Narrative Review

Multidisciplinary Respiratory Care

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Abstract

Background: Respiratory diseases continue to be one of the significant burdens of morbidity and mortality in the world, with tuberculosis, pneumonia, COPD, and lung cancer featuring among the most important causes. These are complex conditions with comprehensive medical, functional, nutritional, medical rehabilitation, and psychosocial management requirements. This narrative review outlines the rationale, structure, and clinical impact of multidisciplinary respiratory care and emphasizes how such care may improve outcomes, coordination, and patient satisfaction.

Discussion: A multidisciplinary team that includes respirologists, thoracic surgeons, nurses, nutritionists, and palliative specialists can allow for integrated patient-centered management, with enhancement in diagnostic accuracy, treatment efficacy, and continuity of care. Evidence shows reductions in hospital readmissions, improved survival, and better quality of life with these approaches. Persahabatan National Respiratory Hospital is an example of this approach through structured multidisciplinary teams in lung cancer, interstitial lung disease, and tuberculosis. Despite resource and system integration challenges, there is a promising outlook for strengthening digital coordination, leadership support, and national policy alignment.

Conclusion: Multidisciplinary respiratory care hence forms a very important framework in advancing high-value, sustainable, and patient-centered respiratory health services in Indonesia and beyond.

Keywords: Multidisciplinary care, respiratory diseases, patient-centered care, integrated healthcare

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Submitted: November 1st 2025
Accepted: November 7th 2025
Published: December 2nd 2025

Cite this:
Susanto AD, Purwono A, Dharmawan INIP, Triswiandi RA, Widjanantie SC, Arman M, et al. Multidisciplinary respiratory care. Persahabatan Respirology Journal 2025;1(1)

Persahabatan Respirology Journal
Vol. 1 No. 1
e-ISSN: 3124-0518
DOI:
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Respiratory diseases continue to be one of the major public health burdens worldwide. Tuberculosis (TB), pneumonia, chronic obstructive pulmonary disease (COPD), and lung cancer are major causes of morbidity, mortality, and health care utilization across the world. The Global Burden of Disease Study 2023 ranked COPD as the third leading cause of death globally, responsible for more than 3.2 million deaths annually, while lung cancer remains the most common cause of cancer-related mortality. Pneumonia or lower respiratory tract infections accounted for 2.18 million deaths globally in 2021, representing over 500,000 children under five and over one million older adults. According to the Indonesia Health Survey (SKI) 2023, the national prevalence of pneumonia in all age groups reached 10.8%. Meanwhile, Indonesia is the country with the second highest burden of tuberculosis in the world, accounting for 10%, after India. These figures point out that major respiratory diseases, including pneumonia, tuberculosis, COPD, and lung cancer, are still major public health problems both globally and nationally.

In Indonesia, the leading causes of hospitalization and death are respiratory diseases, with increasing prevalence of COPD and lung malignancies due to continued tobacco exposure and aging demographics. These conditions are inherently complex, often requiring ongoing pharmacologic, functional, nutritional, and psychosocial interventions. Therefore, a multidisciplinary approach in which professionals from various disciplines work together is considered an essential mechanism for the provision of comprehensive, coordinated, and patient-centered respiratory care.[1–4] This editorial discusses the rationale, composition, and clinical implications of a multidisciplinary approach to respiratory management, based on current evidence and experiences worldwide that are relevant to tertiary centres such as Persahabatan Hospital, Indonesia's National Respiratory Referral Hospital.

DISCUSSION

Definition and Rationale

Multidisciplinary involvement in respiratory medicine refers to organized collaboration of health professionals—pulmonologists, thoracic surgeons, rehabilitation medicines, respiratory nurses, nutritionists, and palliative care specialists—with the aim of attaining shared clinical objectives for the patient. This team-based structure is consistent with evidence showing that multidisciplinary decision-making improves diagnostic accuracy, standardizes management, and enhances patient outcomes. [1,2,4]

Rather than treating isolated symptoms or single organ systems, multidisciplinary respiratory care recognizes that respiratory illness affects multiple dimensions of health-functional capacity, nutrition, mental well-being, and social participation. Studies in COPD further demonstrate that coordinated multidisciplinary interventions optimize functional outcomes and address complex physiological and psychosocial needs beyond pharmacologic therapy alone.[3] This model optimizes treatment plans and reduces mortality and hospital readmissions, enhancing the overall quality of life. WHO (2023) and ATS (2022) both emphasize a core principle of high-value respiratory care: multidisciplinary collaboration in the care of patients with chronic respiratory and oncologic conditions.

Recent observational reviews of multidisciplinary teamwork further illustrate the enhancement in the quality of decision-making by MDTs. Structured meetings with high-quality presentation of key clinical information, such as patient history, radiology, and pathology, occurred regularly and allowed for a more comprehensive and coordinated discussion. These reviews also identify some important gaps: psychosocial factors and patient preferences were among the least discussed elements in case deliberations. The multidisciplinary meetings ran with efficiency-an average of five minutes per case-and were usually led by respiratory physicians. Such findings highlight both the strengths and limitations of MDT processes and suggest that greater attention needs to be given to the

incorporation of psychosocial and patient-centered components in respiratory team discussions.[5]

Core Elements of Multidisciplinary Respiratory Care

1. Team-Based Care

Team-based care integrates the medical, rehabilitative, and psychosocial domains of respiratory management. The multidisciplinary team typically includes pulmonologists or respiratory physicians who are responsible for diagnosis, staging, pharmacologic management, and follow-up, supported by respiratory nurse specialists who coordinate care, monitor adherence, educate patients, and detect early clinical deterioration. Rehabilitation medicine contributes by providing airway clearance, exercise training, and pulmonary rehabilitation, while nutritionists address malnutrition or obesity—both key factors that worsen respiratory outcomes. The role of rehabilitation medicine physicians in providing essential expertise in functional assessment, exercise prescription, management of disability, and coordination of post-acute rehabilitation programs is highlighted in pulmonary rehabilitation models, with an integrated approach to restoring physical and emotional function through multidisciplinary exercise, psychosocial support, and nutritional intervention.[6,7] Palliative care specialists play a crucial role in relieving distressing symptoms, guiding advance care planning, and ensuring that care remains holistic, patient-centred, and aligned with individual values. Evidence shows that multidisciplinary in-hospital teams improve survival and patient satisfaction while reducing adverse events.[3,4,8]

Critical care specialist is at the center of management in acute respiratory failure, optimization of ventilatory strategies, early mobilization, and integration of palliative care principles in patients with severe respiratory distress or multi-organ involvement. Integration of early palliative involvement in the ICU, as described by Temel et al., has been shown to reduce symptom burden, improve decision-making, and enhance overall quality of life in patients with advanced respiratory diseases.[8]

In addition, internal medicine specialists, including cardiologists, endocrinologists, infectious disease physicians, and general internists, provide critical management of comorbidities like diabetes, heart failure, malnutrition, and systemic infections, which all are strong modifiers of respiratory prognosis. Evidence from multidisciplinary COPD and ILD programs demonstrates that optimization of comorbidities is a key determinant of improved outcomes, reduction in hospital readmissions, and more appropriate therapeutic decision-making. These findings emphasize that respiratory disease rarely occurs in isolation and that ongoing collaboration among pulmonology, internal medicine, rehabilitation, and critical care professionals is essential for truly integrated and effective respiratory management.[1–3]

The experiences from multidisciplinary pulmonary rehabilitation programs further illustrate how respiratory care by nature is of a bio-psycho-social kind. These programs bring together, in one coordinated framework, exercise training, airway clearance, education, psychological counseling, nutritional support, and social care-all reflecting the manifold needs of respiratory patients. Rehabilitation medicine address deconditioning and dyspnea through individualized exercise and breathing strategies, while psychologists manage anxiety and depression; dietitians optimize nutrition status, and social workers support the patients in dealing with daily challenges. Such a coordinated multi-domain structure underlines that respiratory illness affects far more than lung function alone and reinforces the value of MDT care as holistic and patient-centered.[6,7]

2. Integrated Support for Complex Needs

Respiratory disorders rarely occur in isolation. Patients with chronic respiratory diseases such as COPD, lung cancer, and interstitial lung disease (ILD) often share overlapping symptoms including dyspnea, fatigue, depression, weight loss, and impaired social function. An integrated model of care addresses these multidimensional needs simultaneously by combining symptom management, medication adherence and inhaler education,

pulmonary rehabilitation with exercise and breathing retraining, nutritional support for cachexia or sarcopenia, and psychological counselling with coping strategies.[3,8] It also incorporates advance care planning and timely palliative consultation to ensure that the management remains holistic and aligned with patient goals. Integrated respiratory care models have demonstrated significant improvements in long-term outcomes, functional capacity, and overall quality of life.[3,4,8]

3. Improved Clinical Outcomes

Multidisciplinary respiratory management has demonstrated measurable benefits across a range of conditions. Studies have shown that this approach leads to lower mortality and fewer hospital readmissions—for instance, a multicentre cohort study in Canada reported a 30% reduction in readmission rates and improved survival among COPD patients managed through integrated multidisciplinary teams.[3] Hospitals implementing structured respiratory multidisciplinary teams have also reported significantly shorter lengths of stay for patients admitted with acute exacerbations. Similarly, multidisciplinary team management in interstitial lung disease and lung cancer has been associated with better patient satisfaction, higher quality of life, and fewer emergency department visits.[1,2,4,8] These outcomes stem from improved coordination, earlier identification of complications, and individualized rehabilitation plans that target the specific needs of each patient.[3,4]

4. Enhanced Coordination and Communication

Fragmented care remains a major challenge in respiratory medicine, as patients frequently move between outpatient, inpatient, and rehabilitation settings. Effective coordination within multidisciplinary teams enhances continuity of care through regular multidisciplinary meetings—such as lung cancer tumour boards or interstitial lung disease (ILD) diagnostic panels—alongside the use of shared electronic medical records and standardized care pathways. Care coordinators and respiratory nurse specialists also play a crucial role in bridging communication between different providers and ensuring that treatment plans are consistently implemented. These systems have been shown to reduce duplication of investigations, improve adherence to clinical guidelines, and decrease adverse events. A 2023 review by the UK National Health Service on ILD multidisciplinary teams reported that structured communication within such teams significantly reduced diagnostic uncertainty and expedited initiation of appropriate therapy.[1]

Beyond the hospital, this form of multidisciplinary respiratory care extends into primary and community services, ensuring a continuum of care across the full spectrum of patient needs. Community-based teams comprising medical rehabilitation teams focused on respiratory care, nurses, dietitians, and social workers have achieved improvements in early detection, self-management, and preventive care. These integrated models decrease avoidable admissions, decrease the use of patient-days, and empower patients through the delivery of ongoing support in familiar environments. Findings such as these suggest that the most effective multidisciplinary respiratory care is not confined to an inpatient or tertiary setting but functions optimally when it spans the acute, rehabilitative, and community domains.[6]

5. Patient-Centred Approach

Modern respiratory care emphasizes shared decision-making among clinicians, patients, and their families. Multidisciplinary teams facilitate this process by ensuring that patients receive comprehensive information about available treatment options, expected outcomes, and supportive or palliative measures.[4,8] Discussions regarding advance care directives and end-of-life preferences are integrated into the overall care plan, allowing patients to make informed decisions consistent with their personal values and goals. This patient-centred model not only enhances satisfaction and trust but also ensures that care delivery aligns with the ethical principles and recommendations outlined in the American Thoracic Society and European Respiratory Society

(ATS/ERS) guidelines on palliative and integrated respiratory care (ATS, 2022).

Applications of Multidisciplinary Care in Key Respiratory Conditions

1. Chronic Obstructive Pulmonary Disease (COPD)

Multidisciplinary management of COPD involves coordinated efforts among pulmonologists, nurses, rehabilitation medicine, and nutritionists to deliver comprehensive rehabilitation and patient education. Core elements of this approach include structured exercise training and endurance conditioning, nutritional counseling with high-protein and anti-catabolic diets, education on proper inhaler technique and self-management strategies, as well as smoking cessation programs and psychosocial support. This integrated model not only targets physiological improvement but also promotes behavioral change and long-term disease control. Systematic reviews have consistently demonstrated that multidisciplinary pulmonary rehabilitation significantly enhances exercise capacity, improves health-related quality of life, and reduces hospital readmissions among COPD patients.[9]

2. Lung Cancer

The lung cancer multidisciplinary team, composed of pulmonologists, oncologists, thoracic surgeons, radiologists, pathologists, and palliative specialists, is considered a cornerstone in modern oncologic care. Such teams ensure that diagnostic and therapeutic decisions are made collaboratively, allowing for faster diagnosis, timely initiation of treatment, and individualized care planning. Evidence consistently shows that multidisciplinary lung cancer teams shorten the interval from diagnosis to treatment, increase the proportion of patients eligible for curative therapy, and improve both one- and three-year survival rates. Moreover, the integration of palliative care within these teams further enhances symptom control, reduces psychological distress and depression, and contributes to better overall survival outcomes.[8]

3. Interstitial Lung Disease (ILD)

The diagnosis and management of ILD are multidisciplinary, as pulmonologists, radiologists, pathologists, rheumatologists, and sometimes thoracic surgeons are all involved. The MDD has become the gold standard for the diagnosis of ILDs, enhancing diagnostic accuracy and confidence. In patients with progressive fibrosing ILD, multidisciplinary teams also play a crucial role in the early detection of disease progression, timely initiation of antifibrotic therapy such as nintedanib or pirfenidone, and the integration of oxygen therapy and pulmonary rehabilitation. These teams additionally provide palliative and psychosocial support to address the holistic needs of patients and their families. Integrated ILD clinics have been shown to reduce emergency admissions and enhance continuity and quality of care.[2]

4. Benign Airway Disorders

Benign airway strictures and tracheobronchial stenosis are pathologies that require collaboration among otolaryngologists, interventional pulmonologists, and thoracic surgeons. Such a multidisciplinary assessment will accurately identify the etiology, whether it be post-intubation, inflammatory, or idiopathic, and will select the best therapy: endoscopic dilation, stenting, or surgical reconstruction. A recent study from Japan demonstrated that a joint airway conference model improved procedural success and reduced restenosis rates in complex benign airway disease.

System Implementation in a National Respiratory Referral Center

At Persahabatan National Respiratory Referral Hospital, multidisciplinary respiratory care can be systematically implemented through a series of structured and collaborative programs. Dedicated multidisciplinary teams (MDTs) form the backbone of this approach, including the weekly Lung Cancer MDT meetings focused on coordinated diagnostic and therapeutic planning, and the biweekly ILD MDT sessions aimed at accurate disease subtyping and evidence-based therapy selection.[1,2] Integrated

outpatient pathways further enhance collaboration across disciplines—for instance, the Thoracic Oncology Integrated Clinic brings together pulmonologists, hematology-oncologists, cardiothoracic surgeons, radiologists, and pathologists to ensure timely and comprehensive management of thoracic malignancies, while the Tuberculosis Integrated Center facilitates cooperation between pulmonology, infectious disease, and radiology specialists to promote early detection and management of airway sequelae. In parallel, education and capacity-building initiatives strengthen the sustainability of multidisciplinary practice by training residents and allied health professionals in team-based, patient-centred principles, ensuring the continuity of collaborative excellence in respiratory care.[4]

Challenges and Opportunities

The implementation of multidisciplinary respiratory care in developing settings such as Indonesia faces several structural and cultural challenges, including limited human resources, compartmentalized workflows, and suboptimal communication systems between departments. Nevertheless, there are key enabling factors that can support its successful integration. These include strong institutional leadership with formal inclusion of multidisciplinary care within hospital strategic plans, the use of shared digital documentation systems and virtual tele–multidisciplinary meetings, standardized referral pathways linking primary and tertiary care facilities, and the development of national guidelines that institutionalize interprofessional collaboration.[4] As Indonesia continues to strengthen its universal health coverage framework, incorporating multidisciplinary respiratory care at Persahabatan Hospital aligns closely with the Ministry of Health's National Referral Network policy and will further reinforce the hospital's role as a national centre of excellence in respiratory medicine.

International experiences also indicate that there are a number of structural barriers to the implementation of multidisciplinary respiratory care. Common challenges include limited staffing, variable participation from key MDT members such as psychologists and dietitians, and inconsistent interprofessional communication. Many programs face resource constraints that limit their comprehensive service provision, and variability in professional roles and expectations can cause operational barriers to collaboration. These operational barriers point to the need for reinforcement in the training of professionals across disciplines, enhancement of communication infrastructure, and institutional support to enable a multidisciplinary approach to respiratory care.[6]

Future Perspectives

Emerging trends point toward even greater integration through tele-multidisciplinary models, AI-assisted radiology and pathology, and patient-reported outcome monitoring. Virtual MDT meetings allow regional hospitals to access expert opinion remotely, improving equity of care. Precision medicine is also altering multidisciplinary care: biomarker-driven therapy of lung cancer and ILD increasingly requires close collaboration between pulmonologists, molecular pathologists, and genetic counsellors. Thus, future respiratory MDTs must be digitally connected, evidence-driven, and patient-empowered.[4]

CONCLUSION

Multidisciplinary respiratory care transforms clinical practice from fragmented disease management to holistic, coordinated, and patient-centered care. By uniting diverse professional expertise, it enhances diagnosis accuracy, treatment efficacy, and patient quality of life—while reducing mortality, readmissions, and system inefficiencies.

Persahabatan Hospital advances multidisciplinary respiratory care not only in harmony with its mandate as Indonesia's National Respiratory Referral Center but also as a pragmatic advance toward sustainable, high-value health care. Continued commitment to collaborative team models, outcomes monitoring, and research will ensure that

Indonesian respiratory medicine remains at the leading edge of innovation and patient care.

REFFERENCE

1. Guler SA, Berezowska SA, Christe A, Geiser T, Funke-Chambour M. Multidisciplinary discussion for diagnosis of interstitial lung disease in real life. Swiss Med Wkly. 2016 May 22;146(2122):w14318.
2. Chaudhuri N, Spencer L, Greaves M, Bishop P, Chaturvedi A, Leonard C. A Review of the Multidisciplinary Diagnosis of Interstitial Lung Diseases: A Retrospective Analysis in a Single UK Specialist Centre. J Clin Med. 2016 Jul 27;5(8):66.
3. Mansoor S, Obaida Z, Ballowe L, Campbell AR, Patrie JT, Byrum TD, et al. Clinical Impact of Multidisciplinary Outpatient Care on Outcomes of Patients with COPD. Int J Chron Obstruct Pulmon Dis. 2020 Jan;Volume 15:33–42.
4. Epstein N. Multidisciplinary in-hospital teams improve patient outcomes: A review. Surg Neurol Int. 2014;5(8):295.
5. Gouliaev A, Berg J, Bibi R, Arshad A, Leira HO, Neumann K, et al. Multi-disciplinary team meetings for lung cancer in Norway and Denmark: results from national surveys and observations with MDT-MODe. Acta Oncol (Madr). 2024 Aug 11;63:678–84.
6. Kirenga BJ. The Multidisciplinary Team Approach in Pulmonary Rehabilitation: Enhancing Outcomes through Integrated Care for Chronic Respiratory Conditions. Journal of Cardiac and Pulmonary Rehabilitation. 2024;8(6).
7. Manu MK, Alex J. Multidisciplinary approach to pulmonary rehabilitation – an overview. Indian Journal of Respiratory Care. 2022 Dec 1;3(1):388–95.
8. Temel JS, Greer JA, Muzikansky A, Gallagher ER, Admane S, Jackson VA, et al. Early Palliative Care for Patients with Metastatic Non–Small-Cell Lung Cancer. New England Journal of Medicine. 2010 Aug 19;363(8):733–42.
9. McCarthy B, Casey D, Devane D, Murphy K, Murphy E, Lacasse Y. Pulmonary rehabilitation for chronic obstructive pulmonary disease. Cochrane Database of Systematic Reviews. 2015 Feb 24;2015(4).