

# Unleashing the Potential: Respiratory Therapists at the Crossroads of Public and Digital Health in India

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## INTRODUCTION

In India, the landscape of respiratory therapy is undergoing significant transformations, marked by noteworthy developments and persistent challenges in gaining the recognition it deserves. A reflection on the state of respiratory therapy in the country reveals a stark reality—out of the 993 universities, merely 40 universities offered dedicated programs till 2001.<sup>1</sup> Since 1995, around 1,000 graduates have emerged from these programs, heavily influenced by curricula from the United States.<sup>1</sup> Despite the field's growth, it lacks a structured evolution, with respiratory therapists primarily confined to acute care settings, managing diseases like pneumonia, asthma, chronic obstructive pulmonary disease (COPD), and acute respiratory distress syndrome (ARDS).<sup>1,2</sup> However, the utilization of their competencies remains somewhat limited, and the lack of acknowledgment extends to hospitals and specialist doctors, resulting in reluctance among major healthcare institutions to employ these professionals.<sup>1-3</sup>

The National Commission for Allied Healthcare Professions Bill seeks to rectify these challenges, providing a much-needed regulatory framework. This bill outlines standards for education and services, mandates institutional assessments, and envisions a system that incorporates the latest scientific advancements into the practice of respiratory therapy.<sup>4,5</sup> This legislative initiative represents a significant stride toward formalizing and recognizing respiratory therapy as a vital healthcare profession in India. It is high time to recognize the competencies of respiratory therapists and understand their utilization in India's public health and digital health ecosystems. This article elucidates the competencies of respiratory therapists and delineates the roles and responsibilities they can play beyond private hospitals in public health programs and the newly emerging field of digital health in India.

## SKILLSETS OF RESPIRATORY THERAPISTS

Respiratory therapists play a pivotal role in the healthcare system, wielding a diverse and specialized set of skills integral to respiratory care and patient well-being. Their multifaceted capabilities contribute significantly to the overall healthcare landscape. Fundamentally, respiratory therapists excel in patient assessment, evaluating individuals with diverse respiratory conditions through physical examinations, reviewing medical histories, and utilizing diagnostic tools. This forms the bedrock for the development of effective treatment plans.

Extending their proficiency, respiratory therapists are adept in a spectrum of respiratory therapy techniques, encompassing the application of oxygen therapy, bronchodilator therapy,

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chest physiotherapy, and mechanical ventilation in acute care as well as chronic care setup. Their competence in administering these therapies and monitoring their impact on patients is vital for ensuring optimal care. For prevalent respiratory conditions like asthma, respiratory therapists provide comprehensive support, educating patients on inhaler techniques, identifying environmental triggers, and advising on lifestyle modifications. In managing COPD, they offer holistic care, incorporating pulmonary rehabilitation programs and providing smoking cessation support to enhance the quality of life for the affected individuals. Critical skills in intubation and mechanical ventilation empower respiratory therapists to manage patients with severe respiratory failure, adjust ventilator settings, and closely monitor ventilated patients to ensure optimal outcomes.

Proficiency in arterial blood gas (ABG) analysis enables respiratory therapists to interpret results accurately, assessing a patient's acid-base balance and ventilation and oxygenation status. This diagnostic capability enhances the precision of their interventions. An indispensable aspect of their role lies in patient education, where they impart knowledge on respiratory conditions, medications, inhaler techniques, and lifestyle modifications, ultimately improving patient compliance and outcomes.

Given their integral position in healthcare, respiratory therapists possess expertise in infection control practices. This includes adherence to hand hygiene, use of personal protective equipment, and maintaining aseptic conditions during procedures. Their competence extends to the management and troubleshooting of respiratory equipment, such as oxygen concentrators, nebulizers, and ventilators, ensuring optimal functionality and safety. Trained

to respond to respiratory emergencies, respiratory therapists are proficient in cardiopulmonary resuscitation (CPR), providing life-saving interventions during critical situations.

## OPPORTUNITIES FOR RESPIRATORY THERAPISTS IN PUBLIC HEALTH SYSTEMS AND PROGRAMS

Respiratory therapists can assume indispensable roles in public health by actively contributing to various initiatives. They play pivotal roles in disease prevention and education, raising awareness about respiratory diseases and promoting preventive measures.<sup>2</sup> This includes spearheading campaigns addressing the dangers associated with tobacco use and exposure to air pollutants, aligning their efforts with broader public health objectives.<sup>6</sup>

Chronic respiratory diseases, such as asthma and COPD, present substantial challenges in the Indian public health landscape.<sup>7</sup> Respiratory therapists can emerge as key advocates, engaging in patient education initiatives focused on proper medication adherence, symptom management, and lifestyle modifications.<sup>8</sup> Their contributions extend to environmental health advocacy, championing the cause for clean air and safe environments, and actively participating in the promotion of clean air policies. They disseminate critical information regarding the health hazards associated with pollution, emphasizing the imperative to adopt measures that reduce environmental exposures and safeguard public health.

In the National Tuberculosis Elimination Program (NTEP), respiratory therapists can significantly contribute to its success. Their specialized skills impact various program objectives, including early detection, precision in sputum collection, patient education, infection control, tuberculosis (TB) contact tracing, ongoing monitoring, pulmonary rehabilitation, and advocacy. In essence, the multifaceted contributions of respiratory therapists underscore their integral role within the NTEP, showcasing their potential to be instrumental in combating TB nationwide.

In the realm of capacity building and training within the public health sector, respiratory therapists can play a pivotal role. They can design and conduct training programs for healthcare professionals, including physicians, nurses, and allied health workers, serving as catalysts for empowering the workforce by imparting essential knowledge and skills related to effective respiratory care.

Though not traditionally associated with maternal health, respiratory therapists specialized in neonatal and pediatric respiratory care can significantly support the well-being of mothers and children in the public healthcare system in India. Their contributions are particularly valuable in addressing respiratory-related issues affecting both mothers and children. Neonatal and pediatric specialist respiratory therapists provide comprehensive respiratory care for infants and children in acute healthcare facilities, covering specialized care for conditions like respiratory distress syndrome, bronchiolitis, and pneumonia, which pose life-threatening risks. In addressing asthma in children, they educate parents and caregivers on management techniques and contribute to action plans.

## OPPORTUNITIES FOR RESPIRATORY THERAPISTS IN DIGITAL HEALTH

Digital health is rapidly transforming healthcare in India through technology, integrating information technology (IT), data analytics, and communication tools to enhance patient care and streamline

medical processes. With increased smartphone use and internet connectivity, digital health solutions like telemedicine and health apps are bridging healthcare gaps, especially in remote areas, contributing significantly to India's ever-evolving healthcare landscape.

Respiratory therapists can play a crucial role in teleradiology and telediagnosis for respiratory diseases, aligning with the goals of digital health and ensuring effective respiratory care in the interconnected healthcare landscape. The beginnings of telehealth practices were seen during the coronavirus disease 2019 (COVID-19) pandemic.<sup>9</sup> Respiratory therapists excel in performing remote assessments of patients exhibiting respiratory symptoms. Engaging in telehealth consultations, they inquire about relevant aspects such as symptoms, medical history, and exposure to risk factors, contributing to the preliminary assessments. Using digital stethoscopes and specialized software, respiratory therapists can remotely listen to a patient's lung sounds in real-time. This enables them to identify abnormal breath sounds, such as wheezing or crackles, indicative of specific respiratory conditions. In collaboration with radiologists, respiratory therapists interpret radiological images like chest X-rays and computed tomography (CT) scans. Their expertise in analyzing these images aids in early diagnosis and treatment planning, identifying abnormalities such as pulmonary nodules, consolidations, or signs of chronic lung diseases like COPD.

Through telehealth platforms, respiratory therapists can guide patients in performing spirometry and other pulmonary function tests at home. They can remotely assess the results, interpret them, and provide preliminary diagnoses or recommendations for further testing. For patients with chronic conditions like asthma or COPD, respiratory therapists can offer remote consultations to assess symptom control and adjust treatment plans. This will ensure that patients receive optimal care without the need for frequent in-person visits. Patients requiring home ventilation or oxygen therapy benefit from remote monitoring by respiratory therapists. They can ensure equipment functionality and provide guidance on usage, adjustments, and troubleshooting through telehealth platforms. Education is a crucial aspect of telediagnosis. Respiratory therapists can use telehealth consultations to educate patients about their conditions, medications, inhaler techniques, and lifestyle modifications. This approach promotes self-management and enhances treatment adherence.

Examining the state of respiratory therapists in India reveals a need for growth and further development to facilitate a structured and uniform evolution of the field. Recognition from hospitals to doctors poses a challenge, affecting the employment prospects of respiratory therapists. Essentially, these professionals possess the capability to make a substantial impact on the healthcare landscape in India by leveraging their specialized skills and competencies. Recognizing their roles in public health and digital health is imperative to fully harness their potential in enhancing respiratory health and overall well-being.

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