

Providing a Breath of Clarity in Pulmonary Medicine

Polarean Imaging plc.
AIM: POLX
September 2023

POLAREAN



Today's Presenters



Dr. Christopher von Jako
Chief Executive Officer

- Joined in June 2023
- 30+ years of global medical device executive, M&A, capital raise experience



Chuck Osborne
Chief Financial Officer

- Joined in April 2019
- 25+ years of executive role experience, including as CFO



Board Of Directors



Christopher von Jako, Ph.D.
CEO



Chuck Osborne
CFO



Bastiaan Driehuys, Ph.D.
Founder and CTO



Kenneth West
Non-Executive Chairman



Daniel Brague
Non-Executive Director



Juergen Laucht
Non-Executive Director



Cyrille Petit
Non-Executive Director



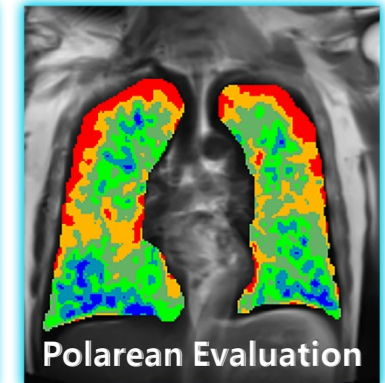
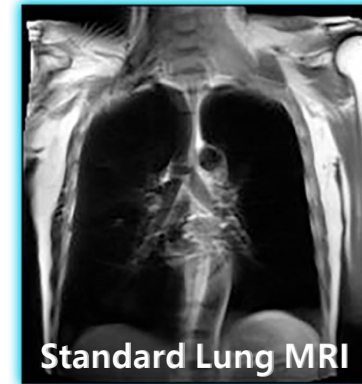
Marcella Ruddy, M.D.
Non-Executive Director



Frank Schulkes
Non-Executive Director

Commercial-stage healthcare leader in advanced MRI of the lungs

- Technology allows production of a specialised, noninvasive, radiation-free agent to visualise and evaluate lung ventilation



Example patient from Polarean Phase-3 studies

Investment Highlights



Poised to be the leader in Functional MRI of the lung

Large Market with High Unmet Clinical Need

\$2B+ U.S. market opportunity in obstructive lung disease

Industry Partnerships

Pharma and MedTech represent a multi-faceted growth avenue

The POLAREAN logo is centered over a light blue silhouette of human lungs. The logo consists of the word "POLAREAN" in a bold, sans-serif font, with the letter "O" stylized with a blue and white circular graphic element.

POLAREAN

Functional Imaging Platform

Pioneering, noninvasive, radiation-free technology with an attractive per patient consumable gas revenue model

Sizeable Market Expansion

\$3B+ U.S. market opportunity in interstitial lung and pulmonary vascular disease

Obstructive Lung Disease

Substantial unmet need with multiple entry points

42 **MILLION**



People in the U.S. living with obstructive lung disease

Constriction or blockage of the airways, resulting in restricted airflow and causing challenges in breathing. Main types include:

- Asthma



In the U.S.
1/4 of all ER visits
are related to Asthma

- COPD



COPD is the
3rd leading
cause of death
worldwide

- Cystic Fibrosis



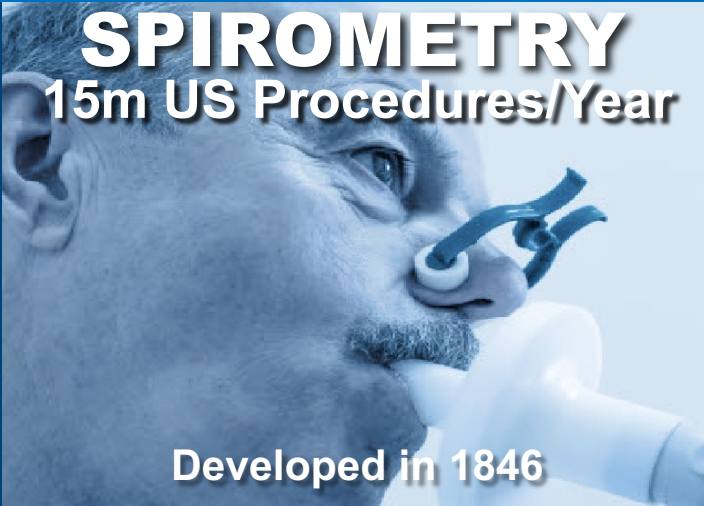
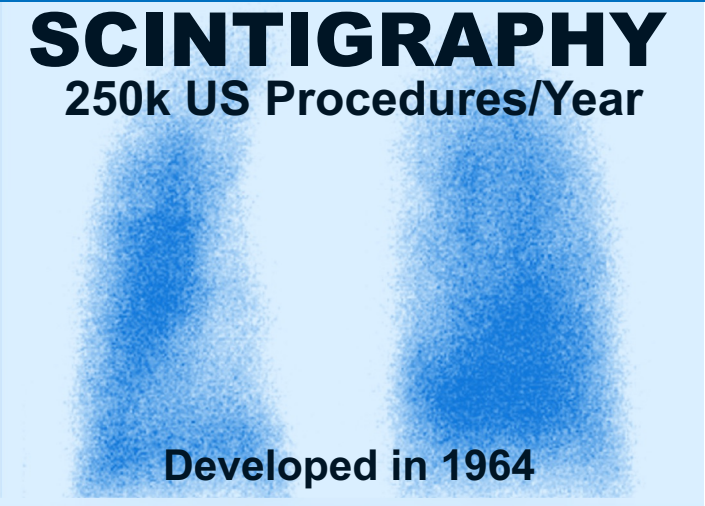
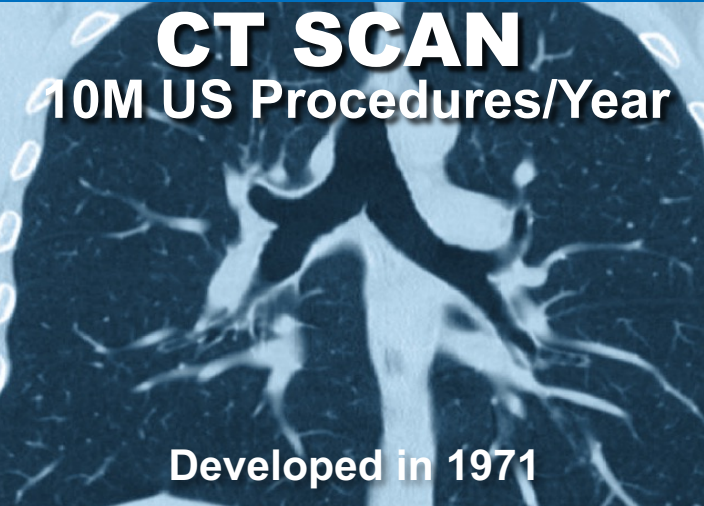
Pulmonary
Exacerbation Costs
in Cystic Fibrosis
>\$75,000 per episode



U.S. economic
burden of
Asthma and COPD
>\$125 billion/yr

Historical Diagnostics Lack the Full Picture

The Dysfunction is NOT fully visible today

	<div>SPIROMETRY 15m US Procedures/Year</div> <div></div> <div>Developed in 1846</div>	<div>SCINTIGRAPHY 250k US Procedures/Year</div> <div></div> <div>Developed in 1964</div>	<div>CT SCAN 10M US Procedures/Year</div> <div></div> <div>Developed in 1971</div>
Functional Measure?	YES	YES	NO
Regional Visualisation?	NO	YES	YES
Radiation-free Procedure?	YES	NO	NO
Patient Effort Independence?	NO	YES	YES

FDA approved drug-device combination product



IMPORTANT SAFETY INFORMATION

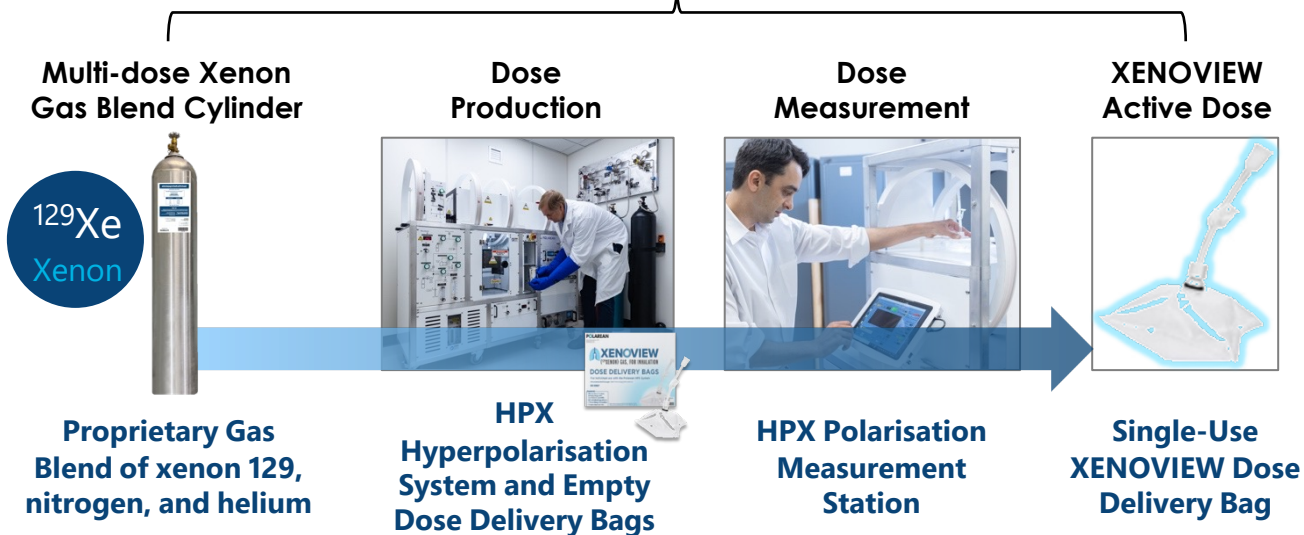
Warnings and Precautions

- Risk of Decreased Image Quality from Supplemental Oxygen: Supplemental oxygen administered simultaneously with XENOVIEW inhalation can cause degradation of image quality. For patients on supplemental oxygen, withhold oxygen inhalation for two breaths prior to XENOVIEW inhalation, and resume oxygen inhalation immediately following the imaging breath hold.
- Risk of Transient Hypoxia: Inhalation of an anoxic gas such as XENOVIEW may cause transient hypoxemia in susceptible patients. Monitor all patients for oxygen desaturation and symptoms of hypoxemia and treat as clinically indicated.

Adverse Reactions

- Adverse Reactions in Adult Patients: The adverse reactions (> one patient) in efficacy trials were oropharyngeal pain, headache, and dizziness.
- Adverse Reactions in Pediatric and Adolescent Patients: In published literature in pediatric patients aged 6 to 18, transient adverse reactions were reported: blood oxygen desaturation, heart rate elevation, numbness, tingling, dizziness, and euphoria. In at least one published study of pediatric patients aged 6 to 18 years, transient decrease in SpO2% and transient increase in heart rate was reported following hyperpolarised xenon Xe 129 administration. XENOVIEW is not approved for use in pediatric patients less than 12 years of age.
- Please see full prescribing information at www.xenoview.net

Hospital Hyperpolarisation Lab



Indication

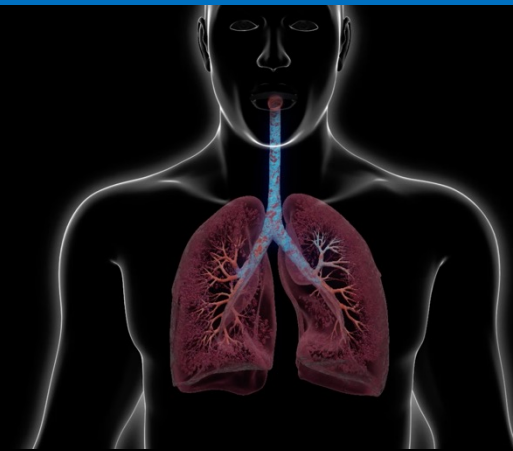
XENOVIEW, prepared from the Xenon Xe 129 Gas Blend, is a hyperpolarised contrast agent indicated for use with MRI for evaluation of lung ventilation in adults and paediatric patients aged 12 years and older.

XENOVIEW has not been evaluated for use with lung perfusion imaging.

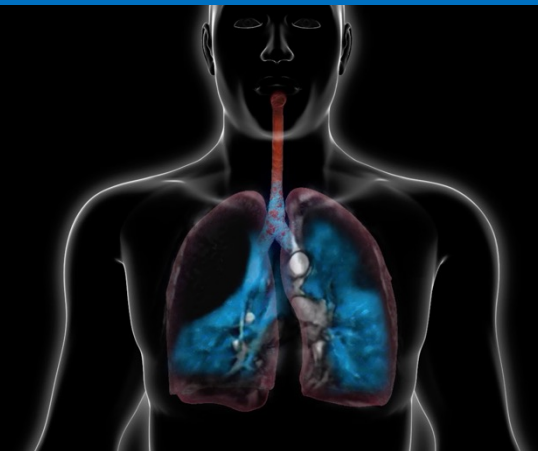
Game Changing Imaging Platform

First-in-class solution to provide the Full Picture

- ~20-minute XENOVUE MRI procedure
 - Inhale XENOVUE for 10-15 sec single breath-hold
 - MRI scanned in a specialised imaging vest
 - Utilise Polarean's proprietary software for image analysis
- Benefits
 - ✓ Noninvasive, 3D MRI scan of airways
 - ✓ Direct measure/visualisation of regional lung ventilation
 - ✓ Strong safety profile including no patient radiation exposure allows for longitudinal imaging
 - ✓ Patient effort independent that reduces variability



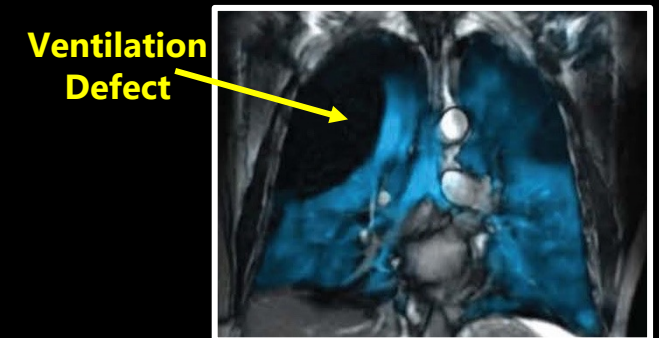
Start of Inhalation



MRI scan starts upon inhalation of XENOVUE



Standard MRI displays a void in chest cavity



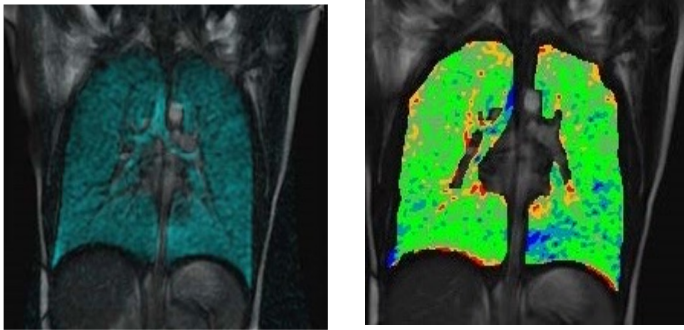
XENOVUE MRI displays ventilation within lung

Enables Quantitative Lung Ventilation Visualisation

Healthy Patient

XENOVUE
in the lungs

Colour map with
Polarean software

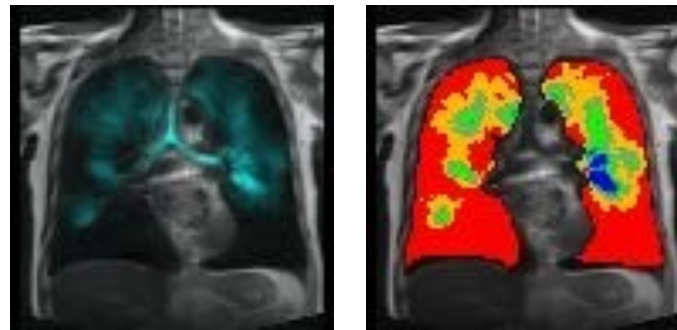


Low Ventilation = 8% of the Lung

Asthma Patient

XENOVUE
in the lungs

Colour map with
Polarean software

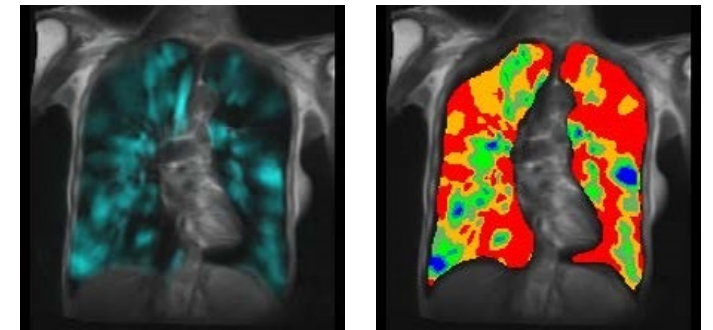


Low Ventilation = 71% of Lung

COPD Patient

XENOVUE
in the lungs

Colour map with
Polarean software



Low Ventilation = 66% of the Lung

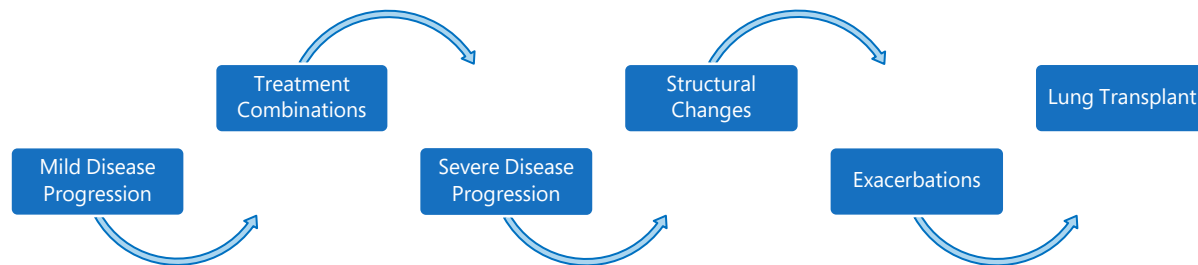


First Clinical Functional MRI scan of the Lung

XENOVIEW makes a life changing impact

- 19-year-old Cystic Fibrosis patient
- FEV1 = 111% of predicted
- XENOVIEW MRI Ventilation Defect % = 12%

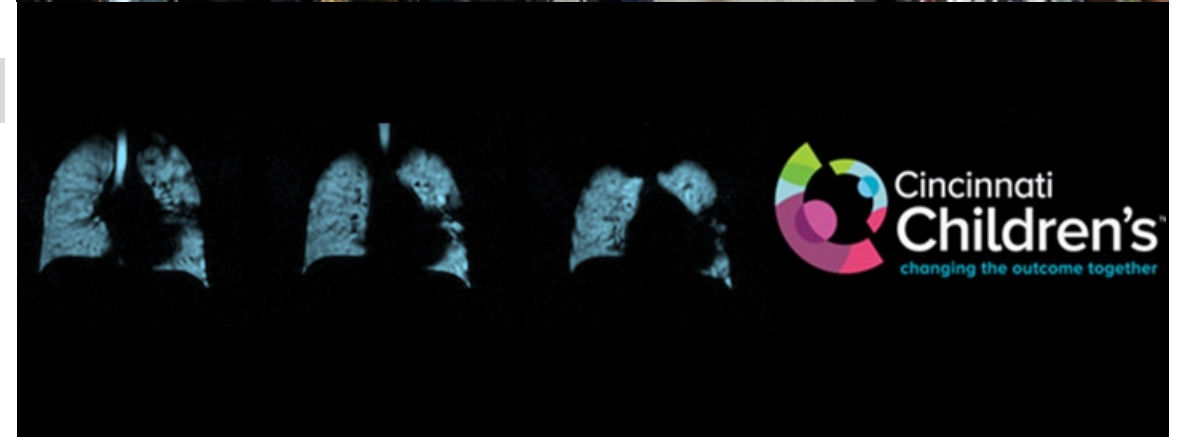
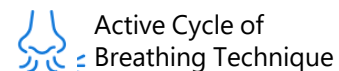
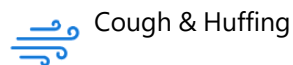
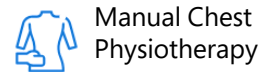
CF patient journey



Treatment Combinations



Examples of Airway Clearance Techniques



Building Value through Strong Fundamentals



Platform supported by regulatory, evidence, reimbursement, and robust IP



Regulatory Experience

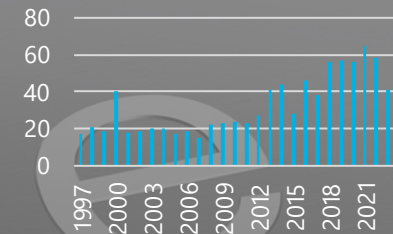
- 1 US FDA approval
- 3 US 510(k)s clearances
- New Chemical Entity designation with a five-year market exclusivity period (2027)



Growing Clinical Validation

- Two Phase-3 clinical trials
- 950+ Xenon MRI published manuscripts

Publications By Year



Extensive Patent Coverage

- Key IP portfolio areas extend coverage to 2035+, areas include:
 - Hyperpolarisation method
 - Imaging methods
 - RF coil designs

20
granted

6
pending

Strategic Growth Initiatives

Enhance performance, reduce expenses through targeted actions

Driving Utilisation

- at newly established clinical sites

Expand User-base

- to highest-priority targeted clinical sites

Establish Reimbursement

- ✓ Code
- Coverage

Develop Key Partnerships

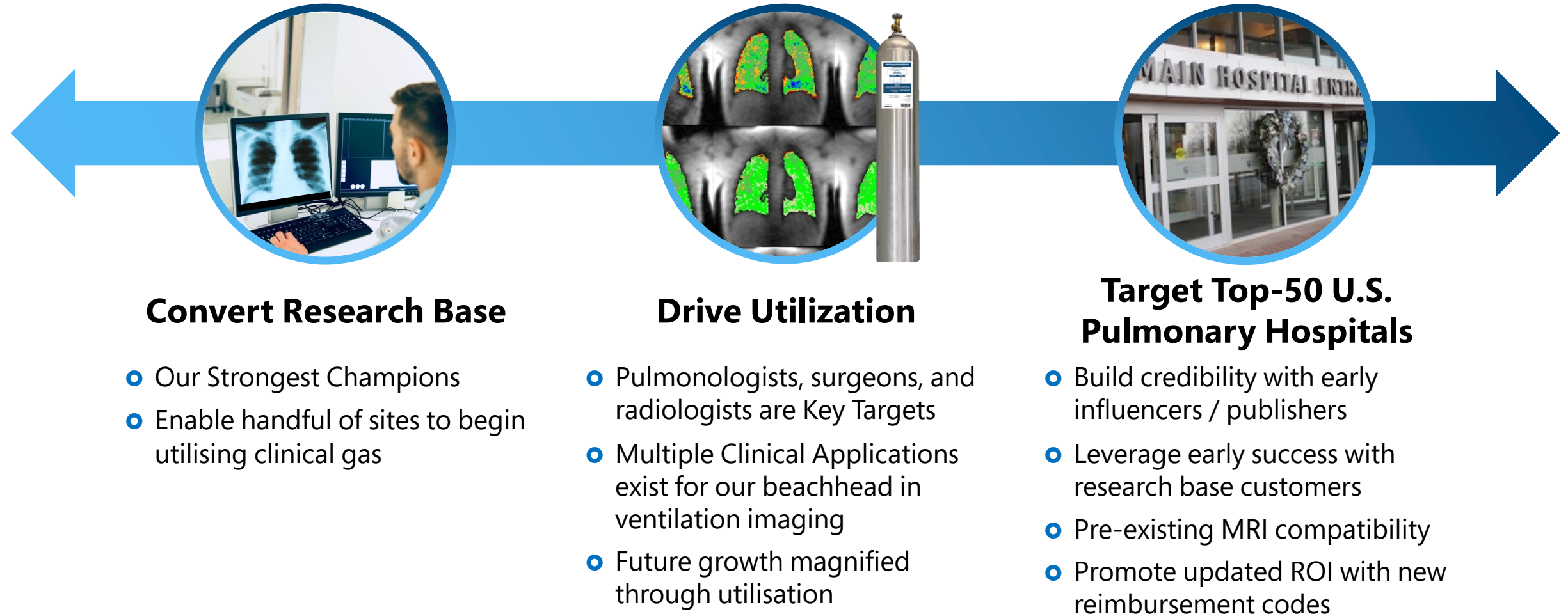
- Pharma
- MedTech
- Professional Societies
- Patient Advocacy

Expansion of FDA labeling

- gas exchange and microvascular haemodynamics for both pulmonary and cardio-pulmonary diseases

Commercialisation Strategy

A three-pronged approach in market development phase



Establish Reimbursement

Estimated payment for total procedure is ~US\$1,750

Hyperpolarisation Lab



Multi-dose Xenon
Gas Blend Cylinder

^{129}Xe



NDC# 80534-6350-1

Dose Production



**Dose
Measurement**



**XENOVIEW
Active Dose**



NDC# 80534-1000-1

MRI Suite



Dosing

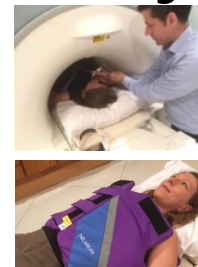


Image Acquisition

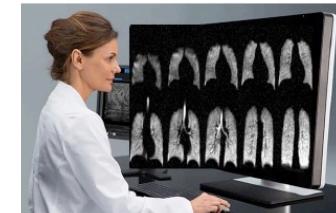
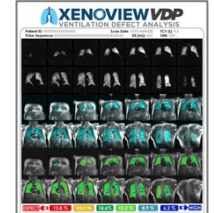


Image Analysis



← New Xenon 129 Specific Code →

← Existing Procedure Codes →

New Code C9791, effective October 1, 2023
"Magnetic resonance imaging with inhaled hyperpolarized xenon-129 contrast agent, chest, including preparation and administration of agent"

Code 71550
"Proton MRI Chest without Contrast"

Code 0649T
"MRI Quantitative Interpretation"

Develop Key Industry Partnerships

Pharma

XENOVIEW MRI can Accelerate Drug Development and Save Pharmaceutical companies Time and Money

- 58% of Respiratory Drug Trials Fail at the Final Stage of Drug Development
- Lung is the #1 most expensive clinical trial category
 - \$985M average Research and Development costs for a novel drug
- Multiple Academic Trials are Ongoing Exploring Xenon MRI as a measure of Drug Effectiveness in several therapeutic applications:
 - Asthma, COPD, Cystic Fibrosis, ILD, Pulmonary hypertension
- XENOVIEW MRI can facilitate respiratory drug development
 - Less variability in the measure leads to lower sample sizes required to observe treatment effect
 - It allows the visualization and quantification of lung function not visible using other technologies to aid in early product characterization and differentiation

MedTech

XENOVIEW MRI Message is Amplified Through Shared Value Proposition in Philips Radiology Customers



Software

XENOVIEW Imaging Platform to be Strengthened with VIDA Expertise and Creation of Harmonized Multisite Trial Network

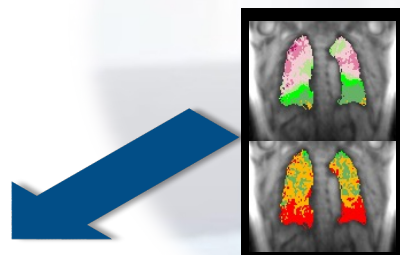
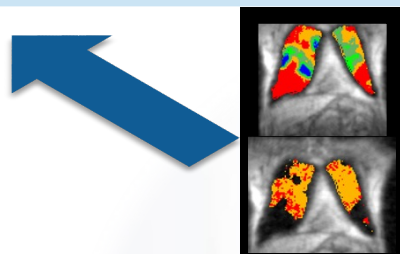


Expansion of U.S. FDA labeling

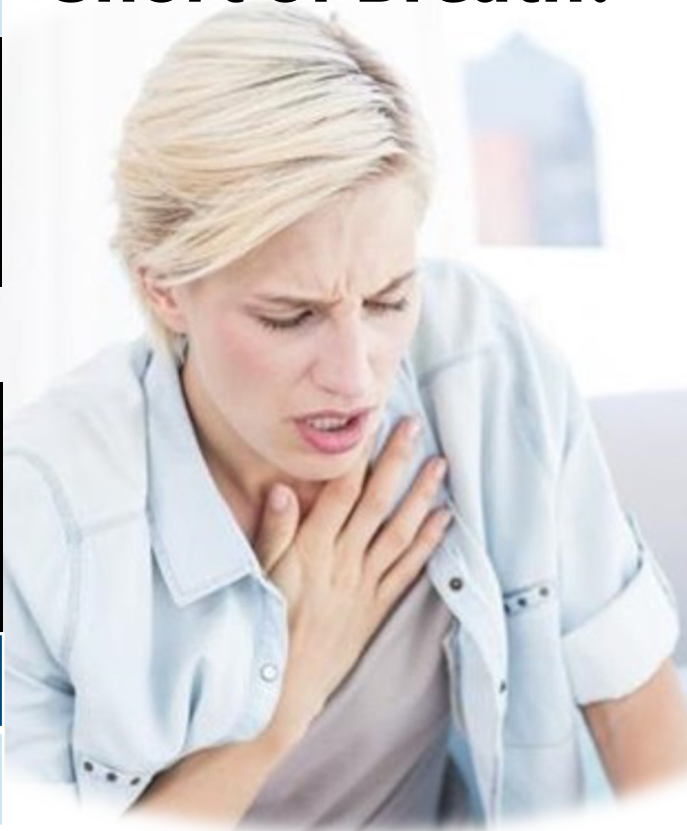
Gas exchange and microvascular haemodynamics* unlocks new populations

Unexplained Dyspnea

> 3,500,000 U.S. Patients

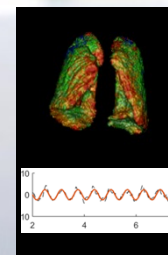
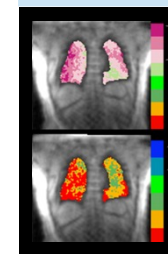


**“Why am I
Short of Breath?”**



Long-COVID

> 10,000,000 Patients



Interstitial Lung Disease

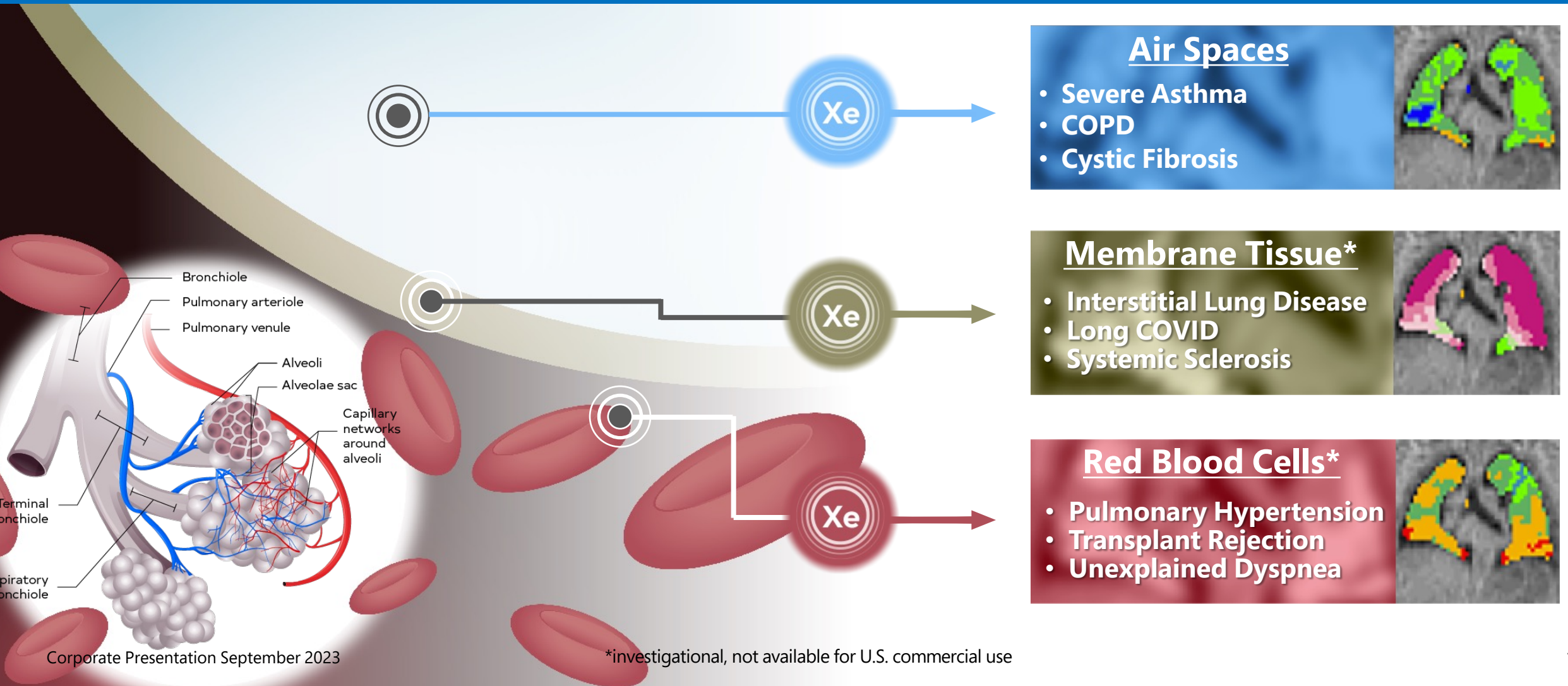
> 500,000 Patients

Pulmonary Hypertension

> 700,000 Patients

Three Compartment Gas Exchange Visualisation

XENOVIEW MRI can more precisely characterise multiple diseases



Comprehensive, Quantitative, Regional Lung Function **POLAREAN**

Only solution that brings to focus the Full Picture in One 10-second exam

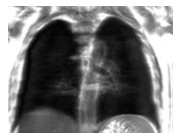
Assess:



**Structure
(Large Airways)**



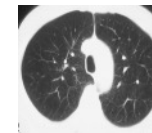
Bronchoscopy



¹H MRI



X-ray



CT

**Polarean
XENOVUE MRI**

Whole Lung Function



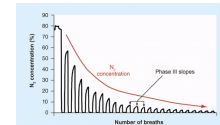
Stethoscope



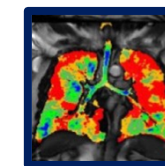
Spirometry



FeNO



N₂ Washout



Defect	19%	2.6±1.8%
Low	25%	17.5±5.7%
High	10%	16.7±3.3%
CV	0.55	0.37±0.04

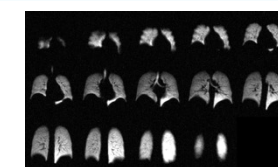
**Regional Small
Airway Ventilation**



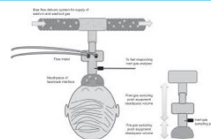
¹³³Xe Scintigraphy



CT Parametric Modeling



Gas Exchange*



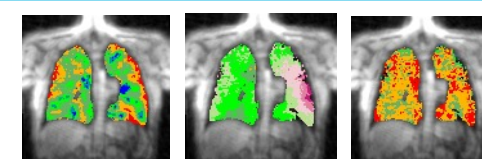
MIGET



DLCO



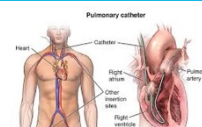
CPET



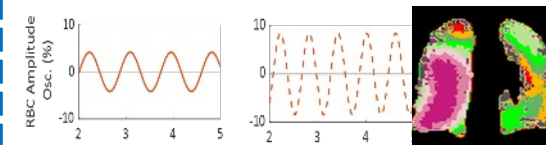
**Capillary
Hemodynamics***



ECG



RHC



Investment Highlights



Game-changing medical imaging platform technology

**Significant Unmet Need
in Obstructive Lung
Disease**

**Robust Functional Lung
MRI Platform with per
Patient Consumable**

**Industry Partnerships
Yield Additional
Revenue Streams and
OpEx Efficiencies**

**Sizeable Total Market in
Pulmonary and Cardio-
pulmonary Applications**

POLAREAN

The information contained in these slides and this presentation is being supplied to you by Polarean Imaging plc (the 'Company') solely for your information. For the purposes of this document, the presentation attached (the 'Presentation') shall mean and include the slides that follow, the oral briefing provided by the directors of the Company (the 'Directors') in connection with the slides, the question and answer session that follows the oral presentation, hard copies of this document and any materials distributed at, or in connection with the Presentation, or any of them.

This Presentation does not constitute or form part of any offer or invitation to sell or issue, or any solicitation of any offer to purchase or subscribe for, any securities of the Company in any jurisdiction nor shall it or any part of it nor the fact of its distribution form the basis of, or be relied on in connection with, any contract, commitment or investment decision in relation to any such matter nor does it constitute a recommendation regarding the securities of the Company. Investors and prospective investors in securities of the Company are required to make their own independent investigation and appraisal of the business and financial condition of the Company and the nature of the securities. Any decision to purchase securities in the context of a proposed offering of securities, if any, should be made solely on the basis of information contained in an offering circular or prospectus published in relation to such an offering. If the Company proposes to offer any securities it will publish a prospectus in relation to any such offering.

This Presentation may include certain forward-looking statements, beliefs or opinions, including statements with respect to the Company's business, financial condition and results of operations. These statements, which contain the words "anticipate", "believe", "intend", "estimate", "expect", "forecast" and words of similar meaning, reflect the Directors' beliefs and expectations and involve risk and uncertainty because they relate to events and depend on circumstances that will occur in the future. No representation is made that any of these statements or forecasts will come to pass or that any forecast results will be achieved. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied by these statements and forecasts. Past performance cannot be relied on as a guide to future performance of the Company. Forward-looking statements speak only as at the date of this presentation and the Company expressly disclaims any obligations or undertaking to release any update of, or revisions to, any forward-looking statements in this Presentation. No statement in this Presentation is intended to be a profit forecast. As a result, you are cautioned not to place any undue reliance on such forward-looking statements.

The information contained in this presentation has been prepared by and is the sole responsibility of the directors of the Company. This Presentation speaks as of the date hereof. No reliance may be placed for any purposes whatsoever on the information contained in this document or on its completeness, accuracy or fairness. The Company, Directors, their advisers and each of their respective members, directors, officers and employees are under no obligation to update or keep current the information contained in this Presentation, to correct any inaccuracies which may become apparent, or to publicly announce the result of any revision to the statements made in this document except where they would be required to do so under applicable law, and any opinions expressed in them are subject to change without notice. No representation or warranty, express or implied, is given by the Company or the Directors, or any of their subsidiary undertakings or affiliates or directors, officers or any other person as to the fairness, accuracy or completeness of the information or opinions contained in this Presentation and no liability whatsoever for any loss howsoever arising from any use of this Presentation or its contents otherwise arising in connection therewith is accepted by any such person in relation to such information. If the recipient is in any doubt about the contents of this and any accompanying materials or the action to be taken, the recipient should consult a person authorised for the purposes of FSMA or from another appropriately authorised advisor if he is taking advice in a territory outside the United Kingdom.

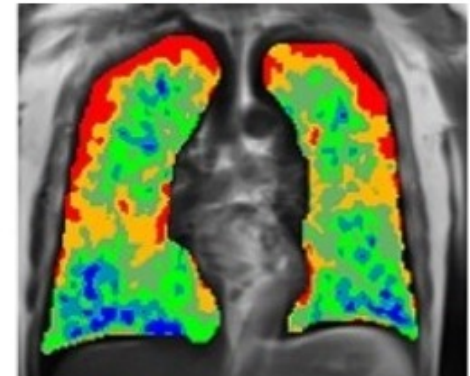
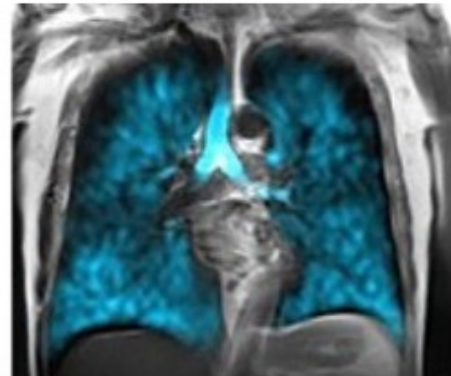
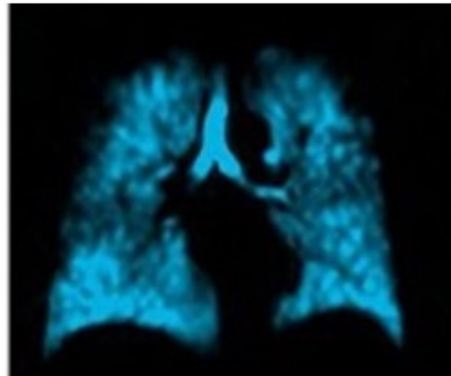
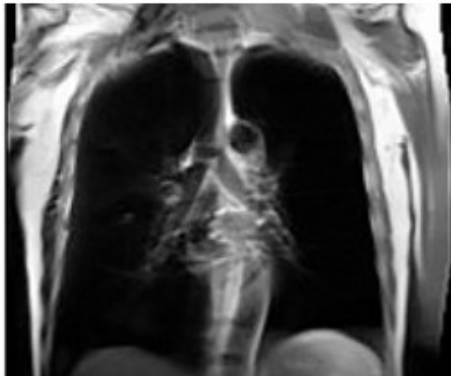
Thank You!

Enquiries :

Polarean
Chuck Osborne
Chief Financial Officer
cosborne@polarean.com

Stifel Nicolaus Europe Limited (NOMAD Sole Corporate Broker)
Nicholas Moore / Samira Essebiyea / Kate Hanshaw (HC Investment Banking)
Nick Adams / Nick Harland (Corporate Broking)
+44 (0)20 7710 7600

Walbrook PR
Anna Dunphy / Phillip Marriage
+44 (0)20 7933 8780
polarean@walbrookpr.com



POLAREAN