

### Digital healthcare for respiratory disease

TechKnow Invest Roadshow

Gold Coast, Surfers Paradise Marriott Resort & Spa, 20 October 2015

Sydney, The Grace Hotel, 22 October 2015

Melbourne, Grand Hyatt Hotel, 23 October 2015

**ASX: RAP** 

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# Digital healthcare for respiratory disease

- Developing the world's first clinically-tested, regulatory-approved respiratory disease diagnostic test for smartphones
  - No additional hardware needed
  - Unique opportunity to integrate into telehealth providers' existing platforms
  - Apps to provide clinical-quality ('Gold Standard') diagnostic tests and chronic disease management tools directly to consumers and healthcare providers
- Huge global market, 700M+ doctor visits annually for respiratory disease<sup>1</sup>
- High levels of accuracy demonstrated in clinical proof of concept study and in multi-site clinical study underway in Perth
- Fully-funded to bring product to market in late 2016

<sup>1.</sup> Based on OECD doctor visits per capita data and assuming 10% of visits are for respiratory disease (based on US data)



### Company overview

### Capital Structure (ASX:RAP)

Shares on issue	561M	
Silaies Oil issue	561M	
Share price as of 16 October 2015	\$0.032	
Market Cap	\$18M	
Performance Shares <sup>1</sup>	93.75M	
Options <sup>2</sup>	33.75M	
Incentive Options <sup>3</sup>	25M	
Cash Balance as of 30 June 2015	\$4M	

- 1. Issued on \$20M of annual revenue or on an acquisition
- 2. Exercise price of 2.6c, expire 31 December 2016
- 3. Issued to MD, 5M options at exercise price of 2.5c, 5M at 5c and 10M at 10c, 5 year expiry; Issued to Dr Abeyratne, 3M at 5c and 2M at 10c

#### **Board of Directors**

Dr Roger Aston Non-Executive Chairman

(Chairman of Oncosil, former CEO of Mayne Pharma, Cambridge Antibody, cofounder of pSivida)

Dr Tony Keating Managing Director and CEO

(former Director, Commercial Engagement of UniQuest)

Mr Adam Sierakowski Non-Executive Director

Mr Chris Ntoumenopoulos Non-Executive Director

#### **Substantial Shareholders**

UniQuest Pty Ltd: 7.51%

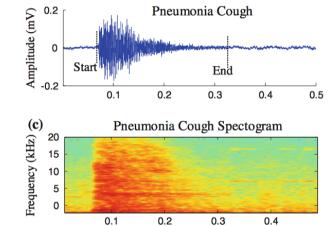
Freeman Road: 5.34%

Top 20 Shareholders: 45.83%



## Revolutionary tool based on sound signatures

- Exclusive worldwide license to machine learning technology developed by A/Prof.
   Abeyratne at The University of Queensland
- Uses signatures in coughing and breathing sounds to diagnose disease
- Patent application filed in US, Australia,
   Europe, China, Japan and South Korea
- Peer-reviewed proof of concept study<sup>1,2</sup>
   funded by the Gates Foundation
- 91 patients, majority under age of 5



ResApp	Sensitivity	Specificity	Accuracy
Pneumonia	94%	100%	96%
Asthma	100%	80%	90%

<sup>2.</sup> Kosashi et al., IEEE Transactions in Biomedical Engineering, 2015



<sup>1.</sup> Abeyratne et al., Annals of Biomedical Engineering, 2013

# Diagnosis of respiratory disease is the most common outcome from a visit to the doctor



#### **Acute conditions**

URTIs, influenza, bronchitis, bronchiolitis, pneumonia, pertussis



Asthma, COPD, cystic fibrosis, bronchiectasis



- 125M doctor visits<sup>1</sup> in the US for respiratory disease (10% of all visits)
- 6-8M doctor visits<sup>2</sup> in Australia for respiratory disease
- Est. 700M+ doctor visits globally<sup>3</sup> for respiratory disease
- High prevalence and growth in Asia

Currently diagnosed using stethoscope, imaging (x-ray, CT), blood and/or sputum tests

<sup>3.</sup> Based on OECD doctor visits per capita data and assuming 10% of visits are for respiratory disease (based on US data)



<sup>1.</sup> Ambulatory case visits, National Ambulatory Medical Care Survey 2010

<sup>2.</sup> Australian Lung Foundation

# Delivery of healthcare via telehealth is one of the biggest trends in healthcare

**75M** 

US telehealth consults in 2014 (Deloitte)

56%

annual growth rate (IHS)

\$12-\$16B

Total US market opportunity (Goldman Sachs, Deloitte, Teladoc)

\$50B

Total global market opportunity (Deloitte)





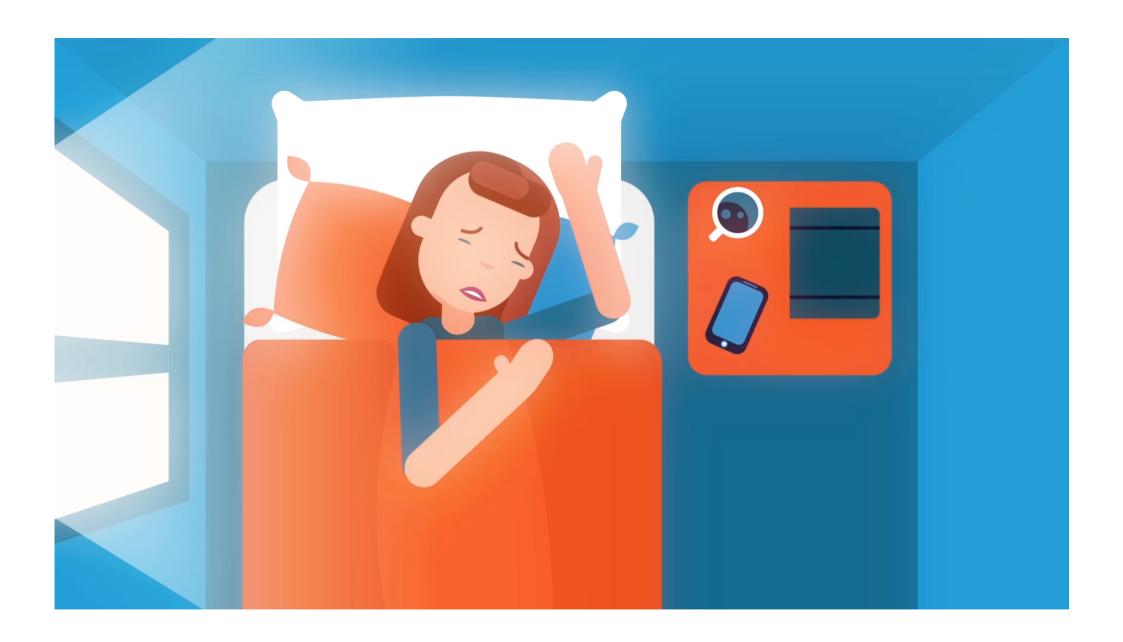




- Teladoc and American Well: 10M+ customers each
- Insurers such as Cigna, Aetna, UnitedHealthcare
- Employers such as Bank of America, Volvo, Yahoo!
- Hospital systems such as Mount Sinai

Walgreens CVS/pharmacy®

 Two largest US pharmacy chains have recently announced partnerships with telehealth providers



# ResApp directly addresses the most common disease encountered by telehealth providers

The market segment addressed by ResApp is enormous



- 30% of telehealth consults for acute respiratory disease<sup>1</sup>
- **22.5M** telehealth consults per year today for acute respiratory disease
- Number of telehealth consultations growing at 56% per year<sup>2</sup>
- 700M+ global doctor visits each year for respiratory disease<sup>3</sup>
  - Access through growth in telehealth <u>plus</u> in-person tests (in-clinic, in-hospital)

<sup>3.</sup> Based on OECD doctor visits per capita data and assuming 10% of visits are for respiratory disease (based on US data)



<sup>1.</sup> Uscher-Pines and Mehrotra (Health Affairs, 2014)

<sup>2.</sup> IHS

### Multiple revenue streams tied to real customer value

Partnerships with telehealth providers Direct to consumers & healthcare providers

Partnerships with device manufacturers & telcos

#### B2B - Per test fee

'In consultation' diagnosis. Access partner's existing patients.















#### B2C - Install & per test fee

Download App via App Stores. Use in home, in clinic & in hospital. Pipeline to disease management.





#### **B2B** – Licensing

Reach huge installed base.



SAMSUNG











**Big Data Insights** 

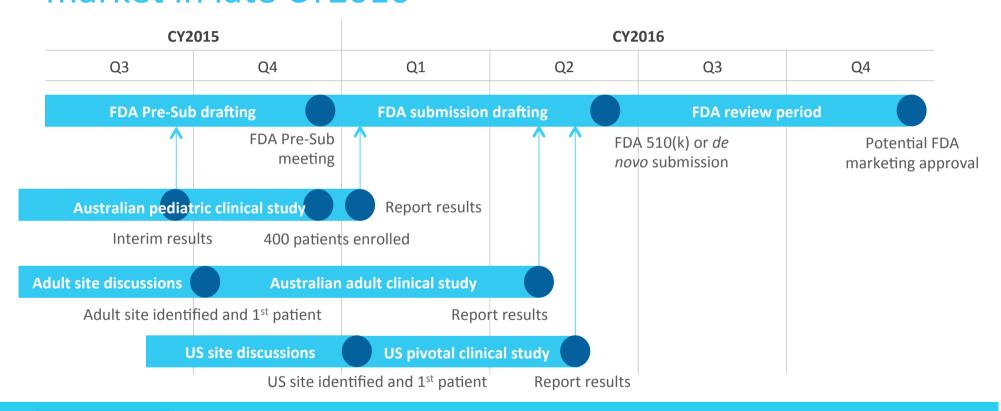


# Successfully achieving key milestones in CY2015

- Australian pediatric clinical study progressing well
  - Patients 0-7 years of age with signs or symptoms of respiratory disease
  - Comparison to final clinical diagnosis as per treating team (after laboratory work and imaging)
  - ~310 patients enrolled (223 confirmed respiratory disease at JHC, 31 at PMH and 56 control cases)
  - Expected to have 400 patients enrolled by end of CY2015
- ✓ Positive preliminary results from pediatric clinical study reported
  - Asthma versus healthy subjects, ≥97% sensitivity, 92% specificity and ≥95% accuracy
  - Pneumonia versus healthy subject, ≥91% sensitivity, ≥95% specificity and ≥96% accuracy
  - Successfully demonstrated that voluntary coughs can achieve high levels of accuracy
- ✓ Appoint best-in-class FDA regulatory consultant Experien Group
- ☐ FDA Pre-Submission meeting by end of CY2015
- Begin enrolment for Australian adult clinical study



# Clinical and regulatory plan to bring product to market in late CY2016





### Summary

- Revolutionary technology diagnosis and management of respiratory disease without the need for additional hardware
- Targeting a huge market, cough is the most common reason for visiting a doctor
- Successful clinical proof of concept funded by the Gates Foundation showed high accuracy for pneumonia and asthma diagnosis
- Multi-site clinical study progressing well with positive preliminary results demonstrating
   ≥95% accuracy for pneumonia and asthma versus healthy subjects
- FDA Pre-Submission meeting planned for Q4 CY2015
- Fully-funded to bring product to market in late 2016, launch via telehealth partner to reach millions of patients quickly





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