ResApp Expands Diagnostic Application to the Management of Respiratory Disease

- **Preliminary clinical results demonstrate up to 94% accuracy in the identification of paediatric asthma and viral wheeze patients who require increased treatment.**
- **Collaborations launched with two lung function test laboratories at Joondalup Health Campus in Perth and the Wesley Hospital in Brisbane for measuring severity of chronic respiratory disease.**

Perth, Western Australia, 18 August 2016 -- ResApp Health Limited (ASX: RAP), the developer of smartphone medical applications for the diagnosis and management of respiratory disease, announced positive initial results that demonstrate the potential for measuring the severity of asthma or viral wheeze in children using cough sounds. ResApp also began working with two lung function test laboratories, one at Joondalup Health Campus (JHC) in Perth and one at the Wesley Hospital in Brisbane to record adult asthma and chronic obstructive pulmonary disease (COPD) patients' breathing and cough sounds alongside comprehensive lung function tests.

Lung function tests, which include spirometry and bronchodilator response, are clinically used for diagnosing and assessing the severity of lung disease and are used to monitor the course of the disease and the response to treatment and medication. The two new sites are under the direction of experienced respiratory physicians; Dr Scott Claxton leads the team at JHC and Dr John Feenstra leads the team at the Wesley. Adult patient recruitment at both lung function test laboraties has begun, with 130 patients enrolled to date.

Preliminary analysis of 224 paediatric patients with asthma or viral wheeze by Associate Professor Udantha Abeyratne's team at The University of Queensland has demonstrated the potential for ResApp's algorithms to measure severity in paediatric asthma patients. Using only coughs, ResApp's algorithms were able to separate patients either without asthma or with controlled asthma (including those with wheeze severity scores[1] of one, which may include the presence of mild wheeze) from patients with wheeze severity scores of two or greater (i.e. patients

[1] Wheeze severity score (WSS) was measured by the clinical team through a combination of respiratory rate, existence and the nature of wheezing as observable through a stethoscope as well as the use of sternocleidomastoid muscles. WSS is measured on a one to nine scale and is often used in paediatric asthma management. In the adult study (and in children older than 7 years), severity will be measured using lung function tests.

where additional treatment is recommended) at 86% accuracy (87% sensitivity, 86% specificity). When additional clinical observations were used, this accuracy increased to 94% (91% sensitivity, 97% specificity). Identifing this level of severity plays an important role in asthma management.

“These preliminary results suggest that we may be able to improve current asthma treatment by giving parents and caregivers more confidence in using their asthma action plans,” said Dr Paul Porter, paediatrician and clinical lead at the JHC site. “These plans are a mainstay of paediatric asthma management. Recognising the presence and severity of acute asthma or viral induced wheeze enables appropriate initiation of treatment and the subsequent monitoring of response.”

The additional clinical studies at JHC and the Wesley will accelerate ResApp’s development of tools for managing chronic respiratory disease such as asthma and COPD. Globally, asthma affects as many as 334 million people and COPD affects 65 million. One in ten Australians have asthma and 7.5% of Australians aged 40 or over have COPD with symptoms that affect daily life. According to the United States Centers for Disease Control and Prevention, COPD is the third leading cause of death in the United States.

“ResApp is commercialising a revolutionary medical app that will potentially enhance our management and diagnosis of many respiratory conditions,“ said Dr John Feenstra, thoracic physician and the academic lead for medicine at the UnitingCare Health Clinical School. “It is an exciting time to assist ResApp to bring this scientific research from the laboratory at The University of Queensland to the bedside.”

“These preliminary results give us great confidence that we can expand our product portfolio from diagnosis to management of respiratory disease,” said Tony Keating, CEO and Managing Director of ResApp. “We are excited by the potential for creating products that could help doctors and patients better manage chronic respiratory disease and very pleased to be addressing yet another massive market.”

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About ResApp Health Limited

ResApp Health Limited (ASX: RAP) is a digital health company developing smartphone applications for the diagnosis and management of respiratory disease. The technology is based on machine learning algorithms that use sound alone to diagnose and measure the severity of respiratory conditions without the need for additional hardware. The algorithms were initially developed by The University of Queensland with funding from the Bill and Melinda Gates Foundation. ResApp has both adult and paediatric clinical studies underway with preliminary results demonstrating accurate diagnosis of pneumonia, asthma/viral wheeze, bronchiolitis, croup and upper respiratory tract infections in children as well as chronic obstructive pulmonary disease, asthma and pneumonia in adults. Markets for ResApp's technology include telehealth use through partnerships with telehealth service providers, emergency department and regular clinic use by healthcare providers, at-home use by consumers and working with global aid and humanitarian organisations to deliver tools for the developing world.

For more information on ResApp, visit www.resapphealth.com.au

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