

Mechanical Ventilators Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028F Segmented By Product Type (Intensive Care Unit/Critical Care, Transport/Portable/Ambulatory, and Neonatal Care), By Interface (Non-invasive Ventilation and Invasive Ventilation), By End User (Hospital & Clinic, Home Care, and Ambulatory Surgical Center), By Region, Competition

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## **Abstracts**

The Global Mechanical Ventilators Market was valued at USD 3.7 billion in 2022 and is expected to experience robust growth in the forecast period with a CAGR of 6.1% through 2028. A mechanical ventilator is a device that assists patients in breathing (ventilation) during surgeries or when they are unable to breathe independently due to critical illness. Patients are connected to the ventilator through a hollow tube (artificial airway) inserted into their mouth and extending into their main airway or trachea. The two primary methods of mechanical ventilation are positive pressure ventilation, where air is forcibly delivered into the lungs, and negative pressure ventilation, where air is drawn into the lungs through movement of the chest. Mechanical ventilators are commonly used in the treatment of respiratory ailments, strokes, chronic obstructive pulmonary disease, and other medical conditions. Mechanical ventilation is a life-sustaining technique that assists patients with severe illnesses in maintaining vital breathing functions.

**Key Market Drivers:** 

Increase in the Geriatric Population: The growing geriatric population and the



prevalence of chronic respiratory disorders are expected to drive the demand for ventilators. Increased awareness of lung cancer symptoms and a higher number of patients in medical facilities contribute to significant market growth for ventilators. However, it is important to consider that the use of mechanical ventilation may pose certain risks, such as an increased risk of infection and potential lung damage. These factors should be taken into account when assessing the market growth potential of mechanical ventilators.

Surging Prevalence of Chronic Obstructive Pulmonary Disease (COPD): The rising prevalence of COPD and other disorders, including sleep apnea, acute lung injury, and hypoxemia, are the main drivers of market growth. Additionally, the increasing number of preterm births and the rapid growth of the geriatric population are expected to further accelerate market expansion. Furthermore, the high prevalence of tobacco smoking, a leading cause of respiratory diseases, will significantly contribute to market growth. According to the World Health Organization (WHO), currently, around 90% of COPD deaths occur in low- and middle-income countries. As a result, the global market is expected to witness growth due to the increasing prevalence of such diseases, introduction of new products, and the availability of cost-effective, portable, and user-friendly mechanical ventilators for respiratory treatment. For instance, in August 2020, Spicejet introduced Spiceoxy, a portable non-invasive ventilation device. The rising awareness among end users is expected to drive demand in the forecast period.

#### Increasing Demand for Home Healthcare:

Home healthcare, including home ventilation, can be more cost-effective compared to extended hospital stays or long-term care in medical facilities. Home care can also reduce the burden on healthcare systems by freeing up hospital beds for more critical cases. Many patients prefer receiving medical care, including ventilatory support, in the comfort of their own homes. Home healthcare offers greater autonomy, better quality of life, and reduced exposure to hospital-acquired infections. Furthermore, the advantages of home healthcare such as convenience and comfort coupled with the cost advantages are also expected to fuel market growth. Additionally, increasing healthcare infrastructure and rising disposable income will lead to high demand for home healthcare, thus acting as a significant driver for the market. Moreover, the rising awareness among the patients regarding the respiratory diseases also cushions the market's growth within the forecasted period.

#### **Technological Advancement**



Technological advancements, such as rapid innovation in the field of Positive Airway Pressure (PAP) devices, enhanced portability, and improved battery life of transport and portable devices, serve as key drivers in promoting the utilization of mechanical ventilators. In April 2020, InnAccel Technologies announced the development of a noninvasive ventilation system designed for ICU use with COVID-19 patients. This system, engineered and manufactured in India, addresses the needs of patients experiencing deteriorating hypoxemia. Furthermore, the versatility of this system allows for application across various settings and clinical scenarios, eliminating the need for continuous electricity or a trained breathing therapist. The emergence of technological advancements in ventilators, combined with the increasing number of intensive care beds (ICU), will contribute to the market's growth. Furthermore, the growing adoption of non-invasive ventilators is anticipated to drive the demand for Mechanical Ventilators. Non-invasive ventilation employs various interfaces and has continuously evolved to prioritize patient comfort and effectiveness. In recent decades, non-invasive ventilation through nasal or facemask delivery has gained recognition in supporting both chronic and acute ventilatory failure.

Key Market Challenges

High Cost of Operation

Operating a hospital involves substantial fixed costs, such as building maintenance, utilities, and equipment purchases. With lower patient volumes in rural areas, these fixed costs become a more significant burden on the facility's budget. Rural hospitals often have limited access to capital and financial resources compared to larger urban hospitals. They may struggle to invest in expensive medical equipment like mechanical ventilators, which can impact patient care capabilities. Budgetary constraints faced by small healthcare facilities are also expected to restrict the adoption of Mechanical Ventilators. Rural and suburban hospitals strive to provide patients with the highest quality of care while simultaneously overcoming challenges posed by their remote geographic location, limited workforce, small size, and constrained financial resources. The low patient volumes in rural hospitals make it challenging for these organizations to manage the significant fixed costs associated with hospital operations. Consequently, they become particularly susceptible to policy and market changes, as well as to Medicare and Medicaid payment reductions.

Risks Associated with the Ventilators Usage

Ventilator-associated pneumonia is a common complication in patients on mechanical



ventilation. It occurs when bacteria enter the lungs through the ventilator tube, leading to infection. VAP can prolong hospital stays and increase the risk of morbidity and mortality. Prolonged ventilator usage can result in ventilator dependency, where the patient becomes reliant on the machine to breathe and has difficulty weaning off the ventilator. The potential risks associated with the utilization of mechanical ventilators may impede the industry's growth. The introduction of germs through the artificial airway poses an infection risk, while the repeated opening and closing of the lungs' microscopic air sacs can lead to lung injury. As a result, the usage of these devices is expected to present challenges to the ventilators market in the forecast period.

**Key Market Trends** 

#### Non-Invasive Ventilation Options

Non-invasive ventilation carries a lower risk of complications compared to invasive mechanical ventilation. Intubation is an invasive procedure that can lead to complications such as ventilator-associated pneumonia, tracheal injury, and ventilator-induced lung injury. In some cases, NIV can be used for outpatient management of respiratory conditions, providing patients with the flexibility to receive treatment at home or in a less acute care setting. Non-invasive ventilation can be used as a bridge to wean patients off invasive mechanical ventilation. It allows for a gradual reduction in ventilator support, helping patients regain independent breathing. There is a growing interest in developing non-invasive ventilation options that provide effective respiratory support without the need for intubation. This could reduce the risk of complications associated with invasive mechanical ventilation.

#### Remote Monitoring and Data Analytics

Remote monitoring allows healthcare professionals to access real-time data on patients' ventilatory parameters, such as tidal volume, respiratory rate, airway pressure, and oxygen levels. This continuous data stream provides valuable insights into the patient's respiratory status, facilitating prompt decision-making. Continuous remote monitoring enables healthcare providers to detect subtle changes in the patient's condition promptly. Sudden fluctuations or trends in the data can trigger alerts, allowing for early intervention and preventing potential complications. With remote monitoring, healthcare professionals can minimize direct contact with the patient and the ventilator, reducing the risk of potential healthcare-associated infections, especially during infectious disease outbreaks. Ventilators with remote monitoring capabilities could provide continuous data streams to healthcare professionals, facilitating early intervention and



better management of patients on mechanical ventilation.

Segmental Insights

Product Type Insights

Based on the product, the intensive care unit segment is anticipated to witness substantial market growth throughout the forecast period. This growth can be attributed to multiple factors, such as the clinical benefits offered by the ventilator in acute respiratory failure, compromised lung functions, or any breathing-related complications. These mechanical ventilators are extensively utilized to ensure proper ventilation and provide support in healthcare facilities. Advanced monitoring and visual decision support are among the key driving factors of these mechanical ventilators, which are expected to have a positive impact on the market share of mechanical ventilators during the forecast period.

#### End User Insights

Based on the end user segment, the hospital and clinic segment has been the dominant force in the market. The increased availability of trained healthcare providers has contributed to the effective operation and utilization of ventilators, resulting in improved productivity of hospitals and a focus on delivering quality care services to customers. These factors are key drivers of market growth and will continue to propel the market forward during the forecast period. Leading players in the industry are expanding their hospital chains to enhance diagnostic capabilities and provide effective treatment. These hospitals are also investing in infrastructure to offer a comprehensive range of services to combat respiratory diseases. These developments, along with the growing preference among customers for hospital-based treatment of chronic respiratory conditions, contribute to the growth of the healthcare facilities segment. Overall, the market is poised for growth due to the convergence of these factors and the ability of hospitals to offer advanced technologies and convenient access to healthcare services.

#### Regional Insights

North America region dominated the market in 2022, primarily due to the rising prevalence of chronic obstructive pulmonary disease (COPD) and respiratory ailments that necessitate non-invasive ventilation. The region benefits from a well-established healthcare infrastructure and the presence of key players like Becton, Dickinson, and Company (BD) in New Jersey, U.S., further driving market growth. Additionally, the



North American region is witnessing increased intensive care admissions and the emergence of novel ventilation modes such as acute non-invasive ventilation, contributing to the expansion of the Mechanical Ventilators Market.

Furthermore, the Asia-Pacific region is projected to exhibit the highest compound annual growth rate (CAGR) during the forecast period of 2022-2028. This growth can be attributed to factors like the escalating prevalence of respiratory ailments like asthma and lung cancer in the region. Both non-invasive ventilation and invasive ventilation are among the modes of ventilation utilized. Moreover, the rising pervasiveness of coronavirus ailment is acting as a catalyst for the progress of the Mechanical Ventilators Market in the Asia-Pacific region.

Market in the Asia-Pacific region.

Key Market Players

Getinge AB

Medtronic PLC

Koninklijke Philips NV

Smiths Medical

ResMed Inc.

Dragerwerk AG & Co. KGaA

GE Healthcare

Mindray Medical International Limited

Nihon Kohden Corporation

Vyaire Medical Inc.

#### Report Scope:

In this report, the Global Mechanical Ventilators Market has been segmented into the following categories, in addition to the industry trends which have also been detailed



#### below:

Mechanical Ventilators Market, By Product Type:

Intensive Care Unit/Critical Care

Transport/Portable/Ambulatory

**Neonatal Care** 

Mechanical Ventilators Market, By Interface:

Non-invasive Ventilation

Invasive Ventilation

Mechanical Ventilators Market, By End User:

Hospital & Clinic

Home Care

**Ambulatory Surgical Center** 

Mechanical Ventilators Market, By Region:

North America

**United States** 

Canada

Mexico

Europe

France

United Kingdom



	Italy	
	Germany	
	Spain	
Asia-Pacific		
	China	
	India	
	Japan	
	Australia	
	South Korea	
South America		
	Brazil	
	Argentina	
	Colombia	
Middle East & Africa		
	South Africa	
	Saudi Arabia	
	UAE	

# Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global



Mechanical Ventilators Market.

Available Customizations:

Global Mechanical Ventilators market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

**Company Information** 

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



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