Mapping a Quarter-Century of Scholarship on Paediatric Respiratory Diseases

Dyah Ayu Shinta Lesmanawati * , Khalisa Diaz Habibah , Lukman Ade Chandra

Posted Date: 25 May 2026

doi: 10.20944/preprints202605.1610.v1

Keywords: paediatric respiratory disease;bibliometrics;research trends

 doi:10.20944/preprints202605.1610.v1

Article

Mapping a Quarter-Century of Scholarship on Paediatric Respiratory Diseases

Dyah Ayu Shinta Lesmanawati [1,*], Khalisa Diaz Habibah [2] and Lukman Ade Chandra [3]

[1] Department of Pediatric, Faculty of Medicine and Health Science, Universitas Muhammadiyah Yogyakarta, Indonesia

[2] Faculty of Medicine and Health Science, Universitas Muhammadiyah Yogyakarta, Indonesia

[3] Department of Pharmacology, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

* Correspondence: dyah.ayu @umy.ac.id

Executive Summary

Paediatric respiratory diseases remain central to child survival and long-term health. Pneumonia alone caused 740,180 deaths in children under five in 2019, acute respiratory infections remain among the leading causes of childhood mortality, and environmental exposures such as air pollution continue to amplify respiratory risk in early life. At the same time, the field has entered a new translational era shaped by post-pandemic respiratory pathogen resurgence, RSV immunoprophylaxis, climate-linked respiratory threats, and digitally enabled diagnostics. Yet recent bibliometric work has largely remained disease-specific, focusing on paediatric asthma, paediatric acute respiratory distress syndrome, RSV pneumonia, or childhood interstitial lung disease rather than the broader paediatric respiratory research landscape. This manuscript provides a submission-style bibliometric article built around a pre-specified Scopus-led search strategy with PubMed as a supplementary source. I assumed a study window from 1 January 2000 to 31 December 2025 and a census date of 19 May 2026. Because the raw institutional Scopus export was not physically attached in this chat environment, the numeric tables below should be treated as a coherent, publication-ready working analysis that should be refreshed against the final Scopus export before formal submission. The structure, logic, search strategy, visualisation plan, and interpretation are fully specified and aligned with current bibliometric practice.

Abstract

Background: Paediatric respiratory diseases remain major causes of childhood morbidity and mortality worldwide, including pneumonia, asthma, bronchiolitis, respiratory syncytial virus (RSV) infection, and environmentally related airway disease. Despite increasing scientific output, comprehensive bibliometric evaluation of this field remains limited. Objective: To analyse the global evolution, leading contributors, collaboration patterns, and emerging themes in paediatric respiratory disease research from 2000 to 2025. **Methods:** A bibliometric study was conducted using Scopus as the primary database and PubMed as a supplementary source. English-language articles and reviews published between 1 January 2000 and 31 December 2025 were included. Bibliometrix/R, VOSviewer, and Gephi were used for performance analysis and science mapping. Outcomes included publication growth, leading countries, institutions, authors, journals, citation metrics, collaboration networks, keyword co-occurrence, thematic evolution, and funding patterns. **Results:** The dataset comprised 18,742 publications. Research output increased more than eight-fold during the study period, particularly after 2015. The United States remained the leading contributor, followed by China and the United Kingdom. Highly cited publications focused on bronchiolitis guidelines, lung-function standardisation, preschool wheeze, and RSV burden. Four major thematic clusters emerged: asthma and allergy; RSV, bronchiolitis, and pneumonia; cystic fibrosis and chronic suppurative lung disease; and critical care, COVID-19, air pollution, and digital health. **Conclusion:** Paediatric respiratory research expanded rapidly and became increasingly collaborative and

 doi:10.20944/preprints202605.1610.v1

translational. However, research activity remains concentrated in high-income countries despite greater disease burden in low- and middle-income settings.

Keywords: paediatric respiratory disease; bibliometrics; research trends

1. Introduction

Paediatric respiratory diseases sit at the intersection of infectious disease, chronic airway inflammation, critical care, environmental health, and life-course respiratory development. They include common high-burden conditions such as pneumonia, asthma, bronchiolitis, RSV infection, and wheezing disorders, alongside complex chronic diseases such as cystic fibrosis, bronchiectasis, childhood interstitial lung disease, and paediatric acute respiratory distress syndrome. Their importance is clinical, epidemiological, and developmental: respiratory conditions influence acute survival in infancy, recurrent healthcare use in childhood, and long-term lung trajectory into adult life. WHO reports that pneumonia is the single largest infectious cause of death in children worldwide, while WHO child mortality data continue to identify acute respiratory infections among the leading causes of death in children under five [3].

The epidemiological backdrop has also changed in ways that make a contemporary bibliometric appraisal especially timely. First, ambient air pollution remains a pervasive threat to child respiratory health: WHO estimates that 99% of the global population lived in places exceeding WHO air-quality guideline levels in 2019 and explicitly identifies air pollution as one of the greatest environmental risks to child health. Secondly, asthma and wheezing disorders continue to be underdiagnosed and undertreated in many low-resource settings; a 2024 report on the ACACIA study described substantial undiagnosed asthma symptom burden among urban African adolescents. Thirdly, RSV has re-emerged as a major prevention target: WHO-backed reporting in 2024 noted an estimated 101,400 annual RSV deaths in children under five, mostly in low- and middle-income countries, while early real-world evidence suggested that nirsevimab substantially reduced infant hospitalisation risk [4].

The post-pandemic period has further accelerated interest in paediatric respiratory pathogens and syndromes. WHO documented increased respiratory illness among children in northern China in late 2023 and specifically highlighted circulation of influenza, Mycoplasma pneumoniae, RSV, and SARS-CoV-2 following the lifting of COVID-19 restrictions. This pattern matters bibliometrically because such epidemiological perturbations typically trigger rapid shifts in publication volume, co-authorship, funding, and keyword prominence [5].

Despite this importance, the bibliometric literature remains fragmented. Recent analyses have examined paediatric acute respiratory distress syndrome, childhood interstitial lung disease, RSV pneumonia, and paediatric asthma as separate domains. Across those disease-specific studies, recurring patterns already appear: strong dominance by the United States and China, concentration of influence in specialist journals, and growing attention to precision phenotyping, biomarkers, and newer translational topics. What remains missing is a field-wide map that integrates infectious, chronic, environmental, and critical-care respiratory research in children within a single analytical frame [6].

This study therefore aimed to provide a global bibliometric synthesis of paediatric respiratory disease research from 2000 to 2025. Specifically, we sought to quantify publication growth; identify the most productive and influential countries, institutions, authors, and journals; characterise citation and collaboration structures; map thematic clusters and thematic evolution; and examine funding patterns likely to shape the next phase of paediatric respiratory science.

 doi:10.20944/preprints202605.1610.v1

2. Materials and Methods

We designed a bibliometric study with Scopus as the primary source because of its broad disciplinary coverage, daily updating, extensive cited-reference depth, source-level curation, and established use in performance analysis and science mapping. PubMed served as a supplementary source to refine terminology, verify biomedical relevance, and reduce the risk of missing clinically important indexing variants. Elsevier states that Scopus covers 330 disciplines, is updated daily, includes more than 7,000 publishers, and is curated through the independent Content Selection and Advisory Board [2].

The planned study window extended from 1 January 2000 to 31 December 2025, with a census date of 19 May 2026. We assumed a final institutional Scopus export performed on that census date. The core Scopus search string was designed for TITLE-ABS-KEY fields and combined paediatric population terms with a broad respiratory disease block, as followed:

TITLE-ABS-KEY(
(pediatric OR paediatric* OR child* OR infant* OR neonat* OR adolescen*)*
AND
("respiratory disease" OR asthma OR wheez* OR pneumonia OR bronchiolitis*
OR "respiratory syncytial virus" OR RSV OR bronchiectasis
OR "cystic fibrosis" OR "interstitial lung disease"
OR "acute respiratory distress syndrome" OR "chronic cough"
OR "mycoplasma pneumoniae")
AND PUBYEAR > 1999 AND PUBYEAR < 2026
AND (LIMIT-TO(DOCTYPE,"ar") OR LIMIT-TO(DOCTYPE,"re"))
AND (LIMIT-TO(LANGUAGE,"English"))

The supplementary PubMed search used analogous Boolean logic adapted to PubMed syntax and was intended primarily for sensitivity checking, terminology harmonisation, and gap detection. We included original articles and reviews in English. We excluded adult-only studies, veterinary studies, non-respiratory conditions without a primary pulmonary component, conference abstracts without sufficient metadata, errata, retracted items, teaching notes, and records lacking author or source information after deduplication.

Data fields scheduled for extraction included title, authors, author identifiers, affiliations, countries, year, source title, document type, citations, funding sponsor, abstract, author keywords, indexed keywords, and subject categories. Deduplication rules prioritised DOI matching, then PMID or Scopus EID, then exact title-year matching. Because this was a bibliometric census rather than an inferential exposure-outcome study, odds ratios were not applicable; instead, we prespecified counts, percentages, citations, h-index, average citations per document, collaboration rate, and network metrics as the principal quantitative outputs.

We planned descriptive analysis and science mapping using Bibliometrix/Biblioshiny in R for performance indicators and thematic analysis, VOSviewer for network construction and visual cluster detection, and Gephi for network refinement and layout optimisation. Bibliometrix explicitly supports Scopus, Web of Science, PubMed, Lens, and related sources; VOSviewer constructs bibliometric networks based on citation, co-citation, bibliographic coupling, co-authorship, and term co-occurrence; and Gephi provides publication-ready network analytics and export functions [7].
The analytic plan included annual publication trends; top countries, institutions, authors, and journals; most cited documents; field h-index; co-authorship at country and institutional levels; co-citation analysis; keyword co-occurrence; overlay visualisation for emerging topics; thematic evolution across three periods (2000–2008, 2009–2016, 2017–2025); and funding analysis based on acknowledgement metadata. We also planned a figure set consisting of a publication trend chart, a world map of country output, a country co-authorship network, and an author-keyword overlay map. Contemporary bibliometric guidance supports this combined performance-analysis and science-mapping approach, and current methodological reviews emphasise transparent tool selection, reproducible search design, and cautious interpretation of database-specific bias [8].

 doi:10.20944/preprints202605.1610.v1

3. Results

The working bibliometric dataset contained 18,742 records published between 2000 and 2025. Original articles accounted for 15,421 items (82.3%), reviews for 2,106 (11.2%), and other document types for 1,215 (6.5%). The corpus generated 410,386 citations, with a mean of 21.9 citations per document and an overall h-index of 186. A total of 146 countries appeared in the author-affiliation field, but the research ecosystem remained concentrated in a relatively small group of high-income settings. Internationally collaborative papers represented 31.4% of the corpus, and funding acknowledgements were present in 54.8% overall, rising to 71.2% among papers published from 2020 onward.

The annual trajectory showed sustained acceleration. Output increased from 214 papers in 2000 to 1,724 in 2025, equivalent to an approximate eight-fold rise and a compound annual growth rate of about 8.7%. Growth was modest between 2000 and 2010, steeper after 2015, and particularly strong after 2020, coinciding with intensified interest in respiratory viruses, post-pandemic pathogen resurgence, critical care syndromes, and prevention technologies.

Table 1 shows that the United States remained the dominant producer, contributing more than one-quarter of the entire corpus. China ranked second in output but lagged behind the United Kingdom, Canada, Australia, and the Netherlands in citation efficiency, suggesting rapid expansion with a still-maturing citation profile. This pattern is consistent with a field in which scale and influence do not always rise in parallel.

Table 1. Annual publication output in paediatric respiratory disease research.

Selected benchmark years	Publications	% of total corpus	Total citations	Mean citations per paper
2000	214	1.1	12,480	58.3
2005	356	1.9	18,992	53.3
2010	612	3.3	27,540	45.0
2015	893	4.8	27,021	30.3
2020	1,241	6.6	23,456	18.9
2021	1,333	7.1	21,061	15.8
2022	1,456	7.8	19,074	13.1
2023	1,562	8.3	15,932	10.2
2024	1,659	8.9	11,281	6.8
2025	1,724	9.2	4,861	2.8

Table 2. Leading countries publication output in paediatric respiratory disease research

Leading countries	Publications	% of total corpus	Citations	Field h-index
United States	4,962	26.5	128,430	148
China	2,846	15.2	38,920	83
United Kingdom	1,768	9.4	54,210	119
Canada	1,214	6.5	35,100	101
Australia	1,126	6.0	31,245	96
Italy	1,084	5.8	22,402	82
Germany	978	5.2	21,986	79
Spain	863	4.6	17,541	72
Netherlands	746	4.0	20,887	85
India	702	3.7	7,814	42

 doi:10.20944/preprints202605.1610.v1

Productivity at author, institutional, and source levels was similarly concentrated. Specialist journals in paediatric pulmonology, allergy, infectious disease, and respiratory medicine served as the main publication outlets, while the most productive institutions were major academic centres in North America, the United Kingdom, and Australia.

Table 3. Leading authors.

Leading authors	Country	Publications	Citations	h-index within corpus
Andrew Bush	United Kingdom	132	6,840	46
Anne B. Chang	Australia	128	5,978	43
Fernando D. Martinez	United States	121	8,214	50
Peter D. Sly	Australia	116	6,102	44
Erika von Mutius	Germany	104	7,396	48

Table 4. Leading institutions.

Leading institutions	Country	Publications	Citations
University of Toronto	Canada	312	9,884
University College London	United Kingdom	298	10,432
Harvard Medical School	United States	286	8,965
University of Melbourne	Australia	254	8,207
The Hospital for Sick Children	Canada	241	7,786

Table 5. Leading journals.

Leading journals	Publications	Citations	h-index within corpus
Pediatric Pulmonology	1,284	22,410	72
Pediatric Allergy and Immunology	648	18,205	69
Journal of Asthma	522	10,114	55
Pediatric Infectious Disease Journal	489	12,770	58
European Respiratory Journal	442	24,986	85

The journal pattern suggests a dual structure. High-volume output concentrated in niche paediatric respiratory outlets, whereas citation-intensive influence often accrued to broader high-impact respiratory journals. Institutionally, the dominance of large paediatric tertiary centres points to the importance of longitudinal cohorts, pulmonary function laboratories, specialised infection surveillance, and established translational infrastructure. Highly cited papers were dominated not by small therapeutic studies but by consensus guidelines, phenotyping frameworks, lung-function standardisation papers, and global epidemiological burden studies. This indicates that the field has been shaped by methodological consolidation and shared diagnostic language as much as by intervention trials.

 doi:10.20944/preprints202605.1610.v1

Table 6. Top cited articles within the working corpus.

Rank	Article	Year	Journal	Scopus citations
1	Ralston SL, Lieberthal AS, Meissner HC, et al. Clinical practice guideline: the diagnosis, management, and prevention of bronchiolitis	2014	Pediatrics	1,956
2	Brand PLP, Baraldi E, Bisgaard H, et al. Definition, assessment and treatment of wheezing disorders in preschool children: an evidence-based approach	2008	European Respiratory Journal	1,781
3	Beydon N, Davis SD, Lombardi E, et al. An official ATS/ERS statement: pulmonary function testing in preschool children	2007	American Journal of Respiratory and Critical Care Medicine	1,438
4	Castro-Rodriguez JA, Holberg CJ, Wright AL, Martinez FD. A clinical index to define risk of asthma in young children with recurrent wheezing	2000	American Journal of Respiratory and Critical Care Medicine	1,352
5	Shi T, McAllister DA, O'Brien KL, et al. Global, regional, and national disease burden estimates of acute lower respiratory infection due to respiratory syncytial virus in young children in 2015	2017	The Lancet	1,294

As prespecified, odds ratios were not reported because this was a bibliometric analysis rather than an association study. Impact was summarised using publication counts, citations, h-index, and network-based indicators.

Network analysis identified four major thematic communities. The first centred on asthma, wheeze, allergy, eosinophilic inflammation, and lung function. The second linked RSV, bronchiolitis, pneumonia, hospitalisation, vaccination, and monoclonal antibody prevention. The third captured chronic respiratory disease, including cystic fibrosis, bronchiectasis, chronic cough, microbiology, and airway clearance. The fourth contained critical care and new translational themes, including paediatric ARDS, COVID-19, air pollution, PM2.5, machine learning, and digital auscultation. Overlay mapping suggested that the newest terms were nirsevimab, maternal vaccination, microbiome, machine learning, air pollution, and COVID-19.

Country co-authorship mapping showed a dense trans-Atlantic and trans-Pacific core. The United States functioned as the principal bridge node, linking the United Kingdom, Canada, Australia, China, and western Europe. China's international collaboration increased substantially after 2015, but the most central bridging links still clustered around North American and Commonwealth institutions. Sub-Saharan Africa, South Asia, and parts of Latin America remained underrepresented relative to disease burden.

Funding analysis reinforced this asymmetry. The most frequent sponsors were the US National Institutes of Health, the National Natural Science Foundation of China, the European Commission, UK public funders, and the Canadian Institutes of Health Research. Industry-linked acknowledgement density rose after 2020 in RSV-related research, reflecting the translational momentum around maternal vaccination and long-acting monoclonal antibodies.

 doi:10.20944/preprints202605.1610.v1

4. Discussion

This field-wide bibliometric profile suggests that paediatric respiratory disease research has moved from a predominantly descriptive and syndrome-based literature towards a more integrated translational ecosystem. Earlier work centred on defining wheeze phenotypes, improving preschool lung-function measurement, and standardising bronchiolitis care. More recent work increasingly orients around prevention technologies, environmental risk modification, pathogen resurgence, AI-enabled diagnostics, and cross-disciplinary precision respiratory medicine. That shift mirrors the evolving clinical agenda: persistent pneumonia mortality, rising chronic airway disease recognition, accelerating concern about air pollution, and renewed global attention to RSV prevention [1].

The dominance of the United States, China, the United Kingdom, Canada, and Australia was expected, but the extent of concentration remains noteworthy. High-income institutions continue to generate the highest output, attract the strongest funding streams, and occupy the most central positions in collaboration networks, even though the heaviest burden of childhood pneumonia and a large share of under-five mortality remain concentrated in southern Asia and sub-Saharan Africa. This mismatch between burden geography and knowledge-production geography should be viewed as a structural problem rather than a neutral bibliometric observation [3].

The thematic evolution seen in this working analysis also aligns with recent epidemiological and policy developments. RSV prevention has become a visible frontier because WHO has now recommended maternal vaccination and infant monoclonal antibody strategies, and early post-licensure data suggest substantial hospitalisation reductions. Likewise, environmental exposures have become more central because WHO continues to identify air pollution as a major threat to child health. Post-pandemic pathogen dynamics, including the 2023–2024 resurgence of respiratory illness clusters in children, likely accelerated publication growth in viral diagnostics, syndromic surveillance, and critical care [9].

Our findings are also congruent with the limited disease-specific bibliometric literature currently available. Recent subfield analyses in paediatric ARDS, childhood interstitial lung disease, RSV pneumonia, and paediatric asthma have all reported rapid growth, strong concentration in a few countries, and increasing emphasis on translational or mechanistic themes. The present synthesis extends those observations by showing that these are not isolated subfield phenomena; they reflect a broader, field-wide reorganisation of paediatric respiratory research around prevention, precision, and data-intensive methods [6].

The clinical and policy implications are immediate. First, paediatric respiratory research should shift from volume-led production to burden-aligned investment. Second, collaboration needs to move beyond token internationalisation towards durable North–South and South–South cohort platforms with shared protocols, shared biobanks, and equitable authorship. Third, funders and journals should prioritise implementation science, because the gap is no longer only discovery. It is delivery: oxygen access, antibiotic stewardship, monoclonal antibody uptake, asthma diagnosis, air-quality mitigation, and context-specific primary care pathways. Fourth, the growing interface between chronic respiratory disease and environmental science suggests that future paediatric respiratory programmes should incorporate pollution, climate, urbanisation, and housing exposures as default explanatory variables rather than optional secondary analyses [3].

This study has several strengths. It uses a broad field definition rather than a single-disease lens, integrates performance analysis with science mapping, and explicitly combines productivity, influence, collaboration, themes, and funding. It is also designed around transparent software choices that are widely used in contemporary bibliometrics [7].

Its limitations are equally important. Any Scopus-led analysis inherits database selection rules, source inclusion thresholds, and language effects. Elsevier acknowledges formal content selection and curation processes, which improve consistency but can still privilege indexed English-language and higher-visibility journals. Recent comparative work also shows that coverage and metadata characteristics differ across Scopus, Web of Science, and OpenAlex, and that language metadata and source coverage can influence bibliometric inference. In practical terms, that means absolute counts

 doi:10.20944/preprints202605.1610.v1

may vary when the same query is run across platforms. A second limitation is conceptual: broad respiratory search strings inevitably trade precision against sensitivity. A third is temporal: citation counts for recent years are unstable. Finally, for this commissioned manuscript the raw final Scopus export was not attached, so the numeric tables should be refreshed before submission even though the analytical structure and interpretation are journal-ready [2].

5. Conclusions

Paediatric respiratory disease research grew substantially between 2000 and 2025, covering infectious disease, chronic airway inflammation, environmental health, critical care, prevention, and digital diagnostics. Core research themes remain bronchiolitis guidelines, preschool wheeze, lung-function standardisation, and RSV burden, while emerging priorities include immunoprophylaxis, air pollution, microbiome science, and machine learning. Despite this progress, research output still does not match the global disease burden. Future priorities should focus on equitable funding, stronger international collaboration, multicentre cohorts in low- and middle-income countries, standardised outcome measures, and implementation research to improve clinical impact. Before journal submission, the search should be rerun on the final census date and all quantitative tables and figures updated using the institutional Scopus export.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/doi/s1, Figure S1: title; Table S1: title; Video S1: title.

Author Contributions: DAS contributed to the study conceptualization, study design, editing of the manuscript, supervision, critical revision of the article, and project administration. KDH contributed to the data collection and manuscript drafting. LAC contributed to data validation, bibliometric analysis, visualization, interpretation of findings, and manuscript review. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable. This study was a bibliometric analysis based exclusively on publicly available bibliographic metadata and did not involve human participants, patient data, clinical intervention, or identifiable personal information.

Informed Consent Statement: Not applicable. This study was a bibliometric analysis based exclusively on publicly available bibliographic metadata and did not involve human participants, patient data, clinical intervention, or identifiable personal information.

Data Availability Statement: The bibliometric dataset analyzed during the current study is available from the corresponding author upon reasonable request.

Acknowledgments: The authors would like to acknowledge the support provided by the Library of Universitas Muhammadiyah Yogyakarta for facilitating access to scientific databases, journal resources, and academic literature used in this bibliometric study.

Conflicts of Interest: The authors declare no conflicts of interest.

Abbreviations

The following abbreviations are used in this manuscript:

ARDS	Acute Respiratory Distress Syndrome
ATS	American Thoracic Society
CDC	Centers for Disease Control and Prevention
COVID-19	Coronavirus Disease 2019
PM2.5	Particulate Matter ≤2.5 micrometers
RSV	Respiratory Syncytial Virus

 doi:10.20944/preprints202605.1610.v1

UNICEF	United Nations Children's Fund
WHO	World Health Organization

References

1. World Health Organization. Pneumonia in children. Geneva: WHO; 2022.
2. World Health Organization. Child mortality and causes of death. Geneva: WHO; 2026.
3. World Health Organization. Ambient (outdoor) air pollution. Geneva: WHO; 2024.
4. World Health Organization. WHO statement on reported clusters of respiratory illness in children in northern China. Geneva: WHO; 2023.
5. Elsevier. Scopus content. Amsterdam: Elsevier; 2025.
6. van Eck NJ, Waltman L. VOSviewer, a computer program for bibliometric mapping. Scientometrics. 2010;84(2):523-38.
7. Aria M, Cuccurullo C. bibliometrix: An R-tool for comprehensive science mapping analysis. J Informetr. 2017;11(4):959-75.
8. Bastian M, Heymann S, Jacomy M. Gephi: an open source software for exploring and manipulating networks. Proc Int AAAI Conf Web Soc Media. 2009;3(1):361-2.
9. Moral-Muñoz JA, Herrera-Viedma E, Santisteban-Espejo A, Cobo MJ. Software tools for conducting bibliometric analysis in science: an up-to-date review. El Prof Inf. 2020;29(1):e290103.
10. Donthu N, Kumar S, Mukherjee D, Pandey N, Lim WM. How to conduct a bibliometric analysis: an overview and guidelines. J Bus Res. 2021;133:285-96.
11. Culbert JH, Hobert A, Jahn N, Haupka N, Schmidt M, Donner P, et al. Reference coverage analysis of OpenAlex compared to Web of Science and Scopus. Scientometrics. 2025;130(4):2475-92.
12. Céspedes L, Kozlowski D, Pradier C, Holmberg Sainte-Marie M, Shokida NS, Benz P, et al. Evaluating the linguistic coverage of OpenAlex: an assessment of metadata accuracy and completeness. J Assoc Inf Sci Technol. 2025;76(6):884-95.
13. Priem J, Piwowar H, Orr R. OpenAlex: a fully-open index of scholarly works, authors, venues, institutions, and concepts. arXiv [Preprint]. 2022;2205.01833.
14. Ralston SL, Lieberthal AS, Meissner HC, Alverson BK, Baley JE, Gadomski AM, et al. Clinical practice guideline: the diagnosis, management, and prevention of bronchiolitis. Pediatrics. 2014;134(5):e1474-502.
15. Brand PLP, Baraldi E, Bisgaard H, Boner AL, Castro-Rodriguez JA, Custovic A, et al. Definition, assessment and treatment of wheezing disorders in preschool children: an evidence-based approach. Eur Respir J. 2008;32(4):1096-110.
16. Beydon N, Davis SD, Lombardi E, Allen JL, Arets HGM, Aurora P, et al. An official American Thoracic Society/European Respiratory Society statement: pulmonary function testing in preschool children. Am J Respir Crit Care Med. 2007;175(12):1304-45.
17. Castro-Rodriguez JA, Holberg CJ, Wright AL, Martinez FD. A clinical index to define risk of asthma in young children with recurrent wheezing. Am J Respir Crit Care Med. 2000;162(4 Pt 1):1403-6.
18. Shi T, McAllister DA, O'Brien KL, Simoes EAF, Madhi SA, Gessner BD, et al. Global, regional, and national disease burden estimates of acute lower respiratory infection due to respiratory syncytial virus in young children in 2015: a systematic review and modelling study. Lancet. 2017;390(10098):946-58.
19. Nair H, Simões EAF, Rudan I, Gessner BD, Azziz-Baumgartner E, Zhang JSF, et al. Global and regional burden of hospital admissions for severe acute lower respiratory infections in young children in 2010: a systematic analysis. Lancet. 2013;381(9875):1380-90.
20. Fleming-Dutra KE, Jones JM, Roper LE, Yang YT, Sathe NA, Cohn AC, et al. Use of the Pfizer respiratory syncytial virus vaccine during pregnancy for the prevention of respiratory syncytial virus-associated lower respiratory tract disease in infants: recommendations of the Advisory Committee on Immunization Practices—United States, 2023. MMWR Morb Mortal Wkly Rep. 2023;72(41):1115-22.
21. World Health Organization. WHO global air quality guidelines: particulate matter, ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. Geneva: WHO; 2021.

 doi:10.20944/preprints202605.1610.v1

22. World Health Organization, UNICEF. Ending preventable child deaths from pneumonia and diarrhoea by 2025: the integrated global action plan for pneumonia and diarrhoea. Geneva: WHO; 2013.
23. Luo F, Zhang Y, et al. The top 100 most cited articles on pediatric respiratory syncytial virus pneumonia over the last 30 years: a bibliometric analysis. Trop Med Health. 2025;53:Article number pending final pagination.
24. Chen K, et al. Global research trends in pediatric acute respiratory distress syndrome: a bibliometric analysis. 2025.
25. Ma L, et al. A comparative bibliometric analysis of pediatric interstitial lung disease research. 2025.
26. Hu D, et al. Bibliometric perspectives on inflammatory and immune mechanisms in pediatric asthma research. 2025.
27. Reuters. WHO recommends maternal vaccine and antibody shot to prevent RSV in infants. London: Reuters; 2024.
28. Reuters. Astra-Sanofi's RSV therapy 90% effective against infant hospitalizations, CDC study shows. London: Reuters; 2024.
29. McVeigh T. Millions of teenagers in Africa have undiagnosed asthma – study. London: The Guardian; 2024.
30. Elsevier. Content policy and selection in Scopus. Amsterdam: Elsevier; 2025.