



**ASX / MEDIA RELEASE**

## **ResApp Announces Development of Obstructive Sleep Apnoea Screening Test**

*Newly-developed sound-based algorithm achieves 86% sensitivity and 83% specificity for identifying moderate and severe obstructive sleep apnoea using only a smartphone*

**Brisbane, Australia, 10 April 2018** -- ResApp Health Limited (ASX:RAP), a leading digital health company developing smartphone applications for the diagnosis and management of respiratory disease, today announced that it is conducting clinical proof-of-concept studies in obstructive sleep apnoea (OSA) and has received excellent preliminary results. ResApp has developed new machine-learning algorithms to measure the severity of OSA from a patient's overnight breathing and snoring sounds recorded using a smartphone placed on a bedside table. The company is working with Dr Philip Currie and Dr Ivan Ling of Cardio Respiratory Sleep (CRS) to recruit patients at Hollywood Private Hospital and The Park Private Hospital in Perth, Australia.

Recent data from the Wisconsin Sleep Cohort Study showed that sleep apnoea affects more than three in ten men and nearly two in ten women. 80 percent of people suffering moderate and severe sleep apnoea are undiagnosed. Untreated OSA is known to increase the risk of heart disease, hypertension, stroke and type 2 diabetes, and is estimated by the American Academy of Sleep Medicine (AASM) to cost the US economy \$149.6 billion annually. OSA is currently diagnosed using sleep laboratory polysomnography or home sleep testing that utilises specialised equipment to monitor heart, lung and brain activity, breathing patterns, arm and leg movements, and blood oxygen levels whilst asleep. Neither method offers the ability to mass screen patients due to high cost and low availability, and many patients find traditional testing to be complicated and uncomfortable.

Preliminary results from ResApp's study achieved 86% sensitivity and 83% specificity for identifying patients with an apnoea hypopnea index (AHI) greater than or equal to 15 (patients with moderate and severe sleep apnoea) compared with simultaneous in-laboratory polysomnography scored using the current 2012 AASM scoring criteria. The area under the receiver operating characteristic curve (a standard measure of how well a test distinguishes between two diagnostic groups, where a value of 1 represents a perfect test) was 0.91. Similar results were obtained for identifying patients with AHI greater than or equal to 30 (patients with severe sleep apnoea). These results were obtained using ten-fold cross-validation on a large cohort of 731 patients, 62% of which were male. The mean age of patients was 53 (range 18-87) with a mean AHI of 24 (range 0-196).

"We are very excited about these excellent preliminary results for identifying OSA," said Tony Keating, CEO and Managing Director of ResApp. "There is a strong clinical and economic need

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for reducing the number of undiagnosed sleep apnoea sufferers and by utilising a smartphone we have the opportunity to deliver a highly-scalable, accurate and easy to use screening test to the mass market. By leveraging our expertise in using audio signatures to identify respiratory conditions we have created another large commercial opportunity.”

The company is currently recruiting patients for a prospective study and is targeting a regulatory submission by the end of this calendar year.

### **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 to diagnose and measure the severity of respiratory conditions without the need for additional hardware. ResApp has adult and paediatric clinical studies underway at leading hospitals in the United States and Australia with results demonstrating accurate diagnosis of pneumonia, asthma/reactive airway disease, bronchiolitis, croup, chronic obstructive pulmonary disease and upper respiratory tract infections and obstructive sleep apnoea. Potential customers of ResApp’s products include healthcare providers in telehealth, emergency department, urgent care and primary care settings as well as humanitarian organisations in the developing world.

For more information on ResApp, visit [www.resapphealth.com.au](http://www.resapphealth.com.au)

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