

# ReDS™ – PEACE OF MIND FOR HEART FAILURE PATIENTS, FAMILIES, AND PROVIDERS



## Home Monitoring for Heart Failure Patients

Heart Failure patients are often prone to rapid changes in the amount of fluid they carry in their lungs and legs. Small increases in congestion - that may or may not be detected by a scale - can cause significant worsening in their symptoms and keep them from their everyday activities.

Having an accurate, noninvasive way to track congestion can provide patients, their families and their providers with a way to improve care at home without driving up costs with ED visits or additional trips to the clinic.

*"Many factors can influence weight and symptoms, but what a Heart Failure provider wants to know is if a patient is volume-overloaded or not and how bad is it,"* says Sean Pinney, MD, Director of the Advanced Heart Failure & Cardiac Transplantation Program at Mount Sinai Medical Center in New York. *"The sooner we know that, the sooner we can target our therapy and hopefully reduce costs even without seeing the patient in the clinic."*

## ReDS™ – Improving Care & Quality of Life at Home

The ReDS™ system is a noninvasive tool that allows providers to rapidly – and accurately – measure lung fluid in Heart Failure patients at home. Measurements take 90 seconds and can be performed by patients daily or, as needed, when symptoms present themselves. The use of the ReDS™ system can improve symptoms through early detection and treatment, and may also lead to superior outcomes. Recent clinical research has shown an 87% reduction in Heart Failure readmission rates for patients treated with the ReDS™ system at home for three months post-discharge versus those who were treated with usual care alone<sup>1</sup>. *"Patients can enjoy more time at home, more time out of the hospital, more quality of life – as a result of us being able to prescribe the right medicine at the right dosage and at the right time,"* says Sean Pinney, MD, Director, Advanced Heart Failure & Cardiac Transplantation, Mount Sinai Medical Center

The ReDS™ system uses a secure cloud environment to transmit readings instantly to providers so that patients can be monitored on a daily basis or on demand. The system is connected to a call center and a physician portal to assist providers in tracking patient compliance and to provide the highest quality remote care with the least burden on clinic staff.

## ReDS™ at home - keeping patients safe

- Non-invasive and easy-to-use
- Accurate and actionable lung fluid measurements in 90 seconds
- Lung fluid readings anytime, anywhere that provide peace of mind to patients and caregivers
- Call center support to monitor compliance and minimize the burden on clinic staff

<sup>1</sup> O. Amir, et al., Evaluation of remote dielectric sensing (ReDS) technology-guided therapy for decreasing heart failure rehospitalizations, *Int J Cardiol* (2017), <http://dx.doi.org/10.1016/j.ijcard.2017.02.120>



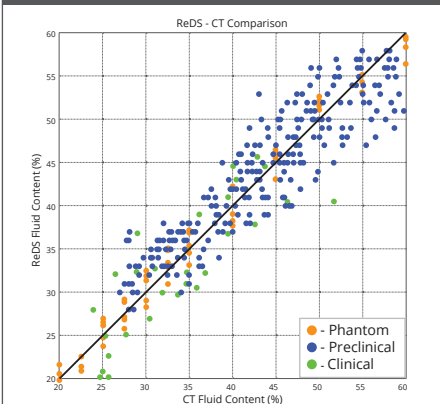
**SENSIBLE  
MEDICAL**  
Seeing through walls



## ReDS™ - Striving to Lead a New Standard of Care in Heart Failure

The ReDS™ system measures lung fluid in Heart Failure patients. It is intended for the measurement of lung fluid in patients living with Heart Failure, patients taking diuretic medication or patients recovering from a coronary artery disease-related event. Adapted for medical use from the military's 'see-through-wall' technology, ReDS™ is a miniature radar system employing low-power electromagnetic energy that provides accurate lung fluid measurements in just 90 seconds, using a noninvasive vest worn by the patient.

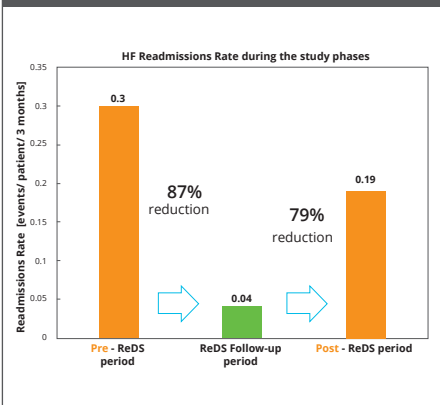
### Accuracy - ReDS vs. CT - 0.94 Correlation



### Technology Validation

ReDS™ medical radar technology has been validated in several bench, pre-clinical and clinical studies. When comparing the accuracy of ReDS™ technology to that of CT-assessed lung fluid quantification, based on commercially available software, the combined intra-class correlation between modalities is 0.94 (385 Data points). The bench test performed on a phantom model showed a correlation of 0.99. The pre-clinical study resulted in a correlation of 0.89 [0.86-0.93] over 294 points. The clinical study included 31 patients and demonstrated a correlation of 0.9 [0.8-0.95]<sup>2</sup>.

### ReDS-HF Readmission Reduction - Economic Benefit Feasibility Study



<sup>2</sup>O. Amir et al., Validation of remote dielectric sensing (ReDS™) technology for quantification of lung fluid status: Comparison to high resolution chest computed tomography in patients with and without acute heart failure, International Journal of Cardiology 221 (2016) 841-846