

New publication highlights challenges of diagnosing acute respiratory disease in emergency departments

- The first known evaluation of diagnostic accuracy by emergency department clinicians for acute respiratory disease
- The authors found that acute paediatric respiratory disease was frequently misdiagnosed, with over 45% of pneumonia cases missed

Brisbane, Australia, 19 November 2021 – ResApp Health Limited (ASX:RAP), a leading digital health company developing smartphone applications for the diagnosis and management of respiratory disease, is pleased to announce the publication of clinical study data analysed from its Breathe Easy paediatric clinical study in the leading peer-reviewed journal, *Frontiers in Pediatrics*.

The landmark publication, entitled *“Diagnostic Errors Are Common in Acute Pediatric Respiratory Disease: A Prospective, Single-Blinded Multicentre Diagnostic Accuracy Study in Australian Emergency Departments”*ⁱ, uses data from the Breathe Easy paediatric clinical study to evaluate the diagnostic accuracy of emergency department clinicians in diagnosing acute paediatric respiratory disease, as compared with expert panel consensus.

In the study, the authors analysed data from 620 paediatric patients who presented to the emergency department and found that acute respiratory disorders were frequently misdiagnosed. While asthma and lower respiratory tract diseases were well identified (at rates of 91% and 86% respectively), over 45% of focal pneumonia, 35% of isolated upper respiratory tract infection, 23% of croup and 33% of bronchiolitis cases were missed by the emergency department clinicians.

The authors concluded *“In well-resourced emergency departments, we have identified a previously unrecognized high diagnostic error rate for acute childhood respiratory disorders, particularly in pneumonia and bronchiolitis. These errors lead to the potential of avoidable harm and the administration of inappropriate treatment.”*

Dr Paul Porter, an author of the publication and Scientific Advisor to ResApp said: *“Our work shines a light on the standard of care for acute respiratory disease diagnosis in the emergency department. The differential diagnosis of childhood respiratory disease is challenging as it relies on a complex mix of clinical and interpretive skills, compounded by many diseases having similar clinical features such*

ⁱ Porter P, Brisbane J, Tan, J, Bear N, Choveaux, J, Della, P, Abeyratne, U. Diagnostic Errors Are Common in Acute Pediatric Respiratory Disease: A Prospective, Single-Blinded Multicenter Diagnostic Accuracy Study in Australian Emergency Departments. *Front. Pediatr.* (2021) 9:1273. <https://doi.org/10.3389/fped.2021.736018>

as breathlessness and wheeze. Although these diseases represent the most common reasons for children to be taken to the emergency department, our study shows that they are frequently misdiagnosed."

Tony Keating, CEO and Managing Director of ResApp added: *"These results bring into focus the clinical value that ResAppDx brings to the assessment of patients presenting with respiratory symptoms. For example, in the same dataset, our cough-based pneumonia algorithm identified 87% of children with pneumonia without the need for clinical examination or investigations. Not only does ResAppDx offer clinicians an objective and accurate diagnostic tool, it has the potential to deliver high quality diagnosis, equal to, or better than what is achieved in a well-resourced emergency department, globally – making it more accessible and affordable for all."*

About ResApp Health Limited

ResApp Health Limited (ASX: RAP) is a leading digital health company developing smartphone applications for the diagnosis and management of the respiratory disease. ResApp's machine learning algorithms use sound to diagnose and measure the severity of respiratory conditions without the need for additional accessories or hardware. ResApp's regulatory-approved and clinically validated products include ResAppDx, a smartphone-based acute respiratory disease diagnostic test for use in telehealth, emergency department and primary care settings; and SleepCheck, a smartphone application which allows consumers to self-assess their risk of sleep apnoea. Both products are CE Marked in Europe and TGA approved in Australia. For more information, please visit www.resapphealth.com.au.

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This ASX announcement was approved and authorised for release by the board of directors of ResApp Health.