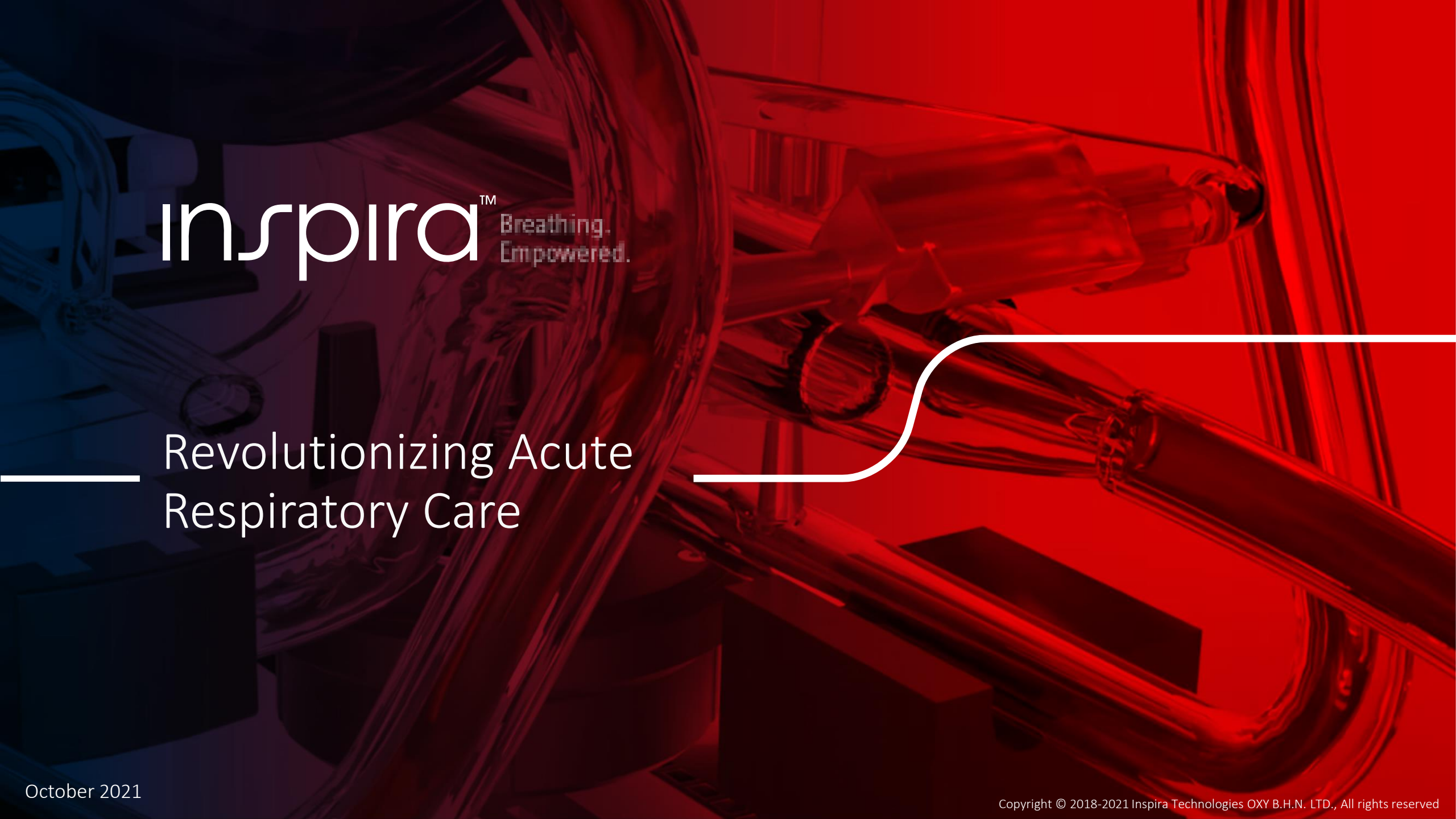

Revolutionizing Acute Respiratory Care

October 2021

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Forward looking-Statements

This presentation of Inspira™ Technologies Oxy B.H.N. Ltd. (the "Company") contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act and other securities law. Words such as "expects," "intends," "plans," "believes," "seeks," "estimates," and similar expressions or variations of such words are intended to identify forward-looking statements. For example, the Company is using forward-looking statements when it discusses its vision, the potential of its product, its strategy, market potential for its product, its paradigm, commercialization of its product, the potential to use its product together with mechanical ventilation, reimbursement strategy for its product, regulatory approval process of its product candidates, the benefits and use of its product candidates intended patient population, lines of therapy and market milestones 2021-2023 to FLS and its future growth. The presentation also contains estimates with respect to the Company's health economics model. Forward-looking statements are not historical facts, and are based upon management's current expectations, beliefs and projections, many of which, by their nature, are inherently uncertain. Such expectations, beliefs and projections are expressed in good faith. However, there can be no assurance that management's expectations, beliefs and projections will be achieved, and actual results may differ materially from what is expressed or indicated by the forward-looking statements. Forward-looking statements are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in the forward-looking statements. For a more detailed description of the risks and uncertainties affecting the Company, the reference is made to the Company's reports filed from time to time with the Securities and Exchange Commission (the "SEC"), including, but not limited to, the risks detailed in the Company's preliminary prospectus dated June [28], 2021, filed with the SEC as a part of the Company's Registration Statement on Form F-1 (File No. 333- 253920), and documents incorporated by reference therein. Forward-looking statements speak only as of the date the statements are made. The Company assumes no obligation to update forward-looking statements to reflect actual results, subsequent events or circumstances, changes in assumptions or changes in other factors affecting forward-looking information except to the extent required by applicable securities laws. If the Company does update one or more forward-looking statements, no inference should be drawn that the Company will make additional updates with respect thereto or with respect to other forward-looking statements.

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Mechanical Ventilation Has Significant Downsides[1–3]

MV requires intrusive intubation, coma induction, and can be very traumatic for patients:

Potential Risks & Complications

- Ventilator-induced lung injury (VILI)
- Ventilator-associated pneumonia (VAP)
- Ventilator-induced diaphragmatic dysfunction
- Pneumothorax & tracheomalacia
- Oxygen toxicity of the lung
- Delirium
- Muscular atrophy

High Cost of Treatment

- Long hospital stays
- Increased complication rate
- Patient re-admissions
- Requires weaning process
- Extended rehabilitation period

1. Am J Respir Crit Care Med Vol. 196, P3-4, 2017. ATS Patient Education Series © 2017 American Thoracic Society
2. Diling Wu et al. Frontiers in pharmacology MINI REVIEW published: 09 May 2019. doi: 10.3389/fphar.2019.00482
3. Kalil AC, Metersky ML, Klompas M, et al. Management of Adults With Hospital-acquired and Ventilator-associated Pneumonia: 2016 Clinical Practice Guidelines by the Infectious Diseases Society of America and the American Thoracic Society. Clin Infect Dis. 2016;63:e61-e111.

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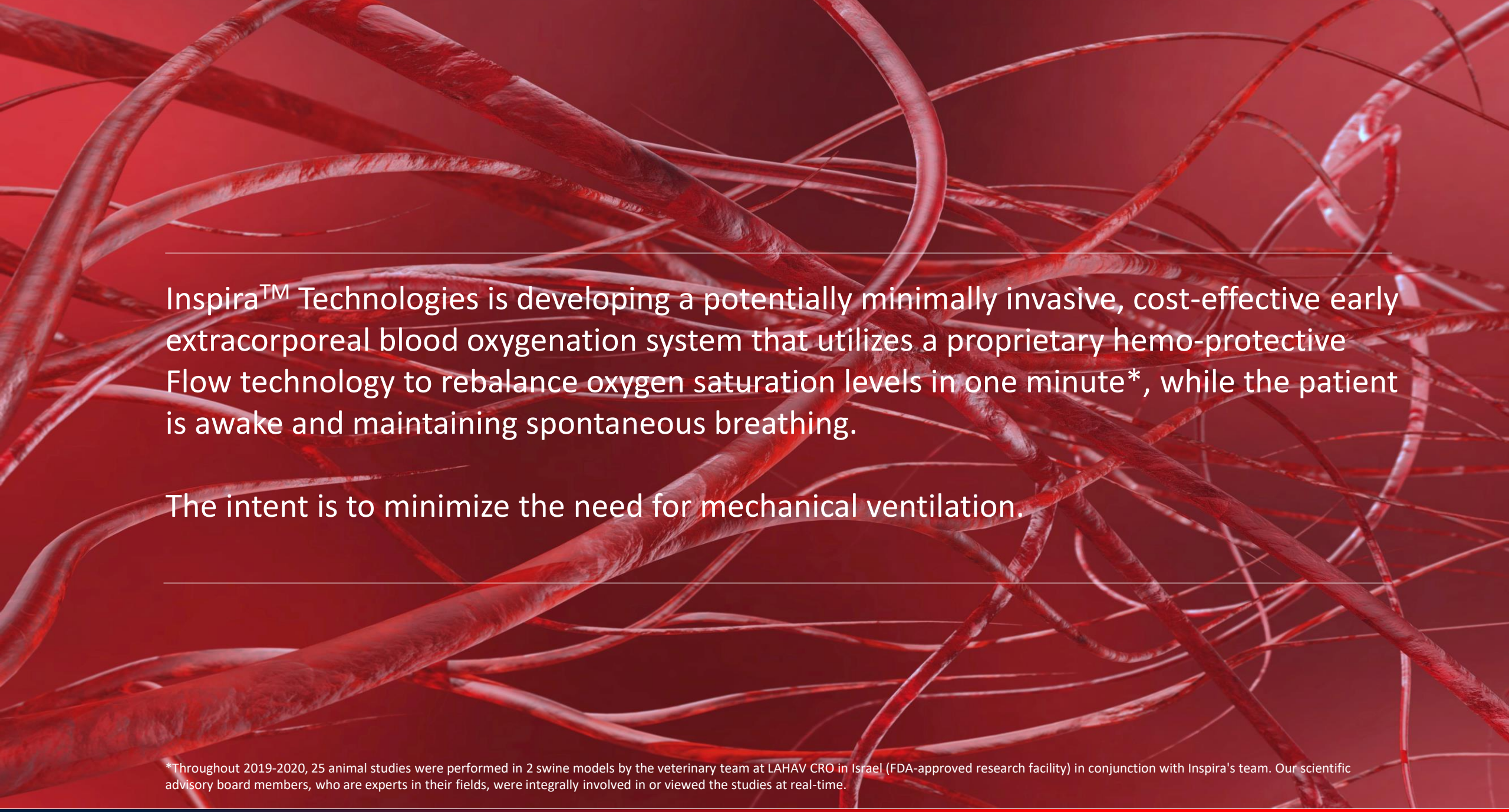

Inspira™ Technologies is developing a potentially minimally invasive, cost-effective early extracorporeal blood oxygenation system that utilizes a proprietary hemo-protective Flow technology to rebalance oxygen saturation levels in one minute*, while the patient is awake and maintaining spontaneous breathing.

The intent is to minimize the need for mechanical ventilation.

*Throughout 2019-2020, 25 animal studies were performed in 2 swine models by the veterinary team at LAHAV CRO in Israel (FDA-approved research facility) in conjunction with Inspira's team. Our scientific advisory board members, who are experts in their fields, were integrally involved in or viewed the studies at real-time.

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Vision

Redefining Artificial Respiration to impact millions of lives

inspira™

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Investment Highlights

A novel therapy
Revolutionary **early extracorporeal respiratory support system**,intended to rebalance saturation and carbon dioxide levels in patients with acute respiratory failure, while they are awake and breathing

Approaching both ICU and non-ICU markets
Cost-effective, designed for deployment in and outside the ICU, in urban and rural hospitals

The respiratory care market size is estimated to reach approximately $29.86 Bn by 2025[1]

Established need
~20 million patients annually admitted to ICUs, requiring acute respiratory care[2], being intubated and placed on mechanical ventilation

1. "Respiratory Care Devices Market by Product". Report by "Research and Market", June 2020. ID: 5129035
2. Forum of International Respiratory Societies. The Global Impact of Respiratory Disease – Second Edition. Sheffield, European Respiratory Society, 2017.

Targeted medical Device companies

HAMILTON MEDICAL · GETINGE · Medtronic · SIEMENS Healthineers · GE Healthcare · BD · Smith Worldwide Medical Products · PHILIPS · Baxter · ResMed

* Trademarks are the property of their respective owners.

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Our mission is **to become the new standard of care,** for acute respiratory patients, to be applied in awake and breathing patients.

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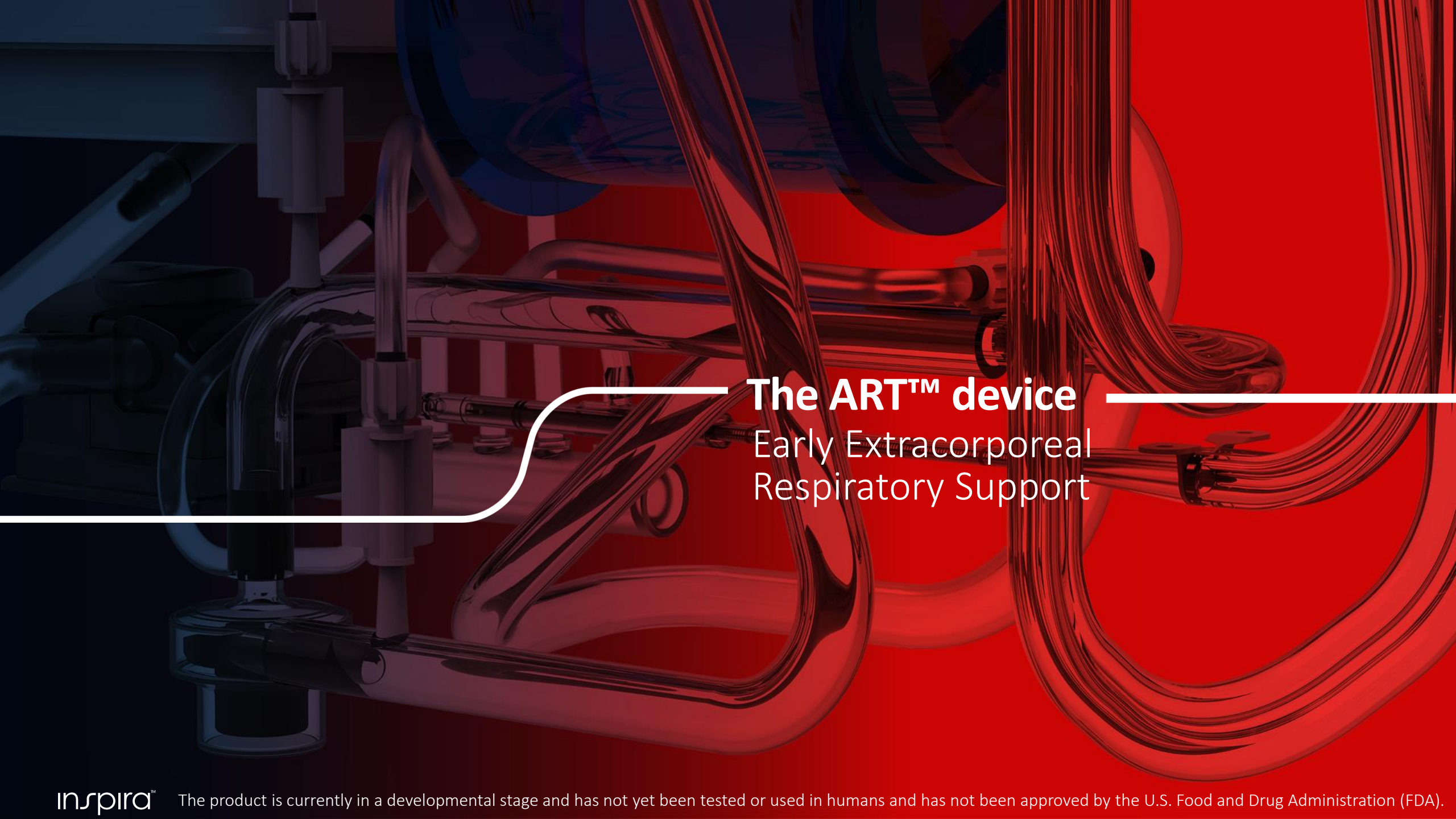

The ART™ device

Early Extracorporeal Respiratory Support

inspira™

The product is currently in a developmental stage and has not yet been tested or used in humans and has not been approved by the U.S. Food and Drug Administration (FDA).

THE ART™ DEVICE

Taking the load off the lungs

INSERT

Dual lumen cannula inserted into the jugular vein

WITHDRAW

Utilizing hemo-protective flow technology, the blood is treated with a minimum drop in blood pressure & a low shear force, protecting the red blood cells

ENRICH

Blood is enriched with high concentrations of oxygen, and CO2 is removed

CIRCULATE

The enriched blood is returned to the body via the dual lumen cannula

REBALANCE

The returned enriched blood rebalances the patient's saturation levels, easing the burden on the lungs

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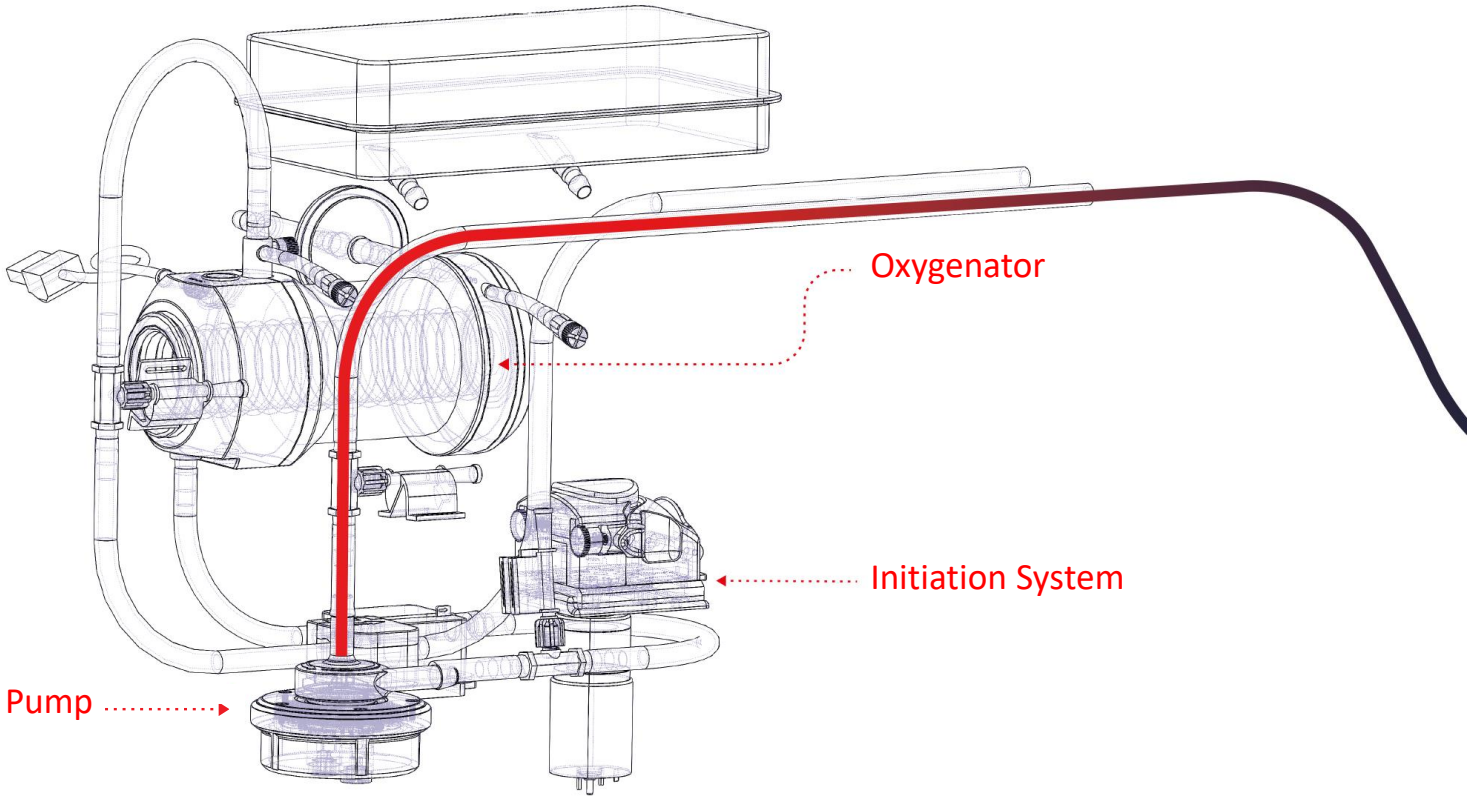
THE ART™

The ART device is comprised of a permanent module and a disposable respiratory support unit.

The company's strategic business model is designed to enable the extension of acute respiratory care **beyond the ICU.**



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ART™ Device Primary Components

Dual Lumen Cannula & Adjustable Dual Lumen

Component:
Low impact radiography-free dual lumen cannula, with small diameter (18Fr) and anti-air-embolism mechanism that expected to draw blood at a rate of 1-1.5L per minute*

Hemo-Protective Flow Pump

Component:
Proprietary hemo-protective pump; designed to prevent hemolysis and thrombosis

Initiation System

Component:
Autonomous initiation system for self-priming of the entire blood circuit, minimizing the need for a perfusionist

Disposable Respiratory Support Unit

Component:
Plug-and-play disposable cartridge. suitable for deployment both in ICUs and general medical units

*when used with initiation system

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ART's Innovative Features

Hemo-protective flow technology aimed to reduce the risks of hemolysis & thrombosis

Single insertion point of dual-lumen cannula aimed at lowering the risk of multiple infections & bleeding

Eliminates the need for a perfusionist

Proprietary plug-and-play disposable unit expected to reduce need for ICU-Level staff

Self-priming capability designed to reduce operational errors and need for perfusionist

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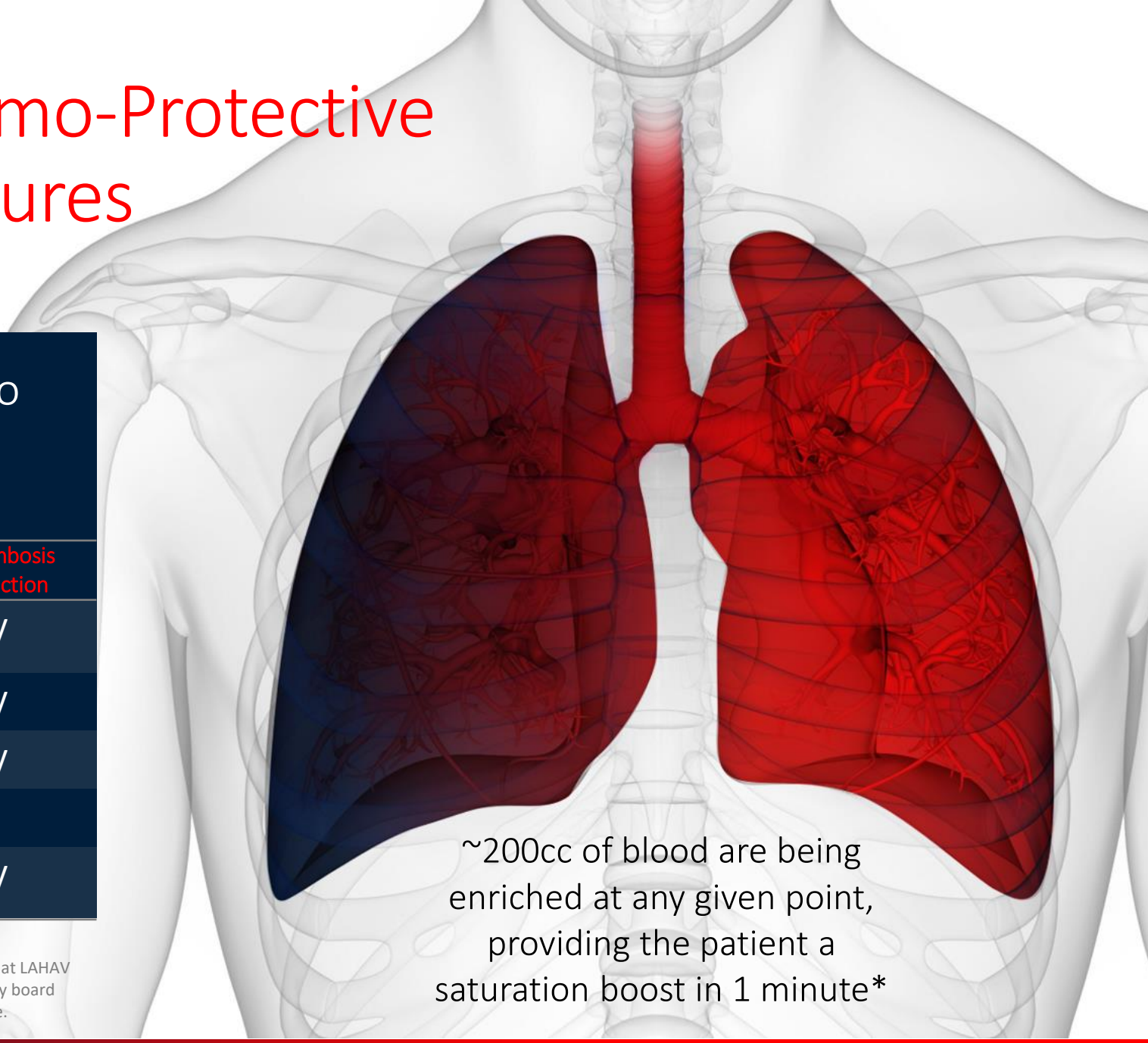
ART's Proprietary Hemo-Protective Flow Technology Features

Presenting innovative features expected to minimize hemolysis & thrombosis

ART's features	Hemolysis reduction	Thrombosis reduction
Disposable set designed for Low flow – high velocity	V	V
A low-volume oxygenator		V
Pump head design for low flow	V	V
Short dual lumen cannula design	V	
Entire disposable set is coated with anticoagulants		V



~200cc of blood are being enriched at any given point, providing the patient a saturation boost in 1 minute*

*Throughout 2019-2020, 25 animal studies were performed in 2 swine models by the veterinary team at LAHAV CRO in Israel (FDA-approved research facility) in conjunction with Inspira's team. Our scientific advisory board members, who are experts in their fields, were integrally involved in or viewed the studies at real-time.

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ART's Respiratory Support System Potential Benefits

The patient's perspective

- Immediate oxygen saturation elevation
- Decreased work of breathing:
  - ✓ Improving compliance to HFNC
  - ✓ Improving compliance to pronation
- Patient can communicate their symptoms and needs
- No need for induced coma
- Avoiding all forms of complications associated with MV

The clinician's perspective

- Clinicians would be able to offer an alternative to mechanical ventilation
- Minimal learning curve
- Self priming system, minimizes the need for perfusionist
- Self priming system results in less human errors
- Designed to use in ICUs, general wards & ambulatory settings

The hospital perspective

- Reduced costs associated with MV complications
- Increased patient throughput
- Better respiratory care in ward setting
- Reduction of patient load in ICU
- Reduced staffing - No need for perfusionists
- No need for surgical access team

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ART™ Offers Two Intervention Modalities

	EARLY INTERVENTION	ADJUNCTIVE THERAPY, SUPPORTING THE USE OF MV
WHO	Avoid VALI, Awake & breathing patients with deteriorating respiratory failure	Ventilated patients under induced coma
WHAT VALUE	• Avoid intubation, coma and MV • VIDD and VAP	• Reduce risk of ventilator induced injuries (VALI, VIDD and VAP) • Expedite ventilation & weaning period
WHERE	ICU General Medical Unit	ICU

MV = Mechanical Ventilation
VALI = Ventilator-associated lung injury
VIDD = Ventilator-induced diaphragmatic dysfunction
VAP = Ventilator-associated pneumonia

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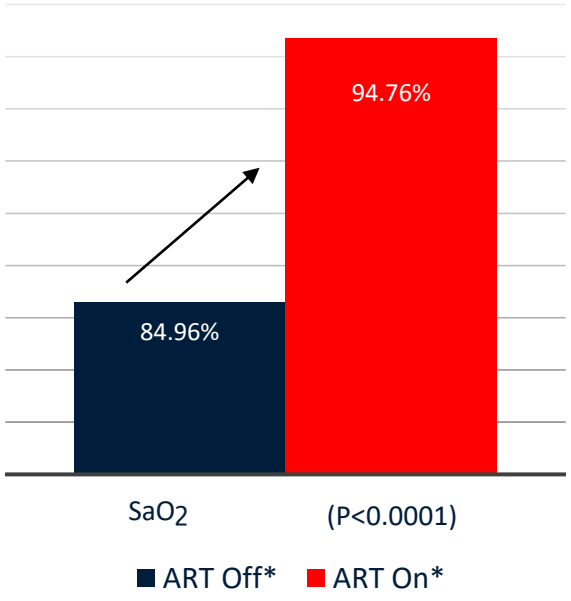
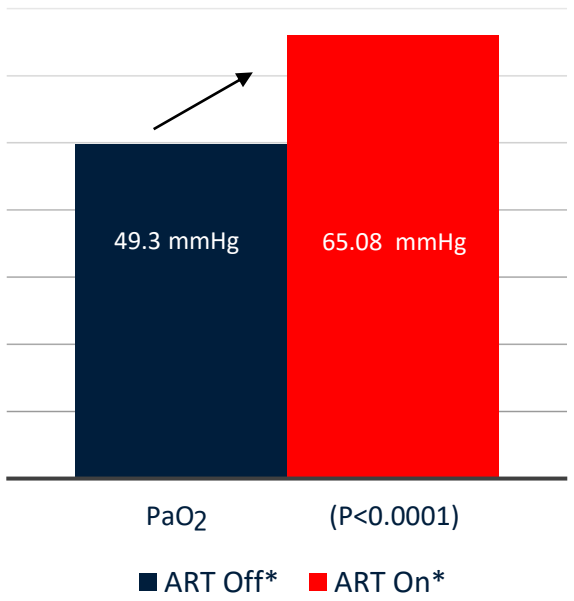
Study Results

Substantial ongoing positive changes in the blood oxygenation levels

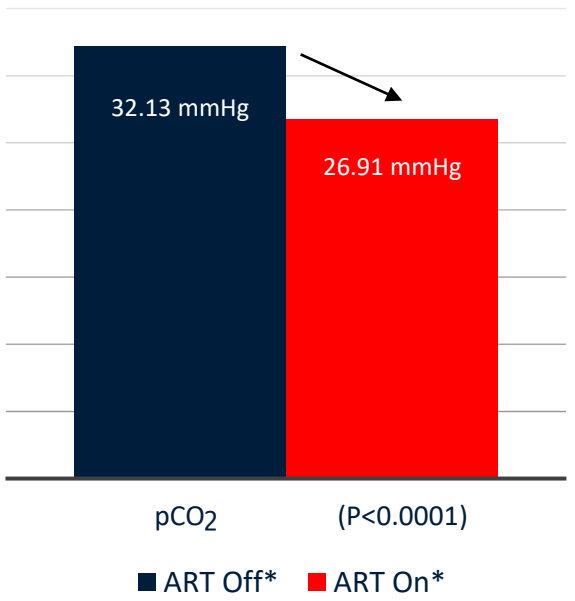
Oxygen Saturation levels



Partial Pressure of Oxygen



Partial Pressure of carbon dioxide



Arterial HCO_3

No significant change

Reference for normal levels - Julia Hooley, MSN, RN. American Nurse Today. Volume 10, Number 1. January 2015

Throughout 2019-2020, 25 animal studies were performed in 2 swine models by the veterinary team at LAHAV CRO in Israel (FDA-approved research facility) in conjunction with Inspira's team. Our scientific advisory board members, who are experts in their fields, were integrally involved in or viewed the studies at real-time.

* Average results

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Intended Patient Population and Lines of Therapy

Patient Population

Acute hypoxemic failure adult patients

Adult COPD patients (Chronic Obstructive Pulmonary Disease)

Non-Invasive Ventilation[1]

- Nasal mask
- Face mask
- Nasal plugs
- BiPAP
- CPAP
- HFNC (High Flow Nasal Cannula)

The ART Device

Invasive Mechanical Ventilation[2]

ECMO[3] (Extracorporeal Membrane Oxygenation)

RESPIRATORY DETERIORATIO

TREATMENT ESCELATION

1. A Grade 2C recommendation is a very weak recommendation; other alternatives may be equally reasonable.
2. Brown 3rd CA, Walls RM. The decision to intubate. In: The Walls Manual of Emergency Airway Management, 5th ed, Lippincott Williams & Wilkins, Philadelphia 2018. p.3.
3. https://www.elso.org/Portals/0/ELSO%20Guidelines%20General%20All%20ECLS%20Version%201_4.pdf (Accessed on July 23, 2018).

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$20Bn Total Addressable Market for the ART™

20 million globally per year[1]

1,250$ per treatment/disposable unit (estimated target price)

*80% of 20 million[1] patients annually[1](treated today by MV) at a direct treatment cost of $1,250 for ART disposables unit (cost per patient per treatment)

1. Forum of International Respiratory Societies. The Global Impact of Respiratory Disease – Second Edition. Sheffield, European Respiratory Society, 2017

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Market Penetration and Gaining Market Share

We have developed a flexible business model to drive global deployment

PRICING MODEL

ART device distributed as an OPEX when bundled with 15 disposable respiratory support units

Novel technology ART device

\+

Disposable respiratory support units

- **Multiple consumer types** — Healthcare Centers, Medical Services & Medical Device Companies
- **Selling Disposable** — Priced at $1,250 per patient to support OPEX model (estimated target price)
- **Aftermarket Services** — Contracting regional providers for distribution & aftermarket services of system & supplies

* Subject to change

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Reimbursement Strategy

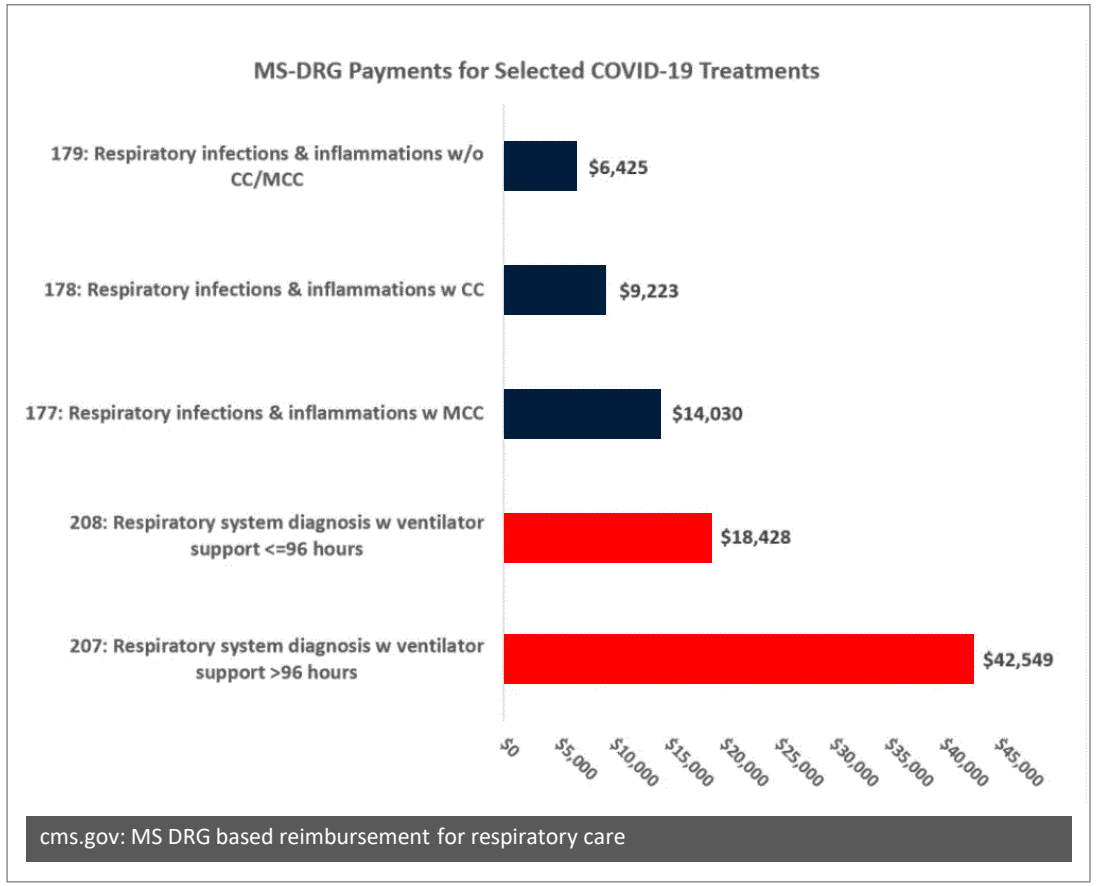
Inspira plans to utilize existing CPT Codes using a “New Approach” to an existing procedure

Expected to eliminate complications associated with MV

Aimed to reduce length of stay & re-admissions

Designed to reduced costs & operational expenses

Designed to reduce hospital & staff burden



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Go-to-Market Strategy

Establishing multiple recurring revenue streams across medical sectors & markets

PURSUING WORLD-WIDE REGULATORY APPROVALS

United States
Europe
Asia
South America
Africa
Middle East

COLLABORATING WITH STRATEGIC MEDICAL CENTERS & PROFESSIONAL ASSOCIATIONS

Strategic partners for regional deployments

Target health associations, such as: “The American Thoracic Society”, “The Extracorporeal Life Support Organization”

OPTIONAL TREATMENT INDICATIONS

- Early saturation elevation, preventing MV
- To be used with MV

PURSUING COLLABORATIONS WITH STRATEGIC PARTNERS

- Global Medical Device Companies, Multinational Electronics Contract Manufacturers
- Potentially, global medical device companies may acquire ART primary components for blood enrichment applications

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Regulatory Submission (Multi-Step approach)

Components
510(k)

Q4-2021

ART
Support
ECLS
510(k)

Q4-2022

ART™
De Novo*

Q3-2023

To-date the ART500 has not been tested on humans and is subject to the regulator's requirement.
*Will require a new 510(k) marketing clearance or, depending on the modification, a de novo or other

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Targeting Major Milestones 2021-2023

- Regulatory Filings
- Distribution Agreement
- Strategic Agreement
- Product Deployment/Pre-Sales
- Medical Collaboration
- Clinical evidence/clinical trial

COMPONENT

H1-2022

- Strategic Agreement
- Distribution Agreement
- Component Deployment
- FDA Filing Component 510(k)

H2-2022

- FDA 510(k) Filings
  - ART support ECLS
  - Components
- Distribution Agreement
- Medical Collaboration

H1-2023

- ART support ECLS Deployment in Leading Hospital
- Strategic Agreement
- Medical Collaboration
- **Preliminary clinical evidence**

H2-2023

- FDA De Novo Filing ART "New Intent of Use"
- CE Filing
- ART Orders, Subject to Regulatory Clearance

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Leadership

Prof. Benad Goldwasser, MD, MBA
Chairman

Urologic surgeon, inventor, entrepreneur & venture capital investor.
Vast experience in leading high growth, publicly traded medical companies.

Co-founded Vidamed Inc., acquired by Medtronic Inc. (NYSE: MDT).

Co-founded Medinol, partnered with Boston Scientific (NYSE: BSX).

Joe Hayon, MBA
Co-Founder, President & CFO

Former CFO, CIO and Corporate Manager Elscint (Formerly NASDAQ & TSE : ELT), Sanmina - Medical Division (NASDAQ: SANM).

Plasan Group - Executed M&As and strategic joint ventures.

Experience in manufacturing & setting up operations to support high-growth delivery.

Dagi Ben-Noon, BSc
Co-Founder, CEO

Co-Founded Nano Dimension

(NASDAQ : NNDM)
Served as COO & Director .
Serial entrepreneur & investor.

Multi-industry experience in growing companies from concept to market penetration and sales.

Dr. Udi Nossinovitch, MD, PhD
Co-Founder, CSO

Cardiologist, ICU Physician & Cardiology Researcher, Senior hyperbaric & diving physician.

Sheba Medical Center, Israel Naval Medical Institute, Technion Institute of Technology, Meir Medical Center, Tel Aviv University

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Scientific Advisory Board

Prof Eli Gabbay, MD, FRACP
Respiratory Advisor

Respiratory physician & specialist in respiratory disease.

Professor of Respiratory Medicine at University of Notre Dame & University of WA.

Chairman of Research at UND, Director of the WA Lung Transplant Program, Sub-training at Freeman Hospital in Newcastle upon Tyne, Stanford University, Palo Alto & the Alfred Hospital, Melbourne.

Dr. Yigal Kasif, MD
ECMO Advisor

Cardiac Surgeon & Director of ECMO Israel, Adult Cardiac Surgery, Heart Transplants, Assist Devices & ECMO, Intensive Care Treatment, Sheba Medical Center at Sheba Hospital.

Cambridge University, UCLA, Hebrew University of Jerusalem, Cardiac surgery clinical fellowship in UCLA and research fellowship at Cedars Sinai Medical Center.

Dr. Avraham Abutbul, MD
ICU Respiratory Advisor

Senior physician at the Medical Intensive Care unit and at the Pulmonology Institute at the Hadassah Medical Center.
Lecturer at the Hebrew University Faculty of Medicine & Hadassah Medical School. Current research: Chronic Obstructive Pulmonary Diseases, &prevention of sepsis related organ dysfunction with Allocetra.

Dr. Orit Cohen Jacob, MDV
Clinical & Research Advisor

Veterinary surgeon & expert in laboratory animal science, Israeli Prime Minister's Office, Chairwoman of the National Animal Experimentation Ethics Committee, Founder of GLP/GMP companies:
SeruMed GMP Ltd.: Production of anti-venom serum.BioSphera Ltd.: Specialized in pre-clinical research

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Scientific Advisory Board - cont.

Dr. Dekel Stavi, MD
Intensivist Advisor

Has considerable experience in leadership and Extracorporeal Life Support programs, cardiology aspects of Intensive Care Unit ("ICU") patients and treating hemato-oncology patients in ICUs. Prior to joining the interdepartmental program of critical care at the University of Toronto, he served as a senior intensive care physician at a leading Israeli hospital - the Tel Aviv Sourasky Medical Center (Ichilov), where he initiated its institutional extracorporeal membrane oxygenation (ECMO) program.

Dr. Yael Lichter, MD
Intensivist Advisor

A director of the Medical ICU at Sourasky Medical Center since 2020 and is also Treasurer of the Israeli ECMO Society since 2019. Dr. Lichter completed her residency programs in Internal Medicine (2015) and Intensive Care (2017) at the Sourasky Medical Center. Prior to this, Dr. Lichter was a Captain in the IDF, holding several positions as a field doctor in combat units.

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THANK YOU

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