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YTD 2024 Milestone Updates



Continued focus on 5-pillar growth strategy

Improving Financials

- Significant revenue increase over H1 2023 and guidance increase for FY 2024
- Operating expenses significantly reduced over H1 2023
- Raised \$12.6M, funding secured until at least Q1 2026

Increased Commercial Traction

- 21 academic medical center customers
- Secured second de novo order; UAB
- 3 trade-in agreements with Cincinnati Children's, UVA Health, and KUMC
- Continued growth in Xenon MRI scanning
- Addressing and mitigating administrative hurdles with potential customers

Building/Optimising an Exceptional Team for Growth

- VP of Sales and Chief Medical Advisor onboarded
- Added Area Sales Directors for Eastern and Western Regions of the US, totaling 5 salespeople
- Streamlined Board of Directors to appropriate size and skills

Xenon MRI Product

- Ongoing product enhancements
- NDA supplement submitted to FDA to lower minimum age from 12 to 6 years
- U.S. Patent granted for dynamic cardiopulmonary blood flow imaging

Partnerships

Continued traction with MedTech and Pharma companies

At a Glance



Revolutionising pulmonary medicine through direct visualisation of lung function

- Commercial-stage functional lung
 imaging company based in RTP, NC, USA with 21 global customers
- Proprietary imaging technology enables direct visualisation and quantification of lung function in a single breath-hold
- Favorable reimbursement strengthens hospital economics, fueling adoption

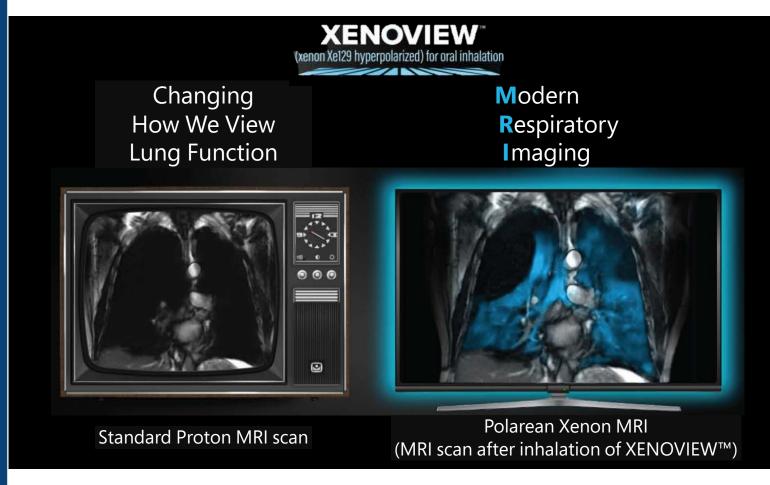
Strong regulatory expertise

- ➤ 1st FDA-approved drug-device pulmonary functional MRI platform technology
- > 3 FDA-cleared accessory products



20+ Patents Granted





Polarean Senior Management Team



Successful, experienced healthcare professionals

		Selected Prior Company Affiliations		
Christopher von Jako, PhD CEO & Executive Director	 Joined in June 2023 30+ years of global executive leadership experience in MedTech with a primary focus on capital image guidance equipment Led organisations in early-stage, expansion, and turnaround environments with five entities resulting in M&A 	St. Jude Medical WeuroTherm Medtronic INTEGRATION COVIDIEN RADIONICS Trusted Accuracy		
Charles Osborne CFO & Executive Director	 Joined in 2019 30+ years of global life sciences experience, 20+ years as CFO Extensive public company, corporate partnering, and M&A experience 	innocrin SCYNEXIS		
Alex Dusek Chief Commercial Officer	 Joined in 2019 25+ years of global executive commercial leadership in Pharma, Biotech, & MedTech Led global pulmonary pharma product launches 	Boehringer Ingelheim United Therapeutics		
Alan Huang, PhD VP of Sales	 Joined in 2024 15+ years of global business leadership experience in MedTech with a primary focus on capital image guidance equipment Experience in creating new markets and growing businesses with novel technologies. 	JOHNS HOPKINS MEDICINE		
Chase Hall, MD Chief Medical Advisor	 Joined in 2024 Associate Professor of Medicine at the University of Kansas Medical Center in the Division of Pulmonary and Critical Care & also serves as Associate Director at the University of Kansas Interstitial Lung Disease and Rare Lung Disease Clinic 	Washington University in St. Louis School of Medicine BARNES EVISH Hospital We HealthCare		
Bastiaan Driehuys, PhD Chief Scientific Officer & Founder	 Joined in 2012 A Polarean founder and technology founder with over 100 peer-reviewed articles on hyperpolarised gases and holds over 30 patents in this area Professor in the Department of Radiology at Duke University Health System 	Amersham Health		

Investment Highlights



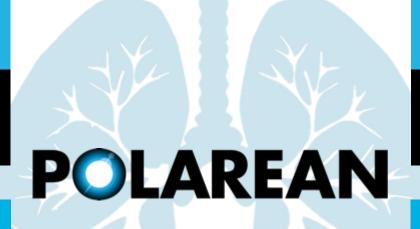
Significant unmet clinical need in improved lung disease diagnosis

Pioneering Functional Imaging Platform with Reimbursement

Proprietary, noninvasive, radiation-free technology with a lucrative per-patient consumable revenue model

Massive Label Expansion Market

\$3B+ U.S. TAM* opportunity in interstitial lung disease (ILD) and pulmonary vascular disease



Large Market with Unmet Clinical Need

\$2B+ U.S. Total Addressable Market*
(TAM) opportunity in
obstructive lung disease

Industry Partnerships

Pharma and MedTech represent multifaceted growth avenues

Optimise Lung Health



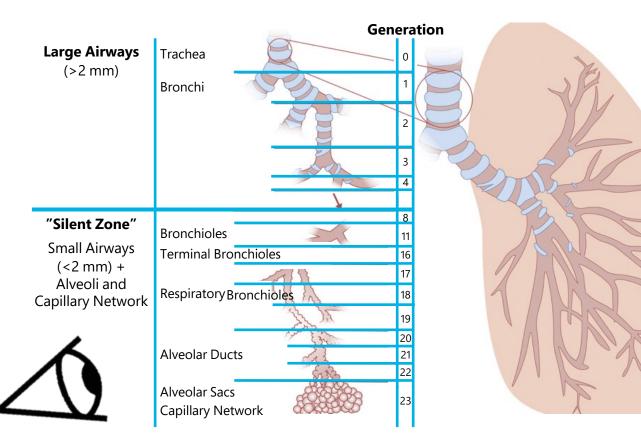
Prevent avoidable loss by illuminating hidden disease

The Challenge

- Unexplained breathlessness is difficult to diagnose and manage
- Current pulmonary functional testing cannot see or quantify disease in the "silent zone," yielding them antiquated, unreliable, and insensitive

The Solution

- The only technology that illuminates hidden disease in the "silent zone," enabling clinicians to diagnose, monitor, and potentially to rectify patient conditions more effectively
- Xenon MRI visualises and quantifies pulmonary function across the entire lung, allowing for precise, individualized treatment that may prevent avoidable loss



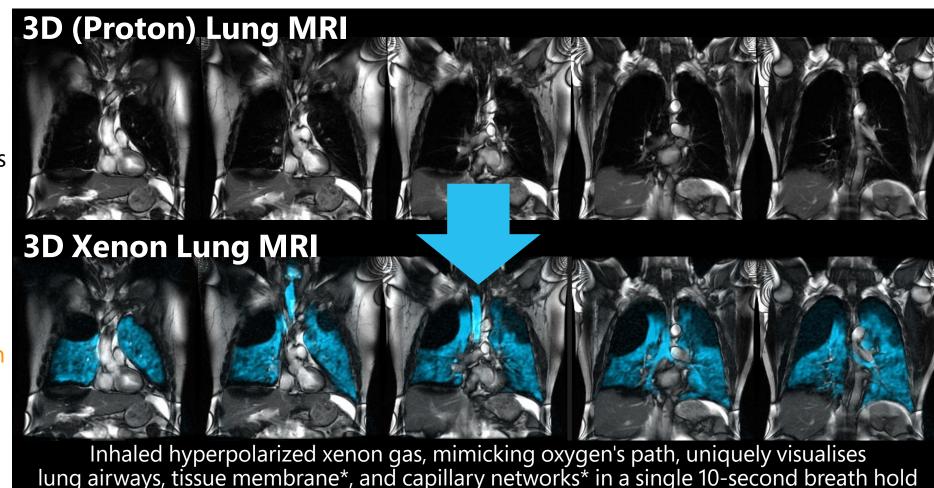
The Lung Airway Network is divided into 23 generations, with each splitting into two smaller airways

Introduce the Power and Safety of MRI to the Lung



Underutilisation of MRI in lung imaging until now

- Limitations with traditional (proton) lung MRI
 - Low proton density (87% of lungs are air)
 - Multiple air/tissue interfaces
 - Long acquisition times and cardiac and lung motion
- Benefits of Xenon MRI
 - Utilises a radiation-free diagnostic pharmaceutical agent to illuminate function
 - Visualises and quantifies lung ventilation and gas exchange* in the patient's own thoracic cavity

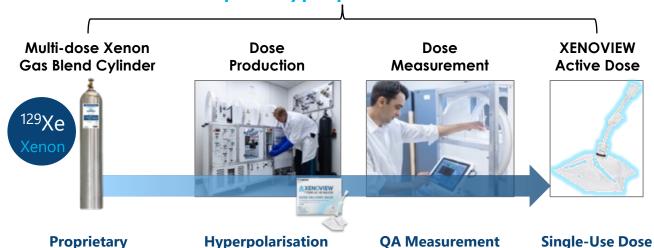


Our Solution: Xenon MRI Platform Technology POLAREAN

Game-changing drug-device imaging product with per patient consumable

Polarean offers the Gas, Production and QA Devices, and Single-use Dose Bags to administer XENOVIEW™

Hospital Hyperpolarisation Lab



XENOVIEW Indication

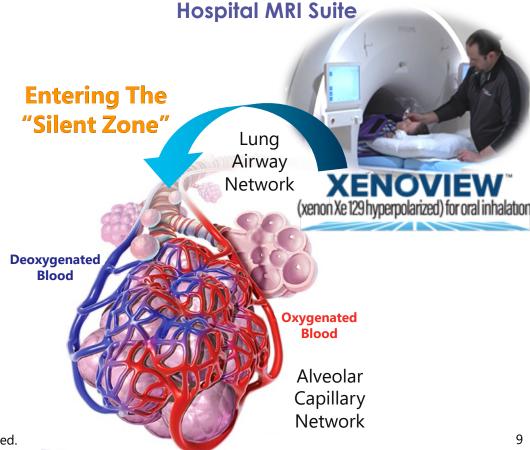
Station

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.

System

Polarean offers the MRI Chest Coil, QA Devices, and Software to complete XENON MRI scan

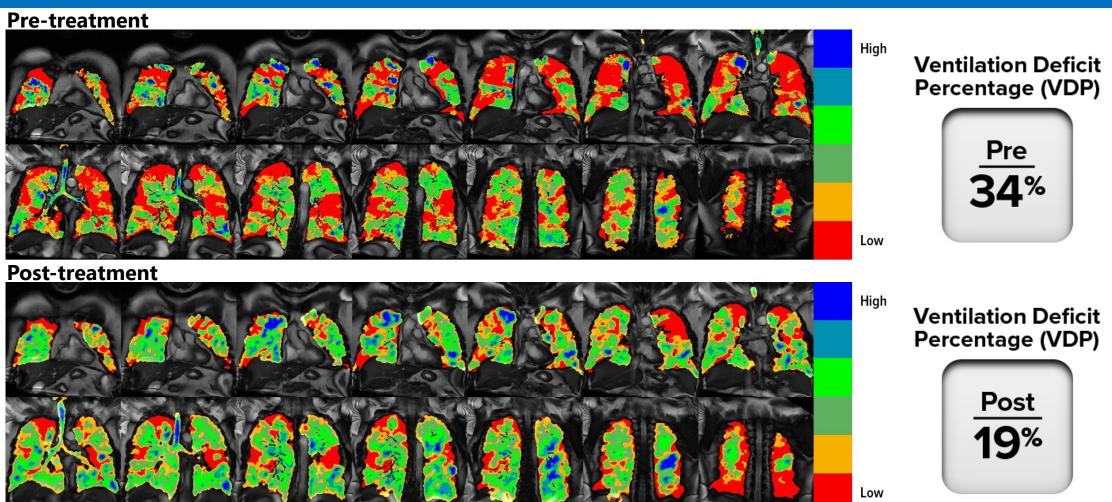


Gas Blend

Delivery Bag

Our Solution: Xenon MRI Platform Technology POLAREAN

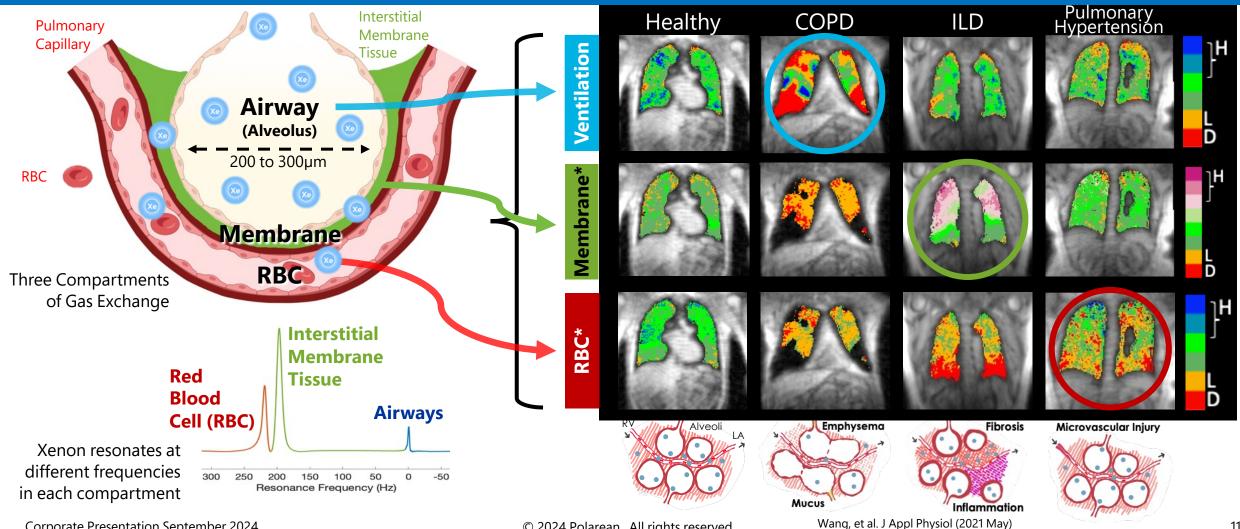
Only pulmonary function test that provides regional visual and quantitative data



The Value – See More



Xenon MRI is uniquely suited to more precisely characterise multiple diseases



Large Unmet Need in Chronic Lung Diseases



Why is a patient short of breath?

Airway disease





Airway

Normal Obstructive

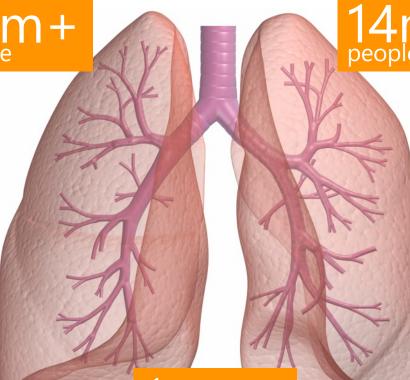
Airway



Asthma Airway Attack

Examples:

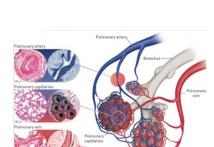
- **Asthma**
- COPD
- Cystic **Fibrosis**
- Transplant





Interstitial Lung Disease?

- Examples:
 - **Fibrosis**
 - Long Covid
 - Unexplained **Breathlessness**



Microvascular Disease?*



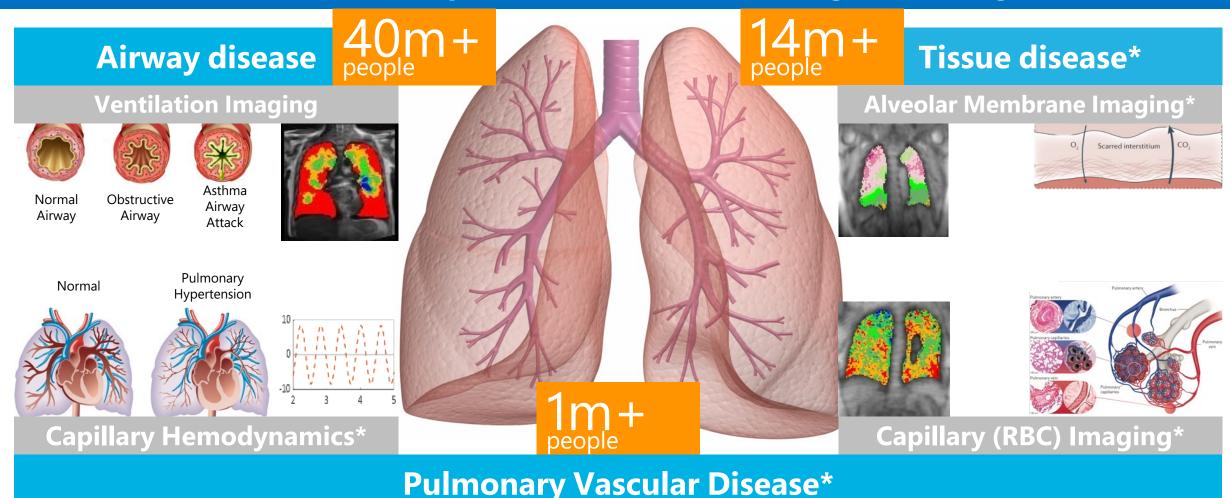
Pulmonary Vascular Disease*

people

Pulmonary Xenon Functional MRI platform



Unlocks \$5B+ U.S. TAM[†] in quantitative ventilation & gas exchange* visualisation



Populations are estimated using diagnosed prevalence from public data.

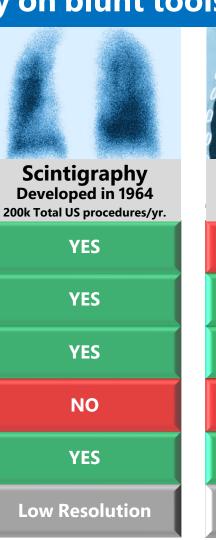
Decades Without Advancement in Pulmonary Function Testing

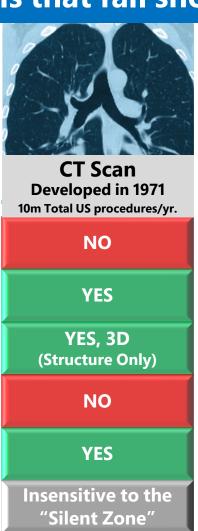


Standard pulmonary function tests rely on blunt tools that fall short

Spirometry **Developed in 1846** 15m US procedures/yr. **YES, Global Only** Without using NO **Ref. Equations? Visualisation?** NO Radiation-free? YES **NO (Variability)** Independent? Insensitive to the **Limitations?** "Silent Zone"









Functional

Measure?

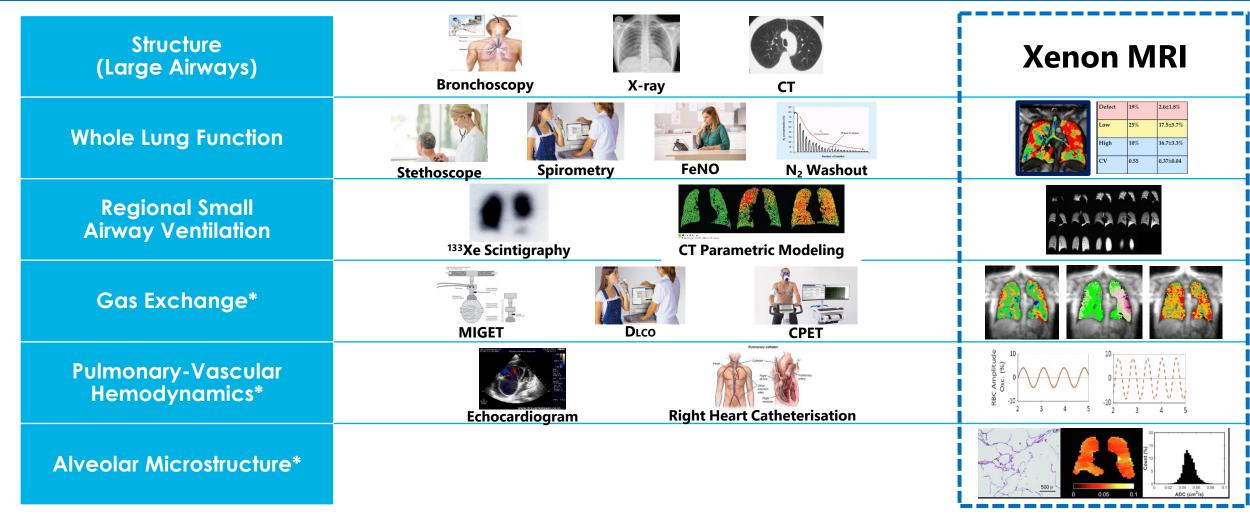
Effort

Other

Delayed Diagnosis: Losses Extend Beyond Time, Cost, and Health



The ONLY comprehensive solution providing a full picture in one 10-second exam



Clinical Focus Areas



Multiple entry points

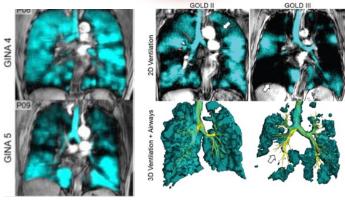
- Pulmonology
- Cardiology
- Hematology
- Immunology
- Interventional Pulmonology
- Lung Transplant Surgery
- Radiation Oncology
- Radiology

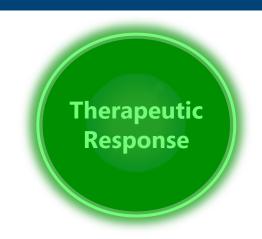


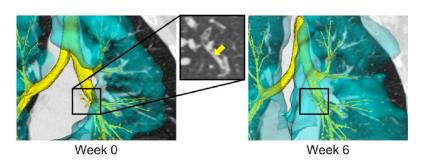
Xenon MRI Clinical Utility



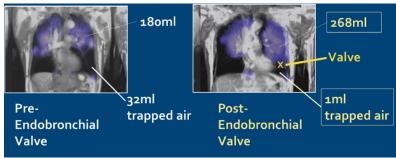












- Asthma / COPD phenotyping
- BPD acinar airway morphometry
- Cystic Fibrosis
- Post-Transplant Rejection

- CF when spirometry is misleading
- Rule out masquerading disease
- Severe asthma biologic optimisation

- Endobronchial Valve Placement
- Functional Avoidance Rad Therapy
- Surgical Resection Planning

High Value Ventilation Applications





Spirometry as a Diagnostic

Spirometry results exhibit greater variability compared to the consistency seen in Xenon MRI

Repeatability in Spirometry

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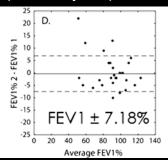
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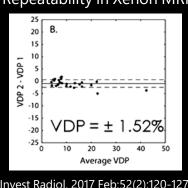


Repeatability in Xenon MRI

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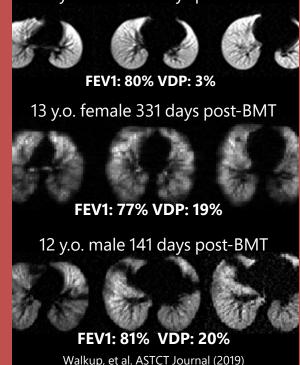
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3 Post-Bone Marrow Transplant (BMT)

Varying ventilation patterns between patients with similar spirometry and vastly different Ventilation Defect Percentage (VDP)

12 y.o. male 141 days post-BMT

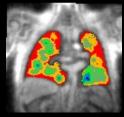


Lung Transplant

Ventilation

Two subjects with lung obstruction post-lung transplant

Subject 1



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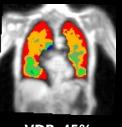
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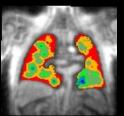


VDP: 45%

Simmons, et al. JHLT Open (2024)

Severe Asthma

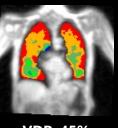
Regional response pre and post biologic therapy in severe asthma



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VDP: 37%



Pre-biologic Therapy

VDP = 10%

Post-Biologic Therapy

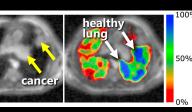
VDP = 3%

McIntosh, et al. Chest (2022)

Right lower lung lobe should be spared from radiation therapy (RT) via planning for this cancer patient

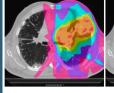
Functional Avoidance RT

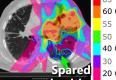




Anatomical Lung MRI

XENOVIEW MRI





Clinically Approved Patient Plan

Luna **Patient Plan** with Xenon MRI

Rankine, et al. Int J Rad Onc Biol Phys (2021)

Xenon MRI Clinician and Industry Validation

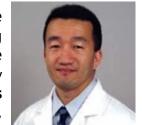




Dr. Jason Woods Cincinnati Children's

"This is the cutting edge of lung imaging technology. We're in the middle of the renaissance medically in the lung. And imaging of gas exchange is one of the most exciting future technologies as it allows us to visualise and quantify the gas ... it is a completely a new level of precision determining thromboembolic and cardiovascular disease abnormalities"

"The Polarean technology will be critical in informing and/or changing our treatment decisions. We will use it to detect and quantify airway obstruction difficult Asthma cases and guide chronic bronchodilator, steroid, and biological therapeutic decision-making.



Dr. Mike Shim

UNIVERSITY VIRGINIA



Dr. Fergus Gleeson UNIVERSITY OF OXFORD

"Long-COVID represents a major challenge to diagnose. This can uncover hidden damage not seen by CT scans. There are now important questions to answer, such as, how many patients with long-Covid will have abnormal scans, the significance of the abnormality we've detected, the cause of the abnormality, and its longer-term consequences. Once we understand the mechanisms driving these symptoms, we will be better placed to develop more effective treatments."



Dr. Chase Hall

"A remarkable feature is the technology signifies lung tissue that is at risk of **progression in ILD**. It usually takes 100s of patients over a year to demonstrate a change. You can see that within 3 months in an individual patient and see response to treatment. For early-stage drug trials, there is a huge advantage to see whether an individual drug has potential in an individual population. Instead of \$500m on a stage 3 clinical trial, a Pharma Companies can spend a few million."

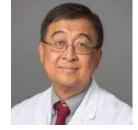


Dr. Erik Hysinger Children's

"I am a big fan of this technology! There's a real opportunity to understand lung physiology and mechanics, and early detection of lung disease"

"XENOVIEWTM is a muchneeded clinical test that fills the current clinical gaps for the diagnosis and management of pulmonary diseases. One of the largest is

dyspnea on exertion. It is one of the most common causes for referrals to pulmonary clinics."



Dr. Tony Huang **Duke**Health

MedTech Partners











Pharma Sponsored Trials



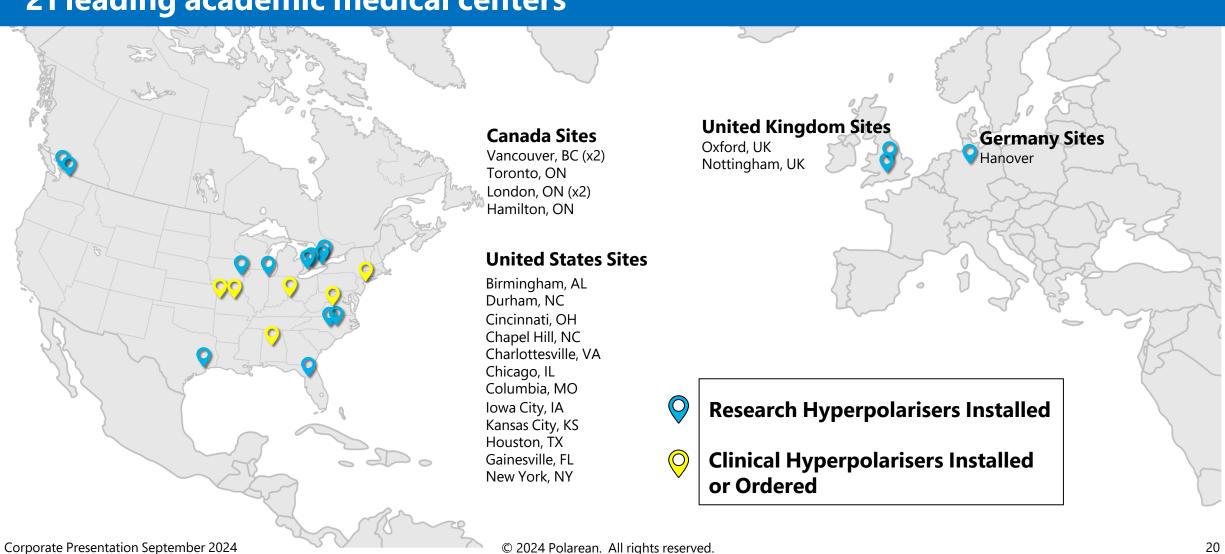




Xenon MRI Customers



21 leading academic medical centers



5-Pillar Growth Strategy



Generating value and paving the path for success in 2024 and beyond



Drive Utilisation

- Prioritized US state licenses for new drug
- Installed, trained, and cultivated 2 academic pulmonary centers
- Promote the highestvalue clinical utilities

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- Driving utilisation to 3-4 scans/week
- Continue to generate clinical study data



Grow User-Base

2

- ✓ 16 research HP sites installed
- √ 5 clinical HP sites installed or ordered
- Continue targeting top-100 US academic pulmonary centers

+++++++++

- Continue addressing administrative hurdles
- Install 12-14 sites by end 2025



Reimbursement

3

- Secured new hospitalbased code
- Confirmed Medicare / early Private Insurance coverage

+++++++++

- Expanding code coverage to include non-hospital base
- Expanding coverage to private insurers



Expand TAM

4

- Completed successful FDA Type B meeting for gas exchange trial
- ✓ Incorporated additional learnings
- ✓ Submitted FDA suppl to expand min age from 12yo to 6yo
- Finalise gas exchange trial FDA protocol
- Finalise clinical plan for gas exchange trail



Develop Partnerships

5

- Secured the following
 - ✓ Xenon-129 supplier
 - ✓ Gas blend manufacturer
 - MRI chest coil design manufacturer
 - Al software partner
 - Philips partnership
- Foster additional partnerships with medical device and pharma companies

Commercialisation Strategy

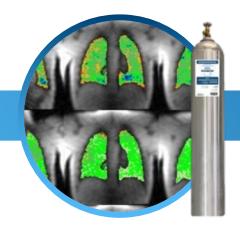


A three-pronged approach in market development phase



Convert Research Base

- Our Strongest Champions
- Enable handful of sites to begin utilising clinical gas



Drive Utilisation

- Target pulmonologists, surgeons, and radiologists
- Focus on multiple clinical applications, starting with ventilation imaging
- Future growth magnified through utilisation



Target Top-100 U.S. Pulmonary Hospitals

- Build credibility with early influencers and publishers
- Leverage early success with research-base customers
- Pre-existing MRI compatibility
- Promote profitable ROI with reimbursement codes

Positive Procedure Economics



A combination of existing codes and a new code for Xenon MRI procedure

Hospital Hyperpolarisation Lab





Multi-dose Xenon **Gas Blend Cylinder** NDC# 80534-6350-1

Dose Production



Dose Measurement



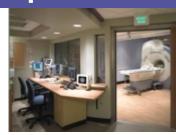
Active Dose

XENOVIEW



New Xenon 129 Specific Code

Hospital MRI Suite



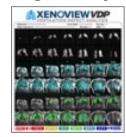
Dosing



Image Acquisition



Image Analysis



Existing Procedure Codes

C9791

"Magnetic resonance imaging with inhaled hyperpolarised xenon-129 contrast agent, chest, including preparation and administration of agent"

> C9150 Xe-129 HYP gas per study dose

71550 "Proton MRI Chest without Contrast"

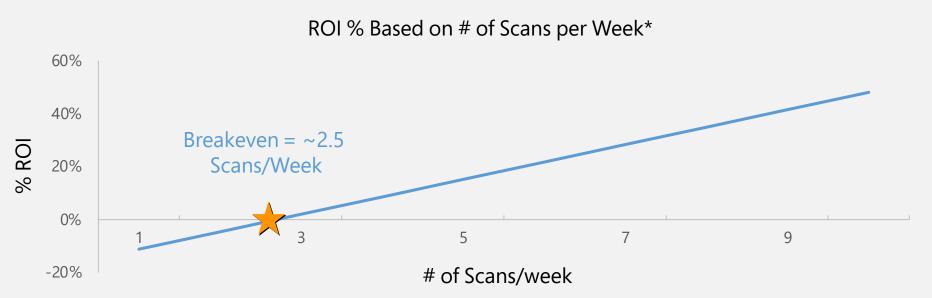
0649T "MRI Quantitative Interpretation"

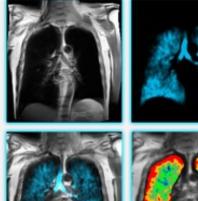
76377 "3D rendering w interpret & reporting of MRI"

Strong Economic/Clinical Incentive to Drive Adoption PolaREAN

Attractive reimbursement - 3 scans/week yields positive cash

Hospital ROI using the likely reimbursement range





Planned TAM Expansion*



Focused on high-value market expansion products

- Gas Exchange
 - De-risked product label expansion by leveraging current product and research
 - ✓ Addresses a significant unmet clinical need
 - ✓ Strong product safety profile
 - ✓ Positive FDA Feedback from Type B meeting
 - ✓ Extensive regulatory process experience
 - ✓ Secured hospital reimbursement
 - ✓ Over 10 years of research in gas exchange science with numerous publications
 - ✓ Proof-of-concept study conducted with 142 subjects †

- Lowering On-Label Age (12 to 6 Years)
 - Benefits both children and providers
 - ✓ No radiation, enabling safe longitudinal imaging
 - ✓ Simpler and less effort-dependent than spirometry
 - √ No reference equations required
 - ✓ Visualises lungs function to monitor progress and support compliance
 - Quantifies alveolar simplification in early childhood through adolescence
 - ✓ Gas exchange offers functional measurement of membrane conductance and RBC transfer

High Value Gas Exchange* Applications





Membrane Conductance*

es

Red-Blood-Cell (RBC) Conductance*

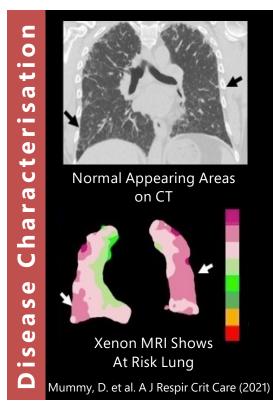


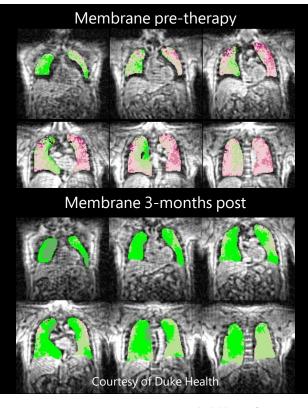
Allows disease characterisation and management of early active disease not explained by CT and/or Spirometery

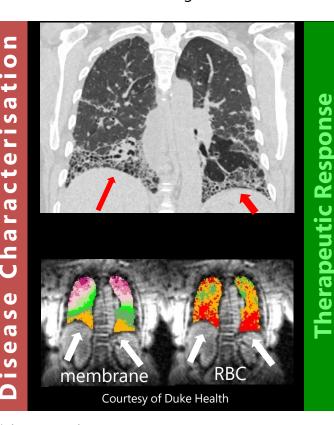
Allows monitoring and optimisation of IPF antifibrotics

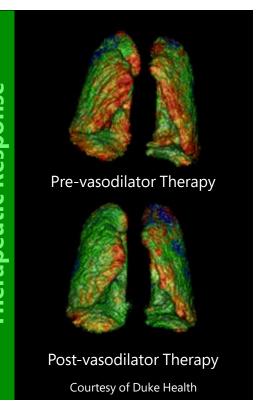
Allows visualisation of changes in Interstitial Lung Disease

Allows monitoring and optimises vasodilator therapy in Pulmonary Arterial Hypertension









Development of Key Industry Partnerships



Pharma

Xenon MRI: Accelerate Drug Development and Saving Costs

- 58% of respiratory drug trials fail at the final stage
 - Thomas DW, et al. Clinical development success rates 2006-2015. Biotechnology Innovation Organization, Washington DC. June 2016.
- Lung trials are the most expensive clinical trial category

https://aspe.hhs.gov/reports/examination-clinical-trial-costs-barriers-drug-development-0

 \$985m: average R&D costs for a novel drug https://iamanetwork.com/journals/jama/article-abstract/2762311

Xenon MRI Impact on Drug Drug Development

- Supports multiple ongoing academic trials for asthma, COPD, cystic fibrosis, ILD, and pulmonary hypertension
- Reduces variability, requiring smaller sample sizes to detect treatment effects
- Enables visualisation and quantification of lung function, offering insights not available with other technologies, aiding 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 Harmonised Multisite Trial Network



Financial Overview



H1 2024 Financial Review

Revenue

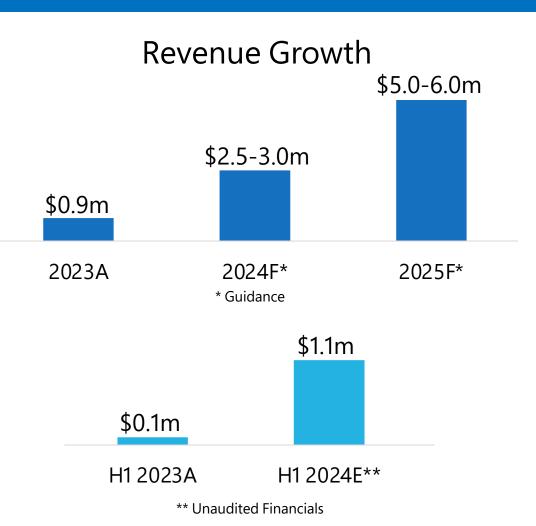
- > Significant increase over H1 2023, with \$1.0m gain
- > Raising lower end of FY 2024 guidance to \$2.5m \$3.0m

Expenses

 Continued tight control of cash operating expenses, with a \$2.5m reduction compared to H1 2023

Cash

- > \$15.2m as of 30 June 2024, and no debt
- Balance sheet bolstered by fundraise of \$12.6m gross proceeds
- > Funds company until at least Q1 2026



Investment Highlights



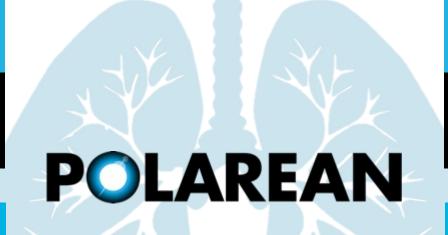
Significant unmet clinical need in improved lung disease diagnosis

Pioneering Functional Imaging Platform

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

Massive Label Expansion Market

\$3B+ U.S. TAM* opportunity in interstitial lung disease (ILD) and pulmonary vascular disease



Large Market with Unmet Clinical Need

\$2B+ U.S. total addressable market* (TAM) opportunity in obstructive lung disease

Industry Partnerships

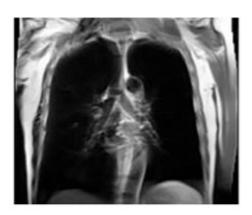
Pharma and MedTech represent a multi-faceted growth avenue

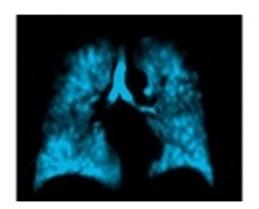
Thank You!

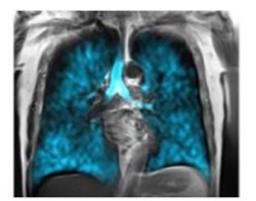
Enquiries:

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Optimise lung health and prevent avoidable loss by illuminating hidden disease









Board of Directors



Selected Prior Affiliations

St. Jude Medical

Industry leaders with extensive industry and leadership experience

				Selected Prior Affiliations	
8	Ken West	Non-Executive Chairman	Former Polarean CEO, serial entrepreneur		VIBREX BIOLEX
	Dan Brague	Non-Executive Director	Former CEO of Curium North America	CUCIUM™ LIFE FORWARD	Mallinckrodt Pharmaceuticals
	Jürgen Laucht	Non-Executive Director	Former Managing Director of NUKEM Isotopes		NUKEM Isotopes
	Charles Osborne	CFO & Director		innocrin precision therapeutics	SCYNEXIS
9	Cyrille Petit	Non-Executive Director	Chief Corporate Development Officer and Head of Strategic Initiatives, Bracco Group	Smith-Nephew	Goldman Sachs
9	Frank Schulkes	Non-Executive Director	Chief Financial Officer, Distalmotion	Convated Converge Con	GE Healthcare
		Dan Brague Jürgen Laucht Charles Osborne Cyrille Petit	Dan Brague Non-Executive Director Jürgen Laucht Non-Executive Director Charles Osborne CFO & Director Cyrille Petit Non-Executive Director	Dan Brague Non-Executive Director Former CEO of Curium North America Jürgen Laucht Non-Executive Director Former Managing Director of NUKEM Isotopes Charles Osborne CFO & Director Cyrille Petit Non-Executive Director Chief Corporate Development Officer and Head of Strategic Initiatives, Bracco Group	Ken West Non-Executive Chairman Former Polarean CEO, serial entrepreneur POLAREAN EI Non-Executive Director Former CEO of Curium North America Jürgen Laucht Non-Executive Director Former Managing Director of NUKEM Isotopes Charles Osborne CFO & Director Cyrille Petit Non-Executive Director Chief Corporate Development Officer and Head of Strategic Initiatives, Bracco Group SmithNephew

Christopher von Jako, PhD

CEO & Director

Medtronic