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# Implementing lung health interventions in low- and middle-income countries: a FRESH AIR systematic review and meta-synthesis

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**This systematic review and meta-synthesis shows why implementation of lung health interventions often fails in low- and middle-income countries, and it provides critical factors to prevent failure with their level of evidence** <https://bit.ly/2UYJOSa>

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**ABSTRACT** The vast majority of patients with chronic respiratory disease live in low- and middle-income countries (LMICs). Paradoxically, relevant interventions often fail to be effective particularly in these settings, as LMICs lack solid evidence on how to implement interventions successfully. Therefore, we aimed to identify factors critical to the implementation of lung health interventions in LMICs, and weigh their level of evidence.

This systematic review followed Cochrane methodology and Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) reporting standards. We searched eight databases without date or language restrictions in July 2019, and included all relevant original, peer-reviewed articles. Two researchers independently selected articles, critically appraised them (using Critical Appraisal Skills Programme (CASP)/ Meta Quality Appraisal Tool (MetaQAT)), extracted data, coded factors (following the Consolidated Framework for Implementation Research (CFIR)), and assigned levels of confidence in the factors (*via* Grading of Recommendations Assessment, Development and Evaluation-Confidence in the Evidence from Reviews of Qualitative research (GRADE-CERQual)). We meta-synthesised levels of evidence of the factors based on their frequency and the assigned level of confidence (PROSPERO:CRD42018088687).

We included 37 articles out of 9111 screened. Studies were performed across the globe in a broad range of settings. Factors identified with a high level of evidence were: 1) “Understanding needs of local users”; 2) ensuring “Compatibility” of interventions with local contexts (cultures, infrastructures); 3) identifying influential stakeholders and applying “Engagement” strategies; 4) ensuring adequate “Access to knowledge and information”; and 5) addressing “Resource availability”. All implementation factors and their level of evidence were synthesised in an implementation tool.

To conclude, this study identified implementation factors for lung health interventions in LMICs, weighed their level of evidence, and integrated the results into an implementation tool for practice. Policymakers, non-governmental organisations, practitioners, and researchers may use this FRESH AIR (Free Respiratory Evaluation and Smoke-exposure reduction by primary Health cAre Integrated gRoups) Implementation tool to develop evidence-based implementation strategies for related interventions. This could increase interventions' implementation success, thereby optimising the use of already-scarce resources and improving health outcomes.