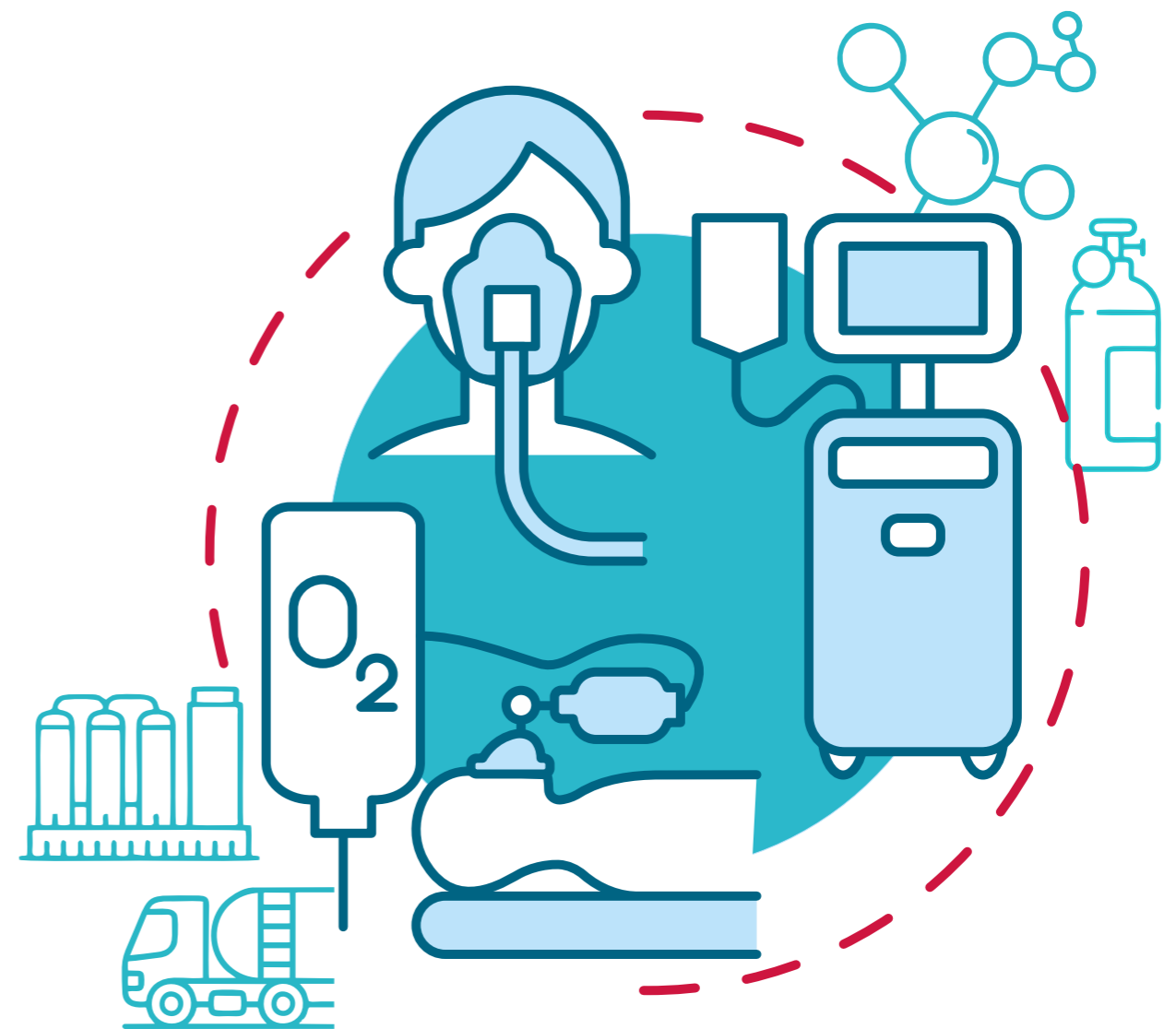




## Technical Support Units for Better Health Outcomes

Insights from USAID NISHTHA's Assistance in  
Strengthening Oxygen Ecosystem in India



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We hope that this document on establishing Technical Support Units (TSUs) for medical oxygen with the health departments in the states and the learnings out from the entire process will contribute to more effective engagement of the technical capacities available with the development partners in strengthening future public health initiatives in India and help us prepare better for any future health emergency.

### **Disclaimer:**

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## ACRONYMS

<b>API</b>	Application programming interface
<b>CCMS</b>	COVID Care Management Systems
<b>GoI</b>	Health and Wellness Centre
<b>LMO</b>	Liquid Medical Oxygen
<b>LMS</b>	Learning Management System
<b>MoHFW</b>	Ministry of Health and Family Welfare
<b>NHA</b>	National Health Authority
<b>NOSP</b>	National Oxygen Stewardship Program
<b>OC</b>	Oxygen Concentrator
<b>OCMIS</b>	OxyCare Management Information System
<b>ODAS</b>	Oxygen Demand Aggregation System
<b>PMU</b>	Project Management Unit
<b>PSA</b>	Pressure Swing Adsorption
<b>ToT</b>	Training of Trainers
<b>TSU</b>	Technical support unit
<b>USAID</b>	United States Assistance for International Development

## BACKGROUND

The year 2020 marked the outbreak of COVID-19, one of the biggest pandemics in the global history. Countries around the world, including India, witnessed a rapid surge in infections that nearly collapsed their health systems. During the second wave of COVID-19, the situation turned grimmer, with the graph of infections rising exponentially and oxygen crisis reaching its peak. Multiple issues such as the lack of hospital beds, inadequate oxygen supply, irrational use of oxygen, and lack of trained health care service providers among others, further challenged public health systems in India, which was already struggling with the increasing COVID-19 caseload. Medical oxygen, a key factor in COVID-19 treatment, became a scarce commodity in India, with many states in the country struggling to produce, procure, and supply enough for its hospitals.

As the second wave witnessed an even bigger rise in infections and huge oxygen crisis, establishing oxygen resources across health facilities became one of the major focus areas for the government of India (GoI). Before the pandemic, medical oxygen in India was mostly supplied through oxygen cylinders and liquid medical oxygen (LMO) tanks. As the country had not undertaken an emergency deployment of such a massive medical infrastructure in the past, rapid installation, commissioning, and operationalization of these oxygen resources on a war footing were big challenges. Moreover, there was very limited biomedical engineering expertise, bringing in management of medical services; nonavailability of technical guidelines and standard operating procedures, procurement specifications, and regulatory mechanisms for these resources. In addition to these challenges, time was a crucial factor, with interventions needing quick turnaround time.

In April 2020, the United States Assistance for International Development (USAID) provided supplemental COVID-19 Emergency Response Funding to NISHTHA for providing need-based responsive technical assistance at the national level as well as in 13 Indian states (Maharashtra, Assam, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura) to strengthen the country's response towards the COVID-19 emergency. In May 2021, as the country was reeling under the severe oxygen supply demand chasm, USAID extended the emergency response funding to improve access and availability of medical oxygen in the country. Incidentally, Jhpiego was also working with USAID on a COVID Rapid Response project wherein they were required to help governments in increasing the access to medical oxygen. As PATH was already providing technical support to the states through its respiratory care program and had technical expertise in medical oxygen systems, Jhpiego provided PATH with a subgrant of the USAID NISHTHA project to support implementation of the project in six states in India. and PATH collaborated to extend the technical support to state and national governments for

augmenting and strengthening the oxygen supply chain management and access to medical oxygen in six states in the country, in addition to supporting them in rapid installation and commissioning of PSA plants.

The six states selected for PATH's technical assistance for oxygen management through USAID NISHTHA were Delhi National Capital Territory, Jharkhand, Karnataka, Maharashtra, Odisha, and Rajasthan. These states were selected by USAID, Jhpiego, and PATH by taking into account several factors, such as states with high COVID-19 caseloads (Delhi, Maharashtra, Karnataka), size of the population, cities with rapidly spreading infections or hotspots (such as Delhi), and Empowered Action Group states (such as Jharkhand, Rajasthan, and Odisha), and then juxtaposing them with states where USAID NISHTHA was already active. PATH, under the USAID NISHTHA project, started supporting the state governments by initiating consultations with the state governments on establishment of state-level technical support units (TSUs) for oxygen management. The TSU approach was agreed to by the state governments for assistance in accelerating state-wide response to demand for medical oxygen.

PATH set up state TSUs in each of the six states, with a team of professionals having a diverse set of skills and experience, such as data scientists, public health professionals, engineers, management professionals, and other support staff. These state TSU teams were supported by PATH's national level oxygen task force which was setup during the pandemic to deal with health emergency that the country was reeling under. The task force had members with years of technical expertise and operational management experience. The state teams were mandated to provide both strategic and project management support, along with providing technical assistance to the state authorities to enhance their preparedness to respond to any future emergencies. Apart from improving the oxygen infrastructure and access to medical oxygen by microplanning and forecasting, the TSUs also supported the state's efforts to coordinate with multiple stakeholders working in the oxygen space at the national, state, and facility levels and assisted them in achieving a coordinated response to oxygen demand, thus strengthening the overall oxygen ecosystem.

This document dives deeper into the role of these six state TSUs in strengthening the oxygen management systems, highlighting their contributions and impact on the overall oxygen ecosystem in the states. The document also captures the experience of TSUs, including both the challenges faced by them and the opportunities they came across during their collaborations with the government, private sector, and other agencies while providing the required technical assistance. Lastly, the document intends to not only illustrate the states' unique experiences while receiving technical assistance on oxygen management but also draw out lessons from their experiences for all future health programming.

## SECTION I: ROLE OF TECHNICAL SUPPORT UNITS IN IMPROVING OXYGEN MANAGEMENT

Over the course of the project, TSUs played a critical role in supporting governments to enhance, expand, and sustain their response to the elevated demand for medical oxygen. They assisted the governments in fast-tracking the commissioning, effectively operating, and sustainably maintaining the oxygen generators or the PSA plants, LMO tanks, oxygen concentrators and cylinders to make facilities at the district, block, and community levels self-sufficient in oxygen.

Furthermore, the state TSUs also contributed to ensuring on-ground implementation of national and state initiatives for strengthening the oxygen ecosystem and ensuring long-term operation and utilization of the resources deployed during the pandemic. Towards this, the state TSU teams supported the governments in developing the road map for oxygen ecosystem development, with the goal of making the states self-sufficient in oxygen and adequately prepared for future health emergencies requiring oxygen therapy. The four key approaches that the state TSUs adopted for providing technical assistance to the states are illustrated in the figure below and are described in subsequent parts of this section.

### a. Improving Oxygen Governance

To mitigate the impact of COVID-19 crisis, TSUs extended comprehensive support to all the six project states in undertaking various interventions to strengthen their health systems, such as enhancing multistakeholder coordination, supporting oxygen governance initiatives such as oxygen task forces and war rooms, facility profiling and assessment, and assistance in rationalizing use of oxygen through audits.

“ Maintaining uninterrupted coordination among multiple stakeholders can lead to effective and synchronous implementation of program interventions. Coordination should be multidimensional and inclusive of all relevant stakeholders for addressing different aspects of the interventions, bringing about a comprehensive and effective impact. ”

Dr Ashalata Pati

### Enhancing multistakeholder coordination

State TSUs helped in liaising with multiple stakeholders such as government agencies and departments as well as private and civil society, development partners, involved in the management of medical oxygen across different levels of the public health infrastructure. Resultantly, the state government's coordination with multiple stakeholders improved, leading to a more comprehensive, timely, and efficient management of oxygen systems and initiatives. Such coordination helped in implementing numerous initiatives such as faster installation and operationalization of oxygen equipment and seamless rolling out of digital platforms for oxygen management such as facilitating the adoption and management of the OxyCare portal, OxyCare Management Information System (OC-MIS) (as in Karnataka and Rajasthan), and Oxygen Demand Aggregation Systems (ODAS) (as in Delhi, Karnataka, Odisha, and Rajasthan). Furthermore, TSUs supported the state and district authorities in their preparation for and participation in multiple center- and state-level meetings on medical oxygen management. The TSUs collected and provided reports on oxygen demand, installation, commissioning and operational status of PSA plants and LMO tanks, among others. As a result of this assistance, the states were able to provide a more accurate update on oxygen-related actions and the need for additional support during the meetings with the GoI bodies, such as the Ministry of Health and Family Welfare (MoHFW). With a localized approach, TSU's addressed issues specific to states, from advocating with state government for oxygen skill lab development in Maharashtra to improving reporting formats for medical oxygen in Rajasthan and mentoring district health and administration officials of deployment and use of Oxygen Concentrators in Karnataka. As a result of such support states were able to ensure that the oxygen infrastructures were in functional readiness in the health facilities.

### Supporting oxygen governance initiatives such as oxygen task forces and war rooms

In the wake of COVID-19 crisis, several states in India constituted oxygen war rooms, committees, and task forces for strengthening the supply of oxygen to

the health facilities. The TSUs supported district-wise oxygen demand analysis and predicted oxygen demand for various scenarios. They contributed to these initiatives through stakeholder coordination, data collection from all facilities, and its compilation in structured formats for analysis and decision-making. For example, in Delhi, the state government had constituted two special task forces—one to manage COVID-19 among children and another to improve health care infrastructure in the state which included augmenting the medical oxygen ecosystem. The Delhi TSU coordinated with different state agencies to gather the data related to oxygen demand and consumption for evidence-based decision-making during these task forces' meetings. The states TSUs of Rajasthan and Karnataka also supported in data collection, demand estimation, and forecasting on oxygen demand and supply. Similarly, Odisha and Maharashtra constituted district-level taskforces to tackle the COVID-19 caseloads and manage oxygen demand and supply. In addition to providing the district-level task forces with the analysis of oxygen-related data, the TSUs in the two states also followed up with the state government to ensure that the review meetings are held on schedule. TSU teams regularly and frequently coordinated with various agencies and officials in their respective states to ensure continuity and sustainability of these task forces, as they were extremely crucial for seamless monitoring of the situation and timely action. TSU staff members, who were integrated into various oxygen-related committees at the state level, also assisted in drafting and development of policy guidelines on strategies for oxygen source management in the state.

### **Supporting facility profiling and assessment**

For an efficient and adequate supply of oxygen resources across the states, the TSUs assisted the states in conducting facility profiling and assessments at the state and district levels to assess the availability of oxygen beds, number of health care workers, etc., and develop district-wise oxygen management plans and determining buffer stock requirements. The infrastructure assessment for the installation of PSA plants and LMO tanks was conducted by the TSUs as per the World Health Organization's guidelines. As per the gap assessment, the Delhi TSU team prepared an assessment report to allot facility-wise PSA plants

and LMO tanks in Delhi. The Rajasthan TSU's state-wide report on public health facilities helped in identifying high-focus facilities and enhancing the oxygen infrastructure and human resources for maintaining them. Additionally, Karnataka TSU's gap analysis report for oxygen sources and respiratory equipment led to the development of a plan for ICU bed augmentation at district and subdistrict hospitals for COVID-19 future wave preparedness. Along with Karnataka, other state TSUs also helped their respective states in compiling the status report on Emergency COVID Response Plan-II.

### **Assistance in rationalizing the use of oxygen through audits**

The TSUs supported the states in preparing the Oxygen Interim Audit report for their respective states, which was directed by the National Task Force, constituted by the Hon'ble Supreme Court. For example, the TSU in Rajasthan trained members of the audit team, who were selected by the Divisional headquarters and were a mix of medical, nursing, paramedical, and engineering resources, orientated them about the process, and compiled the audit report.

### **b. Augmenting Oxygen Capacities**

In the wake of widespread oxygen crisis, TSUs also supported the governments in rolling out various strategies and state-specific roadmaps to augment their oxygen capacities and increase their self-sufficiency.

### **Facilitating rapid operationalization of PSA plants and LMO tanks**

During the COVID-19 crisis, one of the biggest challenges was to ensure adequate medical oxygen to critical patients. In order to ramp up the supply of medical oxygen, TSUs started helping the states with augmenting their oxygen capacities by supporting the state governments in fast-tracking the operationalization of PSA plants and LMO tanks. The TSU teams extensively coordinated with various government agencies, departments, plant manufacturers and vendors, facility-level staff, PSA supplier company nodal officers, and service engineers during the plant delivery, installation, and

commissioning. The TSUs extended their support beyond the scope of coordinating with stakeholders, assisting in the installation and commissioning of the Gol-approved PSA plants, as they also facilitated the operationalization of PSA plants funded by corporate's philanthropic efforts under their Corporate Social Responsibility (CSRs), district funds, members of parliament and members of legislative assembly funds, and funds from other central and state agencies.

The state TSU teams also captured and collated data to determine the noncommissioned plants in the state regularly to help the state leadership focus on the noncommissioned PSA plants and undertake the rapid commissioning of these plants. The TSUs in every state organized meetings at the district levels with the state government leadership to nudge the facilities to work toward operationalizing the PSA plants in their facilities. For instance, in Karnataka, the team organized meetings with District Health Officers and Executive Engineers of various districts under the chairmanship of the Commissioner, Health and Family Welfare (HFW) to expedite the commissioning of PSA plants and also prepared a report on the status of various plants and submitted it to the Commissioner, HFW.

### **Extending monitoring and supervisory support**

Monitoring and supervision were integral to ensuring that the interventions were sustainable and workable in the long run. The state TSU teams undertook site visits to the health facilities where oxygen systems were being installed and commissioned to support them in effectively operating the oxygen equipment, providing facility-specific solutions to issues arising from the functioning of the equipment, and connecting the facility in-charges with the relevant people for troubleshooting support and technical guidance.

“ Technical know-how of oxygen generation plants, information gap filling, effective coordination, and regular follow-ups with stakeholders, like the Health Ministry officials, the state officials, district teams, engineers, vendors, CSR agencies, and donors, were some of the crucial efforts by the TSU that enabled successful installation and commissioning of 243 PSA plants in the state of Karnataka. The state acknowledges and appreciates TSU's contribution and support during COVID-19 pandemic along with strengthening the state's oxygen ecosystem.”

Dr Anil MH,  
*PATH State Lead, Karnataka*

### **Supporting mock drills on PSA plants**

Mock drills were conducted by the government for all installed and commissioned PSA plants to ensure that they are in a fully operational state. The TSUs supported the states in coordinating the implementation of these drills, helped in data compilation, and also coordinated with the vendors for rectification of the technical issues that came up during these mock drills in various facilities. Furthermore, certain TSUs have also adopted implementation methods such as supportive supervision visits to ensure that PSA plants are functional.

### **c. Training and Capacity Strengthening**

Capable and well-trained human resources were an essential requirement for smooth operations, effective troubleshooting, and proper maintenance of the oxygen equipment along with proper management of the oxygen ecosystem in the states. The massive second wave of the COVID-19 crisis brought to light the health sector's acute scarcity of skilled nonmedical personnel.

TSUs provided regular training and capacity-strengthening assistance on the management of the oxygen ecosystem and rational use of oxygen to human resources at various levels of the public health infrastructure including state, district, and facility levels. The TSU teams also supported numerous government-initiated and government-led capacity-strengthening initiatives such as the National Oxygen Stewardship Program (NOSP) and trainings by

the Ministry of Skill Development and MoHFW such as the 10-hour training by Regional Directorate of Skill Development and Entrepreneurship.

State TSUs organized training-of-trainers programs to provide hands-on and theoretical training on oxygen equipment management and maintenance.

### **National Oxygen Stewardship Programme (NOSP)**

The NOSP initiative aimed to empower all health care workers engaged in oxygen management and administration with the essential knowledge and skills to ensure rational utilization of oxygen, especially in resource-constrained settings. It envisaged identifying and training at least one "oxygen steward" in each district across the country. These trained professionals led the training on oxygen therapy and management in their respective districts and also support an audit of oxygen delivery and preparedness for a surge scenario. The TSUs in the six USAID NISHTHA supported states coordinated this NOSP by the GoI and circulated the guidelines and training materials for the same. Furthermore, they provided technical assistance in report compilation, ensuring stewards attend the launch and training programs, and enhancing communication between the state and national government as well as between the state government and district administration for facilitating the NOSP.

### **Developing knowledge products**

Other than workshops, online trainings, and on-site capacity-building, the TSU teams also worked toward enhancing knowledge management systems in the states. In consultation with the knowledge management experts at USAID NISHTHA, TSUs developed various knowledge products, such as Guidebook on Medical Oxygen Management Systems, posters on oxygen management, case studies, and training modules on various aspects of oxygen system management. TSUs contributed to the states in developing and managing knowledge around oxygen systems and clinical management, equipping them with accurate and enhanced knowledge to mitigate all future crises.

## **d. Digital Interventions**

Digital solutions and effective utilization of information technology during the COVID-19 pandemic proved to be a key ingredient in improving and accelerating the efforts of health care systems. The TSUs played a key role in effective use of digital solutions to expedite oxygen response in the six states.

### **Supporting government innovations**

TSUs provided advocacy, technical expertise, data handling, coordination, capacity-strengthening, and project management support to the states in the deployment of digital tools developed by the central and state authorities.

All the TSUs in the six USAID NISHTHA supported states were involved in regularly updating data on the GoI PSA portal. ODAS was one of the most critical initiatives by the National Health Authority (NHA) for oxygen systems' management in the country. The OxyCare portal and OC-MIS were instrumental in monitoring oxygen equipment in the states, including OCs and cylinders, during the pandemic. The TSUs in Karnataka, Maharashtra, Delhi, and Rajasthan were involved in the implementation of this system across the states through data compilation and coordination support. Furthermore, the TSU team in Karnataka coordinated with the NHA, Oxygen Project Management Unit (PMU), MoHFW, and the National Informatics Centre for application programming interface (API) integration of ODAS with the state oxygen demand management system portal. The TSU team supported data validation, checked the accuracy of data transferred from the state portal to the ODAS portal, and facilitated beta-testing of API linkage completion in coordination with state National Informatics Centre, NHA ODAS, and the oxygen PMU team. In Maharashtra, the team provided technical support for coordination between the state agency, which created the COVID Care Management Systems (CCMS) portal for the state, and the GoI, and NHA for successful data integration between CCMS and ODAS. There were many technical issues that came up with the CCMS portal and Maharashtra TSU coordinated with the state's public health department and NHA officials in resolving these issues. The team also trained officials on various aspects of the operation of the



portal, including how to upload and manage data on the portal.

Oxygen cylinders continue to be the backbone of the oxygen systems in the states due to high accessibility and adoption among facilities. State TSUs were involved in implementing innovative solutions to ensure effective monitoring and information transparency about the oxygen cylinders available in the state. For example, QR-tag based cylinder monitoring initiative was supported by Delhi TSU, which not only supported the state in drafting the tender document for purchasing QR tags for oxygen cylinders and in optimizing the cylinder tracking platform but also in developing digital solutions for PSA monitoring. A PSA module was developed as part of government's COVID-19 management portal where data related to PSA could be entered by the hospitals.

### Facilitating e-learning platforms

TSUs supported enhancement of capacities for oxygen management by helping the states create a pool of skilled technical staff for better handling oxygen ecosystem. Leveraging technology, USAID NISHTHA developed an e-learning system, including a learning management system (LMS) and e-training modules, for enhancing capacities of health professionals on oxygen management. The system was developed as an easy-to-access holistic LMS to encourage self-learning. Along with the content availability in English, the modules are also available in Hindi for effective transfer of knowledge to non-English, Hindi-speaking health personnel. TSUs assisted not only in the development but also in the testing and rollout of these e-learning initiatives.

## SECTION 2: CHALLENGES AND OPPORTUNITIES

While providing technical support to the states for improving oxygen systems, the TSUs came across few challenges and hindrances along with some incredible opportunities. This section documents the challenges the TSU experienced and how they were mitigated and navigated. This section also highlights the opportunities that came before the TSUs and how they used them to extend the required technical support to the states.

### Challenges

#### Initial challenge to gain acceptance:

As TSUs were an external agency, outside of the governments' machinery, the government systems accepting them and trusting them with crucial roles and responsibilities was a challenge for some states. Some states took a bit longer to accept the idea of receiving assistance from TSUs for a major crisis such as COVID-19. Officials at both the state and district levels were often found to be apprehensive of an external agency being so closely involved with their day-to-day functioning. The TSU teams had to showcase their expertise and commitment toward the cause to gain their trust. Constant coordination, regular interactions, and efficient delivery of results gradually helped the TSUs in gaining acceptance of the government stakeholders.

“Oxygen TSU was truly provided crucial and timely support needed by the state. Besides development of oxygen ecosystem, it has also helped us in developing rapport with the state and gaining their confidence in PATH team for providing technical assistance. During our engagement with the state, we did not restrict ourselves to the oxygen work only and TSU team supported the state in every possible way even going beyond our scope of work. This has helped us in leveraging the support from the state for many project interventions including maternal new born and child health (MNCH), comprehensive primary health care (CPHC), Rice Fortification, COVID diagnostics, Ayushman Bharat Digital Mission (ABDM), Integrated Public Health Labs (IPHL), and others”

Dr Satish Tajne

PATH State Lead, Maharashtra

### **Frequent reorganization of government systems:**

Frequent transfers of government officers, especially those at the decision-making levels, also posed challenges for the TSU teams in maintaining regular coordination. States such as Delhi and Rajasthan often faced such issues during the course of the COVID-19 crisis. These state TSU teams, thus, had to channelize a lot of their energy into building relationships with every new official who came on board, particularly at the decision-making positions.

### **Managing the workload and timely delivery of results:**

As the COVID-19 crisis was at its peak in all six states at the time of TSU formation, the teams were given no time to ease into the system and their roles. From the very start, they had to take on multiple responsibilities and were pulled in various directions. The workload was heavy, which became more challenging with the availability of only a few team members. Some states also faced difficulties in coordinating with district-level officials to get the required and accurate data. States such as Karnataka faced issues with civil work departments to get the oxygen equipment installations done on time, which further added to the work pressure.

### **Tackling disruptions due to crisis:**

COVID-19 was unlike any other health emergency. As soon as the TSUs began their work, many regions went into complete lockdown, bringing nearly all services to a standstill, for example only roads could be used for travelling from one place to other, hotels, restaurants and similar services were completely shut to prevent further transmission of the virus. Despite the disruptions, the TSU teams were focused on delivering results. TSU teams worked hard to keep things moving, kept visiting the various health facilities, ensuring the oxygen generation plants are installed and commissioned, while coordinating with various supply chain network stakeholders, government and non-government officials. In the process, many team members contracted the deadly infection and the organization ensured full care for recovery. Other team members worked from home when necessary and visiting government offices as needed while taking necessary precautions. To prevent the spread of

infection, all COVID-19 protocols and norms were followed, including social distancing, hand hygiene, and the use of face masks. Coordination through digital media, such as the formation of WhatsApp groups, also contributed to the TSUs delivering results on time.

## **Opportunities**

### **Providing the required emergency support in times of crisis:**

At the beginning of the second wave of COVID-19, almost all the six states were facing multiple issues from high caseloads, lack of oxygen supply, unavailability of hospital beds to dearth of trained professionals. They not only needed programmatic support but also required help in terms of planning and strategizing to overcome the crisis. In such a scenario, the TSUs extended the required multidimensional support to them, bringing in technical expertise along with planning and supervisory assistance. Assistance from TSUs significantly helped the states in managing the crisis in a more efficient and effective manner. This helped cement the need for TSUs among key decision-makers in the state and helped the TSUs establish their credibility and credentials.

Facilitating center-state coordination: During the course of the project, the TSUs got opportunities to facilitate coordination between central government and state government officials, acting as a bridge between central and state officials for regular and smooth flow of information. In addition, the teams were a part of all national-level meetings and sometimes were positioned by the state as their representatives, which was a result of their technical assistance on oxygen management.

### **Improving oxygen data management at both state and national levels:**

When TSUs started working in the states, oxygen data management was the biggest issue. TSUs started working on data collection and compilation from different state- and district-level agencies, collating them and analyzing them to develop into meaningful reports and regularly submitting them even at the

national level. The team also developed standardized data collection formats, trained professionals in data management systems and supported states to develop online real-time digital data repository and analytics platforms. These interventions contributed not only to data management but also in intervention planning, strategizing, and decision-making processes in the six states. As a result, all the six states have well-functioning digital data platforms, their data are streamlined, and they no longer have any issue with oxygen data management.

“ I feel immense satisfaction looking at the contributions made by Rajasthan TSU in strengthening the oxygen management systems in the state, during and after the peak of COVID-19 pandemic. Our timing for pitching in with the TSU was apt as the situation demanded the same. Our objectives were very clear as we wanted to support the state in fast-tracking commissioning of PSA plants and rolling out digital interventions for better management of the oxygen requirements. I believe one of the biggest reasons for the success of TSU in Rajasthan was that the objectives of the TSU were completely aligned with the requirements of the state at that critical point of time. ”

Arun Nair

*PATH State Lead, Rajasthan*

## SECTION 3: LESSONS LEARNT AND RECOMMENDATIONS

### **Technical expertise required for extending TSU support:**

Providing technical assistance needs both knowledge and skills. In order to establish a TSU, the organization should have a pool of human resources effectively skilled in the areas of expertise the role requires. For instance, each of the oxygen state TSU had a team of a public health coordinator, an engineer, a data scientist, a team leader, and a few additional support staff. Each of them had a specific role to play while providing assistance to states' COVID-19 oxygen response and had required knowledge about the crisis they were dealing with.

### **Ensuring privacy and confidentiality is crucial while handling sensitive data and information:**

While assisting the governments in crisis management, TSUs should pay special attention to issues such as data confidentiality and data privacy. As data on oxygen was sensitive at the time of crisis, maintaining data privacy and confidentiality and preventing data manipulation and its misuse became the biggest responsibilities for TSU teams when the sensitive data and information were shared with them from various levels of government systems. Carelessness on these fronts can have drastic repercussions, hence losing the trust of the government stakeholders in the process. PATH recruited professionals with very high levels of integrity and skilled in data management as part of the TSU team. Additionally, special orientation of the entire team was done on data privacy issues and its efficient management to prevent any mishappening.

### **Efficient and timely delivery of results needed to gain the confidence of the system:**

For many states, it has been observed that in the starting days of TSU formation and operations, there had been apprehensions among the government and other stakeholders regarding their capacity and intent to provide the required support. To beat these initial doubts and fears, TSUs had to work very efficiently and effectively, meeting all the deadlines and putting their best foot forward in every assignment.

### **Aligning the organizational agenda with the government's priorities is a prerequisite for an effective TSU:**

As all TSUs are established to extend support to the governments, they must align their objectives with the priorities of the respective governments. Although the TSUs could

propose the areas where they intend to provide the support, they must be completely aligned with the objectives of the governments they are supporting. Regular discussions must be held by the TSUs with the government stakeholders to understand their needs and requirements and accordingly modify their courses of action. In states such as Delhi and Karnataka, the TSUs have developed their terms of reference of work by having in-depth discussions with government stakeholders. Other state TSUs have also adopted the strategy of holding regular and frequent discussions with government counterparts in order to be fully aligned with the government plans and approaches. This prevents any confusion regarding work and development of any kind of mistrust among the TSUs and the government.

**Collaboration with private and other development partners in the region multiplies the impact:**

At every state where the TSUs were providing support, there had also been a host of private and other development stakeholders present. Each one of them had a common objective of providing required help and support to the government in mitigating the COVID-19 crisis. Collaborating constructively with various stakeholders had a multiplier effect on the results. Rather than working in disconnected verticals, the six TSUs engaged with all the relevant stakeholders in the region, leveraging their strengths and working together to bring about greater and more effective impact.

**Diversifying roles and responsibilities of TSU has an advantage for future programming:**

TSUs are established for specific objectives, mostly delivered within a short course of time. Nevertheless, the relationships built, the knowledge gained, and the skills acquired during the course of a TSU operation are extremely helpful for all future programming in the region. Encouraged by the support TSUs extended in delivering oxygen-related solutions, the state health departments of all the six states are reaching out to the TSUs for support in many other areas of health interventions such as infectious diseases, maternal and child health, and so on. While it was not possible for the TSUs to respond comprehensively to all the requests, still they paved the way for establishment of all future programmatic support structures in the region. With required resources, TSUs can increase and diversify their scope of interventions providing assistance in other health intervention areas.

“ In Jharkhand, the establishment of oxygen TSU and its successful implementation has gained government recognition for PATH and widened our opportunities to provide technical support in other areas such as Reproductive, Maternal, Newborn Child plus Adolescent Health (RMNCH+A), Integrated Public Health Labs- Block Public Health Units (IPHL-BPHU), and Comprehensive Primary Health Care (CPHC). It has given us opportunities to support the states as per their requirements. ”

Abhijeet P. Sinha

*PATH State Lead, Jharkhand*

**Every technical assistance arrangement need not be a TSU:**

Though the oxygen state TSU experience under the NISTHA project had been a successful and an encouraging one, yet it is not recommended to establish TSUs for every intervention. The TSUs are more such as special purpose vehicle, with clearly defined mandate and an end date. They are specialized structures usually established for a short period of time for critical interventions requiring fast-paced and skilled assistance such as the COVID-19 crisis. The team is generally comprised of highly skilled professionals. The resources are also pooled for short term and channelized with the intent to mitigate an acute crisis. It is, therefore, recommended to conduct a fair needs assessment of the assistance or intervention required before establishing a TSU for it. Assistance strategy should be developed considering all the aspects of technical operations and management for that particular intervention.

## SECTION 4: CONCLUSION

Establishment of TSUs in the six states significantly helped improve the states' response in mitigating the oxygen crisis and establishing long-term sustainability of oxygen systems. The TSU teams worked closely with the government stakeholders, providing timely and necessary support in all major areas of medical oxygen interventions. By virtue of being involved in daily management of oxygen response, the teams became equipped in designing strategies and approaches for dealing with the crisis more effectively. The technical expertise of the TSU team members, be it of the data analyst, the public health coordinator, the engineer, or the monitoring, evaluation, and learning specialist, has truly added strategic value to the efforts of the state governments. As mentioned earlier, the TSUs have not only improved the health infrastructure but also enhanced the capacities of the human resources in the health systems, making the systems more robust, efficient, and sustainable.

Though TSU is considered to be one of the best approaches to adopt for mitigating an emergency such as COVID-19, which needed high-intensity technical support, attention should be given in mitigating the challenges in establishment of the TSUs and its operations. Building relationships with stakeholders, especially from the government, and being aligned with the needs and requirements of the government would truly help in gaining the trust and acceptance required for TSU operations in the region. While managing critical operations, special focus should be on areas such as data confidentiality and appropriate management of sensitive data. Constructive collaborations with all relevant stakeholders would surely help in magnifying the impact. During the course of oxygen TSU operations, it was realized that a host of constructive relationships were built by the TSU team with stakeholders from diverse areas, along with the enhancement of technical knowledge and skills of the team, all of which could prove extremely helpful for all future programming in the region. Familiarity with the systems, especially government systems, and successful delivery of results have boosted the confidence of TSU teams to cater to requests for technical assistance needed for other health priorities. Teams can learn from the experiences of oxygen TSUs in order to develop their technical assistance strategies and approaches for all future interventions.

## NOTE:

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