

REPORT

Dated 29/06/2026

National Capacity Building Programme on Medical Oxygen Management, at AIIMS Patna

Under the guidance of the Ministry of Health & Family Welfare, Government of India, and AIIMS New Delhi, the Department of Hospital Administration at AIIMS Patna successfully conducted the National Capacity Building Programme on Medical Oxygen Management – Training of Trainers (ToT). Healthcare professionals from Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Uttar Pradesh, Sikkim, Tripura, and West Bengal participated in the program.

The session started with a Pre-Training Assessment to assess participants' prior understanding of the oxygen ecosystem and healthcare facilities' oxygen management practices.





MINISTRY OF HEALTH & FAMILY WELFARE GOVERNMENT OF INDIA



National Capacity Building Programme on Medical Oxygen Management

'Training of Trainers (ToT)' in Oxygen Management for MS, DMS, Faculty In-charge (Medical Gases) & SNOs

Date: 15th June 2026, AIIMS Patna

Venue: E - Class Room, Admin Building, AIIMS Patna

Time	Duration	Activity	Facilitators
09:00 AM - 09:15 AM	15 mins	Registration	
09:15 AM - 09:30 AM	15 mins	Questionnaire: Oxygen Ecosystem in Hospitals in India	Dr. Toney Joseph Resource person, Dept. of Hosp. Admin., AIIMS New Delhi
09:30 AM - 10:00 AM	30 mins	Oxygen Ecosystem and various sources of oxygen	Prof. (Dr.) Vijaydeep Siddharth Dept. of Hosp. Admin, AIIMS New Delhi
10:00 AM - 10:15 AM	15 mins	Inauguration & Release of Training Guidance Document	
10:15 AM - 10:30 AM	15 mins	Tea break	
10:30 AM - 11:15 AM	45 mins	Oxygen Management in Paediatrics and Neonates	Dr. Puneet Kumar Choudury Asst. Prof., Dept. of Pediatrics, AIIMS Patna
11:15 AM - 11:45 AM	30 mins	Oxygen Management in Adults	Prof. (Dr.) Chandni Sinha Dept. of Anesthesia, Pain Medicine and Critical Care, AIIMS Patna
11:45 AM - 12:30 PM	45 mins	Planning & Designing for MGPS Facility and Regulatory Compliances	Prof. (Dr.) Vijaydeep Siddharth Dept. of Hosp. Admin, AIIMS New Delhi
12:30 PM - 13:00 PM	30 mins	Quality Assurance, Patient Safety and Oxygen Stewardship	Dr. Sujeet Kumar Sinha Addl. Prof., Dept of Hosp. Admin. AIIMS Patna
13:00 PM - 14:00 PM	1 hours	Lunch Break	
14:00 PM - 16:00 PM	2 hours	Site Visit : (Participants are divided into two/three groups)	
16:00 PM - 16:15 PM	15 mins	Tea Break	
16:15 PM - 16:45 PM	30 mins	Post Training Assessment	
16:45 PM - 17:00 PM	15 mins	Debriefing, Way forward and closing remarks	

Participating States: Assam, Arunachal Pradesh, Bihar, Chhattisgarh, Delhi, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Uttar Pradesh, Sikkim, Tripura, and West Bengal

Inaugural Ceremony

The formal inauguration of the programme was graced by distinguished dignitaries including:

- **Prof. (Brig.) Dr. Raju Agarwal, Executive Director, AIIMS Patna**
- **Prof. (Dr.) Punam Prasad Bhadani, Dean (A), AIIMS Patna**
- **Prof. (Dr.) Prashant Kumar Singh, Medical Superintendent, AIIMS Patna**
- **Prof. (Dr.) Vijaydeep Siddharth, Dept. of Hospital Admin., AIIMS New Delhi**
- **Prof. (Dr.) Chandni Sinha, Department of Anaesthesiology & Deputy Medical Superintendent, AIIMS Patna**



The ceremonial lamp, which represents a search of excellence and knowledge in healthcare, was set off to start the ceremony. Bouquet were given to the dignitaries as a show of gratitude.

In his Welcome Address, Dr. Sujeet Kumar Sinha, the training's Nodal Officer, emphasized the importance of strengthening healthcare systems through effective oxygen management.

Prof. (Dr.) Chandni Sinha and Prof. (Dr.) Vijaydeep Siddharth then spoke, stressing the significance of patient safety, readiness, and capacity building.

Prof. (Brig.) Dr. Raju Agarwal delivered the keynote address, highlighting the vital role that a strong oxygen infrastructure and qualified medical personnel play in guaranteeing high-quality patient care and healthcare resiliency.

The inaugural ceremony concluded with a Vote of Thanks proposed by Dr. Ramkrishna Mondal, followed by the National Anthem and group photograph.

Academic Sessions

Session 1: Oxygen Ecosystem and Various Sources of Oxygen

Speaker: Prof. (Dr.) Vijaydeep Siddharth

A thorough review of the medical oxygen ecosystem in hospitals was given throughout the event, which included a variety of oxygen sources, including cylinders, oxygen concentrators, PSA plants, and liquid medical oxygen (LMO). It was underlined how crucial it is to guarantee a consistent and dependable supply of oxygen through adequate infrastructure, planning, and backup plans.





Session 2: Oxygen Management in Paediatrics and Neonates

Speaker: Dr. Puneet Kumar Choudhary

The specific needs of oxygen therapy for pediatric and newborn patients were the main topic of this session. Participants learned about safe oxygen delivery, monitoring methods, and approaches to avoid oxygen-related problems while guaranteeing the best possible care for infants and young children.

Session 3: Oxygen Management in Adults

Speaker: Prof. (Dr.) Chandni Sinha

The fundamentals of oxygen therapy for adult patients in a variety of clinical situations were covered in the workshop. Oxygen delivery equipment, patient monitoring, proper oxygen use, and best practices for treating patients with respiratory conditions and critical care requirements were important subjects.

Session 4: Planning and Designing for MGPS Facility and Regulatory Compliances

Speaker: Prof. (Dr.) Vijaydeep Siddharth

The key elements of Medical Gas Pipeline Systems (MGPS), such as planning, design concerns, operational safety, and maintenance requirements, were emphasized during the workshop. In order to guarantee safe and effective oxygen distribution within healthcare institutions, regulatory standards and compliance criteria were also reviewed.



Session 5: Quality Assurance, Patient Safety, and Oxygen Stewardship

Speaker: Dr. Sujeet Kumar Sinha

The importance of patient safety and quality control in oxygen management was highlighted in the final session. In order to promote effective use of oxygen supplies while upholding high patient standards, participants were introduced to oxygen stewardship principles, monitoring systems, and best practices.





Site Visit

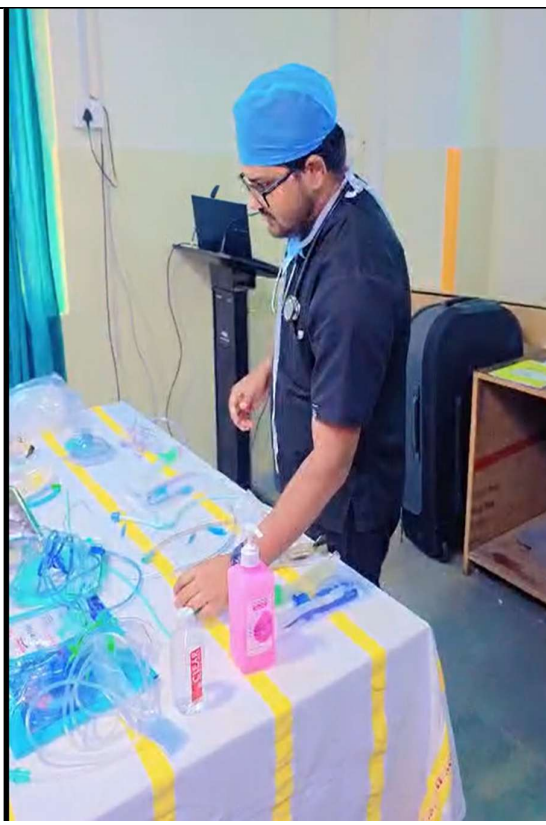
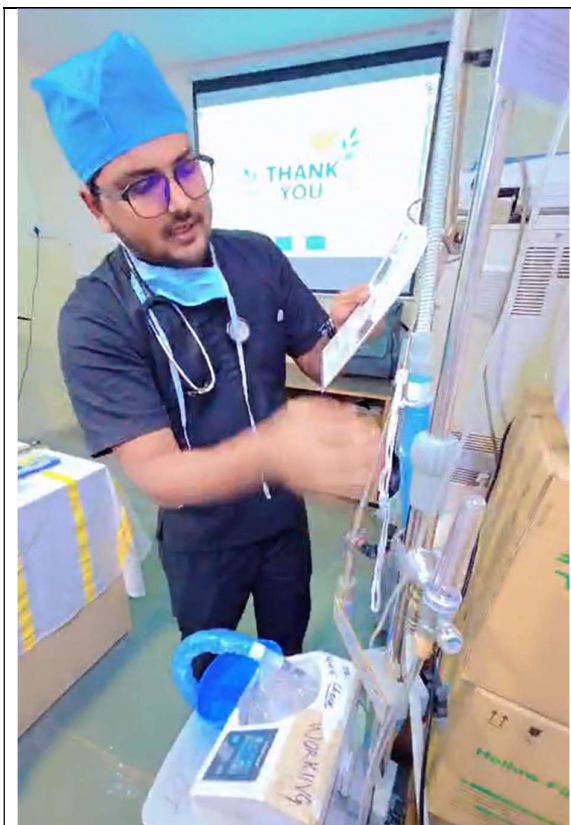
The site visit, which took participants to the Medical Gas Pipeline System (MGPS) Facility at AIIMS Patna, was a significant practical component of the program. The visit offered visitors a firsthand look at the hospital's oxygen infrastructure, including its production, storage, distribution system, and operating elements.





Furthermore, oxygen management techniques in critical care environments were demonstrated. In the adult intensive care unit (ICU), Dr. Tulika gave a demonstration of oxygen management procedures and critical care techniques; in the pediatric intensive care unit (PICU), Dr. Amit Gupta gave a demonstration of oxygen treatment and patient care procedures. Participants were able to comprehend the real-world application of oxygen management concepts through these demonstrations, which also served to reinforce the ideas discussed in the academic sessions.





Valedictory Session

Participants completed the Post-Training Assessment at the end of the program to assess the knowledge they had learned.

Dr. Sujeet Kumar Sinha then gave the final remarks and talked about how to improve medical oxygen management systems in healthcare facilities going forward.

A Vote of Thanks was held at the end of the event to thank the Ministry of Health & Family Welfare, AIIMS New Delhi, AIIMS Patna, faculty, organizers, and attendees for their important contributions.

In appreciation of their active participation and contribution to the program's effective execution, certificates of participation and keepsakes were given to all participants, instructors, and organizers.

About 85 healthcare professionals, including physicians and nursing officers, actively participated in the program, which received an incredible reaction. Its goals of developing a network of qualified professionals dedicated to improve patient safety and healthcare readiness nationwide and strengthening the knowledge and abilities of healthcare workers in medical oxygen management were effectively accomplished.



Recommendations

The program's discussions, technical seminars, and hands-on demonstrations led to the following recommendations:

1. To guarantee ongoing expertise in medical oxygen management, regular training programs and courses should be offered to physicians, nursing officers, biomedical engineers, and administrators.
2. Healthcare facilities should routinely evaluate and improve their systems for producing, storing, and distributing oxygen, as well as make sure they have sufficient backup plans.
3. Hospitals must set up routine oxygen consumption, MGPS performance, and safety standard compliance monitoring and auditing systems.
4. Encouragement of oxygen stewardship for sensible and fact-based oxygen use.
5. To further spread the information and best practices acquired from this course, participants should serve as trainers inside their respective organizations.
6. Additionally, healthcare facilities need to examine and update their emergency response protocols and oxygen backup plans on a regular basis.

Key Takeaways from the Oxygen Management, Ventilation, and Medical Gas Pipeline Systems Capacity Building Program

1. Accuracy and lung protection are essential for neonatal ventilation

- The first ventilator settings should be customized, with the lowest FiO₂ necessary to maintain target oxygen saturation, tidal volumes of 6–8 mL/kg, and PEEP of 5–6 cm H₂O.
- To avoid ventilator-induced lung damage, ongoing monitoring and prompt setting adjustments are crucial.

2. Target-driven oxygen therapy is necessary.

- As a therapeutic intervention, oxygen should be administered and closely watched.
- In order to prevent both hypoxemia and hyperoxia, target SpO₂ ranges should be maintained based on patient categorization.
- Clinical requirement and patient age should be taken into consideration while choosing oxygen delivery equipment.

3. The Foundation of Safe Mechanical Ventilation is Lung-Protective Ventilation

- Key concepts include low tidal volume breathing (≤ 6 mL/kg estimated body weight), driving pressure < 15 cm H₂O, and plateau pressure < 30 cm H₂O.
- In order to reduce lung damage caused by ventilators, permissive hypercapnia may be tolerated.

4. Evidence-based standards must be used in the design of medical gas pipeline systems.

- International standards including ISO 7396-1:2016, HTM 02-01, and NFPA 99 should be followed throughout planning and implementation.
- With design flow rates of roughly 1 L/min for general beds and 15 L/min for ICU and operating room beds, precise oxygen demand estimate is essential.

5. Being Prepared Requires Knowing How to Calculate Oxygen Requirements.

- Healthcare facilities must be able to calculate oxygen demand and translate needs into cylinder capacities and equivalent liquid medical oxygen (LMO).
- Accurate forecasting ensures that oxygen is always available for both routine operations and emergencies.

6. Keeping an eye on oxygen consumption improves sustainability and efficiency.

- Periodic oxygen audits, structured manual records, and real-time monitoring systems all aid in maximizing utilization and minimizing waste.
- Data-driven management boosts operational effectiveness and resource planning.

7. The Importance of Interdisciplinary Collaboration

- Clinicians, biomedical engineers, hospital administrators, and planning teams must work closely together for efficient oxygen management and medical gas infrastructure.
- Regulatory compliance, system dependability, and patient safety all depend on capacity growth and ongoing training.

Overall Point:

To provide high-quality patient care and improve the readiness of healthcare facilities, safe oxygen therapy, lung-protective ventilation, evidence-based infrastructure planning, and ongoing monitoring are essential.

Dr Sujeet Kumar Sinha
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