

India Medical Oxygen Market By Form (Liquid Oxygen, Compressed Oxygen, Oxygen Gas Mixture), By Delivery Mode (Tanks/Pipeline, Cylinder, Others), By Application (Therapeutic, Diagnostics), By End User (Hospitals & Clinics, Ambulatory Care Centers, Homecare, Others), By Region, Competition Forecast & Opportunities, 2020-2030F

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Abstracts

India Medical Oxygen Market was valued at USD 382.23 Million in 2024 and is anticipated to project impressive growth in the forecast period with a CAGR of 7.25% through 2030. Medical oxygen, an indispensable element of healthcare, refers to oxygen utilized for medical purposes to aid patients with respiratory ailments and those necessitating oxygen therapy. It comprises high-purity, compressed, or liquid oxygen conforming to stringent medical criteria and administered under healthcare professional supervision. Various delivery methods, such as oxygen masks, nasal cannulas, high-flow nasal cannula systems, and mechanical ventilators, are employed based on patient condition and oxygen needs. In emergency medicine and critical care, medical oxygen plays a pivotal role, furnishing life-saving assistance to individuals experiencing respiratory distress or oxygen saturation challenges. Storage methods include high-pressure cylinders, liquid oxygen tanks, or on-site generation through specialized equipment, necessitating meticulous handling and storage for purity and safety preservation.

The burgeoning demand for medical oxygen is propelled by ongoing enhancements in healthcare infrastructure, encompassing the establishment of novel hospitals, clinics, and healthcare facilities. As the healthcare landscape expands, so does the requisite oxygen supply. The rising uptake of home healthcare services, particularly oxygen

therapy for chronic respiratory conditions, contributes to this demand, with home healthcare entities and suppliers assuming a pivotal market role.

Continuous research and developments are fostering technological breakthroughs in oxygen generation and delivery systems, potentially yielding more efficient and cost-effective methodologies, thereby stimulating market expansion. The imperative for healthcare emergency preparedness underscores the importance of medical oxygen storage and availability, ensuring healthcare facilities are suitably equipped to tackle crises, including pandemics and natural disasters. Heightened awareness regarding the significance of medical oxygen in healthcare, particularly in underserved rural regions, fuels market growth as more individuals seek access to healthcare facilities and oxygen therapy.

Key Market Drivers

Technological Advancements

Oxygen concentrators represent cutting-edge devices leveraging advanced filtration and concentration technology to extract oxygen from the surrounding air. Portable and ensuring a continuous oxygen supply, they are predominantly utilized for home oxygen therapy, offering superior convenience and cost-efficiency in contrast to traditional oxygen cylinders.

The integration of Internet of Things (IoT) technology facilitates real-time monitoring and management of oxygen supply systems. IoT sensors track oxygen levels, system performance, and consumption, furnishing healthcare providers with invaluable data for enhanced patient care and resource allocation. Cryogenic storage systems, employing ultra-low temperatures to store oxygen as a liquid, enable the storage of larger oxygen volumes in a smaller footprint. Commonly deployed in expansive healthcare facilities and industrial settings, they optimize space utilization.

Precision is ensured through the deployment of advanced flow control devices and regulators, facilitating accurate regulation and delivery of oxygen to patients, thereby maintaining prescribed oxygen flow rates. Oxygen concentration monitors play a pivotal role in continuously assessing the oxygen percentage in the gas stream, guaranteeing patients receive the appropriate oxygen concentration during therapy.

On-site oxygen generation systems, such as Pressure Swing Adsorption (PSA) and Vacuum Pressure Swing Adsorption (VPSA), empower healthcare facilities to self-

generate medical oxygen, reducing reliance on external suppliers and ensuring a consistent supply. Innovations in portable oxygen systems, encompassing lightweight oxygen cylinders, backpack oxygen systems, and wearable oxygen delivery devices, enhance patient mobility and flexibility during therapy.

Purity analyzers and monitoring systems continuously evaluate the purity of medical oxygen, ensuring adherence to established quality standards. Telehealth and remote patient monitoring solutions enable healthcare providers to remotely monitor patients' oxygen levels and vital signs, particularly beneficial for individuals undergoing home oxygen therapy. Advancements in oxygen delivery modes, such as high-flow nasal cannula (HFNC) systems and non-invasive ventilation, enhance patient comfort and treatment outcomes, particularly in critical care scenarios. The evolution of energy-efficient oxygen generation systems reduces operational costs and environmental impact, particularly advantageous in resource-limited healthcare environments.

Emergency Preparedness

Public health crises like the COVID-19 pandemic can trigger sudden and overwhelming surges in medical oxygen demand, necessitating hospitals and healthcare facilities to stockpile medical oxygen, establish extra oxygen generation capacity, and ensure a robust distribution network. Large-scale accidents, mass casualty incidents, or acts of terrorism can lead to abrupt patient influxes requiring oxygen therapy. Emergency preparedness measures entail protocols for accessing supplementary oxygen resources and outfitting first responders with portable oxygen systems.

Infrastructure breakdowns such as power outages or equipment malfunctions can disrupt medical oxygen supply. Emergency preparedness entails deploying backup power sources like generators and devising contingency plans to sustain oxygen supply. Hospitals and healthcare facilities must expand surge capacity during emergencies, often involving the establishment of temporary treatment areas or field hospitals necessitating reliable medical oxygen sources.

Strategies for swift medical oxygen transportation and distribution to affected areas are integral to emergency preparedness, involving specialized oxygen transport vehicles, coordination with oxygen suppliers, and ensuring safe storage and delivery. Regulatory agencies and healthcare authorities mandate detailed emergency preparedness plans inclusive of medical oxygen supply provisions, compelling healthcare institutions to maintain adequate medical oxygen inventories.

Beyond hospital-centric preparedness, communities and local health departments must also be primed for emergencies, ensuring access to medical oxygen for individuals under home healthcare. In major disasters or health crises, India may extend medical oxygen as international aid, underscoring the need for surplus medical oxygen production capacity and a well-prepared oxygen supply system. Public awareness campaigns associated with emergency preparedness often emphasize the necessity of having medical oxygen readily available for individuals with specific medical conditions like chronic obstructive pulmonary disease (COPD) or asthma during disasters, potentially influencing the pace of demand growth in the India Medical Oxygen Market.

Increased Awareness

Awareness campaigns, educational initiatives, and public health programs serve to enlighten individuals about the importance of respiratory health. These endeavors underscore the pivotal role of medical oxygen in managing respiratory conditions, potentially motivating more individuals to seek medical attention and oxygen therapy as necessary. Heightened awareness regarding the prevalence of chronic respiratory ailments such as chronic obstructive pulmonary disease (COPD), asthma, and interstitial lung disease can spur demand for medical oxygen, particularly among diagnosed individuals who recognize oxygen therapy as integral to their treatment regimen. Awareness of available home oxygen therapy options can further drive demand among those requiring extended oxygen support, as understanding its benefits may prompt patients with chronic conditions to opt for this form of therapy. India bears a disproportionate share of the global burden of chronic respiratory diseases. Despite accounting for 15.69% of global cases, the country reports 30.28% of all global fatalities linked to these conditions. With 55.23 million cases, India leads the world in the prevalence of Chronic Obstructive Pulmonary Disease (COPD). Alarming, it also records the second-highest number of global COPD-related deaths, totaling nearly 0.85 million annually.

Public outreach initiatives concerning emergency preparedness can inspire individuals to secure access to medical oxygen for natural disasters, power outages, or other unforeseen emergencies. Enhanced awareness of oxygen's life-saving significance may consequently elevate demand. The COVID-19 pandemic notably heightened awareness of medical oxygen's critical role, particularly among individuals previously unaware of its importance, accentuating its pivotal role in managing severe respiratory illness. Advocacy organizations and patient support groups play a crucial role in raising awareness about medical oxygen, advocating for enhanced access to oxygen therapy, and potentially influencing policy changes to expand access.

Well-informed healthcare providers, including physicians and respiratory therapists, are more inclined to prescribe oxygen therapy when warranted, thereby contributing to increased demand as patients receive appropriate care. Improved awareness surrounding early diagnosis and screening for respiratory conditions may result in more individuals identified as candidates for oxygen therapy.

Key Market Challenges

Supply and Demand Imbalance

The COVID-19 pandemic triggered an unparalleled upsurge in medical oxygen demand, driven by the urgent need for oxygen therapy among severely ill patients. Healthcare facilities and hospitals found themselves inundated, grappling with a critical shortage of medical oxygen. India's existing medical oxygen production capacity proved inadequate to meet the sudden surge in demand, with production plants operating at or near maximum capacity, leaving minimal room for maneuverability.

Challenges emerged within oxygen distribution networks and logistics, particularly concerning the swift and efficient transportation of oxygen from production sites to healthcare facilities, notably in rural and remote areas. Insufficient storage infrastructure and the absence of medical oxygen stockpiling compounded the difficulty of establishing reserves for emergency situations. Oxygen production, typically operated on a just-in-time basis, offered scant leeway for accommodating demand spikes.

Disparities surfaced in oxygen distribution, with urban centers and major hospitals disproportionately receiving oxygen allocations, leaving smaller healthcare facilities and rural regions underserved. Transportation hurdles, encompassing roadblocks and delays in oxygen tanker movements, impeded the seamless delivery of oxygen to hospitals in need. Amid worsening pandemic conditions, instances of panic buying and hoarding of medical oxygen cylinders and concentrators by individuals and healthcare entities intensified the supply-demand imbalance, exacerbating the crisis.

Pricing and Cost Concerns

Fluctuations in medical oxygen prices, particularly during periods of heightened demand such as health crises like the COVID-19 pandemic, can pose challenges for healthcare institutions. Price volatility strains budgets and complicates oxygen expense planning. Emergencies drive up the costs associated with medical oxygen production, storage,

transportation, and distribution, raising concerns about affordability and budgetary constraints for healthcare facilities. Economic disparities exacerbate uneven access to affordable medical oxygen, with smaller healthcare facilities, clinics, and rural hospitals particularly vulnerable to pricing pressures from suppliers, impacting patient care.

Patients requiring home oxygen therapy for chronic conditions may encounter affordability hurdles, facing challenges in covering the expenses of oxygen concentrators, cylinders, and refill costs. High prices create treatment and adherence barriers. Healthcare institutions, particularly those in resource-limited settings, grapple with the strain of elevated oxygen prices on budgets, potentially diverting resources from other vital healthcare services. The regulatory landscape governing medical oxygen prices and quality standards significantly influences pricing and cost considerations. Striking a balance between affordability and maintaining quality standards remains imperative. Reports of price gouging by certain suppliers during health crises exacerbate affordability concerns and raise ethical questions in healthcare.

Key Market Trends

Shift Towards On-Site Oxygen Generation

On-site oxygen generation systems, such as Pressure Swing Adsorption (PSA) and Vacuum Pressure Swing Adsorption (VPSA) technologies, offer a multitude of advantages over conventional oxygen supply methods, leading to their increasing adoption within healthcare facilities across India.

The primary catalyst driving the transition towards on-site oxygen generation is the imperative for enhanced self-reliance and dependability in oxygen provisioning. Healthcare institutions, particularly those situated in remote or underserved areas, frequently encounter hurdles in securing a consistent and cost-efficient stream of medical oxygen from external vendors. On-site oxygen generation systems effectively tackle this challenge by empowering healthcare facilities to autonomously produce medical oxygen as needed, thereby diminishing reliance on external suppliers and ensuring an uninterrupted and dependable oxygen supply.

On-site oxygen generation systems yield substantial cost savings over the long term. Unlike conventional oxygen supply methods, such as cylinder or liquid oxygen delivery, which incur ongoing operational expenses and logistical complexities, on-site oxygen generation systems present a more economically viable and operationally efficient alternative. Once implemented, these systems entail minimal maintenance and

operating costs, rendering them financially appealing to healthcare facilities aiming to streamline their oxygen supply chain. On-site oxygen generation systems offer heightened adaptability and scalability in oxygen production. Healthcare facilities can readily adjust oxygen production levels in response to fluctuating demand, guaranteeing the availability of an adequate medical oxygen supply to meet patient requirements at all times. This flexibility proves particularly advantageous during health crises, such as the COVID-19 pandemic, where the demand for medical oxygen can surge unpredictably.

Increasing Emphasis on Telehealth And Remote Patient Monitoring Solutions

With advancements in technology and the proliferation of digital healthcare platforms, telehealth has become an integral component of healthcare delivery, especially during the COVID-19 pandemic. This trend is driving the demand for medical oxygen in India in several ways. Telehealth enables healthcare providers to remotely monitor patients' oxygen levels and vital signs from a distance, particularly beneficial for individuals receiving home oxygen therapy. By leveraging telehealth solutions, healthcare professionals can ensure timely interventions and adjustments to oxygen therapy regimens, thereby improving patient outcomes and reducing the need for in-person visits, especially in regions with limited access to healthcare facilities.

The integration of remote patient monitoring devices and sensors into telehealth platforms allows for continuous monitoring of oxygen saturation levels, providing real-time data to healthcare providers. This proactive approach to patient care enables early detection of deteriorating respiratory conditions and facilitates prompt interventions, potentially preventing complications and hospitalizations. As a result, there is a growing demand for medical oxygen to support remote patient monitoring initiatives and telehealth interventions across India.

Telehealth solutions facilitate seamless communication and coordination among healthcare providers, patients, and caregivers, enhancing care coordination and patient management. By remotely accessing patients' oxygen data and medical records, healthcare teams can collaborate more effectively, ensuring comprehensive and personalized care for patients requiring oxygen therapy. This increased collaboration and coordination drive the need for a reliable and accessible supply of medical oxygen to support telehealth-enabled healthcare delivery models.

Segmental Insights

Form Insights

In 2024, the India Medical Oxygen Market largest share was held by Compressed Oxygen segment. Compressed oxygen stands as the predominant and widely embraced form of medical oxygen, extensively utilized across diverse healthcare settings encompassing hospitals, clinics, and home healthcare. Its ubiquitous presence in medical applications underscores its status as the most prevalent form of medical oxygen. Renowned for its established reliability and efficacy, compressed oxygen represents a trusted technology for administering medical oxygen, garnering trust and assurance among both healthcare professionals and patients alike. Favoured for its versatility, compressed oxygen serves as a cornerstone in critical medical scenarios, catering to the oxygen needs of patients grappling with severe respiratory ailments, undergoing surgical procedures, or encountering emergency situations. Its pivotal role in facilitating life-saving interventions underscores its significance as a primary choice in healthcare settings.

Application Insights

In 2024, the India Medical Oxygen Market largest share was held by Therapeutic segment and is predicted to continue expanding over the coming years. The healthcare institutions primarily catered to by the therapeutic segment encompass hospitals, clinics, and home healthcare services. Medical oxygen stands as an indispensable component in numerous medical treatments, particularly for patients afflicted with respiratory conditions, heart ailments, and other health issues. Its utilization spans across respiratory support, oxygen therapy, and various medical procedures.

Hospitals, whether public or private, emerge as key consumers of medical oxygen, necessitating a steady and dependable supply to address the diverse medical needs of patients, spanning critical care units, surgical theaters, and emergency departments. India exhibits a notable prevalence of respiratory disorders like chronic obstructive pulmonary disease (COPD), asthma, and pneumonia, with patients afflicted by these conditions often requiring medical oxygen as an integral aspect of their treatment regimen. In this context, the therapeutic segment assumes a pivotal role in furnishing oxygen therapy to cater to the needs of such individuals.

Regional Insights

The North India region dominates the India Medical Oxygen Market in 2024. North India hosts some of the nation's most densely populated states, including Uttar Pradesh,

Bihar, and Delhi. The region's larger populace translates to heightened demand for healthcare services, prominently including medical oxygen. North India boasts a comparatively denser concentration of healthcare facilities, comprising hospitals and clinics, intensifying the call for medical oxygen. North India commands a significant industrial and economic footprint, encompassing sectors such as manufacturing and pharmaceuticals. These industries necessitate substantial quantities of medical oxygen for diverse applications, ranging from production processes to laboratory procedures. Consequently, the industrial activity prevalent in the region substantially fuels the demand for medical oxygen.

Key Market Players

Philips India Limited

Wipro GE Healthcare Pvt. Ltd.

Siemens Healthcare Private Limited

Nidek Medical India

India Medtronic Pvt Ltd

Hitachi India Pvt. Ltd.

Accuray Medical Equipment India Pvt. Ltd

DeVilbiss Healthcare pvt Ltd.

Trivitron Healthcare Pvt. Ltd

Sanrad Medical Systems Private Limited

Report Scope:

In this report, the India Medical Oxygen Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

India Medical Oxygen Market, By Form:

India Medical Oxygen Market By Form (Liquid Oxygen, Compressed Oxygen, Oxygen Gas Mixture), By Delivery Mode (...)

Liquid Oxygen

Compressed Oxygen

Oxygen Gas Mixture

India Medical Oxygen Market, By Delivery Mode:

Tanks/Pipeline

Cylinder

Others

India Medical Oxygen Market, By Application:

Therapeutic

Diagnostics

India Medical Oxygen Market, By End-User:

Hospitals & Clinics

Ambulatory Care Centers

Homecare

Others

India Medical Oxygen Market, By region:

North India

South India

East India

West India

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the India Medical Oxygen Market.

Available Customizations:

India Medical Oxygen Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

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Detailed analysis and profiling of additional market players (up to five).

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