# Resonance Health Limited

Resonance Health

CORPORATE PRESENTATION

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Resonance Health (ASX: RHT) was founded in 2004 and is headquartered in Perth, Western Australia. RHT is an Australian healthcare company specialising in the development and delivery of non-invasive medical imaging software and analysis services. Our products are used by clinicians in the diagnosis and management of human diseases and by pharmaceutical companies in their clinical trials. Resonance Health has gained endorsement by leading physicians worldwide for consistently providing high quality quantitative measurements essential in the management of particular diseases.

Resonance Health's flagship product FerriScan<sup>®</sup> is the global gold-standard for liver iron concentration quantification and has become established in many international 'Standards of Care' for Thalassemia. RHT now provides a number of services to the radiology and clinical community for both organ iron overload and fat measurement. FerriScan<sup>®</sup>'s proprietary technology has been applied in training neural networks to develop our new product FerriSmart<sup>®</sup>, the world's first and only regulatory-cleared Artificial Intelligence tool for the measurement of liver iron concentration.

The Company has built significant capability in the AI space with its FerriSmart product as well as ongoing development in other disease settings.

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#### **Capital Structure & Substantial Shareholders:**

- 402.5m shares on issue
- 21m Options with exercise prices from 3-10c expiring 9 Mar 2021
- Southam Investments Pty Ltd •
- (17.6%) 37.1m shares (9.2%)

SG Hiscock & Co Board & Management •

- 80.1m shares (19.9%)

70.7m shares

Top 20 Shareholders

197.4m shares (49%)

# **Financial Snapshot**

### **Financial Highlights:**

- Revenue for March quarter was \$850K (unaudited), an increase of 31% versus the March quarter for previous year
- Growth and profitability improvement continuous in Q3 2018
- 98% retention of top 50 customers
- High repetition of business (i.e. recurring services)
- Cash balance at 31 December 2017 AU \$1,116K
- Cash balance at 31 March 2018 AU \$1,477K
- Resonance Health is forecasting a profit range of 100k to 200k for FY 18 (Loss of \$304K FY 17, Loss of \$384K FY16)
- In addition to revenue of approx. \$2.4 m (*unaudited*) as of April 18 (growth of 17% this year), the company has also recently won clinical trial work to the approx. value of US \$677K, with work for several other clinical trials also currently under consideration

### **Progressing towards profitability**



This highly stable, profitable platform provides an excellent base from which new initiatives can be undertaken. Resonance Health is actively pursuing opportunities for growth through both in-house innovation and potential collaborations with others, either through acquisitions, channel partners, or providing distribution services for products that are an excellent fit with the Resonance Health core business and distribution network.



# Iron Overload



## **Causes of Iron Overload**

Anaemias and blood disorders requiring repeated **blood transfusions:** 

### Thalassaemia

- Inherited blood disorder causing less haemoglobin resulting in severe anemia and death if untreated
- **3rd most serious** public health problem in South East Asia following Malaria and HIV
- WHO estimates **330,000** new thalassaemia births globally each year

#### Sickle cell anaemia

- Red blood cells assume an abnormal (sickle) shape
- **75-100,000** cases in the USA (approx 1:500 African American births) approx 15% have iron overload

#### **Myelodysplastic Syndrome (MDS)**

- Bone marrow abnormalities resulting in lack of red blood cells
- Over 100,000 cases in USA and Europe approx 15% are transfused and become iron loaded

### Primary Iron Overload

#### **Hereditary Haemochromatosis**

- Inherited iron overload disorder
- HH is the **most common genetic disorder** in western populations affecting **1 in 250** people from Northern European descent
- Over 2 million cases in USA & Europe

### Non-Transfusion Dependent Thalassemia **(NTDT)**

Iron overload due to both increased intestinal absorption of iron AND intermittent blood transfusions

Requires iron chelator to remove excess iron

## FDA mandates an approved 'companion diagnostic' to prescribe Exjade in NTDT

## FerriScan and Cardiac T2\*



Our Gold Standard MRI technology (FerriScan<sup>®</sup>) for liver iron concentration measurement alongside our Cardiac T2\* MRI service has become established in many international 'Standards of Care' for Thalassemia. FerriScan is suitable for use in the quantification of iron in many conditions, such as Sickle Cell Disease, Thalassemia, Hereditary Haemochromatosis, various anaemias, and cancer.

FerriScan R2-MRI is a proprietary, patent-protected imaging technology for measuring liver iron concentration and is the first noninvasive test for liver iron concentration (LIC) to have achieved FDA regulatory clearance and approval in the US, CE Mark in Europe and TGA in Australia. The FerriScan service involves an approximately 10 minute free breathing MRI scan followed by off-site processing of the images in Resonance Health's ISO certified central image analysis center to generate the LIC result.

By March 2018, over 45,000 FerriScans had been performed globally in over 45 countries. FerriScan is reimbursed in the UK, Germany, and Canada by government, and has some private payer coverage in the US.



Cardiac T2\* is the most widely accepted MRI based method for assessing heart iron loading. Resonance Health offers a dual analysis service including Cardiac T2\* measurement in addition to FerriScan to provide more comprehensive information regarding body iron stores. Both the liver and the heart data are captured in one patient visit. Resonance Health's Cardiac T2\* analysis service has regulatory approval from the FDA in the USA, TGA in Australia, and CE Mark for Europe. The Cardiac T2\* analysis service is available to suitably equipped MRI centers internationally. The imaging protocol is provided by MR equipment manufacturers and standardised as per Resonance's Manual/Instructions. The analysis is provided at Resonance's central image analysis centre by specially trained and experienced analysts under stringent quality controlled conditions.

## **Global Access to FerriScan**



Map icons indicate just some of our FerriScan<sup>®</sup> locations, with over 400+ sites having now been activated.

## FerriSmart



FerriSmart<sup>®</sup> uses Artificial Intelligence (AI) incorporated into a fully automated computer software medical device to accurately and rapidly determine the liver iron concentration (LIC) from a specially acquired Magnetic Resonance (MR) image. FerriSmart<sup>®</sup> was designed for medical professionals to diagnose and manage patients (children and adults) with life threatening acquired iron-overload disorders such as Thalassemia, Sickle Cell disease, Haemochromatosis, anaemias, and cancers.

FerriSmart<sup>®</sup> was specifically developed to help clinicians in developing countries access an affordable and clinically validated method for LIC quantification. Due to significant disparities in assessment regimes (largely cost driven), patient outcomes in these countries may be significantly lower than in developed countries. FerriSmart will enable clinicians to monitor the health of patients with potentially fatal liver iron-overload with the same calibre of diagnostic tool available to clinicians in developed countries.

FerriSmart was trained using thousands of archived FerriScan<sup>®</sup> image data sets with clinically validated LIC 'label' values. These datasets were analysed and labelled according to a set of stringent standards and guidelines implemented as part of an ISO 13485 accreditation quality system in operation for over 12 years.





## FerriScan & FerriSmart Target Markets



## **Metabolic Disease**

# THE OBESITY EPIDEMIC

Resonance Health has expanded its suite of products in the important metabolic disease space, with the Company now offering DR Grader alongside HepaFat Scan (for hepatic steatosis), pancreatic fat scan for pancreatic steatosis, NASH-Scan (for steatohepatitis) as well as a genotyping panel for fatty liver disease.

### **Metabolic Related Liver Disease**

Rising global obesity, caused by the consumption of high calorie and nutrient poor diets, is increasing the rates of cardiovascular (heart) disease, diabetes, liver disease (NAFLD/NASH), and cancer.

### Non-alcoholic Fatty Liver Disease (NAFLD)

- Affects 10-30% of the global population of 7.6 billion people
- Around 25% of those with NAFLD will develop liver inflammation termed non-alcoholic steatohepatitis (NASH) and 5% will develop cirrhosis
- By 2020 NALFD will be the leading cause of liver transplants globally
- Drug companies are in a race to develop treatments to head off this epidemic

### Liver Cancer and NAFLD

- NAFLD is linked to Hepatocellular carcinoma (HCC), a life-threatening liver-specific cancer
- While rates of HCC have increased dramatically, those of other cancers are falling

#### **Diabetes**

- It is estimated that 415 million people in the world have diabetes
- About 65% of NASH patients also have type 2 diabetes mellitus (T2DM)
- Diabetes increases the severity of liver disease.
- Causes diabetic cardiomyopathy
- Diabetic cardiomyopathy is a leading cause of heart failure and premature death

### **Cardiovascular disease**

- Studies have linked NAFLD to cardiovascular disease
- Pathological processes are probably related

## Metabolic Disease Products



Resonance Health has recently increased its product suite with the inclusion of several new assessment techniques above to assist clinicians in diagnosing and managing conditions. It also offers additional services including:

- Pancreatic Fat Assessment quantitative assessment of pancreatic fat.
- Visceral / Subcutaneous Fat and Organ Fat in Metabolic Disease quantitative assessments of visceral fat, subcutaneous fat, epicardial fat.
- Liver Biopsy Stereology Services quantitative assessment of hepatic steatosis of digitised biopsies using stereology.

## **TeleMedC** (Diabetic Retinopathy)

- Resonance Health have signed a 2 year agency agreement to distribute an Artificial Intelligence (AI) Diabetic Retinopathy (DR) grading tool.
- The technology, named DR Grader, was developed by leading researchers in Australia.
- Dr Grader has been tested and successfully deployed in Singapore.
- The artificial intelligence (AI) based fully automated DR software system uses images of the eyes and clinical risk factors to provide a reading accuracy of over 92%.
- Resonance Health to target low regulation jurisdictions, with commercialisation first in Lebanon, Pakistan, and Bangladesh. Efforts in China to commence subject to appropriate regulatory.



Image shows sample eye images of various grades of DR

## **Diabetes market in focus**

### Pakistan

### • 193 million people

- 35 million to 37.5 million people above 20 are estimated to be suffering with diabetes
- One study estimated the prevalence of DR in Pakistan at 26%

### Bangladesh

- 163 million people
  - **1** in 4 at serious risk of losing their eyesight to DR
- 750,000 adults and 48,000 children are known to be blind, with approximately 2.5 million people at risk of developing diabetic retinopathy

### China

- 1.379 billion people
- Prevalence rates for diabetes and pre-diabetes (in individuals aged 20 years or older in 2007-2008) of 9.7% and 15.2%
- More than 68 million people have already been diagnosed with diabetic DR



## **Corporate Growth through Product Innovation and Collaboration**

# Resonance Health is actively pursuing opportunities for growth through both in-house innovation and potential collaborations with others.

### **Product Innovation:**

- 3T FerriScan calibration: Currently FerriScan is suitable for almost all 1.5T scanners. With the increase in use of 3T scanners, Resonance Health is adapting FerriScan to ensure 3T compatibility for those clients who choose to use 3T.
- FerriScan and FerriSmart shorter acquisition sequence: Trials are under way to significantly reduce the image acquisition time for the FerriScan protocol. This will increase scanner throughput, a key selling point for the product.
- HepaFat-Scan is now 3T compatible.
- Attempted full automation of HFS is currently underway to allow for both scalability and deployment on other platforms.
- Resonance Health has now developed significant experience in AI development and regulatory clearances. This combined with a substantial distribution network puts the company in a unique position to assess and assist other AI tools needing commercialisation pathways.

### **Collaboration:**

Resonance Health is actively pursuing opportunities for collaboration through acquisitions, channel partners for existing products, or providing distribution services for products that are an excellent fit with the Resonance Health core business and distribution network.

Examples of such collaborations include:

- Perth Radiological Clinic Joint Venture Term Sheet for the assessment of the viability for the development and commercialization of several Artificial Intelligence diagnostic tools;
- Agency agreement with TeleMedC to commercialise their Artificial Intelligence tool for the assessment and grading of diabetic retinopathy.

Several additional strategically important collaborations are currently being assessed.

## **Recent ASX Announcements**

- (4 May) Resonance Health sign 2-year agency agreement to distribute an Artificial Intelligence (AI) Diabetic Retinopathy (DR) grading tool.
- (20 February) Resonance Health releases a new MRI-based assessment tool (NASHScan) for the screening of non-alcoholic steatohepatitis (NASH) patients.
- (13 February) Resonance Health announce 3 executed contracts with pharmaceutical companies for clinical trial work. Total dollar value of work for multi-year trials amount to an aggregated sum of US \$677,000.