



# RESPIRE ASM 2025 Abstract Booklet

for Poster Presentations  
on 30 July 2025

**This is Version 4 of the 2025 Abstract Booklet.**

Download the most up-to-date version by  
scanning the QR Code or visit:

<https://edin.ac/4n7sUNF>



### Updates since Version 3:

- Location changed from Vista Ballroom on Floor 1 to Ballroom 2 on Floor 2.
- Floor plan removed due to new location.

## Poster presentations at the RESPIRE ASM

Posters will be displayed in the foyer outside Ballroom 2 of the Hilton Hotel, Kota Kinabalu. They will be on display from 9am on Tuesday 29 July until 4pm on Wednesday 30 July.

Abstracts are colour coded based on the poster presentation session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health

Co-led by:



THE UNIVERSITY  
of EDINBURGH



UNIVERSITI  
MALAYA

FUNDED BY

**NIHR**

National Institute for  
Health and Care Research



**UK International  
Development**

Partnership | Progress | Prosperity



# Poster list

#	Title and link to abstract	Presenter
1.	<a href="#">RESPIRE: A collaboration across research programmes and their supporting platforms</a>	Dominique Balharry
2.	<a href="#">Pilot Study of a Clinical Algorithm Scoring System for Diagnosing Smear-Negative Pulmonary Tuberculosis in Resource-Limited Settings</a>	Chee Kuan Wong
3.	<a href="#">Challenges in conducting the Phase 2 AMASSMENT Study: Experience from the Sandakan Health Centre</a>	Suhashini Sivasegaran
4.	<a href="#">Leveraging Air Quality Forecasts for Asthma Care: A Randomised Trial of the AQA App</a>	Adina binti Abdullah
5.	<a href="#">Air Quality Policies in Malaysia: A Scoping Review and Stakeholder-Informed Approach to Strengthen Environmental Health Governance</a>	Norita Hussein
6.	<a href="#">Estimating prevalence and burden of Chronic Respiratory Disease in adults in Asian low and middle-income countries.</a>	Nik Sherina Haidi Hanafi
7.	<a href="#">Exploring community perceptions and experiences of living with chronic respiratory disease (CRD) in Pune, India using photovoice methodology</a>	Hani Salim / Rutuja Patil
8.	<a href="#">Revitalising Asthma Care and Treatment (ReACT): a School-based asthma training programme</a>	Siti Nurkamilla Ramdzan
9.	<a href="#">Adapting school-based Asthma Programme: a multi-country (AdAPT) study</a>	Siti Nurkamilla Ramdzan
10.	<a href="#">Adoption and Feasibility of the Klang Asthma Cohort (KAC) Registry in Primary Care</a>	Rizawati Ramli
11.	<a href="#">Digital Engagement Patterns of the Klang Asthma Cohort (KAC) Kit: A Web Analytics Study</a>	Rizawati Ramli
12.	<a href="#">Effectiveness of Pictorial Personalised Asthma Action Plans in Malaysian Public Primary Care Clinics: A Randomised Controlled Trial</a>	Ai Theng Cheong
13.	<a href="#">Evaluating the Oxygen Preparedness &amp; Security: A Mixed-Method Approach for Oxygen Survey</a>	Sabit Saad Shafiq
14.	<a href="#">Scale up of pulse oximetry in outdoor management of childhood illnesses in Bangladesh: a hybrid effectiveness implementation study</a>	Sabit Saad Shafiq
15.	<a href="#">Cooking Fuel Use, Kitchen Environment, and Indoor PM<sub>2.5</sub> Levels in Sri Lankan Households: Implications for Feto-Maternal and Child Respiratory Health</a>	Duminda Yasaratne
16.	<a href="#">Text messaging for Seasonal Asthma in Islamabad, Pakistan</a>	Ahmad Kakakhail
17.	<a href="#">A Cluster Randomized Controlled Trial of mHealth (mobile health) Intervention for Smoking Cessation in People with Tuberculosis</a>	Maham Zahid / Fahmidur Rahman
18.	<a href="#">Acceptability of respiratory syncytial virus (RSV) vaccine: a qualitative study in India and Pakistan</a>	Shabina Ariff
19.	<a href="#">Barriers to and enablers of tuberculosis diagnosis, notification and intervention for designing customized intervention package to minimize 'missing millions' in tribal communities of India – Systematic review</a>	Ashish Satav

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

20. <a href="#">Integrating Psychological Intervention into PR for Chronic Respiratory Disease in Rural India</a>	Diksha Naresh Singh
21. <a href="#">Policies and programs in South Asia to address Asthma and Chronic Obstructive Pulmonary Disease in the context of climate change - A scoping review</a>	Shabina Ariff
22. <a href="#">To assess the feasibility and acceptability of integrating spirometry into the routine practice of primary care physicians in rural India for the effective diagnosis and management of Chronic Respiratory Diseases (CRD)</a>	Dhiraj Agarwal
23. <a href="#">Adaptation strategies and Physiological Responses to Weather Variability, among persons with chronic respiratory diseases (CRDs) in Rural India: Vadu HDSS experience</a>	Dhiraj Agarwal
24. <a href="#">Identifying Vulnerable Communities and Their Experiences Related to Climate Change and Respiratory Health, and Creating Awareness Through Community Engagement</a>	Paul Jebaraj
25. <a href="#">A scoping review for toolkit development to improve health systems for climate change and respiratory health</a>	Paul Jebaraj
26. <a href="#">Pulmonary Rehabilitation for Chronic Respiratory Diseases: Perspectives of Healthcare Professionals and Policymakers in Bangladesh</a>	Monsur Habib
27. <a href="#">Feasibility of Pulmonary Rehabilitation for Chronic Respiratory Diseases in Low-Resource South Asian Settings</a>	Monsur Habib
28. <a href="#">Enhancing Chronic Respiratory Disease (CRD) Care Through Upskilling Health Care Providers of the Government Health System in a Rural District in India: A Pre-Post Educational Intervention Trial</a>	Biswajit Paul
29. <a href="#">Climate Change and Lung Function in the Adult Population of Sylhet, Bangladesh</a>	Salahuddin Ahmed
30. <a href="#">Climate Change and Respiratory Health in South Asia: A Scoping Review</a>	Rezwana Tabassum
31. <a href="#">Prevalence of Chronic Respiratory Diseases (National CRD Survey) and Quality of Care in Bhutan</a>	Thinley Dorji
32. <a href="#">Childhood Acute Respiratory Infection Prevalence and Climate Parameters: A Retrospective Analysis</a>	Ahad Mahmud Khan

## Abstract listing

### 1 RESPIRE: A collaboration across research programmes and their supporting platforms in Bangladesh, Bhutan, India, Indonesia, Malaysia, Pakistan and Sri Lanka The RESPIRE Core Team

Visit this poster display to learn how RESPIRE's studies, programmes and platforms work together to enable world-leading research to reduce the burden of respiratory disease.

#### Further information is available on the following pages

- Programmes and studies: <https://usher.ed.ac.uk/respire/research>
- Supporting platforms: <https://usher.ed.ac.uk/respire/platforms>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 2 Pilot Study of a Clinical Algorithm Scoring System for Diagnosing Smear-Negative Pulmonary Tuberculosis in Resource-Limited Settings

**Chee Kuan Wong<sup>1</sup>; Wai Khew Lee<sup>2</sup>; Sarah Jane Jia Chyi Chan<sup>3</sup>; Suhashini Sivasegaran<sup>4</sup>; Jiloris Dony<sup>5</sup>; Roddy Teo<sup>6</sup>; Karuthan Chinna<sup>7</sup>; Jayakayatri Jeevajothei Nathan<sup>8</sup>; Helen R Stagg<sup>9</sup>; Harish Nair<sup>10</sup>; Harry Campbell<sup>11</sup>; Ee Ming Khoo<sup>12</sup>**

<sup>1</sup>Division of Respiratory Medicine, Department of Medicine, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia; <sup>2</sup>Luyang Health Clinic, Kota Kinabalu, Sabah, Malaysia; <sup>3</sup>Manggatal Health Clinic, Kota Kinabalu, Sabah, Malaysia; <sup>4</sup>Suhashini Sivasegaran, Sandakan Health Clinic, Sandakan, Sabah, Malaysia; <sup>5</sup>Kota Kinabalu Public Health Laboratory, Ministry of Health Malaysia, Kota Kinabalu, Sabah, Malaysia; <sup>6</sup>Tuberculosis and Leprosy Control Sector, Sabah State Health Department, Kota Kinabalu, Sabah, Malaysia; <sup>7</sup>Faculty of Business and Management, UCSI University, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia; <sup>8</sup>Department of Primary Care Medicine, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia; <sup>9</sup>Department of Infectious Disease Epidemiology, London School of Hygiene & Tropical Medicine, London, United Kingdom; <sup>10</sup>Usher Institute, University of Edinburgh, Edinburgh, United Kingdom; <sup>11</sup>Usher Institute, University of Edinburgh, Edinburgh, United Kingdom; <sup>12</sup>Department of Primary Care Medicine, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia

**Background:** Sabah, Malaysia, bears the country’s highest TB burden. Diagnosing Smear-Negative Pulmonary TB (SNPTB) in Sabah is challenging due to limited access to rapid diagnostic tools and poor applicability of existing algorithms. This pilot study aimed to evaluate a locally developed Clinical Algorithm Scoring System (CASS) for diagnosing SNPTB.

**Methodology:** A CASS was developed with a panel of 23 health experts from January to June 2024, using the modified Delphi method. The cut-off score of ‘likely’ SNPTB (20 and above), sensitivity (86.2%), and specificity (76.7%) of the CASS were determined by using an urban tertiary hospital database records of 60 anonymised patients with respiratory symptoms (29 culture positive SNPTB, 31 non-PTB). The CASS was piloted at three high-burden TB sites in Sabah from August to October 2024 on 53 suspected SNPTB patients. They were individuals aged  $\geq 12$  years with at least one pulmonary TB symptom, three negative AFB smears, chest X-ray findings suggestive of TB, and no other confirmed pulmonary diagnosis. The diagnosis of SNPTB was confirmed by Mycobacterium tuberculosis (MTB) culture.

**Results:** The median CASS score was 24, with 88.5% of the patients classified as 'likely TB'. The algorithm showed 100% sensitivity but only 14% specificity when MTB culture was used as the reference standard.

**Expected impact:** The high sensitivity suggests the clinical algorithm is good as a screening tool for SNPTB but poor as a diagnostic tool. Further refinement of clinical parameters and their weightage or integration of additional diagnostic tools may improve the specificity.

<https://usher.ed.ac.uk/respire/research/infectious-diseases/current/amassment>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

### 3 Challenges in conducting the Phase 2 AMASSMENT Study: Experience from the Sandakan Health Centre

**Suhashini Sivasegaran<sup>1</sup>, Wai Khew Lee<sup>2</sup>, Chee Kuan Wong<sup>3</sup>, Ri Hui Lam<sup>1</sup>, Sarah Jane Jia Chyi Chan<sup>4</sup>, Jiloris Dony<sup>5</sup>, Roddy Teo<sup>6</sup>, Karuthan Chinna<sup>7</sup>, Jayakayatri Jeevajothi Nathan<sup>8</sup>, Harish Nair<sup>9</sup>, Harry Campbell<sup>9</sup>, Ee Ming Khoo<sup>8</sup>, Helen R Stagg<sup>10</sup>**

<sup>1</sup>Sandakan Health Clinic, Sandakan, Sabah, Malaysia; <sup>2</sup> Luyang Health Clinic, Kota Kinabalu, Sabah, Malaysia; <sup>3</sup> Division of Respiratory Medicine, Department of Medicine, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia; <sup>4</sup> Menggatal Health Clinic, Kota Kinabalu, Sabah, Malaysia; <sup>5</sup> Kota Kinabalu Public Health Laboratory, Ministry of Health Malaysia, Kota Kinabalu, Sabah, Malaysia; <sup>6</sup> Public Health Sector, Sabah State Health Department, Kota Kinabalu, Sabah, Malaysia; <sup>7</sup> Faculty of Business and Management, UCSI University, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia; <sup>8</sup> Department of Primary Care Medicine, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia; <sup>9</sup> Usher Institute, University of Edinburgh, Edinburgh, United Kingdom; <sup>10</sup> Department of Infectious Disease Epidemiology, London School of Hygiene & Tropical Medicine, London, United Kingdom

**Background:** Smear-negative pulmonary tuberculosis (SNPTB) is difficult to diagnose due to non-specific symptoms and low bacillary load. Sabah has the highest tuberculosis (TB) incidence in Malaysia and is further challenged by limited laboratory infrastructure and molecular testing. The AMASSMENT (Algorithm Modelled & Applied in Sabah for Smear Negative Tuberculosis) study developed a clinical algorithm scoring system to improve SNPTB diagnosis. It is being tested at 3 sites i.e. Luyang, Menggatal, and Sandakan health clinics since November 2024. This paper outlines the implementation process and challenges faced in Sandakan.

**Methods:** A pre-study engagement was held at a TB hotspot village to raise awareness and encourage symptomatic individuals to come forward for testing. Site visits, staff briefings, and a CXR refresher course were conducted by principal investigators (PI). Challenges were identified through regular meetings with PIs.

**Findings:** As of May 2025, 29.5% (63/234) for Sandakan were recruited; comprising 43 men and 33 women. Most aged 50-65 years and reside within 25km of the clinic. Key challenges identified were confusion over recruitment criteria, rapid turnover of staff, competing clinical duties, and multiple entry points in the clinic for suspected TB patients (i.e. from outpatient department and peripheral clinics). Missed follow-ups and transport barriers further hindered recruitment.

**Discussion:** Poor recruitment was identified as the main issue. The workflow was streamlined by routing all suspected TB cases to the TB clinic after initial assessment to reduce missing patients.

**Conclusions:** Most staff lack experience in conducting research albeit enthusiastic. Regular meetings with PIs helped identify roadblocks early and enabled implementation of remedial measures.

<https://usher.ed.ac.uk/respire/research/infectious-diseases/current/amassment>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

#### 4 Leveraging Air Quality Forecasts for Asthma Care: A Randomised Trial of the AQA App

**Adina Abdullah<sup>1</sup>; Wei Leik Ng<sup>1</sup>; Norita Hussein<sup>1</sup>; Chee Sun Liew<sup>2</sup>; Wee Cheah<sup>3</sup>; Nik Sherina Hanafi<sup>1</sup>; Siti Nurkamilla Ramdzan<sup>1</sup>; Rizawati Ramli<sup>1</sup>; Chun Lin<sup>4</sup>; Chng Saun Fong<sup>5</sup>; Ping Yein Lee<sup>6</sup>; Darwish Mohd Isa<sup>7</sup>; Afifah Tahar<sup>3</sup>; Chin Hai Teo<sup>1,6</sup>; Norimichi Hirahara<sup>6</sup>; Chee Kuan Wong<sup>8</sup>; Mohd Talib Latif<sup>9</sup>; Maggie Chel Gee Ooi<sup>10</sup>; Amy Stidworthy<sup>11</sup>; Daniel Connolly<sup>11</sup>; Ai Theng Cheong<sup>12</sup>; Sazlina Shariff Ghazali<sup>12</sup>; Hani Syahida Salim<sup>12</sup>; Poh Ying Lim<sup>13</sup>; Jay Evans<sup>4</sup>; Bee Kiau Ho<sup>14</sup>; Hilary Pinnock<sup>4</sup>; Ee Ming Khoo<sup>1</sup>**

<sup>1</sup> Department of Primary Care Medicine, Faculty of Medicine, Universiti Malaya, Malaysia; <sup>2</sup> Department of Computer System & Technology, Faculty of Computer Science and Information Technology, Universiti Malaya; <sup>3</sup> Institute of Ocean and Earth Sciences, Universiti Malaya, Malaysia; <sup>4</sup> Usher Institute, The University of Edinburgh, United Kingdom; <sup>5</sup> Institute for Advanced Studies, Universiti Malaya, Malaysia; <sup>6</sup> U M eHealth Unit, Faculty of Medicine, Universiti Malaya, Malaysia; <sup>7</sup> Department of Social and Preventive Medicine, Faculty of Medicine, Universiti Malaya, Malaysia; <sup>8</sup> Department of Medicine, Faculty of Medicine, Universiti Malaya, Malaysia; <sup>9</sup> Department of Earth Sciences and Environment, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, Malaysia; <sup>10</sup> Center for Tropical Climate Change System, Institute of Climate Change, Universiti Kebangsaan Malaysia, Malaysia; <sup>11</sup> Cambridge Environmental Research Consultants, United Kingdom; <sup>12</sup> Department of Family Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Malaysia; <sup>13</sup> Department of Community Health, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Malaysia; <sup>14</sup> Botanik Health Clinic, Klang District, Ministry of Health, Malaysia

**Background:** Poor air quality is associated with increased asthma exacerbations. We developed a mobile app, the Air Quality for Asthma (AQA RESPIRE) app, which provides a 48-hour air quality forecast using the Atmospheric Dispersion Modelling System (ADMS). This study aimed to assess its feasibility and impact on asthma control.

**Methodology:** A pilot randomized controlled trial was conducted at Klinik Kesihatan Botanic, Klang, involving 60 adults with asthma. Participants were randomly assigned to either the intervention group (AQA RESPIRE app + usual care) or the control group (usual care). The primary endpoint was asthma control, assessed via the GINA Asthma Symptoms Control tool at baseline, 1, 3, 6, and 12 months. Secondary endpoints included exacerbation frequency, emergency visits, medication use, and peak flow rate. Usability was evaluated using the System Usability Scale (SUS), and app utility was assessed through dashboard analytics. To assess effectiveness, independent t-tests or Mann-Whitney tests were used for continuous data, while chi-square tests were applied to categorical data.

**Challenges/opportunities encountered:** At one-month follow-up, no significant difference in asthma control was observed ( $p=0.72$ ). The mean SUS score of 70.1 indicated good usability. However, technical issues, such as automatic log-offs and data flow interruptions, limited app utility. Data from the three-month follow-up is under review.

**Expected impact:** While early findings suggest good usability, addressing technical limitations is crucial for long-term utility. Continuous monitoring and system improvements are essential to optimize the AQA RESPIRE app's use and its impact on asthma control.

<https://usher.ed.ac.uk/respire/research/preventable-risk-factors/current/aq-haze>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 5 Air Quality Policies in Malaysia: A Scoping Review and Stakeholder-Informed Approach to Strengthen Environmental Health Governance

**Jayakayatri Jeevajothi Nathan<sup>1</sup>, Norita Hussein<sup>1</sup>, Adina Abdullah<sup>1</sup>, Chng Saun Fong<sup>2</sup>, Wee Cheah<sup>3</sup>, Logaraj Ramakreshnan<sup>4</sup>, Darwish Mohd Isa<sup>5</sup>, Afifah Tahar<sup>3</sup>, Nursyuhada Sukri<sup>1</sup>, Nik Sherina Hanafi<sup>1</sup>, Chee Kuan Wong<sup>6</sup>, Ping Yein Lee<sup>7</sup>, Siti Nurkamilla Ramdzan<sup>1</sup>, Rizawati Ramli<sup>1</sup>, Wei Leik Ng<sup>1</sup>, Ai Theng Cheong<sup>8</sup>, Sazlina Shariff Ghazali<sup>8</sup>, Linda Bauld<sup>9</sup>, Genevie Fernandes<sup>10</sup>, Hillary Pinnock<sup>9</sup>, Chun Lin<sup>9</sup>, Ee Ming Khoo<sup>1</sup>**

<sup>1</sup>Department of Primary Care Medicine, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia; <sup>2</sup>Institute for Advanced Studies, Universiti Malaya, Kuala Lumpur, Malaysia; <sup>3</sup>Institute of Ocean and Earth Sciences, Universiti Malaya, Kuala Lumpur, Malaysia; <sup>4</sup>Infection Control Department, University of Malaya Medical Centre, 50603 Kuala Lumpur, Malaysia; <sup>5</sup>Department of Social and Preventive Medicine, Faculty of Medicine, Universiti Malaya, Malaysia; <sup>6</sup>Department of Medicine, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia; <sup>7</sup>Dean Office, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia; <sup>8</sup>Department of Family Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia; <sup>9</sup>Usher Institute, University of Edinburgh, UK, <sup>10</sup>International Primary Care Respiratory Group, London, UK

**Background:** Air pollution remains a major public health concern in Malaysia, contributing to rising cardiorespiratory illnesses and economic losses. Despite the existence of numerous national and regional policies, their implementation and effectiveness remain unclear. This study aimed to map existing policy measures, assess their effectiveness, and co-develop policy priorities through stakeholder engagement.

**Methods:** A scoping review of academic and grey literature was conducted across five bibliographic databases and official government sources, covering documents published between 2000 and 2025. Policies were analysed for objectives, interventions, and reported effectiveness. Subsequently, a two-phased stakeholder engagement was undertaken involving 32 representatives from government, academia, NGOs, and community groups. Thematic discussions and a priority-setting survey were used to identify and validate key policy needs. Kendall’s coefficient of concordance measured consensus across stakeholders.

**Results:** The review identified 28 policy documents and two scholarly articles. Ten core policy themes were mapped, including air quality regulation, urban planning, green technology, and haze management. However, limitations were noted, including fragmented governance, lack of emission targets, weak enforcement, and minimal integration of health considerations. Stakeholders identified inadequate coordination, outdated legislation, and limited community engagement as major barriers. Priority recommendations included establishing a centralised coordinating body, strengthening enforcement, embedding public health in policy design, and addressing indoor air pollution. Moderate consensus on policy priorities was observed.

**Conclusion:** While Malaysia has developed a comprehensive air quality policy framework, significant gaps remain in implementation and overall effectiveness. Integrating stakeholder voices, strengthening enforcement, and linking environmental policy with public health are essential to improve air quality governance. Findings from this study informed a stakeholder-driven policy brief and offer a roadmap for responsive, inclusive, and health-centred air pollution control in Malaysia.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 6 Estimating prevalence and burden of Chronic Respiratory Disease in adults in Asian low and middle-income countries.

**Dhiraj Agarwal<sup>1</sup>, Nik Sherina Hanafi<sup>2</sup>, Osman M Yusuf<sup>3</sup>, Ee Ming Khoo<sup>2</sup>, Siok Fuang Liong<sup>2</sup>, Karleen Chong<sup>2</sup>, Siti Nurkamilla Ramdzan<sup>2</sup>, Rizawati Ramli<sup>2</sup>, Pang Yong Kek<sup>2</sup>, Wong Chee Kuan<sup>2</sup>, Ho Bee Kiau<sup>5</sup>, Salbiah Mohamed Isa<sup>5</sup>, Norita Hussein<sup>2</sup>, Saqib Mustafa<sup>3</sup>, Ahmad Kakakhail<sup>3</sup>, Hilary Pinnock<sup>4</sup>**

1 Vadu Rural Health Program, KEM Hospital Research Centre, Pune, India; 2 Universiti Malaya (UM), Kuala Lumpur, Malaysia; 3 The Allergy and Asthma Institute, Pakistan (AAIP), Islamabad, Pakistan; 4 Usher Institute, University of Edinburgh; 5 Botanic Health Clinic, Klang District, Ministry of Health Malaysia

**Background:** Findings from the RESPIRE 4-Country chronic respiratory disease (4CCORD) pilot study suggested a high burden of asthma (7%), COPD (8%) and other CRDs. However, the aim of the pilot was to validate the research tools and methodologies, and had only recruited 100 participants in each centre, lacking power to draw inference on the burden of CRDs in these communities. In this study, we aimed to estimate the burden of CRDs using fully powered, representative samples in Malaysia and Pakistan.

**Methodology:** Cross-sectional community-based surveys of adults (over 18 years) in Klang, Malaysia (n=640) and Islamabad, Pakistan (n=510). We will use the piloted questionnaire to detect the burden of respiratory symptoms and measure lung function with spirometry including COVID related questions. Data will be collected by field research assistants and spirometry technicians. Questions that were poorly understood in the pilot will be translated into the local dialect for clarity.

**Current status:** All required ethics approvals (ACCORD, EMREC and local Institutional Ethics Committee) have been secured for the study. Redcap data collection application development is in progress. We plan to start data collection from June 2025.

<https://usher.ed.ac.uk/respire/research/non-communicable-diseases/current/4ccord-survey-spirometry>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 7 Exploring community perceptions and experiences of living with chronic respiratory disease (CRD) in Pune, India using photovoice methodology

**D. Dhamdhere<sup>1</sup>, U. Kand<sup>1</sup>, D. Agarwal<sup>1</sup>, H. Pinnock<sup>2</sup>, H. Salim<sup>3</sup>, R. Patil<sup>1</sup>**

<sup>1</sup> Vadu Rural Health Program, KEM Hospital Research Centre - Pune (India); <sup>2</sup> University of Edinburgh - Edinburgh (United Kingdom); <sup>3</sup> Universiti of Putra Malaysia, Malaysia <sup>3</sup> - Selangor (Malaysia)

**Background:** CRDs affect health and quality of life in LMICs. While clinical aspects have been studied, there is limited research on community perceptions, awareness, and social environment of CRD patients. We aimed to explore lived experiences of CRD patients using photovoice.

**Method:** 18 (nine Male & nine Female) patients aged 24 -72 years of age, purposively sampled to achieve maximum variation, clicked photos to express their lived experience of CRD. In-depth interviews explored their perceptions initially and after sharing photos. Qualitative analysis identified key themes.

**Result:** Many shared photos of triggers for CRD symptoms such as dust, smoke, smell, food allergy, pollen, and weather. Biomass exposure was a common trigger and, unexpectedly, food tempering (a crucial cooking step in Indian cuisine) mainly affected females due to involvement in daily chores. Photos of lifting heavy objects, climbing stairs, exposure to biomass and using incense sticks illustrated daily routine challenges. An inhaler symbolised both a lifeline and a source of stigma, reflecting emotional struggles were shared by both male & female participants. Photos of bicycle, tourism or temple visits depicting a desire to lead normal life. Conclusion: Photos illustrated patient perspectives, disease burden and hope for better health. Enhancing community awareness and improving knowledge through participatory methods can promote disease management and support systems.

<https://usher.ed.ac.uk/respire/research/non-communicable-diseases/current/4ccord-photovoice>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 8 Revitalising Asthma Care and Treatment (ReACT): a School-based asthma training programme

**Dr Siti Nurkamilla Ramdzan<sup>1</sup>; Nur Syuhada Sukr<sup>1</sup>; Norita Hussein<sup>1</sup>; Christine Shamala Selvaraj<sup>1</sup>; Rizawati Ramli<sup>1</sup>; Nik Sherina Hanafi<sup>1</sup>; Ping Yein Lee<sup>2</sup>; Adina Abdullah<sup>1</sup>; Jayakayatri Jeevajothi Nathan<sup>1</sup>; Ai Theng Cheong<sup>3</sup>; Sazlina Shariff Ghazali<sup>3,4</sup>; Hani Salim<sup>3</sup>; Ho Bee Kiau<sup>5</sup>; Salbiah Mohamed Isa<sup>5</sup>; Asiah Kassim<sup>6</sup>; Chee Kuan Wong<sup>7</sup>; Yong Kek Pang<sup>7</sup>; Azainorsuzila Ahad<sup>8</sup>; Ahmad Tajuddin Mohamad Nor<sup>9</sup>; Ee Ming Khoo<sup>1</sup>; Karuthan Chinna<sup>10</sup>; Jürgen Schwarze<sup>11</sup>; Hilary Pinnock<sup>11</sup>**

1 Department of Primary Care Medicine, Faculty of Medicine, Universiti Malaya, Malaysia; 2 UM eHealth Unit, Faculty of Medicine, Universiti Malaya, Malaysia; 3 Department of Family Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Malaysia; 4 Malaysian Research Institute on Ageing, Universiti Putra Malaysia, Malaysia; 5 Botanic Health Clinic, Klang District, Ministry of Health Malaysia; 6 Department of Pediatric and Clinical Research Centre, Hospital Tunku Azizah, Hospital Kuala Lumpur, Malaysia; 7 Department of Medicine, Faculty of Medicine, Universiti Malaya, Malaysia; 8 Port Dickson Health Clinic, Port Dickson, Malaysia; 9 Emergency and Trauma Department, Hospital Tengku Ampuan Rahimah, Klang, Malaysia; 10 UCSI University Kuala Lumpur, Malaysia; 11 The University of Edinburgh, United Kingdom

**Background:** The World Health Organization (WHO) recommends training school staff to support the self-management of children with asthma including provision of asthma first aid in schools. However, Malaysia currently lacks a structured programme for this. As part of the RESPIRE 1 initiative, we developed a school-based asthma training programme to equip school staff with the skills to manage asthma appropriately.

**Research objective:** This pilot study is a cluster randomized controlled trial (cRCT) to evaluate the programme’s effectiveness.

**Methodology:** The study involved staff from government primary schools in Klang District, Malaysia. Four schools were randomly selected—two received the asthma training intervention, while two received general health education. The programme was delivered jointly with the Klang school health team. The primary outcome is asthma-related knowledge among school staff, assessed via a validated questionnaire at baseline, and at 1, 3, 6, and 12 months post-intervention. Feasibility is assessed as a secondary outcome.

**Challenges and Opportunities:** Only 7 out of 23 schools agreed to participate. Due to packed school schedules, sessions were held on weekends. The school health team delivered the control programme but could not join the intervention. Feedback from the intervention group was positive, while some participants in the control group expressed dissatisfaction. Dropout rates were high at 3 and 6 months; therefore, we will visit the schools at 12-month for data collection to improve retention rate.

**Expected Impact:** This study will provide important evidence to inform the potential nationwide implementation of school-based asthma training for teachers in Malaysia.

<https://usher.ed.ac.uk/respire/research/non-communicable-diseases/current/react-schools>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 9 Adapting school-based Asthma Programme: a multi-country (AdAPT) study

**Dr Siti Nurkamilla Ramdhan<sup>1</sup>, Dr Ashish Satav<sup>2</sup>, Professor Dr Cissy Kartasasmita<sup>3</sup>, Dr Farzana Khan<sup>4</sup>, Dr Hana Mahmood<sup>5</sup>, Dr Hareem Fatima<sup>6</sup>, Professor Dr Jürgen Schwarze<sup>7</sup>, Professor Dr Nik Sherina Hanafi<sup>1</sup>, Associate Professor Dr Norita Hussein<sup>1</sup>, Dr Rina Triasih<sup>8</sup>, Professor Dr Sajid Soofi<sup>6</sup>, Associate Professor Dr Shabina Ariff<sup>6</sup>, Professor Ee Ming Khoo<sup>1</sup>, Professor Dr Hilary Pinnock<sup>7</sup>**

1 Department of Primary Care Medicine, Universiti Malaya, Malaysia; 2 MAHAN Trust, India; 3 Department of Child Health, Faculty of Medicine, Universitas Padjajaran, Bandung, Indonesia; 4 Fasiuddin Khan Research Foundation, Bangladesh; 5 Neoventive Solutions, Islamabad, Pakistan; 6 Aga Khan University, Pakistan; 7 Usher Institute, The University of Edinburgh, United Kingdom; 8 Department of Child Health, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada/Dr. Sardjito Hospital, Yogyakarta, Indonesia

**Background:** WHO guidelines on school health services recommend self-management support for children with asthma and asthma first aid training for school staff. However, many low- and middle-income countries (LMICs) lack structured, school-based asthma programmes.

**Research Objective:** To adapt a Malaysian-developed school-based asthma programme for implementation in Bangladesh, Indonesia, India, and Pakistan.

**Methodology:** Using the ADAPT process model, this mixed-methods study involved three phases: (1) Qualitative Exploration, (2) Programme Adaptation, and (3) Feasibility Testing. Schools distributed letters to parents to identify children with asthma based on reported symptoms or prior diagnoses. Local stakeholders were engaged throughout to ensure cultural and contextual relevance.

**Results:** In Phase 1, fewer than 1% of children self-reported asthma symptoms or physician-diagnosed asthma. Ongoing qualitative interviews are exploring potential reasons. Preliminary themes include: (1) challenges in identifying children with asthma, (2) widespread use of oral medications, and (3) teachers' concerns about taking on health-related responsibilities. These insights are shaping the adaptation to improve awareness, reduce stigma, and encourage symptom disclosure. Phases 2 and 3 are ongoing.

**Discussion:** The low rate of reported asthma is far below prevalence rates reported in previous studies and may reflect underdiagnosis or stigma-related underreporting in schools. Findings from Phase 1 will guide culturally sensitive programme adaptations. Phase 3 will assess the feasibility of implementing the adapted programme in diverse LMIC school settings, informing future trials.

**Expected impact:** This study provides the foundation work for culturally adapted school-based asthma programme in Bangladesh, Indonesia, India, and Pakistan.

<https://usher.ed.ac.uk/respire/research/non-communicable-diseases/current/adapt-schools-feasibility>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 10 Adoption and Feasibility of the Klang Asthma Cohort (KAC) Registry in Primary Care

**Rizawati Ramli<sup>1</sup>, Hooi Chin Beh<sup>2</sup>, Norita Hussein<sup>1</sup>; Siti Nurkamilla Ramdzan<sup>1</sup>; Adina Abdullah<sup>1</sup>; Nik Sherina Hanafi<sup>1</sup> ; Chin Hai Teo<sup>1,3</sup>; Ping Yein Lee<sup>3</sup>, Hirahara Norimichi<sup>3</sup>; Ai Theng Cheong<sup>4</sup>; Hani Syahida Salim<sup>4</sup>; Sazlina Shariff Ghazali<sup>4,5</sup>; Azainorsuzila Mohd Ahad<sup>6</sup>; Zienna Zufida Zainol Rashid<sup>7</sup>; Siti Fairuz Asahar<sup>8</sup>; Yong Kek Pang<sup>9</sup>; Chee Kuan Wong<sup>9</sup>; Asiah Kassim<sup>10</sup>; Ahmad Tajuddin Mohamad Nor<sup>11</sup>; Karuthan Chinna<sup>12</sup>; Ee Ming Khoo<sup>1</sup>; Jurgen Schwarze<sup>13</sup>; Hilary Pinnock<sup>13</sup>**

1 Department of Primary Care Medicine, Universiti Malaya, Malaysia; 2Department of Primary Care Medicine, Universiti Malaya Medical Centre, Malaysia; 3 UM eHealth Unit, Faculty of Medicine, Universiti Malaya, Malaysia; 4 Department of Family Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Malaysia; 5Malaysian Research Institute on Ageing, Universiti Putra Malaysia, Malaysia; 6Port Dickson Health Clinic, Port Dickson, Malaysia; 7 Pandamaran Health Clinic, Klang, Malaysia; 8 Bukit Kuda Health Clinic, Klang, Malaysia; 9 Department of Medicine, Universiti Malaya, Malaysia; 10 Department of Medical Peadiatric, Clinical Research Centre, Hospital Tunku Azizah, Kuala Lumpur, Malaysia; 11Emergency and Trauma Department, Hospital Tengku Ampuan Rahimah, Klang, Malaysia; 12 UCSI University Kuala Lumpur, Malaysia; 13 Usher Institute, The University of Edinburgh, United Kingdom

**Background:** Malaysian public primary care clinics lack a standardized asthma registry, leading to fragmented documentation and accessibility issues. The previous registry relied on manual documentation and was unsustainable due to limited protected time for data entry, leading to outdated records and underestimated active cases. Additionally, it lacked crucial clinical details for comprehensive asthma assessment and care. The KAC registry utilizes MS Excel and cloud-based platforms. It includes 25 data elements covering patient demographics, asthma control, treatment, self-management, education, and continuity of care.

**Objectives:** This study evaluates the KAC registry's early adoption, usability, and acceptability among primary care doctors, identifying facilitators and barriers to its implementation.

**Methodology:** A total of 21 medical officers and one family medicine specialist from two clinics participated in in-depth or focus group interviews, conducted in-person or via Zoom. Data was analysed thematically.

**Results:** At one year of implementation, the registry was used during 469 consultations. While perceived as highly usable and acceptable, sustained adoption after one year was limited to only 2–3 doctors in dedicated asthma clinics, with minimal uptake in general outpatient settings. Barriers included EMR interoperability limitations, high patient loads, and the deprioritisation of asthma in favour of managing other comorbidities. Facilitators included expanding asthma clinic capacity, establishing team-based asthma care, enhancing registry-EMR system integration and interoperability, advanced technology adoption, and integration of a non-communicable diseases checklist.

**Expected Impact:** Broader and sustained adoption of the registry could potentially lead to more efficient routine asthma data management and improved quality of asthma care.

<https://usher.ed.ac.uk/respire/research/non-communicable-diseases/current/klang-asthma-registry>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



## 11 Digital Engagement Patterns of the Klang Asthma Cohort (KAC) Kit: A Web Analytics Study

**Rizawati Ramli<sup>1</sup>; Hooi Chin Beh<sup>2</sup>; Norita Hussein<sup>1</sup>; Siti Nurkamilla Ramdzan<sup>1</sup>; Adina Abdullah<sup>1</sup>; Nik Sherina Hanafi<sup>1</sup>; Chin Hai Teo<sup>1,3</sup>; Ping Yein Lee<sup>3</sup>; Hirahara Norimichi<sup>3</sup>; Ai Theng Cheong<sup>4</sup>; Hani Syahida Salim<sup>4</sup>; Sazlina Shariff Ghazali<sup>4,5</sup>; Azainorsuzila Mohd Ahad<sup>6</sup>; Zienna Zufida Zainol Rashid<sup>7</sup>; Siti Fairuz Asahar<sup>8</sup>; Yong Kek Pang<sup>9</sup>; Chee Kuan Wong<sup>9</sup>; Asiah Kassim<sup>10</sup>; Ahmad Tajuddin Mohamad Nor<sup>11</sup>; Karuthan Chinna<sup>12</sup>; Ee Ming Khoo<sup>1</sup>; Jurgen Schwarze<sup>13</sup>; Hilary Pinnock<sup>13</sup>**

1 Department of Primary Care Medicine, Universiti Malaya, Malaysia; 2 Department of Primary Care Medicine, Universiti Malaya Medical Centre, Malaysia; 3 UM eHealth Unit, Faculty of Medicine, Universiti Malaya, Malaysia; 4 Department of Family Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Malaysia; 5 Malaysian Research Institute on Ageing, Universiti Putra Malaysia, Malaysia; 6 Port Dickson Health Clinic, Port Dickson, Malaysia; 7 Pandamaran Health Clinic, Klang, Malaysia; 8 Bukit Kuda Health Clinic, Klang, Malaysia; 9 Department of Medicine, Universiti Malaya, Malaysia; 10 Department of Medical Paediatric, Clinical Research Centre, Hospital Tunku Azizah, Kuala Lumpur, Malaysia; 11 Emergency and Trauma Department, Hospital Tengku Ampuan Rahimah, Klang, Malaysia; 12 UCSI University Kuala Lumpur, Malaysia; 13 The University of Edinburgh, United Kingdom

**Context:** The Klang Asthma Cohort (KAC) Kit is a web-based resource designed to support healthcare providers in delivering effective asthma care within primary care clinics. This tool is accessible via both computers and mobile devices. Over six months, it was implemented at two public primary care clinics in Klang using a full electronic medical record (EMR) system. Engagement initiatives included a navigation guide video, curated quick-access links, and periodic reminders to encourage continued website use.

**Objective:** To analyse user engagement patterns and browsing behavior to uncover insights that enhance website performance and improve user interaction.

**Methodology:** Website analytics data from February 2 to May 25, 2025, was extracted from Google Analytics.

**Results:** A total of 165 users accessed the site, with 53 returning users and 508 total views recorded. Direct search accounted for 59% of visits, while organic search contributed 41%. User activity showed peak engagement on April 18, when a stakeholder engagement session was held to reinforce content and navigation guidance, leading to 35 users on that day. However, overall daily usage remained low, ranging between 0 to 10 users. The average engagement time was 2 minutes and 27 seconds, with the Clinical Management of Asthma section attracting the highest number of views (187) and the longest engagement time (2 minutes and 8 seconds). Scroll depth averaged 16.88%, indicating limited deep exploration of content.

**Conclusion:** Low usage and scroll depth suggest limited engagement. Improving content quality and structure may enhance navigation and user interaction.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 12 Effectiveness of Pictorial Personalised Asthma Action Plans in Malaysian Public Primary Care Clinics: A Randomised Controlled Trial

**Ai Theng Cheong<sup>1</sup>; Sazlina Shariff Ghazali<sup>1,2</sup>; Poh Ying Lim<sup>3</sup>; Hani Salim<sup>1</sup>; Fadzilah Mohamad<sup>1</sup>; Ping Yein Lee<sup>4</sup>; Norita Hussein<sup>5</sup>; Nik Sherina Hanafi<sup>5</sup>; Siti Nurkamilla Ramdzan<sup>5</sup>; Rizawati Ramli<sup>5</sup>; Siow Foon Tan<sup>6</sup>; Norasnita Nordin<sup>7</sup>; Fazlina Mohamed Yusoff<sup>8</sup>; Zuzana Aman<sup>9</sup>; Chee Kuan Wong<sup>10</sup>; Ee Ming Khoo<sup>5</sup>; Hilary Pinnock<sup>11</sup>**

1 Department of Family Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Malaysia; 2 Malaysian Research Institute on Ageing, Universiti Putra Malaysia, Malaysia; 3 Department of Community Health, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Malaysia; 4 UMeHealth Unit, Faculty of Medicine, Universiti Malaya, Malaysia; 5 Department of Primary Care Medicine, Faculty of Medicine, Universiti Malaya, Malaysia; 6 Port Klang Health Clinic, Klang District, Ministry of Health Malaysia; 7 Kapar Health Clinic, Klang District, Ministry of Health Malaysia; 8 Anika Health Clinic, Klang District, Ministry of Health Malaysia; 9 Meru Health Clinic, Klang District, Ministry of Health Malaysia; 10 Department of Medicine, Faculty of Medicine, Universiti Malaya; 11 Usher Institute, The University of Edinburgh, UK

**Background:** Asthma self-management, supported by a personalised asthma action plan (PAAP), improves clinical outcomes. Pictorial-PAAP have the potential to overcome the inequity of text-based asthma action plans (text-PAAP) and benefit all patients regardless of their health literacy. We aimed to compare the effectiveness of pictorial-PAAP and text-PAAP for asthma control.

**Methodology:** We recruited 180 adult asthma patients who were treated with daily inhaled corticosteroids from four public primary care clinics and 90 participants were randomised to each arm of the trial. Enrolled patients were randomly assigned to receive either a pictorial-PAAP or a text-PAAP and followed up at 3-, 6- and 12-month via phone call. Asthma control was measured using the validated Global Initiative for Asthma (GINA) Control Tool and the status of control was classified into uncontrolled, partly controlled and controlled.

**Results:** There was no difference in sociodemographic characteristics between the two groups. There is a 1:4 ratio of men to women. Asthma control improved over time in both groups. Proportion of well controlled asthma in pictorial-PAAP users was 21.1%, 28.7%, 40.7%, 64.3% and text-PAAP was 21.1%, 28.9%, 45.5%, 44.6% respectively at baseline, 3-, 6- and 12 months follow-up. Generalized Estimating Equation (GEE) analysis revealed that the pictorial PAAP group had a higher probability of achieving good control compared to the text-PAAP group at 12-month follow-up ( $p=0.013$ ).

**Expected Impact:** Both groups showed improvement in asthma control over the 12-months follow-up. The pictorial-PAAP group had a significantly higher odds of good control over the text-PAAP group at 12 months. Primary care doctors should consider providing pictorial-PAAP as an option to facilitate patient self-management especially for patients with literacy problem.

<https://usher.ed.ac.uk/respire/research/non-communicable-diseases/current/paap>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

### 13 Evaluating the Oxygen Preparedness & Security: A Mixed-Method Approach for Oxygen Survey

**Ahmed Ehsanur Rahman<sup>1</sup>, Dr. Shabina Ariff<sup>2</sup>, Dr. Mimi Lhamu Mynak<sup>4</sup>, Shafiqul Ameen<sup>1</sup>, Sabit Saad Shafiq<sup>1</sup>, Sadman Sowmik Sarkar<sup>1</sup>, Hareem Fatima<sup>2</sup>, SN Singh<sup>3</sup>, Shams El Arifeen<sup>1</sup>**

1 International Centre for Diarrhoeal Disease Research, Bangladesh; 2 Aga Khan University Hospital, Pakistan; 3 King George's Medical University, India; 4 JDW National Referral Hospital, Bhutan

**Research question:** Does exposure to indoor air pollution (IAP) affect the respiratory symptoms and lung function of pregnant women, infants and children under 5 years?

**Background:** Medical oxygen is essential for managing critical illnesses, yet access remains inconsistent across South Asia. The COVID-19 pandemic exposed longstanding weaknesses in oxygen infrastructure, delivery, and system coordination. In response, a multi-domain, multi-country study was launched in Bangladesh, Bhutan, India, and Pakistan to assess medical oxygen systems comprehensively. The planning phase was treated not as a preparatory task, but as a vital opportunity for systems learning and implementation readiness.

**Study Framework:** The study focuses on five areas: (1) interviews with policymakers and facility managers; (2) assessments of facility readiness; (3) knowledge, attitudes, and practices (KAP) of providers and patients; (4) extraction of clinical data regarding oxygen use; and (5) cost analysis at both patient and facility levels.

**Learning During Planning Phase:** Ten online meetings were held with country teams to develop domain-specific tools collaboratively. All teams were connected through a dedicated WhatsApp group to support ongoing coordination and real-time communication. Tools were piloted and tailored to country-specific systems. Standard Operating Procedures (SOPs) were developed jointly. Each country recruited research assistants trained through SOP walkthroughs, practical simulations, and tailored data quality sessions. Efforts were made to ensure that all tools remained comprehensive, consistent, and contextually appropriate.

**Implementation Challenges:** Securing ethical approvals and government permissions was essential but time-consuming, as each country required separate IRB and Ministry clearances. The varying procedures and timelines underscored the need for early initiation of the process. Additional delays arose at the facility level when final approvals from managers were withheld on the scheduled day of data collection, which were mitigated through proactive coordination. Another operational challenge involved the lack of technically knowledgeable respondents, particularly when key staff were absent during field visits. This was addressed through flexible scheduling and follow-up visits to ensure comprehensive and accurate data capture.

**Conclusion:** The planning phase demonstrated that collaborative learning and adaptive problem-solving are essential for effective implementation. Initial challenges informed study design, enhanced data collection, and strengthened system readiness.

<https://usher.ed.ac.uk/respire/research/infectious-diseases/current/oxygen-security>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 14 Scale up of pulse oximetry in outdoor management of childhood illnesses in Bangladesh: a hybrid effectiveness implementation study

**Ahmed Ehsanur Rahman<sup>1</sup>, Shafiqul Ameen<sup>1</sup>, Sadman Sowmik Sarkar<sup>1</sup>, Sabit Saad Shafiq<sup>1</sup>, Md. Jahurul Islam<sup>2</sup>, Shams El Arifeen<sup>1</sup>**

<sup>1</sup>International Centre for Diarrhoeal Disease Research, Bangladesh; <sup>2</sup>Directorate General of Health Services, Ministry of Health and Family Welfare, Dhaka, Bangladesh

**Background:** Pneumonia remains a leading cause of under-five mortality in Bangladesh, with hypoxaemia contributing significantly to severe cases. The World Health Organization recommends integrating pulse oximetry (PO)—a non-invasive method for measuring blood oxygen saturation—into routine Integrated Management of Childhood Illness (IMCI) services, particularly in resource-limited settings.

**Objectives:** This study aims to evaluate the effectiveness of incorporating PO into routine IMCI services in Bangladesh. A secondary objective is to assess implementation outcomes during national scale-up.

**Methods:** A hybrid effectiveness–implementation design is employed, using a stepped-wedge cluster randomised controlled trial across three districts. Implementation outcomes include adoption, acceptability, feasibility, appropriateness, fidelity, and sustainability. Data collection methods comprise day-six community follow-ups for children classified with pneumonia, data extraction from IMCI registers, structured observation of PO usage, re-assessments, and qualitative enquiries.

**Progress and Challenges:** Progress was delayed due to the January 2024 national election and subsequent political unrest, resulting in a governmental transition in August 2024. Changes in health sector leadership and shifting policy priorities led to the deprioritisation of PO scale-up. The next health sector programme was halted and distribution of pre-procured PO devices were delayed. Consequently, regular advocacy meetings were held at national and district levels. Stakeholder feedback necessitated revisions to the study design, including changes in the study districts and facilities and reduction of the implementation period from 12 to 9 months. Data collection started in May 2025 and is expected to conclude by January 2026.

**Conclusion:** This study will generate evidence on the effectiveness and scalability of PO within IMCI services to improve pneumonia management and reduce child mortality in Bangladesh.

<https://usher.ed.ac.uk/respire/research/infectious-diseases/current/po-hybrid-implementation>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 15 Cooking Fuel Use, Kitchen Environment, and Indoor PM<sub>2.5</sub> Levels in Sri Lankan Households: Implications for Feto-Maternal and Child Respiratory Health

**Prof. Savithri Wimalasekera<sup>1</sup>; Prof. Duminda Yasaratne<sup>2</sup>; Prof. Dushantha Madegedara<sup>3</sup>; Dr. Gayan Bowatte<sup>2</sup>; Prof. Sampatha Goonewardena<sup>1</sup>; Prof. Thamara Amarasekara<sup>1</sup>; Prof. Pathum Dissanayake<sup>2</sup>; Dr. Lalindra Kaththiriarachchi<sup>4</sup>; Dr. Dulshan Jayasinghe<sup>5</sup>; Dr. Chanaka Karunarathne<sup>2</sup>; Ms. Akindra Kariyawasam<sup>6</sup>; Mr. Damith Nissanka<sup>3</sup>; Ms. Ridma Thilakaratne<sup>6</sup>; Dr. Chun Lin<sup>7</sup>; Prof. Jurgen Schwarze<sup>7</sup>**

<sup>1</sup> University of Sri Jayawardenapura; <sup>2</sup> University of Peradeniya; <sup>3</sup> National Hospital Kandy; <sup>4</sup> Kothalawala Defense University; <sup>5</sup> University of Wayamba; <sup>6</sup> Kaatsu International for Undergraduate studies; <sup>7</sup> University of Edinburgh

**Background and Methods:** Household air pollution from cooking fuel combustion is a leading source of indoor particulate matter less than 2.5  $\mu\text{m}$  in diameter (PM<sub>2.5</sub>) exposure for pregnant women and preschool children in low- and middle-income countries, such as Sri Lanka. This study aimed to assess the concentration of PM<sub>2.5</sub> in the households of pregnant women and to examine their exposure patterns. Indoor PM<sub>2.5</sub> levels were continuously monitored over three days using portable air quality monitors in 64 households of pregnant women in Kandy, Sri Lanka. Data on stove and fuel types, ventilation, and kitchen characteristics were collected.

**Results:** Of the 64 households, LPG was the most common primary cooking fuel (78.1%), followed by firewood (18.8%). PM<sub>2.5</sub> concentrations were highest in homes using firewood ( $55.9 \pm 56.5 \mu\text{g}/\text{m}^3$ ), followed by LPG ( $35.7 \pm 23.2 \mu\text{g}/\text{m}^3$ ). Only one household each used kerosene and electricity as the primary fuel for cooking. Among firewood users, PM<sub>2.5</sub> levels varied by stove type, with traditional stoves producing the highest value ( $59.1 \pm 71.5 \mu\text{g}/\text{m}^3$ ), followed by traditional clay stoves ( $56.4 \pm 43.4 \mu\text{g}/\text{m}^3$ ) and improved (Anagi) stoves ( $44.2 \pm 17.2 \mu\text{g}/\text{m}^3$ ). Among all households, 87.5% had PM<sub>2.5</sub> levels exceeding the WHO recommended 24-hour average limit of  $15 \mu\text{g}/\text{m}^3$ . Only 48.4% of kitchens had chimneys, of which just 46.7% were cleaned regularly, and 81.3% of households kept doors and windows open while cooking.

**Conclusion:** Fuel and stove type influence indoor PM<sub>2.5</sub> concentrations and impact household air quality. The widespread use of biomass fuel for cooking, combined with inadequate kitchen ventilation, likely leads to elevated exposure levels.

<https://usher.ed.ac.uk/respire/research/preventable-risk-factors/current/aq-indoor>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 16 Text messaging for Seasonal Asthma in Islamabad, Pakistan

**Osman Yusuf<sup>1</sup>; Saqib Mustafa<sup>1</sup>; Ahmad Kakakhail<sup>1,2</sup>; Tanveer Anjum<sup>1</sup>; Shahida Ashraf<sup>1</sup>; Chun Lin<sup>3</sup>; Hilary Pinnock<sup>3</sup>; Jürgen Schwarze<sup>3,4</sup>**

1 The Allergy & Asthma Institute, Islamabad, Pakistan; 2 National University of Modern Languages, Rawalpindi, Pakistan; 3 Usher Institute, University of Edinburgh, UK; 4 Centre for Inflammation Research, University of Edinburgh, UK

**Research Question:** Can timely SMS-based alerts regarding rising paper mulberry pollen concentrations support better management of seasonal asthma in Islamabad?

**Background:** Asthma poses a significant health risk during spring in Islamabad. Considering the limited preventive healthcare measures, this study aimed to develop an SMS-based service providing real-time guidance on asthma management, triggered by airborne concentrations of paper mulberry pollen – a known allergen.

### Methodology:

1. Participants were recruited from Allergy and Asthma Institute, Pakistan, based on clinical history and a confirmed positive skin prick test to paper mulberry pollen.
2. Informed consent was obtained from all participants.
3. Participants were trained to record daily peak expiratory flow (PEF) readings and complete the Control of Allergic Rhinitis and Asthma Test (CARAT) weekly.
4. Using the “R” statistical software, 150 participants were randomized into two equal groups (intervention vs. control).
  - a. Intervention Group: Received pre-season written management plans for asthma and allergic rhinitis based on GINA and ARIA guidelines. During the pollen season, SMS alerts were sent by a consultant physician advising adherence to the management plan in response to pollen level spikes.
  - b. Control Group: Received standard care without SMS support or written action plans.
5. The intervention began on 2nd March 2025, coinciding with the rise in pollen counts, and lasted 7 weeks until pollen levels dropped below 2,000 grains/m<sup>2</sup>.
6. Data collection is ongoing, and analysis will follow.

<https://usher.ed.ac.uk/respire/research/preventable-risk-factors/current/aq-pollen>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



## 17 A Cluster Randomized Controlled Trial of mHealth (mobile health) Intervention for Smoking Cessation in People with Tuberculosis

**Maham Zahid, Fahmidur Rahman, Mahmoud Danaee, Shakhawat Hossain Rana, Asiful Chowdhury, Saeed Ansaari, Ai Keow Lim, Melanie Boeckmann, Steve Parrott, Jinshuo Li, Amina Khan, Rumana Huque, John Norrie, Kamran Siddiqi**

**Background:** Smoking worsens outcomes in people with tuberculosis (TB), whilst quitting hastens recovery. We assessed the effectiveness of a mHealth (mobile health) intervention for achieving continuous tobacco abstinence at 6 months compared with usual care in people with TB.

**Methods:** In a multi-centre, cluster-randomized controlled trial in Bangladesh and Pakistan, 27 TB clinics were allocated (2:1) to the mHealth or usual care groups. A total of 1,080 adults with pulmonary TB, who smoked, were willing to quit, and had mobile phones, were enrolled. The mHealth group received motivational text messages, first daily and then weekly, throughout TB treatment, encouraging tobacco cessation. The primary outcome was self-reported continuous abstinence at 6 months, biochemically-verified by carbon monoxide breath test. Secondary outcomes included point abstinence at 9 weeks and 6 months, TB treatment adherence, TB success rates and 6-month survival.

**Results:** 91% (983/1,080) enrolled participants were retained throughout the trial. For primary outcome, 41.7%(300/720) participants in the mHealth group demonstrated continuous abstinence as compared to 15.3% (55/360) in the usual care group (RR=3.0; 95%CI 2.04-4.92). For secondary outcomes, 86.8% (625/720) in the mHealth and 85.3% (307/360) in the usual care group successfully completed TB treatment (RR 1.04; 95%CI 0.96-1.13). Mortality was lower in the mHealth (3.5%[25/720]) than usual care group (7.5%[27/360]); HR 0.44; 95%CI 0.21-0.93.

**Conclusion:** The mHealth intervention was effective in achieving continuous abstinence in people with TB who smoked. mHealth is a feasible, effective and potentially scalable solution to help TB patients quit smoking, which is of particular value in times of funding cuts.

<https://usher.ed.ac.uk/respire/research/preventable-risk-factors/current/quit4tb>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 18 Acceptability of respiratory syncytial virus (RSV) vaccine: a qualitative study in India and Pakistan

**Shabina Ariff<sup>1</sup>, Kiran Sangwan-Kadam<sup>2</sup>, Kajal Tonde<sup>2</sup>, Radhika Nimkar<sup>2</sup>, Sayali Kasture<sup>2</sup>, Eesha Chawan<sup>2</sup>, Nisha Mutalikdesai<sup>2</sup>, Rutuja Patil<sup>2</sup>, Aditi Apte<sup>2</sup>, Dhiraj Agarwal<sup>2</sup>, Fareeha Javaid<sup>1</sup>, Hareem Fatima<sup>1</sup>, Girish Dayma<sup>2</sup>, Sajid Soofi<sup>1</sup>**

1 Centre of Excellence in Women & Child Health, The Aga Khan University, Karachi, Pakistan; 2 Vadu Rural Health Program and Community Health Research Unit, KEM Hospital Research Centre, Pune, India

**Background:** Over 97% of global childhood deaths due to RSV occur in LMICs, with India and Pakistan being major contributors. Acceptance of RSV vaccination is of key importance in minimizing the burden of RSV.

**Objective:** To explore acceptability of RSV vaccination for pregnant women and infants among various stakeholders using qualitative methods.

**Methods:** The study is being conducted in rural and urban areas of India (Pune) and Pakistan (Karachi and Matiari) using Theoretical Framework of Acceptability. Participants include community members and leaders, community health workers, doctors, and officials from the health system. Presently, in Pakistan, 28 FGDs and 35 IDIs have been completed. In India, 12 FGDs and 14 IDIs have been conducted.

**Preliminary Findings:** In both countries, there is adequate willingness to vaccinate mothers and children among various stakeholders, with acceptance of injectable or subcutaneous routes. Community engagement and affordability are potential facilitators, whereas misinformation and fear of side effects are potential barriers to the vaccine. In Pakistan, resistance stems from distrust of foreign-funded programs, cultural taboos, and concerns about infertility. Accessibility and validation from healthcare workers and government are key facilitators. In India, acceptance depends on perceived illness severity and trust in government services, with lower uptake for non-mandatory vaccines. Barriers include cost and poor access; facilitators include antenatal counseling and alignment with the public health vaccination schedule.

**Field Reflections:** In Pakistan, established networks facilitated trust and recruitment. In India, focus groups faced some scheduling conflicts, and low RSV awareness required framing questions around a general new vaccine.

**Expected Impact:** Findings can inform communication, service delivery, and policy for integrating RSV vaccine into the immunization programs in the respective countries.

<https://usher.ed.ac.uk/respire/research/infectious-diseases/current/rsv-acceptability>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 19 Barriers to and enablers of tuberculosis diagnosis, notification and intervention for designing customised intervention package to minimise ‘missing millions’ in tribal communities of India – Systematic review

**Dhananjay Raje<sup>1</sup>, Vibhawari Dani<sup>1</sup>, Radha Munje<sup>2</sup>, Shraddha Kumbhare<sup>1</sup>, Sanjay Zodpey<sup>3</sup>, Manasi Shelgaonkar<sup>1</sup>, Hilary Pinnock<sup>4</sup>, Helen R. Stagg<sup>5</sup>, Harish Nair<sup>4</sup> and Ashish Satav<sup>1</sup>**

1MAHAN Trust, Dharni, Amaravati, MH, India; 2 IGGMCH, Nagpur MH, India; 3Public Health Foundation of India, New Delhi, India; 4 Usher Institute, College of Medicine and Veterinary Medicine, The University of Edinburgh, United Kingdom; 5London School of Hygiene & Tropical Medicine, London, UK

**Background:** Tribal communities in India showed a high burden of tuberculosis; 7,030 per million. The diagnosis and notification gap in tribal communities is substantial, partly due to the remoteness of these populations. To design an intervention to find the ‘missing millions’ among tribal communities, we undertook a systematic review to determine the barriers and enablers of tuberculosis diagnosis as well as notification that could assist in designing an intervention in such populations.

**Methods:** We searched PubMed, Embase and Web of Science on September 26, 2023 using search terms tuberculosis, diagnosis, notification, barriers, enablers and interventions. We targeted studies from lower- and lower-middle-income countries (LICs and LMICs) published between 2000-2023. Appropriate quality assessment tools were used for qualitative and quantitative studies. Thematic analyses were performed using the socio-ecological model (SEM) for barriers and enablers of diagnosis and notification, and the consolidated framework for implementation research (CFIR) for implementing the interventions to address these barriers. The study was registered with PROSPERO (CRD42023439841).

**Findings:** 34 eligible studies were referred. Lack of knowledge, illiteracy, social stigma, long distances and financial constraints were identified as key barriers. Inadequate diagnostic facilities, lack of trained staff, low incentives, poor counselling, and inadequate budget were the barriers for health system for implementation. Increasing knowledge and awareness about TB, encouragement from family members and other TB survivors, motivating health workers through monetary incentives were noted as important enablers.

**Interpretation:** This systematic review identified barriers and enablers of TB diagnosis and notification to assist in designing customized intervention program, thereby to minimise ‘missing millions’.

<https://usher.ed.ac.uk/respire/research/infectious-diseases/current/mtbht>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



## 20 Integrating Psychological Intervention into PR for Chronic Respiratory Disease in Rural India

**Diksha Singh<sup>1</sup>; Hilary Pinnock<sup>2</sup>; Kirstie McClatchey<sup>2</sup>; Dhiraj Agarwal<sup>1</sup>; Ruth McQuillan<sup>2</sup>**

<sup>1</sup> KEMHRC, Pune, India; <sup>2</sup>Usher Institute, University of Edinburgh, UK

**Background:** Chronic respiratory diseases (CRDs) are prevalent in low- and middle-income countries (LMICs) and often co-occur with anxiety and depression. Mental health needs remain under-addressed, particularly in rural pulmonary rehabilitation (PR) settings. This study aims to design and evaluate a tailored psychological intervention for CRD patients attending PR in rural India.

**Methodology:** Following the MRC framework, the study has three phases:

1. Systematic review (SR) of 20 LMIC studies to identify effective psychological components integrated into PR.
2. Community engagement and involvement (CEI) meeting with urban PR stakeholders (chest physicians, psychologists, physiotherapists, nutritionists) to refine intervention content and cultural feasibility.
3. Feasibility study piloting the intervention with 6–10 patients in a rural Indian PR, assessing acceptability and integration.

The psychological intervention includes (1) general well-being sessions with mindfulness, yoga-based breathing, and psychoeducation; and (2) individualised sessions for those screening positive for anxiety or depression.

**Results:** The SR identified facilitators like integrated care and stigma-sensitive delivery, and barriers such as limited training, high dropout rates, and lack of contextual adaptation. CEI findings highlighted the need for stigma-free language, family involvement, and non-specialist staff training. Stakeholder feedback supported a modular, stepped-care design.

**Challenges:** Limited high-quality evidence from LMICs and initial difficulties engaging patients in CEI meetings. Opportunities: stakeholders proposed innovative low-stigma strategies, and the review clarified key adaptation components.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 21 Policies and programs in South Asia to address Asthma and Chronic Obstructive Pulmonary Disease in the context of climate change - A scoping review

**Sajid Soofi<sup>1</sup>; Shabina Ariff<sup>2</sup>; Neyama Alladin<sup>1</sup>; Mariam Shafiq<sup>1</sup>**

<sup>1</sup> Centre of Excellence in Women and Child Health, Aga Khan University, Karachi, Pakistan; <sup>2</sup>Department of Paediatrics & Child Health, Aga Khan University, Karachi, Pakistan

**Background:** Climate-related exposures such as ground-level ozone, greenhouse gases, extreme heat, and humidity may increase asthma and COPD exacerbations and respiratory mortality. Bangladesh, India, Pakistan, and Sri Lanka, home to over 95% of South Asia’s population, are especially vulnerable due to geographic and socioeconomic factors.

**Objective:** This review seeks to examine national policies and programs addressing climate change, particularly heat adaptation and mitigation, alongside chronic respiratory diseases in Bangladesh, India, Pakistan, and Sri Lanka. The goal is to assess their readiness to manage the growing burden of COPD and asthma in the context of climate change.

**Methods:** We applied Arksey and O’Malley’s framework to review academic and grey literature. A total of 10,893 records were identified from PubMed, Scopus, and Global Index Medicus, with 94 studies included after screening. From 99 grey literature documents retrieved from government and NGO websites, 52 were included. Data extraction was conducted using Covidence for academic studies and Excel for grey literature.

**Preliminary Findings:** All four countries have national climate action plans. Most studies (67) focused on India. Across 266 reviewed policies—86 from Bangladesh, 65 each from India and Pakistan, and 50 from Sri Lanka—the most common focus areas were forestation (56 policies), clean energy (53), and carbon emissions (35). Only five policies addressed health and respiratory diseases, indicating a potential gap.

**Expected Impact:** Findings can support evidence-based advocacy for integrating respiratory health into climate policy and promoting inclusive, multisectoral approaches.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 22 To assess the feasibility and acceptability of integrating spirometry into the routine practice of primary care physicians in rural India for the effective diagnosis and management of Chronic Respiratory Diseases (CRD)

**Radhika Nimkar<sup>1,2</sup>; Rutuja Patil<sup>1,2</sup>; Anand Kawade<sup>1,2</sup>; Hilary Pinnock<sup>3</sup>; Dhiraj Agarwal<sup>1,2</sup>**

1 Vadu Rural Health Program, KEM Hospital Research Centre, Pune, India; 2 Community Health Research Unit, KEM Hospital Research Centre, Pune, India; 3 Usher Institute, The University of Edinburgh, Edinburgh, UK

**Background:** Chronic respiratory diseases (CRD) cause 11% of Non-Communicable Diseases -related mortality in India. Although spirometry is the diagnostic gold standard, shortage of skilled personnel in primary care hinders timely management. RESPIRE research highlights knowledge gaps among general practitioners (GPs) in managing these conditions, emphasizing the need for training and diagnostic tools. While National Program-Non-Communicable Disease guidelines (2023-2030) propose CRD screening at the primary healthcare level, they lack clarity on capacity building for spirometry use. The study explores the feasibility and acceptability of integrating spirometry into routine primary care.

**Objective:** To assess the feasibility and acceptability of integrating spirometry among primary care physicians in rural India to diagnose and manage CRD effectively.

**Methodology:** This mixed-methods, pre-post-intervention study will be conducted at the Community Health Research Unit (KEMHRC) in Pune district. Purposive sampling will involve primary care physicians (GPs), Auxiliary Nurse Midwives (ANMs), and Accredited Social Health Activists (ASHAs) at the primary care level. Sixteen baseline In-depth interviews (IDI) will assess the Knowledge, Attitude, and Practices in CRD management and spirometry use. Pulmonologist-led interventions will provide capacity building and hands-on training. Six months post-intervention, IDIs of 16 participants will evaluate changes in KAP, exploring facilitators and barriers to routine spirometry use.

**Challenges:** Inadequate infrastructure in primary care centres to support routine spirometry use.

**Expected Impact:** Early, accurate diagnosis of CRDs will enable timely, appropriate management, reducing morbidity and mortality.

<https://usher.ed.ac.uk/respire/research/non-communicable-diseases/current/4ccord-quality-improvement-upskilling>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 23 Adaptation strategies and Physiological Responses to Weather Variability, among persons with chronic respiratory diseases (CRDs) in Rural India: Vadu HDSS experience

**Dipali Dhamdhare<sup>1</sup>; Dr Anand Kawade<sup>1</sup>; Dr Parag Khatvkar<sup>1</sup>; Jacques Prioux<sup>2</sup>; Joy Merwin Monteiro<sup>3</sup>; Dr Dhiraj Agarwal<sup>1</sup>**

1Vadu Rural Health Programme, KEM Hospital Research Centre, Pune, India; 2Ecole Normale Supérieure in Rennes (France); 3Departments of Earth and Climate Science and Data Science at the Indian Institute of Science Education and Research Pune, India

**Background:** Climate change and extreme weather events increasingly affect the health of vulnerable populations, especially individuals with chronic respiratory diseases (CRDs). In rural India, limited data available on how people with CRDs respond physiologically and behaviourally to heat stress and air pollution which is critical for designing early warning systems and adaptive interventions.

**Objectives:** The primary objective is to assess the relationship between heat stress and physiological strain in persons with and without CRDs. The secondary objective is to explore the influence of air quality on health outcomes and identify behavioural adaptation strategies.

**Methodology:** This exploratory mixed-methods study will recruit 40 participants (20 with CRDs, 20 healthy controls) aged 18 and above from the Vadu HDSS region. Over six months, participants will undergo bi-weekly assessments using wearable sensors to monitor heart rate, oxygen saturation, skin temperature, energy expenditure, and physical activity during 6-minute walk tests. Heat stress will be measured by the Wet Bulb Globe Temperature index; PM2.5 levels will be monitored for air quality. Spirometry and morbidity assessments will complement physiological data. Forty-eight in-depth interviews across three timepoints will explore behavioural adaptation.

**Opportunities and Challenges:** The study offers a unique opportunity to integrate physiological, environmental, and behavioural data in a rural LMIC setting. However, challenges include managing sensor compliance, participant fatigue, and variability in environmental exposures.

**Expected Impact:** Findings will inform climate-resilient public health strategies, early warning systems, and adaptation plans for vulnerable groups.

**Current Status:** Funding and major ethics approvals (ACCORD, EMREC & local Ethics Committee) have been secured; HMSC approval is under review.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 24 Identifying Vulnerable Communities and Their Experiences Related to Climate Change and Respiratory Health, and Creating Awareness Through Community Engagement

**Paul Jebaraj<sup>1</sup>, Manoj Jacob Dhinagar<sup>1</sup>, Udayakumar<sup>1</sup>, Mythry Ravichandran<sup>1</sup>, Jagdish<sup>1</sup>, Biswajit Paul<sup>1</sup>**  
 1RUHSA Department, Christian Medical College, Vellore.

**Background:** Over the past two decades, climate-related disasters have doubled globally, with low- and middle-income countries (LMICs) bearing the highest mortality burden. India ranks among the top five countries with the highest number of such disasters and is particularly vulnerable to climate change impacts such as air pollution, heatwaves, water scarcity and floods—affecting the health and livelihoods of communities, especially in rural areas.

**Objectives:**

1. To identify vulnerable communities and populations affected by climate change and develop case studies highlighting respiratory health impacts.
2. To increase awareness of respiratory health vulnerabilities through community engagement and capacity building.

**Methodology:** This qualitative study focuses on Vellore district and employs the Intergovernmental Panel on Climate Change (IPCC) vulnerability matrix to identify affected populations. Using matrix’s predefined criteria and vulnerability factors, community participatory techniques such as participatory rural appraisal (PRA) and participatory learning and action (PLA) will be used to identify the vulnerable groups. Focus group discussions (one in each vulnerable respiratory health group) and 10 – 15 key informant interviews will be done to develop case series of impacted individuals and communities in Vellore district.

**Results:** The study mapped 184 panchayat villages across six revenue blocks in Vellore district using secondary data from the Indian Meteorological Department (IMD), ERA5 Reanalysis, and RUHSA census data. In all villages, climate change impact targeting will be categorized using the IPCC matrix followed by PLA/PRA at the ground level to identify participants for qualitative study.

**Expected Impact:** The study will generate community-driven narratives on climate-related respiratory health challenges, strengthen local awareness, and support the development of targeted, context-specific adaptation strategies for marginalized and low-literate populations.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 25 A scoping review for toolkit development to improve health systems for climate change and respiratory health

**Paul Jebaraj<sup>1</sup>; Manoj Jacob Dhinagar<sup>1</sup>; Udayakumar<sup>1</sup>; Mythry Ravichandran<sup>1</sup>; Sadiq Basha<sup>1</sup>; Nadege Atkins<sup>2</sup>; Marshall Dozier<sup>3</sup>; Ruth McQuillan<sup>1</sup>; Biswajit Paul<sup>1</sup>**

1 RUHSA Department, Christian Medical College, Vellore; 2 Usher Institute, University of Edinburgh, UK; 3 University of Edinburgh, UK

**Background:** Health care providers are key frontline players who can effectively mitigate and respond to climate driven health effects. Being involved in delivering effective, evidence-based treatment strategies and preventive measures, health care providers are potentially well placed to contribute to environmental health policy making, community resilience development, and adaptive responses. However, there are frameworks for health care providers to respond to climate change and health in developed countries. This scoping review aimed at identifying current knowledge, skills and core competencies among health care providers and existing gaps, specifically in context of respiratory health exigencies due to climate change.

**Methodology:** We followed the JBI guidelines for scoping reviews and the PRISMA-ScR protocol. Peer-reviewed search strategy was developed, and systematic searches were conducted in MEDLINE (PubMed) CINAHL, Web of Science, Cochrane Library, Global Health, and SCOPUS databases using search terms based on the Population (“Health care providers”, or “Doctors”, or “Nurses”) Concept (“Knowledge”, or “Skills”, or “Competency) Context (“climate change”, “Global climate change”, and “respiratory health”) framework. Peer-reviewed journal papers published between 2000 to 2023 written in any language that provide literature evidence on the research question were included. The results of the database searches were exported into Covidence software. Two reviewers independently screened the titles and abstracts and full texts for eligibility.

**Results:** A total of 7620 articles were screened at the title and abstract level, of which 111 were also assessed at full text for eligibility. The 74 articles identified for inclusion for data extraction.

**Expected impact:** Following narrative synthesis of evidence, a toolkit will be developed to train health providers and to improve health systems for climate change and respiratory health in LMICs.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 26 Pulmonary Rehabilitation for Chronic Respiratory Diseases: Perspectives of Healthcare Professionals and Policymakers in Bangladesh

**Monsur Habib, Nazim Uzzaman, Rowshan Alam, Sadia Sultana, Kmarun Nahar, Ataul Gani, B D Bidhu, Hilary Pinnock**

**Background:** Chronic respiratory diseases (CRDs) such as asthma, COPD, bronchiectasis, and interstitial lung disease present a growing health burden globally, particularly in low- and middle-income countries (LMICs) like Bangladesh. Pulmonary rehabilitation (PR) is an evidence-based, multidisciplinary intervention that enhances functional capacity and quality of life. However, its implementation remains limited in LMICs due to health system constraints and a lack of stakeholder engagement.

**Objective:** This qualitative study explores the perspectives of healthcare professionals and policymakers, especially those with limited prior exposure to PR, regarding the feasibility, acceptability, and strategies for implementing PR in Bangladesh.

**Methods:** We conducted 30 semi-structured interviews (20 healthcare professionals, 5 public sector policymakers, and 5 private sector administrators) across various regions of Bangladesh. Participants were purposively selected to ensure diversity. Thematic analysis was utilised to identify key patterns in stakeholder perceptions.

**Results:** Preliminary themes include poor visibility and understanding of PR, especially among general physicians and health administrators; skepticism regarding its clinical utility; and system-level barriers such as resource limitations and a lack of trained staff. Facilitators involve integrating PR within existing NCD programs, engaging patient advocacy groups, and endorsement at the national policy level. The need for strong local evidence and community-level awareness was strongly emphasised.

**Conclusion:** Stakeholder perspectives reveal both structural and perceptual barriers to PR implementation in Bangladesh. Strategic advocacy, evidence dissemination, and the contextual adaptation of PR delivery models are essential to ensure sustainable integration into the healthcare system. This study informs ongoing implementation efforts, including the multi-country PuRe trial.

<https://usher.ed.ac.uk/respire/research/non-communicable-diseases/current/pr-qualitative>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 27 Feasibility of Pulmonary Rehabilitation for Chronic Respiratory Diseases in Low-Resource South Asian Settings

**Farzana Khan, Monsur Habib, Nazim Uzzaman, Kazi Sarmad Karim, Mimi Lhamu Mynak, Dr Yeshey Om Tshering and Namgay Wangchuk, Rubina Aman, Furqan Siddiqui, Shahida Ashraf, Mohammad Jamal, Naureen Tassadaq, Ishtiaq Raja, Osman Yusuf, Hilary Pinnock**

**Introduction:** Chronic respiratory diseases (CRDs) are a growing public health concern, particularly in low- and middle-income countries (LMICs) where health systems often lack resources for diagnosis and evidence-based care. Despite strong evidence supporting pulmonary rehabilitation (PR) as a key intervention for CRDs, existing studies are largely from high-income settings, limiting generalizability. This study evaluates the feasibility of delivering PR in Bangladesh, Bhutan, and Pakistan.

**Methods:** This multicountry feasibility study adapted a mixed-method strategy and enrolled 120 clinically eligible patients with CRDs for the quantitative part: 50 in Bangladesh (including refugee camps), 30 in Bhutan, and 40 in Pakistan. An 8-week PR program adapted from global guidelines was delivered. Functional exercise capacity, dyspnoea severity, and health-related quality of life were measured at baseline, post-intervention, and six months. A purposive sample of participants were recruited for the qualitative study till the data saturation achieved. Semi-structured interviews with patients, providers, and stakeholders explored implementation barriers and facilitators.

**Discussion:** Preliminary findings support the feasibility and contextual adaptability of PR in resource-limited settings. Completion rates and positive feedback from Bangladesh indicate a strong potential for scaling up. Ongoing analyses will further inform the design and delivery models for sustainable PR services in LMICs.

<https://usher.ed.ac.uk/respire/research/non-communicable-diseases/current/pr-feasibility>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM  
 RESPIRE Global  
 @RESPIREGlobal  
 RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 28 Enhancing Chronic Respiratory Disease (CRD) Care Through Upskilling Health Care Providers of the Government Health System in a Rural District in India: A Pre-Post Educational Intervention Trial

**Biswajit Paul<sup>1</sup>, Paul Jebaraj<sup>1</sup>, Udhayakumar P<sup>1</sup>, Jagdish L<sup>1</sup>, Manoj Jacob Dhinagar<sup>1</sup>, Richa Gupta<sup>1</sup>, Balaji BV<sup>1</sup>, Rita Isaac<sup>2</sup>, David Weller<sup>3</sup>, Hilary Pinnock<sup>3</sup>**

1 Christian Medical College, Vellore, India, Kuala Lumpur, Malaysia; 2 Karakinos Foundation and Mandiram Hospital, India; 3 Usher Institute, University of Edinburgh, UK

**Background:** This study explores the feasibility and effectiveness of integrating spirometry-based diagnosis and protocol-driven management of Chronic Respiratory Diseases (CRDs) into the government primary health care system by upskilling existing providers. Embedding these practices within existing infrastructure by capacity building and skilling up, it aims to enhance CRD diagnosis and management at the primary care level.

**Methodology:** A one-group, pre-post, quasi-experimental design was implemented in two rural blocks of Tirupattur district, Tamil Nadu. Baseline assessments included facility evaluation using the WHO Harmonised Health Facility Assessment (HHFA) and Knowledge, Attitude, and Practices (KAP) surveys among health care providers, therapists, and community health workers (CHWs). The intervention phase includes facility strengthening, skill-based training, and community screening, followed by post-intervention evaluation.

**Results:** At baseline, both facilities lacked adequate capacity for CRD management. All health care providers had poor or average knowledge score; therapists had poor knowledge; and 49.4% of CHWs had average score. Mean attitude scores were 2.1 (0.4), 1.5 (0.2) and 1.6 (0.3) for health care providers, therapists and CHWs respectively where higher scores (Range 1- 5) reflecting better attitude towards CRD management.

**Challenges & Opportunities:** Delays in obtaining ethical and administrative approvals, frequent turnover of district health officers, and time-consuming procurement processes posed significant challenges. However, the National Health Mission (NHM) provided consistent support, facilitating approvals and promising procurement of inhalers, improving feasibility.

**Expected Impact:** This study will generate evidence to inform policy and support the scale-up of standardized CRD care in similar settings, promoting sustainability and alignment with state and national health priorities.

<https://usher.ed.ac.uk/respire/research/non-communicable-diseases/current/4ccord-quality-improvement-upskilling>

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 29 Climate Change and Lung Function in the Adult Population of Sylhet, Bangladesh

Salahuddin Ahmed, Ahad Mahmud Khan, Rezwana Tabassum, Md Shafiqul Islam

Projahnmo Research Foundation

**Background:** Bangladesh is among the top ten most climate-affected countries globally, with climate change contributing to increasing levels of ambient air pollution and posing significant threats to respiratory health. Adults, particularly the elderly, are at elevated risk of impaired lung function due to these environmental stressors. However, a lack of population-level lung function data limits our ability to assess the effects of climate variability and air quality on respiratory health.

**Objectives:** This study aims to establish a baseline dataset on lung function, climate parameters, and ambient air pollution among the adult population in Sylhet, Bangladesh, to support future monitoring and policy development.

**Methodology:** A community-based cross-sectional study will be conducted in one urban (Sylhet city) and one rural (Zakiganj sub-district) setting in Bangladesh. A total of 760 adults aged 40 years and older will be randomly selected and enrolled. Lung function will be assessed using spirometry, capturing FVC, FEV1s, FEV1s/FVC ratio, FEF25–75%, and PEF. Climate parameters (temperature, humidity, rainfall) will be measured using meteorological instruments, while PM2.5 and PM10 concentrations will be assessed with air quality monitors. The study is funded by the NIHR Global Health Research Unit on Respiratory Health (RESPIRE).

**Challenges:** Challenges include ensuring accurate measurement in variable field conditions. However, this study presents a unique opportunity to generate robust, region-specific data on climate–health interactions.

**Expected Impact:** This study will establish a critical baseline linking climate, air pollution, and lung function, guiding future research, informing public health policies, and enabling targeted interventions to improve respiratory health in Bangladesh.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

### 30 Climate Change and Respiratory Health in South Asia: A Scoping Review

**Rezwana Tabassum<sup>1</sup>, Tajkia Rumman<sup>1</sup>, M Z E M Naser Uddin Ahmed<sup>1</sup>, Bipasha Akhter<sup>1</sup>, Madhurima Nundy<sup>2</sup>, Marylene Wamukoya<sup>3</sup>, Marshall Dozier<sup>4</sup>, Ruth McQuillan<sup>3</sup>, Salahuddin Ahmed<sup>1</sup>, Ahad Mahmud Khan<sup>1</sup>**

<sup>1</sup> Projahnmo Research Foundation, Dhaka, Bangladesh, <sup>2</sup> UNCOVER, Usher Institute, University of Edinburgh, Edinburgh, UK, <sup>3</sup> Centre for Global Health, Usher Institute, University of Edinburgh, Edinburgh, UK, <sup>4</sup> Library & University Collections, Information Services, University of Edinburgh, Edinburgh, UK

**Background:** Climate change poses a major global health threat, significantly affecting respiratory health. Despite low emissions, South Asia remains highly vulnerable to climate-related health risks. Respiratory diseases such as asthma, COPD, allergic rhinitis, etc., are increasingly linked to climate-induced environmental changes in this region.

**Research objective:** To explore existing evidence exposing risk factors and their outcome linking climate change to respiratory health in South Asia.

**Methodology:** This study follows the Arksey and O’Malley framework for scoping reviews, complemented by the PRISMA-ScR checklist for transparent reporting. A comprehensive search strategy is applied through peer-reviewed and grey databases. The search strategy is based on the term “climate change OR extreme weather events”, “respiratory health conditions” and “South Asia”. Studies are selected based on predefined eligibility criteria focused on climate-related exposures and respiratory outcomes within South Asia. A total of 12,290 studies were screened, and 163 studies are under ongoing full-text review. Descriptive and qualitative thematic analyses will be performed following data extraction.

**Challenges:** Uneven distribution of country-specific evidence across South Asia, while some countries have substantial research on climate change, others lack adequate data, limiting regional generalizability.

**Expected impact:** This scoping review will provide regional evidence linking climate change to respiratory health, identify knowledge gaps, and inform public health policy, research priorities, and targeted mitigation and adaptation strategies.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

### 31 Prevalence of Chronic Respiratory Diseases (National CRD Survey) and Quality of Care in Bhutan

**Thinley Dorji<sup>1</sup>; Tshering Penjor<sup>2</sup>; Mongal Singh Gurung<sup>3</sup>**

1 Department of Internal Medicine, Central Regional Referral Hospital, Gelephu, Bhutan; 2 Department of Internal Medicine, Jigme Dorji Wangchuck National Referral Hospital, Thimphu, Bhutan; 3 Policy and Planning Division, Ministry of Health, Thimphu, Bhutan

**Background:** Chronic Respiratory Diseases (CRD) are a common presentation among patients visiting hospitals across Bhutan. There is a lack of proper data on the population-level prevalence and risk factors of CRD, the quality of life among patients with CRD, and how climate change affects the risk factors of CRD. This study has three components: Parts A, B and C.

**Objectives:** The objective of Part A is to describe the prevalence of CRD based on spirometry and identify risk factors associated with CRD. The objective of Part B is to describe the quality of care and quality of life among those diagnosed with CRD. The objective of Part C is to identify the barriers to accessing healthcare services and the impact of climate change on the control of CRD symptoms.

**Methods:** In Part A, a cross-sectional survey will be conducted in all 20 districts and the sample size is 960. A stratified four-stage sampling method will be adopted. In Part B, a descriptive study will be conducted among those diagnosed with any type of CRD in Part A. Part C is a qualitative study with a sequential exploratory design involving focused group discussions.

**Challenges:** Data collection from sampling units spread across all 20 districts is a logistical challenge.

**Expected outcomes:** The study will describe the prevalence of CRD based on spirometry and the quality of life and quality of care among those with CRD. In addition, this study will also describe the impact of climate change on symptom control and access to healthcare services.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health



#RESPIREASM

RESPIRE Global  
@RESPIREGlobal  
RESPIREGlobal



<https://usher.ed.ac.uk/respire>

## 32 Childhood Acute Respiratory Infection Prevalence and Climate Parameters: A Retrospective Analysis

**Ahad Mahmud Khan, Salahuddin Ahmed, Rezwana Tabassum, Md Shafiqul Islam**

Projahnmo Research Foundation

**Background:** Bangladesh, ranked as the seventh most climate-vulnerable country globally, faces significant health risks due to climate change, particularly in respiratory health. Acute Respiratory Infections (ARIs) are a leading cause of morbidity and mortality among children, especially in low- and middle-income countries (LMICs) like Bangladesh. Despite the potential influence of climatic factors—such as temperature, humidity, and rainfall—on ARI prevalence, there is limited evidence examining these associations.

**Research Objectives:** To investigate the association between the variability of climate parameters and the prevalence of childhood ARIs in Bangladesh.

**Methodology:** We will conduct a retrospective analysis using secondary data from 1993 to 2022. ARI prevalence data for children aged 0–5 years will be sourced from nine rounds of Bangladesh Demographic and Health Survey (BDHS). Climate data, including monthly average maximum, minimum, and mean temperature (°C), monthly average relative humidity (%), and total monthly rainfall (mm) from the Bangladesh Meteorological Department and air pollution data (PM2.5, PM10) from the Department of Environment will be obtained. We will conduct a descriptive analysis of climate parameters, air pollutants, and childhood ARI prevalence across regions of Bangladesh over time. Pearson correlation will explore associations with ARI, and linear regression will adjust for confounders to further assess these relationships.

**Challenges:** Challenges include aligning datasets across varying spatial and temporal resolutions and addressing gaps in historical pollution data. However, the availability of long-term, nationally representative datasets presents a unique opportunity to examine climate–health linkages over time.

**Expected Impact:** Findings from this study will enhance understanding of climate-related health risks and inform public health interventions and policy planning aimed at reducing childhood ARI burden in climate-vulnerable settings.

The **NIHR Global Health Research Unit on Respiratory Health (RESPIRE)** aims to reduce the number of deaths and wider health and societal impacts from respiratory diseases in some of the world’s most disadvantaged populations.

Co-led by the University of Edinburgh and Universiti Malaya, RESPIRE partners based in Bangladesh, Bhutan, India, Indonesia, Malaysia, Pakistan, and Sri Lanka collaborate to deliver low-cost, scalable policy and clinical interventions to reduce respiratory disease and death in Asia.

RESPIRE is funded by the UK National Institute for Health and Care Research (NIHR), using international development funding from the UK Government to support global health research.

Learn more at [usher.ed.ac.uk/respire/](https://usher.ed.ac.uk/respire/) or @RESPIREGlobal on LinkedIn, Twitter/X and Facebook.

Abstracts are colour coded based on programme and session:

Poster Session 1   10.45 – 12.00		Poster Session 2   14.15 – 15.30	
Preventable Risk Factors	Infectious Diseases	Non-Communicable Diseases	Climate & Health