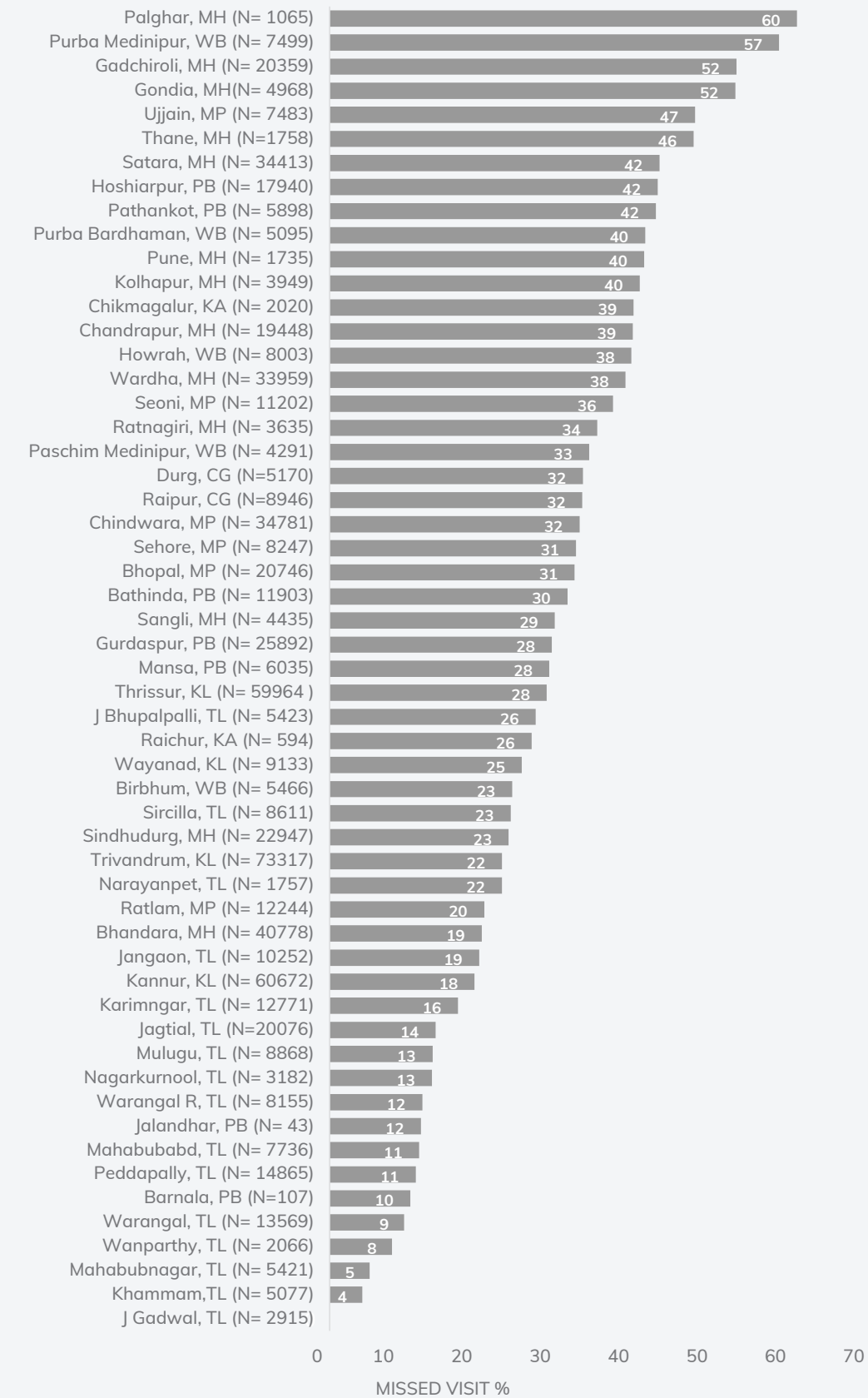
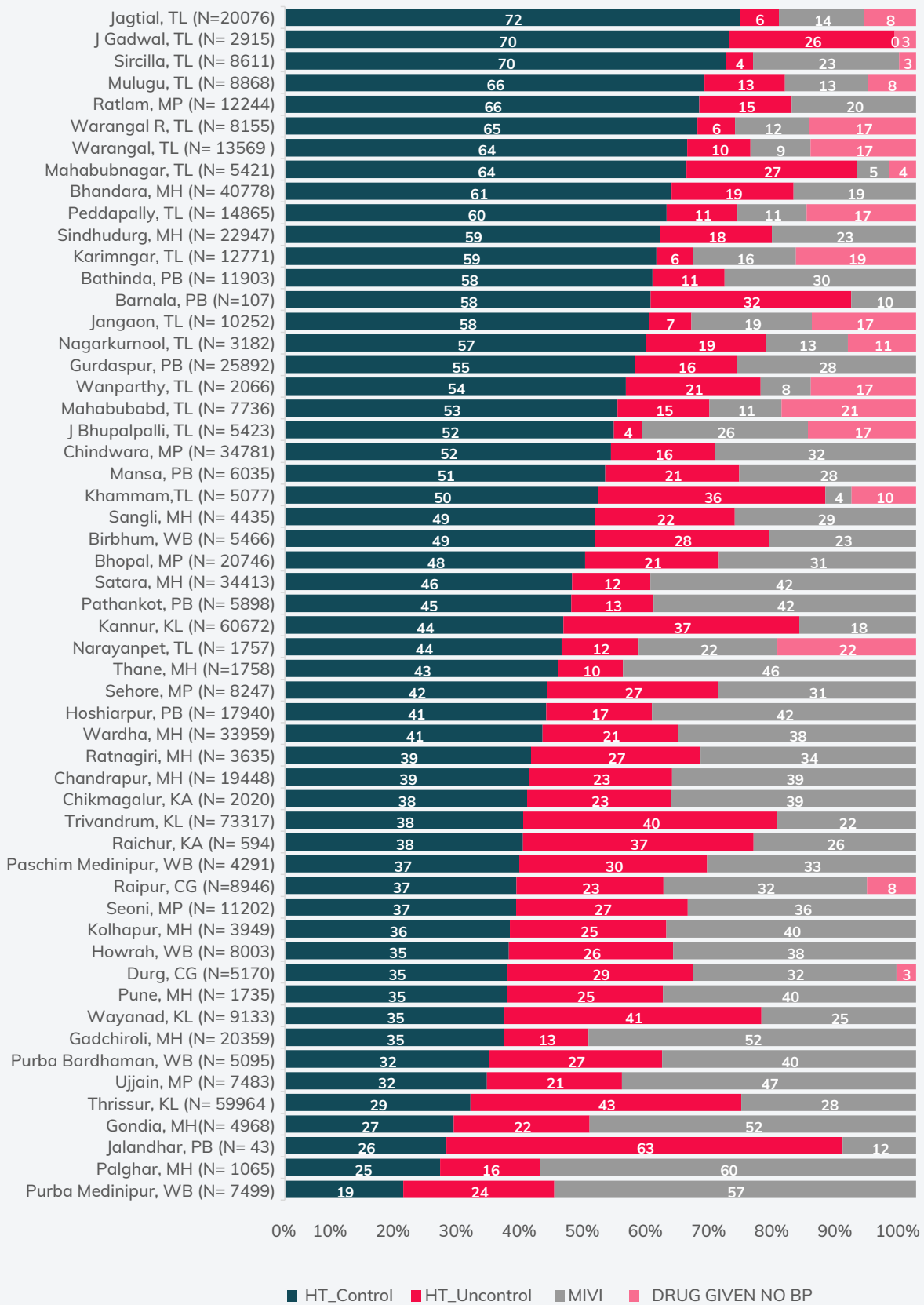


Figure 21

Treatment outcomes by district during Jan-March 2021 among hypertension patients under care in Phase I five states and Phase II three states (55 districts), India (N=7,36,884)



Top 26 districts with highest number of patients

- Among 3,44,038 patients who had controlled blood pressure during their most recent visit in Jan-March 2021, two districts (Bhandara, Satara) with the highest number of patients above 15,000 were in Maharashtra, three in Kerala (Trivandrum, Kannur, Thrissur) and one in MP (Chhindwara). The other districts with more than 10,000 included Jagtial, Gurdaspur, Wardha and Sindhudurg.
- The 13 districts with controlled blood pressure between 5k – 10k were Bhopal, Ratlam in MP; Peddapally, Warangal (R), Warangal (U), Karimngar, Sircilla, Jangaon, Mulugu in Telangana; Chandrapur and Gadchiroli in Maharashtra and Hoshiarpur and Bathinda in Punjab.

Figure 22

Top 25 districts with highest number of patients with controlled blood pressure during their most recent visit in Jan-March 2021, India



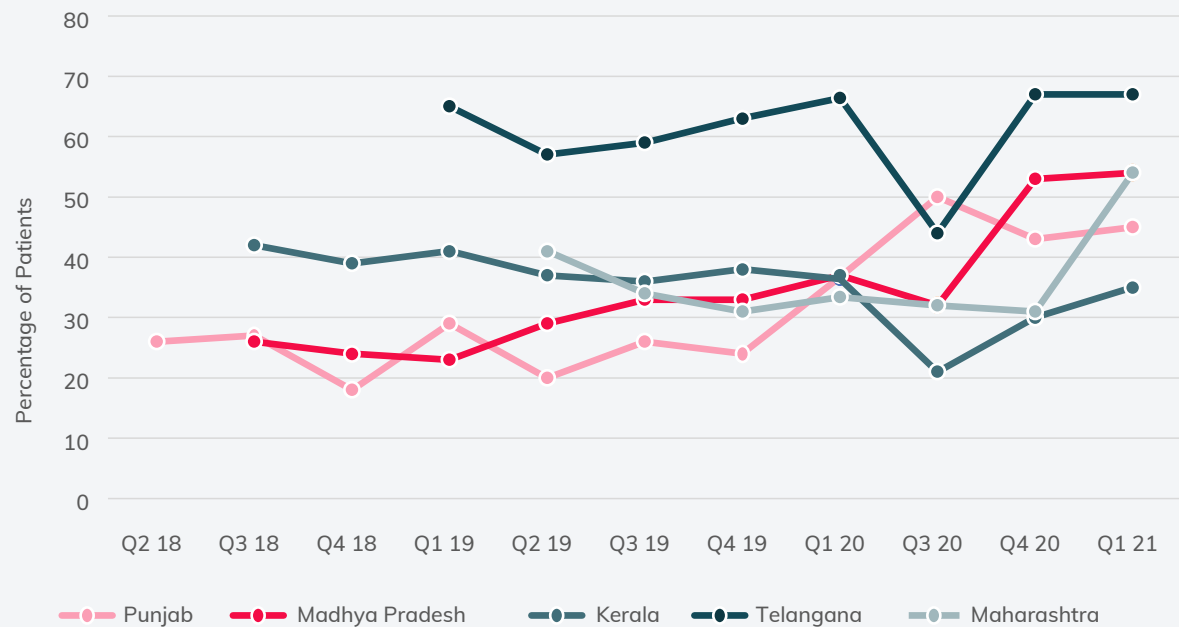
COMPARISON OF QUARTERLY AND ANNUAL INDICATORS FOR INITIAL 26 DISTRICTS IN PHASE I STATES IN 2021 COMPARED TO 2019 AND 2020

Quarterly blood pressure control is estimated as the proportion of patients with blood pressure under control in a quarter when we measured the treatment outcome among patients registered in the previous quarter. Data collection could not be done in Q2, 2020 due to COVID-19 lockdowns and restrictions.

Quarterly BP control by state

- In Punjab, the BP control rate improved to 50% in Q3 2020 & 45% in Q1 2021 from 26% in the project's beginning (Q2 2018).
- During Q3 2020, there was a marked decline in blood pressure control in Telangana (66% to 44%) and Kerala (36% to 21%) due to the COVID-19 pandemic, which was improved in Q4 2020 and Q1 2021 by quickly adopting various mitigation strategies.
- BP control increased in MP from 37% in Q1 2020 to 54% in Q1 2021. In Maharashtra, BP control ranged from 31%- 32% in Q3 and Q4, 2020 and improved to 54% in Q1, 2021.

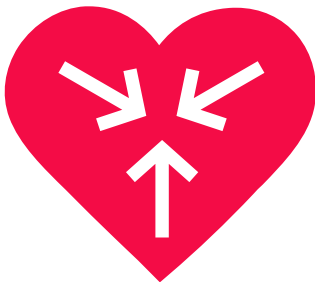
Figure 23
Quarterly BP control over time by state in 29 districts in five Phase I states, Jan 2018 to Dec 2020



The quarter mentioned is a three- month period in which treatment outcome was measured. In 2020 due to lockdown, Q1 enrolled patients were assessed in Q3 for outcomes.

Community-level blood pressure control in 25 districts in 5 Phase I states

One of the HEARTS indicators is community-level BP control, which is measured annually. It is defined as the % of patients who had controlled BP during a recent visit Jan-March in the year of reporting among all expected hypertensives in the given geographic area.



Number of patients with BP control

- Overall, 2,83,457 patients had controlled blood pressure in Jan-March 2021 compared to 2,18,340 in Jan-March 2020 and 64,704 in Jan-March 2019 in Phase I 26 districts (Figure 24).
- The number was highest in Kerala (75,282) and lowest in Punjab (34,445) (Figure 25).
- Nearly 70k in Maharashtra and Telangana, and 35k in Madhya Pradesh achieved blood pressure control.
- The numbers declined in Kerala due to poor documentation during pandemic and regulatory issues which did not permit drugs refills at the subcentre level.

Figure 24
Number of patients with BP control in the Phase I initial 26 districts in first quarter of 2019, 2020 and 2021

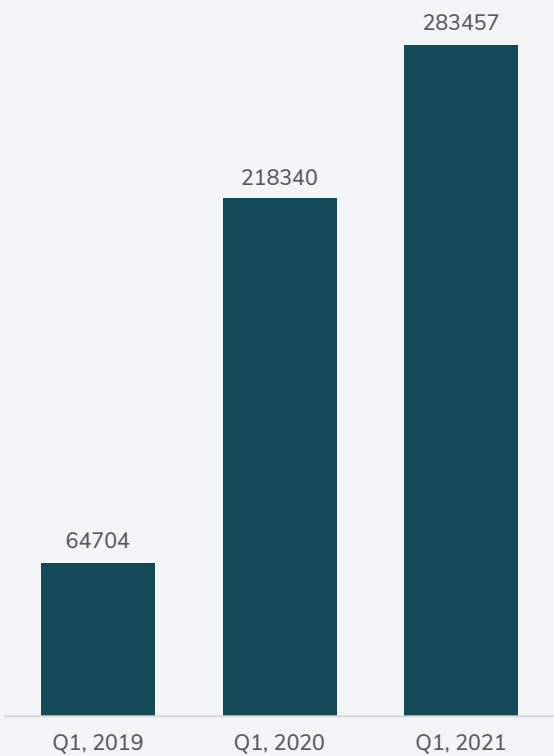
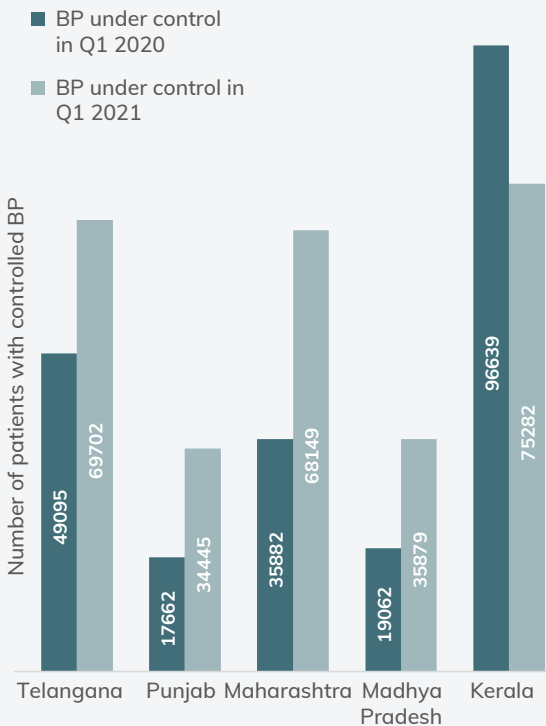


Figure 25
Number of patients with BP control by state in the Phase I initial 26 districts in 5 states in first quarter of 2020 and 2021



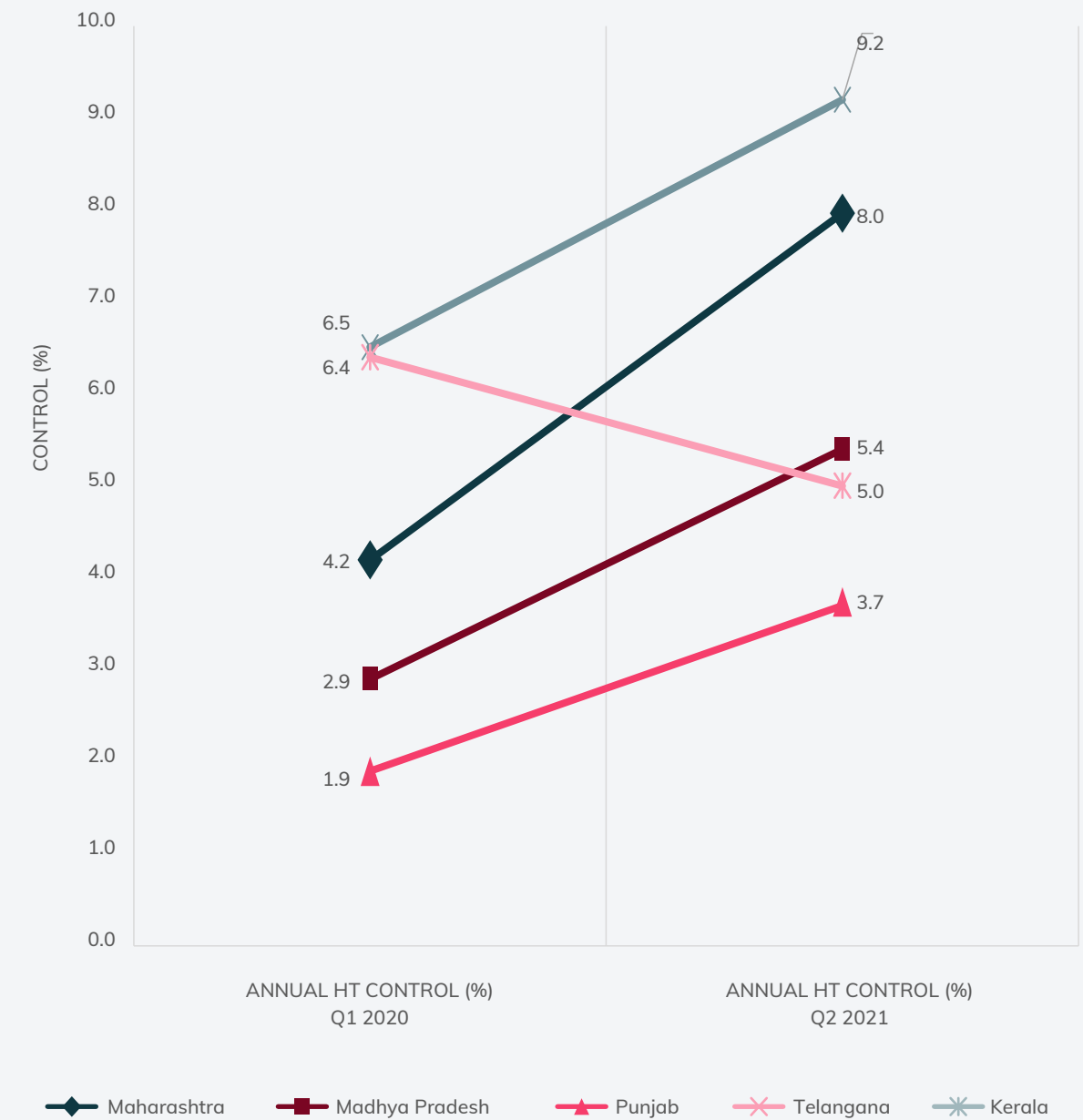
Community-level blood pressure control by state



- Overall, 6.1% achieved BP control in Jan-March 2021, compared to 4.9% in Jan-March 2020 and 1.4% in Jan-March 2019.
- Annual hypertension control in 2021 was 3.7 % in Punjab, 5% in Kerala, 5.8 % in Madhya Pradesh, 8% in Maharashtra and 9.2% in Telangana.
- Compared to the hypertension control in Jan-March 2020, hypertension control improved in four states except Kerala.
- The three states with 2.5% or more increase were Maharashtra, Telangana and Madhya Pradesh.

Figure 26

Community-level hypertension control by state in the Phase I initial 26 districts in 5 states in first quarter of 2020 (N=2,18,340) and 2021 (N=2,83,457)



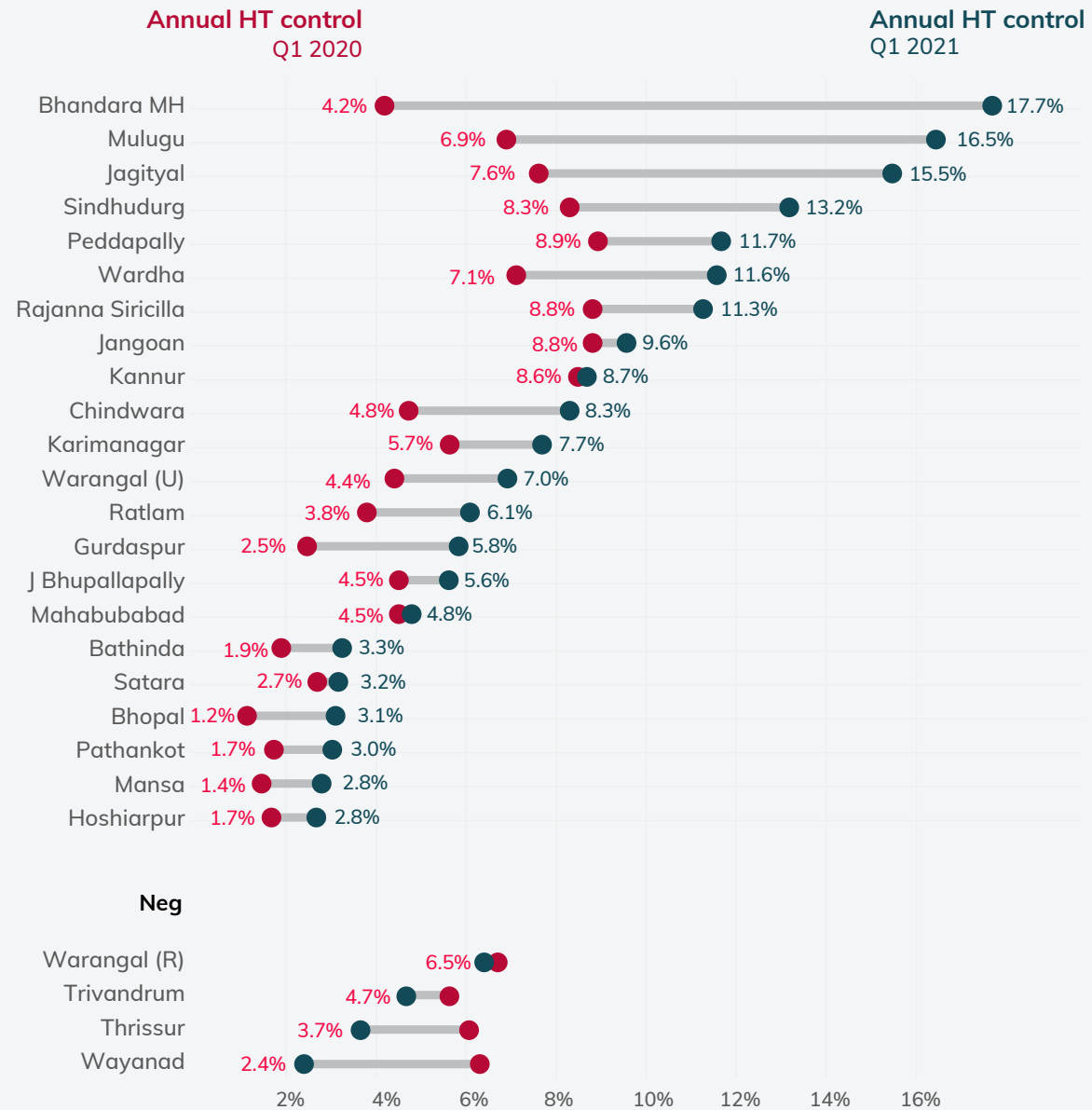
Community-level blood pressure control in 26 districts in 5 Phase I states



- Community-level hypertension control improved in 21 project districts in Jan- March 2021 compared to Jan-March 2020.
- However, HT control declined in 4 districts (one in Telangana and three in Kerala) and remained the same in one district in Kerala (Kannur). This decline was due to lockdowns, reduced patient visits and poor documentation due to COVID-19.
- Six districts achieved more than 10% community level BP control including three in Telangana (Mulugu, Jagtial, Peddapally) and three in Maharashtra (Bhandara, Wardha and Sindhudurg). Eight districts achieved control between 5-10%.

Figure 27

Community-level hypertension control by district during a recent visit in Jan-March 2021 among hypertension patients in 26 districts of Phase I five states, India compared to Jan-March, 2020 (Estimated hypertensives N= 46,98,477, Number with BP control = 2,83,457 in Jan-March,2021, Number with BP control =2,18,340 in Jan-March 2020).



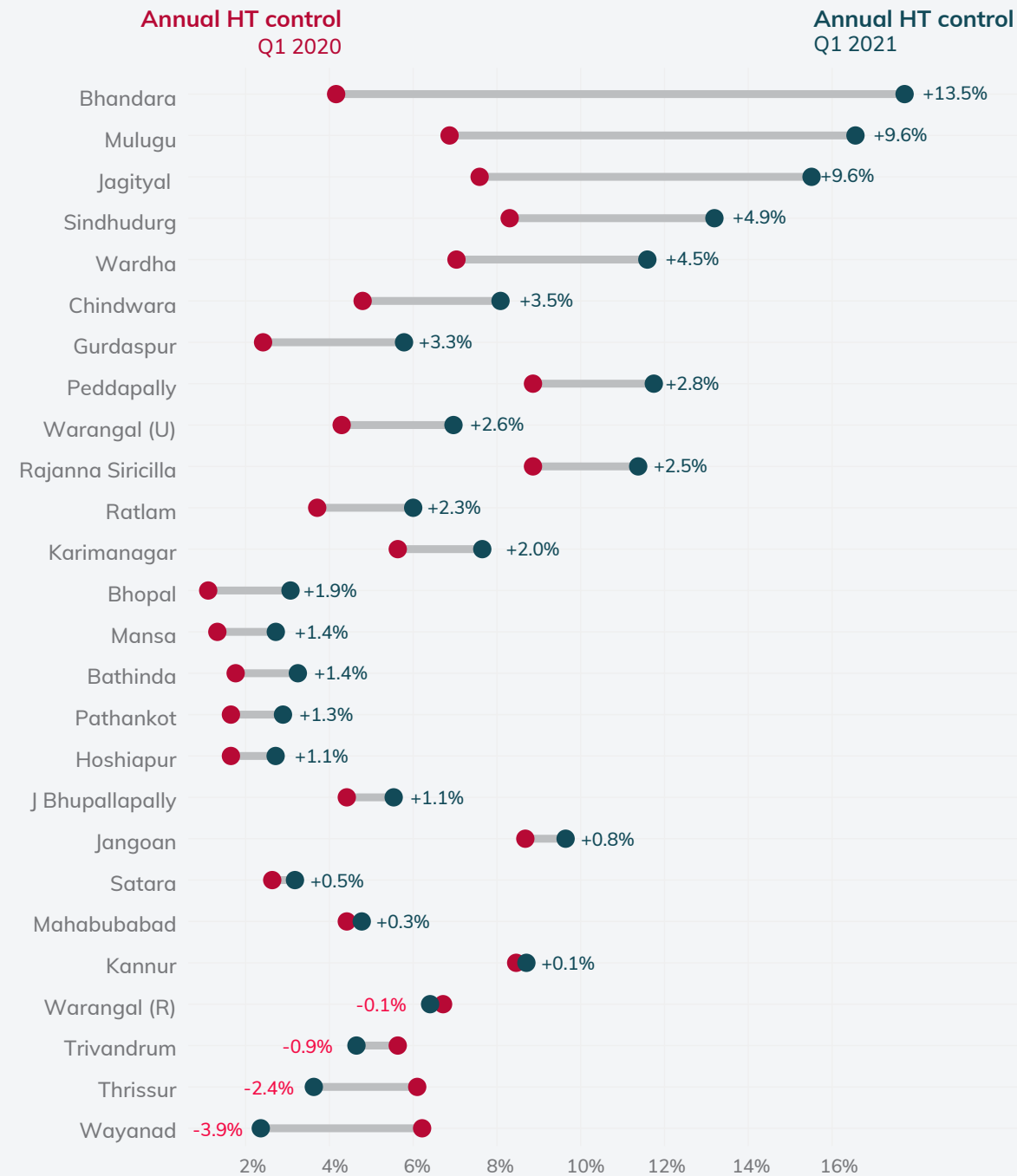
Difference in community-level blood pressure control by the district



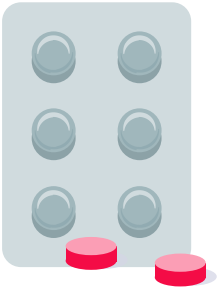
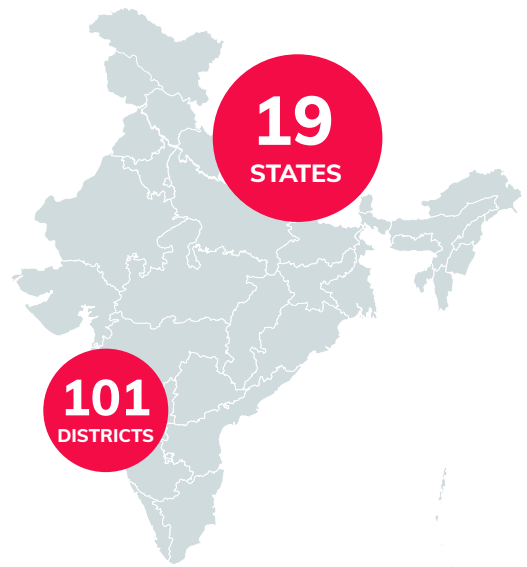
- Community-level BP control increased by more than 4% in Bhandara (MH), Mulugu (TL), Jagtial (TL), Sindhudurg (MH), and Wardha (MH) districts (Figure 28). Four districts Warangal (R), Trivandrum, Thrissur and Wayanad had a decline in community level control.

Figure 28

Difference in community-level hypertension control by the district during a recent visit in Jan-March 2021 among Hypertension patients in 26 districts of Phase I five states, India compared to Jan-March 2020 (Estimated hypertensives N= 46,98,477, Number with BP control = 2,83,457 in Jan-Mar 2021, Number with BP control =2,18,340 in Jan-March 2020).



SUMMARY



DRUG AVAILABILITY

Availability of HT Protocol drugs improved in all Phase I states with at least one-month refills for all three drugs in five Phase I states. Punjab, Madhya Pradesh and Telangana had stocks for nearly 6 months for protocol drugs. Kerala had only one-month stock and Maharashtra had two-months stock available in May,2021.

AT A GLANCE

By December 2021, 101 districts across 19 States had initiated the project activities. The project districts enrolled a total of 20 lakh patients across 13,000+ health facilities.



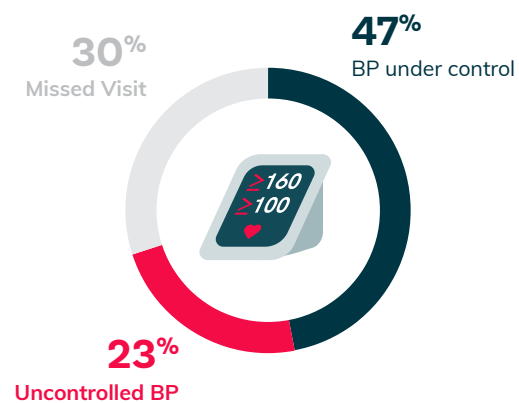
ENROLLMENT STATUS

In the 26 initial districts, one-fifth of the expected patients were enrolled. State proportions were Maharashtra (27%), Kerala (22.6%), Madhya Pradesh (18.7%), Telangana (18.6%) and Punjab (14.2%). The COVID-19 pandemic slowed down patient enrolment.



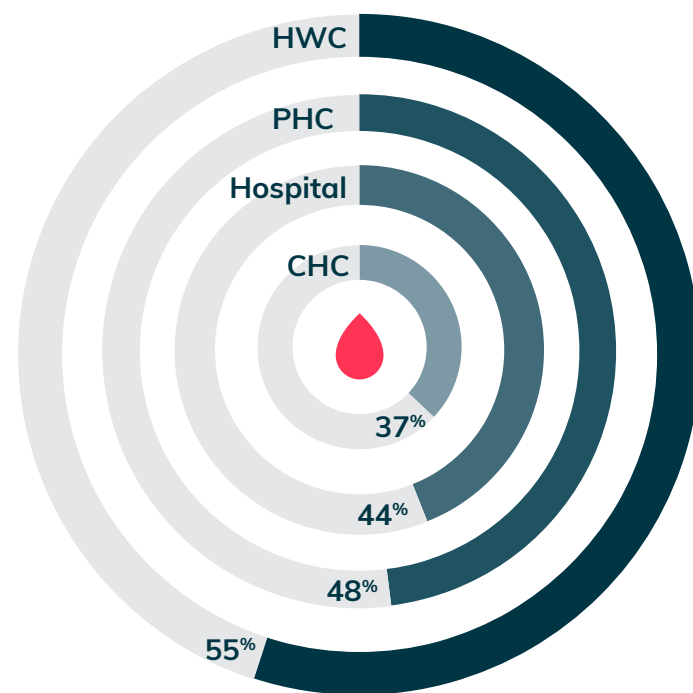
PROCUREMENT

Availability of drugs was a challenge in most Phase II states and the procurement process took nearly one year from planning to availability at the facility level.



BLOOD PRESSURE CONTROL

Nearly half (47%) of the registered patients under care had blood pressure under control during their most recent visit in the first quarter of 2021. Nearly one-fourth (23%) had uncontrolled BP, and 27% did not return for follow-up in this period.



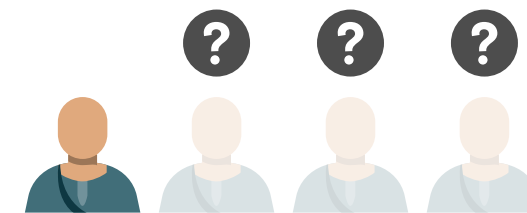
BP control was highest (55%) at HWC and second highest (48%) at PHC, followed by 44% in hospitals and 37% in CHC facilities.

Nearly 2.8 lakh had controlled blood pressure in Jan-Mar 2021 compared to 2.2 lakhs in Jan-Mar 2020 and 64k in Jan-Mar 2019. The numbers declined in Kerala due to poor documentation in context of Covid and inability to do drugs refills at the Subcentre level.

DOCUMENTATION

Of the 9.9 lakh patients registered in the 4,505 health facilities in five Phase I and three Phase II states in Dec 2020, 7.4 lakhs were under care between April, 2020 – March, 2021.

The states which used paper-based treatment cards had challenges in documenting visits in the treatment cards due to the pandemic. A quarter of patients did not have any documented follow up visit in 12 months.



STAFF AVAILABILITY

In Phase I states, dedicated nurses for NCD work were lacking in most facilities except Telangana and Maharashtra. In Phase II states, most districts did not have dedicated NCD nurses at PHC level, except Chennai. Few phase II districts lack doctors and nurses at the PHC level.

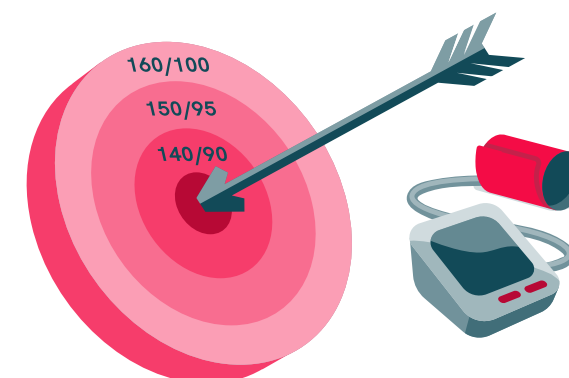


COMMUNITY LEVEL BLOOD PRESSURE

Six districts achieved more than 10% community level blood pressure control in Jan-March 2021.

Overall community level blood pressure control was 6.1% in Jan-March 2021, compared to 4.9% in Jan-March 2020 and 1.4% in Jan-March 2019.

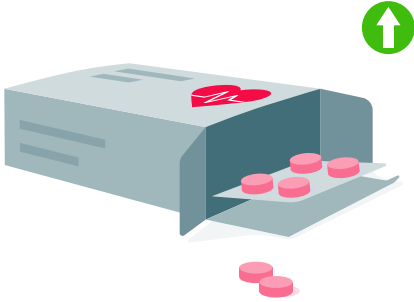
Community-level hypertension control improved in 21 project districts in Jan- March 2021 compared to Jan-Mar 2020.



EQUIPMENT AVAILABILITY


Lack of validated high-quality digital blood pressure monitors in several health facilities affected accuracy of hypertension diagnosis.

RECOMMENDATIONS



1 TO IMPROVE THE SUPPLY OF ADEQUATE QUANTITIES OF DRUGS

- Identify the gaps in procurement systems and strengthen systems to procure annual requirement based on timely forecasting.
- Improve uninterrupted availability of drugs at the health facility level by using forecasting tools and ready reckoner and improving the distribution process from warehouse to health facility.
- Estimate the PHC drugs requirement including patients who follow up at the HWC.



2 TO IMPROVE THE BLOOD PRESSURE CONTROL RATE

- Improve compliance to State-specific hypertension treatment protocols at all levels of facilities in the public sector.
- Sensitize the medical officers for timely titration of drugs to decrease the proportion of patients with uncontrolled BP.
- Utilize telemedicine services (e-Sanjeevani/ Simple app) effectively in HWC/SC to titrate medications.
- Train and retrain all health workers focusing on CHWs and ANMs for follow-up of patients who missed visits.



3 CONDUCT REGULAR MONTHLY REVIEW

of IHCI at block/ district level and 3-monthly reviews at State level as a part of NPCDCS review.



4 DISSEMINATE THE REPORTS TO ALL STAKEHOLDERS

and promote the Simple dashboard's use to review the performance of health facilities, districts and states on a regular basis and in review meetings.




5 TO INCREASE THE NUMBER OF REGISTRATIONS AND COVERAGE

- Encourage screening in the HWCs and COVID-19 vaccination camps.
- Ensure dedicated NCD staff nurse (one at PHC and two or more at CHC and hospitals) and fill the medical officer vacancies in all health facilities.
- Promote opportunistic screening and assign support staff in every health facility to check blood pressure of all adults visiting the facility.
- Procure validated high-quality digital BP monitors for primary care health facilities.
- Enhance the linkages and referral of patients detected with high BP during population-based screening to health facilities for confirmation of diagnosis and registration.



6 TO REDUCE MISSED VISITS

- Encourage the use of IT tools for better documentation of visits and send periodic automated reminders to patients who did not return for follow up visits.
- Decentralize hypertension drugs refills to HWC/SC.
- Provide extended period prescriptions up to 60 days for those with controlled BP.
- Leverage existing ASHA incentives for follow-up of patients in the community and ensure regular disbursement.



7 ENGAGE THE PRIVATE SECTOR

to enhance the coverage and quality of hypertension treatment and community-level hypertension control.

ANNEXURE I : TRAINING IN PHASE 2 STATES

Table 1
Training status of physician, staff nurse and pharmacist by district in Phase II states, May 2021.

State	District	Physician		
		Trained	Load#	%
Andhra Pradesh	Krishna	157	172	91
	Visakhapatnam	148	190	78
Bihar	Muzaffarpur	45	113	40
	Vaishali	65	149	44
Chhattisgarh	Raipur	97	188	52
	Durg	83	146	57
Goa	North	73	85	86
	South	59	83	71
Gujarat	Surat	0	142	0
	Rajkot	0	65	0
Jharkhand	Bokaro	72	85	85
	Ranchi	15	138	11
Karnataka	Chikmagalur	55	78	71
	Raichur *	33	50	66
Nagaland	Mokokchung	27	30	90
	Kohima	21	29	72
Puducherry	Puducherry	62	109	57
Rajasthan	Bikaner	29	154	19
	Churu	124	281	44
	East	13	13	100
Sikkim	South	8	9	89
	North	0	6	0
	West	8	9	89
Tamil Nadu	Chennai **	32	35	91
Uttar Pradesh	Jhansi	0	108	0
	Lalitpur	0	42	0
	Allahabad	94	156	60
	Varanasi	128	196	65
West Bengal	Birbhum	65	73	89
	Howrah	123	174	71
30 districts' total:		1636	3108	53

Load represents the total number of health workers planned to be trained in a district.

* Training loads shown in different categories of Raichur district are from three blocks, where IHCI was launched in 2020.

** Chennai data represents only three zones where IHCI was launched in 2020.

	Staff Nurse			Pharmacist	
	Trained	Load#	%	Trained	Load#
	234	242	97	107	112
	127	240	53	72	115
	14	52	27	3	24
	11	198	6	25	25
	149	218	68	75	80
	232	315	74	61	78
	29	255	11	38	57
	29	390	7	50	55
	0	99	0	0	76
	0	29	0	0	80
	116	130	89	10	15
	16	150	11	4	11
	45	55	82	11	38
	47	50	94	27	37
	0	33	0	27	37
	16	44	36	27	30
	102	170	60	39	42
	0	254	0	0	88
	120	459	26	13	46
	8	11	73	5	6
	8	18	44	5	5
	0	7	0	0	1
	8	18	44	5	5
	55	59	93	25	27
	104	104	100	0	76
	0	65	0	0	30
	178	285	62	44	194
	34	99	34	49	108
	71	71	100	53	54
	120	736	16	68	84
	1873	4856	39	843	1636

ANNEXURE II: HUMAN RESOURCES

Table 2
Number of functional PHC & UPHC without any doctor in Phase II IHCI districts, May 2021.

State	District	Total number of PHC & UPHC	PHC & UPHC without any doctor	%
Gujarat	Rajkot	64	6	9
Jharkhand	Bokaro	19	1	5
	Ranchi	33	16	55
Karnataka	Chikmagalur	60	1	2
Nagaland	Mokokchung	15	2	13
Rajasthan	Churu	99	2	2
Uttar Pradesh	Allahabad	84	20	24
	Jhansi	49	11	22
	Lalitpur	23	13	57
	Varanasi	53	5	9
West Bengal	Birbhum	38	8	32
	Howrah	73	11	16
Number of PHC & UPHC without any doctor in 12 districts			101	

Table 3
Number of functional PHC & UPHC without any nurse in Phase 2 IHCI districts, May 2021.

State	District	Total number of PHC &UPHC	PHC & UPHC without any doctor	%
Karnataka	Chikmagalur	60	31	52
Uttar Pradesh	Allahabad	84	55	65
	Jhansi	49	22	45
	Lalitpur	23	5	22
	Varanasi	53	29	55
West Bengal	Birbhum	38	5	13
	Howrah	73	20	27
Total number of functional PHC & UPHC without any nurse in 07 districts			167	

Table 4
Distribution of doctor, dedicated staff nurse and pharmacist in district (DH) & sub district hospital (SDH) in IHCI phase-II districts.

State	District	Total DH & SDH	Number of doctors in OPD for HT treatment	Number of dedicated staff nurse	Number of pharmacists in place
Andhra Pradesh	Krishna	3	3	0	3
	Visakhapatnam	5	5	0	5
Bihar	Muzaffarpur	1	2	0	0
	Vaishali	2	1	1	8
Sikkim	East	1	1	0	1
	North	1	1	0	1
	South	1	2	1	1
	West	1	2	1	1
Rajasthan	Bikaner	2	4	0	2
	Churu	3	5	1	19
Chhattisgarh	Durg	2	8	15	7
	Raipur	1	4	2	3
Goa	North	1	4	2	8
	South	3	26	8	13
Gujarat	Rajkot	6	6	11	22
	Surat	3	9	4	23
Jharkhand	Bokaro	4	13	1	5
	Ranchi	2	18	3	3
Karnataka	Chikmagalur	3	11	3	4
	Raichur	3	13	4	12
Nagaland	Kohima	1	4	2	7
	Mokokchung	1	2	2	1
Uttar Pradesh	Allahabad	3	1	2	32
	Jhansi	1	1	2	6
	Lalitpur	1	1	1	5
	Varanasi	4	1	2	28
West Bengal	Birbhum	2	6	2	4
	Howrah	10	41	41	33
Puducherry	Puducherry	0	N/A	N/A	N/A
Tamil Nadu	Chennai	0	N/A	N/A	N/A
30 districts grand total:		71	226	111	257

Name of the district is highlighted where no dedicated staff nurse is available.
N/A: not applicable

Table 5

Distribution of doctor, dedicated staff nurse and pharmacist in community health centre (CHC) & block primary health centre (BPHC) in IHCI Phase II districts.

State	District	Total CHC & BPHC	Number of doctors in OPD for NCD treatment	Number of dedicated staff nurse	Number of pharmacists in place
Andhra Pradesh	Krishna	12	12	0	12
	Visakhapatnam	12	12	0	12
Bihar	Muzaffarpur	15	40	0	22
	Vaishali	03	02	0	02
Jharkhand	Ranchi	14	112	0	08
	Bokaro	08	41	01	08
Sikkim	East	01	02	0	01
	North	0	N/A	N/A	N/A
	South	01	01	01	01
	West	01	01	01	01
Nagaland	Mokokchung	03	01	0	14
	Kohima	03	06	01	06
Rajasthan	Bikaner	18	18	0	18
	Churu	18	18	0	12
Uttar Pradesh	Allahabad	20	0	03	76
	Varanasi	10	0	01	17
	Jhansi	08	02	04	21
	Lalitpur	06	05	04	12
Chhattisgarh	Durg	08	16	08	16
	Raipur	09	17	04	18
Goa	North	04	22	02	12
	South	02	13	01	05
Gujarat	Rajkot	13	29	11	14
	Surat	15	34	11	12
Karnataka	Chikmagalur	04	07	03	05
	Raichur	05	10	03	05
Puducherry	Puducherry	02	11	02	06
Tamil Nadu	Chennai *	15	(n/a)	(n/a)	(n/a)
West Bengal	Birbhum	11	22	11	11
	Howrah	15	32	28	23
30 districts grand total		256	486	100	370

Name of the district is highlighted where no dedicated staff nurse is posted/no doctor available in OPD for hypertension treatment

* Programme not launched; data not available (n/a)

Table 6

Distribution of doctor, dedicated staff nurse and pharmacist in primary health centre (PHC) & urban primary health centre (UPHC) IHCI Phase II districts.

State	District	Total PHC & UPHC	Number of doctors in OPD for HT treatment	Number of dedicated staff nurse	Number of pharmacists in place
Andhra Pradesh	Krishna	125	157	0	60
	Visakhapatnam	114	173	0	98
Bihar	Muzaffarpur	06	03	0	02
	Vaishali	15	10	0	06
Goa	North	12	38	0	37
	South	15	43	01	37
Gujarat	Rajkot	64	58	0	62
	Surat	61	95	0	60
Jharkhand	Bokaro	19	18	0	0
	Ranchi	31	08	0	0
Uttar Pradesh	Allahabad	84	78	0	81
	Jhansi	49	30	0	41
	Lalitpur	23	10	0	11
	Varanasi	53	48	0	45
Sikkim	East	09	11	0	04
	North	05	05	0	0
	South	06	06	0	03
	West	06	06	0	03
Karnataka	Chikmagalur	60	60	0	29
	Raichur	34	36	0	23
West Bengal	Birbhum	38	30	0	38
	Howrah	73	50	0	56
Nagaland	Kohima	15	17	0	12
	Mokokchung	15	01	0	0
Rajasthan	Bikaner	71	71	0	23
	Churu	99	97	0	15
Chhattisgarh	Durg	30	60	1	60
	Raipur	36	48	1	41
Puducherry	Puducherry	31	98	7	36
Tamil Nadu	Chennai*	140	35	59	27
30 districts grand total		1339	1365	179	910

Name of the district is highlighted where no dedicated staff nurse is posted/no doctor available in OPD for hypertension treatment

*data from facilities of three zones only

Table 7

Distribution of doctors, nurses and pharmacists in DH/SDH in IHCI Phase I districts, Sep'21

State	District	Total DH & SDH	Number of doctors in OPD for HT treatment	Number of dedicated staff nurse	Number of pharmacists in place
Maharashtra	Palghar	3	8	4	5
Maharashtra	Thane	3	7	3	4
Maharashtra	Sindhudurg	4	3	7	4
Maharashtra	Wardha	3	1	11	2
Maharashtra	Gadchiroli	4	1	9	0
Maharashtra	Gondia	3	1	0	8
Maharashtra	Sangli	1	1	0	1
Maharashtra	Satara	3	1	4	4
Maharashtra	Chandrapur	5	2	15	5
Maharashtra	Pune	7	45	3	22
Maharashtra	Ratnagiri	4	4	4	4
Maharashtra	Kolhapur	5	5	2	17
Maharashtra	Bhandara	3	1	17	10
Madhya Pradesh	Bhopal	2	2	1	6
Madhya Pradesh	Chhindwara	4	2	4	16
Madhya Pradesh	Ratlam	3	3	3	3
Madhya Pradesh	Sehore	3	1	1	6
Madhya Pradesh	Seoni	2	2	1	4
Madhya Pradesh	Ujjain	7	9	1	16
Punjab	Jalandhar	3	11	3	7
Punjab	Rupnagar	3	5	3	11
Punjab	Fatehgarh sahib	2	4	0	6
Punjab	Gurdaspur	2	5	2	5
Punjab	Pathankot	1	4	0	4
Punjab	Amritsar	3	7	2	7
Punjab	Hoshiarpur	4	10	2	10
Punjab	Mansa	3	4	1	3
Punjab	Bathinda	4	3	1	0
Punjab	Barnala	2	2	0	0

State	District	Total DH & SDH	Number of doctors in OPD for HT treatment	Number of dedicated staff nurse	Number of pharmacists in place
Kerala	Trivandrum	3	3	3	23
Kerala	Thrissur	5	4	5	48
Kerala	Kannur	8	5	17	11
Kerala	Wayanad	4	57	2	21
Kerala	Kozhikode	9	6	7	23
Kerala	Kasargod	7	29	189	14
Kerala	Ernakulam	14	25	9	55
Kerala	Kollam	11	34	8	43
Kerala	Alleppey	10	36	8	37
Telangana	Warangal Urban	0	0	0	0
Telangana	Warangal Rural	1	3	1	1
Telangana	Jangaon	1	4	2	2
Telangana	Bhupalpally	0	0	0	0
Telangana	Mulugu	1	2	3	1
Telangana	Mahabubabad	1	0	1	2
Telangana	Karimnagar	1	2	0	1
Telangana	Peddapalli	2	4	0	2
Telangana	Sircilla	1	1	0	1
Telangana	Jagitial	1	1	0	1
Telangana	Khammam	1	1	1	2
Telangana	Bhadradi Kothagudem	1	0	0	1
Telangana	Medak	1	1	3	3
Telangana	Sangareddy	1	1	2	1
Telangana	Mahabubnagar	1	6	0	5
Telangana	Narayanpet	1	0	0	2
Telangana	J Gadwal	1	5	0	4
Telangana	Wanparthy	1	0	0	3
Telangana	Nagarkurnool	1	0	0	3
Telangana	Siddipet	1	2	2	3

Table 8

Distribution of doctors, nurses and pharmacists in CHC/BPHC in IHCI Phase-I districts

State	District	Total CHC & BPHC	Number of doctors in OPD for HT treatment	Number of dedicated staff nurse	Number of pharmacists in place
Maharashtra	Palghar	7	8	8	7
Maharashtra	Thane	5	6	4	5
Maharashtra	Sindhudurg	7	7	6	4
Maharashtra	Wardha	8	0	6	8
Maharashtra	Gadchiroli	4	2	9	0
Maharashtra	Gondia	10	0	0	10
Maharashtra	Sangli	11	11	0	11
Maharashtra	Satara	15	2	8	14
Maharashtra	Chandrapur	9	1	9	9
Maharashtra	Pune	19	61	3	28
Maharashtra	Ratnagiri	8	8	7	8
Maharashtra	Kolhapur	16	16	0	18
Maharashtra	Bhandara	7	0	7	12
Madhya Pradesh	Bhopal	3	0	0	11
Madhya Pradesh	Chhindwara	10	10	1	11
Madhya Pradesh	Ratlam	8	9	1	9
Madhya Pradesh	Sehore	8	0	0	15
Madhya Pradesh	Seoni	8	8(MO)	0	11
Madhya Pradesh	Ujjain	6	5	1	5
Punjab	Jalandhar	17	47	2	26
Punjab	Rupnagar	5	11	4	12
Punjab	Fatehgarh sahib	6	11	0	14
Punjab	Gurdaspur	18	44	0	29
Punjab	Pathankot	4	15	1	8
Punjab	Amritsar	8	32	2	24
Punjab	Hoshiarpur	15	15	9	16
Punjab	Mansa	4	5	1	4
Punjab	Bathinda	9	0	4	2
Punjab	Barnala	4	4	1	0

State	District	Total CHC & BPHC	Number of doctors in OPD for HT treatment	Number of dedicated staff nurse	Number of pharmacists in place
Kerala	Trivandrum	22	141	0	50
Kerala	Thrissur	27	137	0	58
Kerala	Kannur	14	76	65	40
Kerala	Wayanad	23	76	0	54
Kerala	Kozhikode	16	52	0	22
Kerala	Kasargod	6	31	17	7
Kerala	Ernakulam	22	73	0	23
Kerala	Kollam	16	147	0	16
Kerala	Allepey	16	158	0	16
Telangana	Warangal Urban	0	0	0	0
Telangana	Warangal Rural	2	2	3	2
Telangana	Jangaon	0	0	0	0
Telangana	Bhupalpally	2	5	1	2
Telangana	Mulugu	2	4	2	2
Telangana	Mahabubabad	2	0	1	2
Telangana	Karimnagar	2	2	0	2
Telangana	Peddapalli	2	3	0	1
Telangana	Sircilla	0	0	0	0
Telangana	Jagitial	2	2	0	2
Telangana	Khammam	4	0	0	5
Telangana	Bhadradi Kothagudem	5	0	0	5
Telangana	Medak	3	1	4	5
Telangana	Sangareddy	6	2	11	5
Telangana	Mahabubnagar	2	0	0	2
Telangana	Narayanpet	2	0	0	2
Telangana	J Gadwal	1	7	4	1
Telangana	Wanparthy	2	0	0	2
Telangana	Nagarkurnool	4	0	0	5
Telangana	Siddipet	4	0	3	2

Table 9

Distribution of nurses and pharmacists in PHC/UPHC in IHCI Phase I districts

State	District	Total PHC & UPHC	Number of Pharmacists in place
Maharashtra	Palghar	47	34
Maharashtra	Thane	33	21
Maharashtra	Sindhudurg	38	31
Maharashtra	Wardha	31	31
Maharashtra	Gadchiroli	9	0
Maharashtra	Gondia	40	33
Maharashtra	Sangli	60	43
Maharashtra	Satara	76	69
Maharashtra	Chandrapur	60	47
Maharashtra	Pune	129	131
Maharashtra	Ratnagiri	70	41
Maharashtra	Kolhapur	87	80
Maharashtra	Bhandara	34	33
Madhya Pradesh	Bhopal	56	31
Madhya Pradesh	Chhindwara	71	69
Madhya Pradesh	Ratlam	26	6
Madhya Pradesh	Sehore	21	20
Madhya Pradesh	Seoni	30	23
Madhya Pradesh	Ujjain	30	21
Punjab	Jalandhar	35	21
Punjab	Rupnagar	19	10
Punjab	Fatehgarh sahib	26	20
Punjab	Gurdaspur	24	19
Punjab	Pathankot	11	7
Punjab	Amritsar	38	34
Punjab	Hoshiarpur	30	33
Punjab	Mansa	15	15
Punjab	Bathinda	32	5
Punjab	Barnala	8	2
Kerala	Trivandrum	86	145

State	District	Total PHC & UPHC	Number of Pharmacists in place
Kerala	Thrissur	81	128
Kerala	Kannur	80	176
Kerala	Wayanad	10	14
Kerala	Kozhikode	74	111
Kerala	Kasargod	43	44
Kerala	Ernakulam	91	99
Kerala	Kollam	58	58
Kerala	Allepey	59	59
Telangana	Warangal Urban	26	23
Telangana	Warangal Rural	17	17
Telangana	Jangaon	14	13
Telangana	Bhupalpally	12	6
Telangana	Mulugu	13	10
Telangana	Mahabubabad	21	15
Telangana	Karimnagar	22	22
Telangana	Peddapalli	23	12
Telangana	Sircilla	15	12
Telangana	Jagitial	22	22
Telangana	Khammam	30	27
Telangana	Bhadradi Kothagudem	34	33
Telangana	Medak	20	20
Telangana	Sangareddy	33	26
Telangana	Mahabubnagar	22	15
Telangana	Narayanpet	13	10
Telangana	J Gadwal	15	10
Telangana	Wanparthy	14	8
Telangana	Nagarkurnool	27	19
Telangana	Siddipet	34	19

ANNEXURE III: TREATMENT OUTCOMES BY DISTRICT

Table 10
Treatment outcomes by district during Jan-March 2021 in Phase I five states and Phase II three states (55 districts), India

State	District	Projected Population for 2020_>30 yrs	Estimated Hypertensives	Number of registration till Dec, 2020
Chattisgarh	Durg, CG	1662947.941	408254	5170
Chattisgarh	Raipur, CG	2090001.879	400235	8946
Karnataka	Chikmagalur, KA	570701	143246	2200
Karnataka	Raichur, KA	832131	172251	608
Kerala	Kannur	1386285	310528	75709
Kerala	Thrissur	1800133	473435	99197
Kerala	Trivandrum	1843782	566041	101143
Kerala	Wayanad	420989	132191	22980
Madhya Pradesh	Bhopal	1199233	317797	34467
Madhya Pradesh	Chindwara	957647	217386	46829
Madhya Pradesh	Ratlam	678963	133756	16600
Madhya Pradesh	Sehore, MP	587836	40561	10537
Madhya Pradesh	Seoni, MP	660438	38966	12676
Madhya Pradesh	Ujjain, MP	947743	72028	8753
Maharashtra	Bhandara	594590	141512	48931
Maharashtra	Chandrapur, MH	1092924	320227	20747
Maharashtra	Gadchiroli, MH	509212	164985	21361
Maharashtra	Gondia, MH	672215	174776	5347
Maharashtra	Kolhapur, MH	2054835	341103	4211
Maharashtra	Palghar, MH	1762288	424711	1154
Maharashtra	Pune, MH	5344314	1549851	1886
Maharashtra	Ratnagiri, MH	799811	179158	3682
Maharashtra	Sangli, MH	1467808	220171	4775
Maharashtra	Satara	1563698	483183	51485
Maharashtra	Sindhudurg	456137	103543	29244
Maharashtra	Thane, MH	4600469	1108713	2016
Maharashtra	Wardha	669807	127263	53826
Punjab	Barnala, PB	1463816	361563	108

Cont_N	Control_%	UnCont_N	UnControl_%	Missed visit_N	Missed visit_%	LTFU _N	LTFU_%	Drug Given _No BP	Drug Given _No BP %
1823	35	1517	29	1670	32	0	1	160	3
3282	36	2085	23	2884	31	151	3	695	8
775	35	462	21	783	36	180	8	0	0
224	37	217	36	153	25	14	2	0	0
26786	35	22668	30	11218	15	15037	20	0	0
17625	18	25732	26	16607	17	39233	40	0	0
27695	27	29498	29	16124	16	27826	28	0	0
3176	14	3718	16	2239	10	13847	60	0	0
9869	29	4396	13	6481	19	13721	40	0	0
17971	38	5721	12	11089	24	12048	26	0	0
8039	48	1791	11	2414	15	4356	26	0	0
3430	33	2226	21	2591	25	2290	22	0	0
4106	32	3046	24	4050	32	1474	12	0	0
2395	27	1600	18	3488	40	1270	15	0	0
24979	51	7888	16	7911	16	8153	17	0	0
7539	36	4391	21	7518	36	1299	6	0	0
7068	33	2724	13	10567	49	1002	5	0	0
1329	25	1069	20	2570	48	379	7	0	0
1408	33	979	23	1562	37	262	6	0	0
262	23	168	15	635	55	89	8	0	0
610	32	429	23	696	37	151	8	0	0
1418	39	976	27	1241	34	47	1	0	0
2178	46	983	21	1274	27	340	7	0	0
15658	30	4275	8	14480	28	17072	33	0	0
13646	47	4059	14	5242	18	6297	22	0	0
761	38	181	9	816	40	258	13	0	0
13866	26	7278	14	12815	24	19867	37	0	0
62	57	34	31	11	10	1	1	0	0

Table 10 contd..

State	District	Projected Population for 2020_>30 yrs	Estimated Hypertensives	Number of registration till Dec, 2020
Punjab	Bathinda	731030	213461	21916
Punjab	Gurdaspur	818849	245655	37697
Punjab	Hoshiarpur	801726	268578	38363
Punjab	Jalandhar, PB	1141395	181482	47
Punjab	Mansa	383439	171397	11728
Punjab	Pathankot*	301385	90416	9114
Telangana	J Bhupallapally	217198	50173	6958
Telangana	J Gadwal, TL	54809	6687	2926
Telangana	Jagityal	492735	94605	
Telangana	Jangoan	277843	62237	12169
Telangana	Karimanagar	502883	96554	14430
Telangana	Khammam, TL	1262290	208278	5104
Telangana	Mahabubabad	379965	87772	8996
Telangana	Mahabubnagar, TL	1705789	208106	5440
Telangana	Mulugu	153569	35475	9908
Telangana	Nagarkurnool, TL	33168	4047	3201
Telangana	Narayanpet, TL	45383	5537	1779
Telangana	Peddapally	397688	76356	15219
Telangana	Rajanna Siricilla	276034	52998	9539
Telangana	Wanparthy, TL	53757	6558	2075
Telangana	Warangal (R)	352488	81425	10143
Telangana	Warangal (U)	530229	122483	15364
West Bengal	Birbhum, WB	1707102	390926	5606
West Bengal	Howrah, WB	2529633	703238	8310
West Bengal	Paschim Medinipur, WB	2983895	671376	4352
West Bengal	Purba Bardhaman, WB	2270739	558602	5446
West Bengal	Purba Medinipur, WB	2532042	415255	7794

Cont_N	Control_%	UnCont_N	UnControl_%	Missed visit_N	Missed visit_%	LTFU _N	LTFU_%	Drug Given _No BP	Drug Given _No BP %
6930	32	1363	6	3610	16	10013	46	0	0
14353	38	4203	11	7336	19	11805	31	0	0
7424	19	3010	8	7506	20	20423	53	0	0
11	23	27	57	5	11	4	9	0	0
3063	26	1281	11	1691	14	5693	49	0	0
2675	29	770	8	2453	27	3216	35	0	0
2826	41	243	3	1425	20	1535	22	0	0
2051	70	765	26	0	0	11	0	0	0
	0	0	0	0	0		0	0	0
5915	49	689	6	1956	16	1917	16	0	0
7518	52	733	5	2090	14	1659	11	0	0
2523	49	1824	36	211	4	27	1	0	0
4075	45	1127	13	884	10	1260	14	0	0
3448	63	1464	27	277	5	19	0	0	0
5895	59	1130	11	1164	12	1040	10	0	0
1819	57	604	19	415	13	19	1	0	0
770	43	215	12	386	22	22	1	0	0
8991	59	1663	11	1632	11	354	2	0	0
6019	63	369	4	1989	21	928	10	0	0
1116	54	441	21	164	8	9	0	0	0
5329	53	486	5	964	10	1988	20	0	0
8649	56	1360	9	1289	8	1795	12	0	0
2683	48	1510	27	1273	23	140	2	0	0
2841	34	2082	25	3080	37	307	4	0	0
1594	37	1276	29	1421	33	61	1	0	0
1647	30	1398	26	2050	38	351	6	0	0
1408	18	1792	23	4299	55	295	4	0	0

ANNEXURE IV: PROJECT CORE TEAM

National level core team

- **Indian Council of Medical Research – Technical lead and implementation partner**

Principal Investigator: Dr. Prabhdeep Kaur, Scientist F and Head of Division of Noncommunicable Diseases, ICMR- National Institute of Epidemiology, Chennai.

Coordinator at ICMR HQ: Dr. Meenakshi Sharma, Scientist G, NCD Division, ICMR HQ, New Delhi

Co-Investigator: Dr. P Ganeshkumar, Scientist D, ICMR-National Institute of Epidemiology, Chennai

- **MoHFW - National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke**

Mr. Vishal Chauhan, Joint Secretary (NCD), MoHFW, New Delhi

Dr. Sudarshan Mandal, DDG, NPCDCS Nodal Officer, DteGHS, MoFHW, New Delhi

Dr. Sunny Swarnakar, DADG, DteGHS, MoFHW, New Delhi

- **WHO Country Office India – Implementation partner**

Dr. Fikru Tullu, Team Leader, NCD, WHO Country Office India

Dr. Abhishek Kunwar, National Professional Officer (NCD)

Dr. Kiran Durgad, Senior CVHO

- **AIIMS, New Delhi – Technical support**

Dr. Ramakrishnan S, Professor of Cardiology, AIIMS, New Delhi

State level technical support by ICMR- Institutions

Dr. Tapas Chakma, Scientist G, National Institute for Research Tribal Health, Jabalpur, Madhya Pradesh

Dr. Sampada Dhayarkar, Scientist D, ICMR- National AIDS Research Institute, Pune, Maharashtra

International technical partner

- **Resolve to Save Lives, an initiative of Vital Strategies**

Dr. Bhawna Sharma, India Lead, Resolve to Save Lives, India

Dr. Anupam Khungar Pathni, Senior Technical Advisor & Deputy lead Cardiovascular Health, Resolve to Save Lives, India

ANNEXURE V: PROJECT GOVERNANCE MECHANISM

Program Steering Group

- Chairperson - Secretary, Ministry of Health and Family Welfare, Government of India
- Co-Chairperson - Secretary DHR and Director General, ICMR
- Convenor - Dr. Meenakshi Sharma, Scientist G, ICMR Hqrs
- Additional Secretary & MD National Health Mission
- Joint Secretary – NCD program/ Director – NCD program
- Director General of Health Services, and/or a representative
- Executive Director, NHSRC
- WHO Representative to India, and/or a representative
- Secretary Health, State governments implementing the project, and/or a representative

Technical Advisory Group

- Chairperson -Dr. Balram Bhargava, DG, ICMR
- Co-Chairperson – Dr. Roderico H. Ofrin, WHO Representative to India
- Convenor - Dr. Meenakshi Sharma, Scientist G, ICMR Hqrs
- WHO - Dr. Fikru Tullu, Dr. Abhishek Kunwar
- ICMR - Dr. Prabhdeep Kaur, Scientist E, NIE, Chennai
- DteGHS – Dr. Sudarshan Mandal, DDG, Dr. Sunny Swarnakar, DADG
- AIIMS - Dr. Ramakrishnan, Professor of Cardiology, AIIMS, New Delhi
- NHSRC – Focal point for HWC
- Resolve to Save Lives Initiative – Dr. Bhawna Sharma, India Country Lead
- Special invitees – Experts
- Two state nodal officers - invited in rotation

ANNEXURE VI: PROJECT TEAMS AT NATIONAL, STATE AND DISTRICT LEVEL

National

- Dr. Shweta Singh, Consultant (IHCI)
- Dr. Ashaish Bhat, Consultant (IHCI)
- Mr. Praveen Kumar, Data Management Coordinator (IHCI)
- Mr. Vishal Sharma, Data Assistant (IHCI)
- Mr. Gaurav Sharma, Data Assistant (IHCI)

ICMR- NIE National Coordinating unit

- Dr. Sailaja Bitragunta, Consultant (Medical)
- Dr. Mohamed Azarudeen, Consultant (Medical)
- Dr. Shubhabrata Das, Consultant (Medical)
- Ms. Jhilam Mitra, Consultant (Non-Medical)
- Mr. Azhagendran. S, Consultant (Non-Medical)
- Mr. Vettrichelvan Venkatasamy, Consultant (Data Manager)
- Ms. Amirthammal Guna Grace, Scientist-C (Data Analyst)
- Mr. Arumugam V, Scientist-C (IT)
- Mr. Prakash, Technical Assistant

Resolve to Save Lives - Technical support team

- Dr. Ashish Krishna, Senior Technical Advisor – Hypertension Control,
- Mr. Swagata Kumar Sahoo, Technical Advisor – Supply Chain
- Ms. Diya Nag, Communications Manager

State Name	State NCD nodal officers	Name of State CVHO	Districts	Name of District CVHO	Name of STS
Punjab	Dr. Sandeep Singh Gill	Dr. Navneet	Bathinda	Dr. Bidisha Das	Mr. Richpal Singh, Ms Rajwant Kaur
			Mansa		Mr. Gobinder Singh
			Barnala		Ms Manpreet Kaur
			Hoshiarpur	vacant	Mr. Rajinder Singh
			Jalandhar		Mr. Sandeep Kumar, Mr. Manish Thakur
			Gurdaspur	Vacant	Mr. Davinder Singh, Mr. Narinder Singh
			Pathankot		Mr. Deepak Mehra
			Amritsar		Mr. Gulshan Kumar
			Fatehgarh Shaib	Dr. Navneet	Ms. Jyoti Gulia
			Ropar		Ms Davinder Kaur
Madhya Pradesh	Dr. Namita Nilkhant	Dr. Jatin Thakkar	Ratlam		Dr. Narender Salvi, Mr. Abhishek Chaurasia
			Ujjain		Mr. Israil Khan
			Barwani		Mr. Vishal Parmar
			Neemuch		Mr. Rakesh Kumar
			Chhindwara	Dr. Rupali Bharadwaj	Mr. Ankit Chourasia, Mr. Ashwin Nikode, Mr. Satyapal, Mr. Umashankar Pawar
			Seoni		Mr. Anand Bhushan Bachekar
			Betul		Mr. Praveen Magarde
			Narsingpur		Mr. Deepak Raghuwanshi
			Hoshangbad	Dr. Jatin Thakkar	Mr. Dev Narayan Khapre
			Guna		Mr. Dharam Raj Mishra
			Bhopal		Mr. Vikas Harod, Mr. Sajid Khan
			Sehore		Mr. Neelesh Dube

State Name	State NCD nodal officers	Name of State CVHO	Districts	Name of District CVHO	Name of STS
Maharashtra	Dr. Padmaja Jogewar	Dr. Amol Wankhede	Satara	Dr. Suhas Namdevrao Khedkar	Mr. Vishal Ashok Mohane
			Sangli		Ms Vrishali Vaibhav Devkar
			Wardha	Dr. Lalit Sarode	Mr. Gajendra Tarale
			Chandrapur		Mr. Sanjay Ravindra Salve
			Bhandara	Dr. Vishwajit Washudeorao Bhardawaj	Mr. Dnyaneshwar Prabhu
			Gadchiroli		Mr. Saurabh Zodape, Mr. Vivek Babanrao Chavan
			Gondia		Mr. Maheshkumar Bhojram Sursaut
			Pune	Dr. Tejpalsinh Anandrao Chavan	Mr. Prathmesh Rameshwar Bhise, Mr. Krishana Jagtap, Mr. Darshana Shivaji Phadtare, Mr. Vaibhav Bhosale
			Sindhudurg	Dr. Sameer Nawal	Mr. Rahul Anand Sokte
			Ratnagiri		Mr. Jitendra Sridhar Chavan
			Kolhapur		Mr. Santosh Ambadas Nannavare, Amarsinh Anandrao Chavan
			Palghar	Dr. Amol Wankhede	Mr. Harshal Anand Yeole
			Thane		Mr. Sumit Gaikwad, Anil Kendre, Ajit Bhalke

State Name	State NCD nodal officers	Name of State CVHO	Districts	Name of District CVHO	Name of STS
Telangana	Dr. Madhavi M	Dr. Thokala Sravan Kumar Reddy	Karimnagar	Dr. Thej Kiran reddy	Mr. Raparthi Rajesh
			Rajanna Sircilla		Mr. Vinod Kumar Challuri
			Peddapalli		
			Jagityal		Mr. Sanjay Thipparthi
			Siddipet		
			Warangal Urban	Dr. Satyendranath Ponna	Mr. Kranti Kumar reddymala
			Warangal Rural		Mr. Kondle Anil
			Jangaon		Mr. Srinivas Vijigri
			Mulugu		Mr. O. Vijay Kumar
			Jayashankar Bhupalpally	Dr. Suresh Uppiretla	Mr. Banoth Ramesh
			Mahabubabad		Ms. Marsakatla Suneetha
			Khammam		Mr. Katipaka Sathyanarayana
			Bhadradi Kothagudem	Dr. Mohammed Abdul Wassey	Mr. Easwaraiah
			Gadwal		
			Mahabubnagar		Mr. G. Ravi Kumar
			Narayanpet		Ms Mudam Uha Sri
			Wanparthy		Mr. Pole Tarun kumar
			Nagarkurnool	Dr. Thokala Sravan Kumar Reddy	Mr. Srinivasulu Mushtooru
			Sangareddy		Mr. Koninti Manaiah
			Medak		
Kerala	Dr. Bipin K. Gopal	Dr. A Branch Immanuel	Trivandrum	Dr. A Branch Immanuel	Ms. Arima , Soumya T R
			Kollam		Mr. Abhishek
			Allepey		Mr. Antony A.K.
			Wayanad	Vacant	Mr. Anurenj
			Kozhikode		Mr. Muhammed Afsal A,
			Kannur		Mr. Jobins Joseph
			Kasargod	Dr. Deenadayalan Chandran	Mr. Anoop Jacob
			Thrissur	Dr. Yannick Poulouse Puthussery	Mr. Shinto P.J., Sinto George
			Ernakulam		Ms Shruti Chendra, Mr. Amalu Joshy

State Name	State NCD nodal officers	Name of State CVHO	Districts	Name of District CVHO	Name of STS
Andhra Pradesh	Dr. TVSN Sastry	Dr. Raghavendra Patel Chittumella	Krishna		Mr. Mala Chinna Huseni
			Visakhapatnam		Mr. Muduvath Ravinder
West Bengal	Dr. Somnath Mukharjee/ Dr. Subhransu Dutta	Dr. Subhasis Bhandari	Birbhum		Mr. Kumar Manglam Chowdhury
			Howrah		Mr. Ujjwal Halder
			Purba Medinipur		NA
			Paschim Medinipur		
			Purba Bardhaman		
			Alipurduar		
			Cooch Behar		
			Darjeeling		
			Jalpaiguri		
			Uttar Dinajpur		
Karnataka	Dr. Rangaswamy H.V.	Dr. Gopinath Thirugnana Sambandam	Chikmagalur		Mr. Vijay Uddappa Kallimani
			Raichur		Mr. Basavaraj
Chhattisgarh	Dr. Mahendra Singh	Dr. Urvin Kumar Shah	Raipur		Mr. Rahul Roy
			Durg		Mr. Atul Kumar Shukla
Uttar Pradesh	Dr. Alka Sharma	Dr. Abhinav Kadia	Varanasi	Dr. Lalita	Mr. Nandan Kumar Mishra
			Allahabad	Dr. Abhinav Kadia	Mr. Rajesh Kumar
			Lalitpur		Mr. Anurag Srivastava
			Jhansi		Mr. Anuj Chaudhary
Bihar	Dr. Rajesh Kumar	Dr. Bharath J	Vaishali		Mr. Jaibhardhan Siddharth
			Muzaffarpur		Mr. Ankit Kumar
			Purnia		Mr. Himanshu lal
			Rohtas		Mr. Babban Kumar
			Jamui		Mr. Shekhar Kapoor
Sikkim	Dr. Sangeeta Pradhan		East Sikkim/ North Sikkim		Mr. Palden Tshrereng Bhutia
			South Sikkim/ West Sikkim		Mr. Tenzin Tashi
Puducherry	Dr. Ramesh / Dr. Duraisamy				Ms. Devanga Akshita
Tamil Nadu	Dr. Jerard Selvam/ Dr. MS Hemalatha (CMO, GCC)		Chennai		Ms. Ramya/ Ms Ezhil
Jharkhand	Dr. L R Pathak	Dr. Madhur Raimule	Bokaro		Ms. Shweta Shaleeni
			Ranchi		Mr. Viresh Kumar Mishra

State Name	State NCD nodal officers	Name of State CVHO	Districts	Name of District CVHO	Name of STS
Rajasthan	Dr. R. N Meena	Dr. Piyush Gupta	Churu		Mr. Chetan Sharma
			Bikaner		Mr. Sanjay Kumar
Gujarat	Dr. Hiren Bhagora	Dr. Chakshu Chandrakant Joshi	Surat		Mr. Monu Pathak
			Rajkot		Ms. Shyalu Chalisery
Nagaland	Dr. Kevichusa Medikhru		Mokokchung		Mr. Lanutemsu
			Kohima		Mr. Rhokuotho
Goa	Dr. Rupa Naik		North and South		Dr. Yuga Bhatkar
Haryana	Dr. Rekha Singh	Dr. Hanspreet Shekhon	Yamunanagar		Mr. Devendra Singh Dhakar
			Sirsa		Ms Sukhmandeep Kaur
Odisha	Dr. Sushant Swain	Dr. Manoj Patroni	Rayagada		
			Kalahandi		Mr. Arjeet Sith
			Balangir		Mr. Guram Akhil
Jammu and Kashmir	Dr. Praveen YograJ, SPM J & K Dr. Junaid Kousar Division, Kashmir Dr. Vijay Kumar Sharma Division, Jammu	Dr. Asif Jeelani	Udhampur		
			Kupwara		
Mizoram	Dr. Jeremy L Pautu	Dr. Aiswarya Laxmi	Aizawl		Ms. Catherine Lianhlupuii
			Kolasib		
Tripura	Dr. Supriya Mallik		South		Ms. Kakali Noatia
Assam	Dr. Rahul Sharma, SPO	Dr. Gunjan Nath	Dibrugarh		Mr. Krishna Khadda
			Barpeta		

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