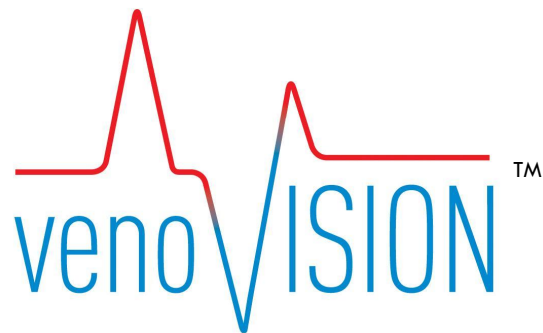




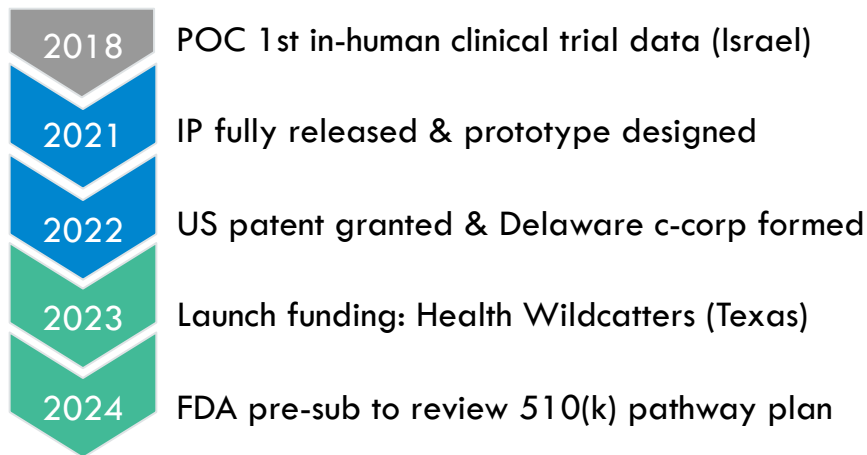
Non-invasive fluid status monitoring

Spot deterioration and guide therapy more closely for heart failure and at-risk patients in the hospital and home.

Jonathan Maron, President, jmaron@venovision.com

Company overview

\$33B heart failure and perioperative patient monitoring hospital & home market:
VenoVision non-invasively delivers fluid status vital signs previously limited to invasive sensors and implants.



Seed round: \$4M

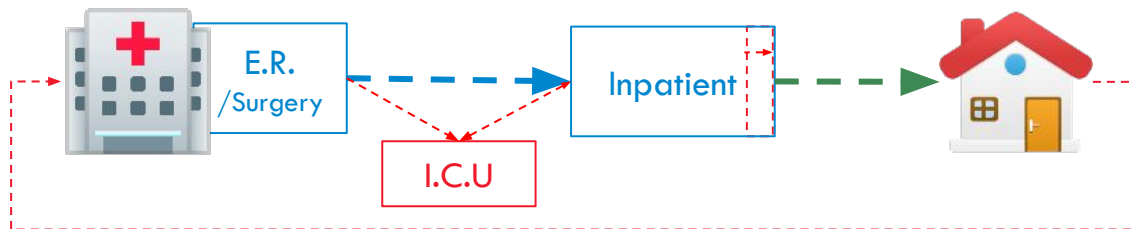
*Prototype to FDA cleared device
(18-24 months)*

- 1st Tranche: \$1.25M
- Milestone: Autonomous device
+ validation (9-12 months)

Total raise to-date: \$205K

*Management: +30yrs in medtech/hitech, intl.
management, regulatory leadership, product dev.*

Delayed, over intensive & extended care costs \$ billions



Heart Failure \$20B on 1M (re)hospitalizations & excess hospital days
70-80% Medicare beneficiaries

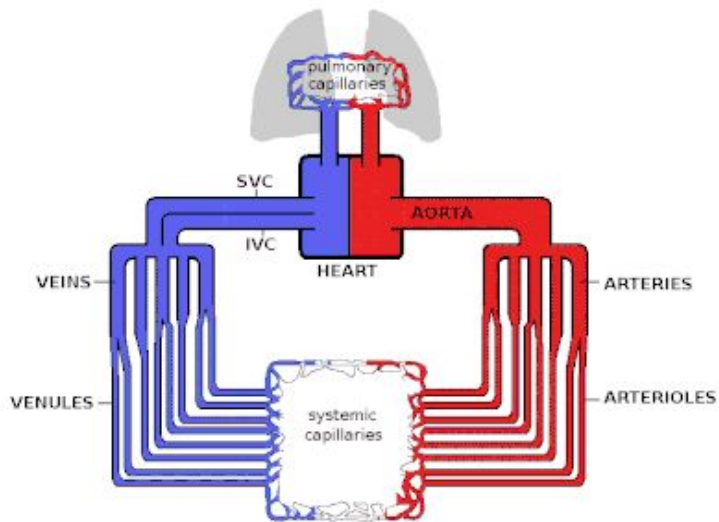
Hospital: \$11K reimbursement shortfall p/patient

Post-Op Care 28M surgeries with 20% adverse event rate

Hospital: \$3K-150K costs absorbed p/patient

Insufficient fluid status monitoring is a key factor to this

Hemodynamics are the principles & mechanisms governing the flow & pressure of blood.



Is the Patient in Hemodynamic Balance?

Don't know? = Risks

Heart failure
exacerbation

Organ
dysfunction

Fluid
overload

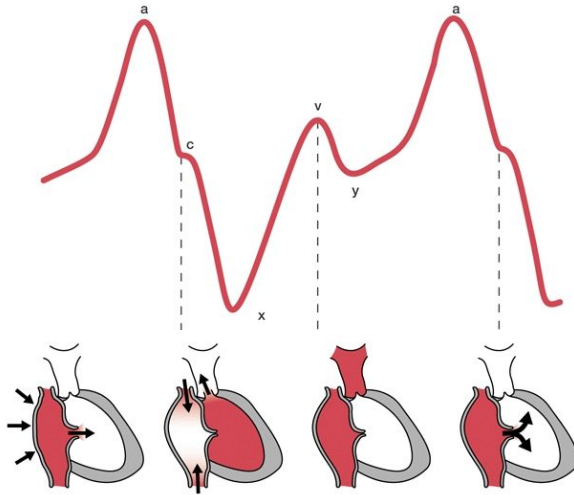
Acute kidney
injury

Cardiogenic
shock

Hospitalization, ICU, Extended LOS

Improving CVP monitoring can help assess hemodynamics

Monitoring central venous pressure from E.D. to discharge leads to better outcomes.

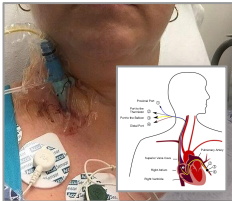
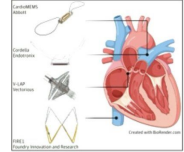
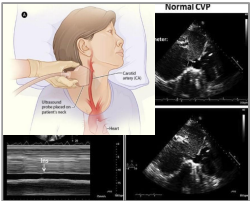
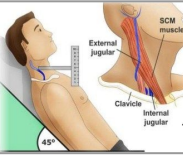


Central Venous Pressure reflects:

- Amount of blood returning to the heart.
- Heart's ability to pump blood back to the arterial system.
- Various cardiac dysfunctions through its venous waveform changes.

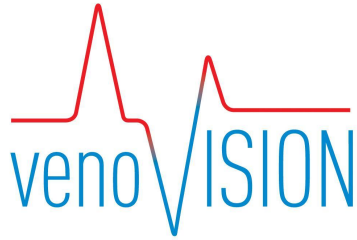
CVP is a key indicator of congestion developing in organs and tissues (+ the reverse).

Yet current monitoring options have significant limitations

Standard	Hemodynamic Monitoring	
 Consumer Wearables: Insufficient.	Invasive  Swan Ganz: Risks + ICU bed.  CardioMEMS: Expensive.	Non-Invasive  Ultrasound*: Specialist only.  Visual JVP: Inaccurate.

- ✗ Patient at risk for hours
- ✗ Specialists/ ICU beds diverted
- ✗ Expensive implants at home

**Ineffective on obese patients*



Overcomes the limitations
of current hemodynamic
monitoring technology

- ✓ **Rapid:** Minutes not hours
- ✓ **Easy-to-use:** “Point & Press”
- ✓ **All settings & users:**
Not dependent on MD specialists!



Hand-held Device

Thermal Imaging + ML

Adding VenoVision helps improve care & critical decisions

VenoVision VVC-100

- Central Venous Pressure
- Venous Waveform
- Heart Rate + Respiration Rate + Body Temp.



Regular
+ Patient
data

E.R.



Inpatient

Telemed.
Care

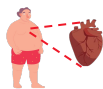


- ✓ Speed up diagnosis
- ✓ Enable initial treatment
- ✓ Better decide home vs admit

- ✓ Keep patient out of the ICU
- ✓ Guide up-titration / post-op.
- ✓ Assess stability for discharge

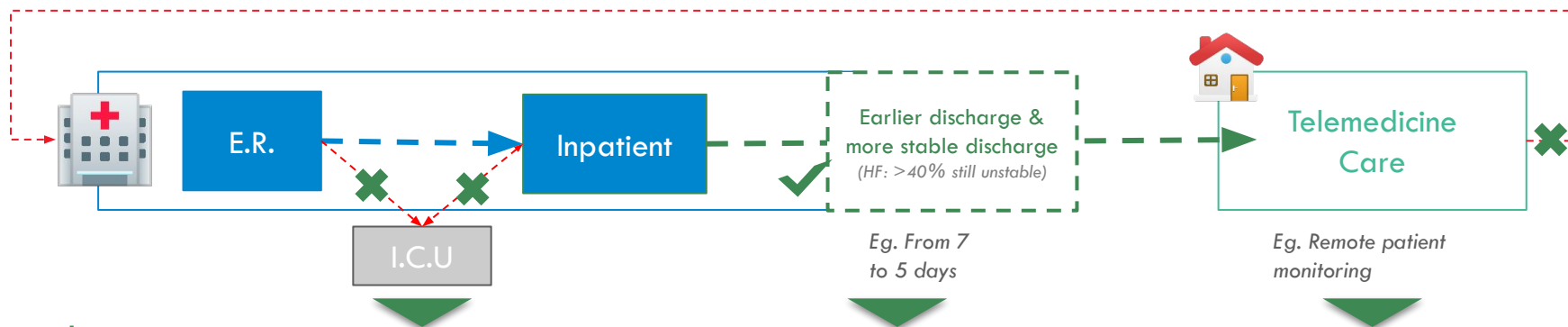
- ✓ Remote patient monitoring
- ✓ Personalized diuretic dosage
- ✓ Avoid hospitalization

Resulting improved patient management can save \$\$\$



↓ **LOS by 1 day saves at least \$2B:**

e.g 20% of HF patients are obese, +1-3 days extra.



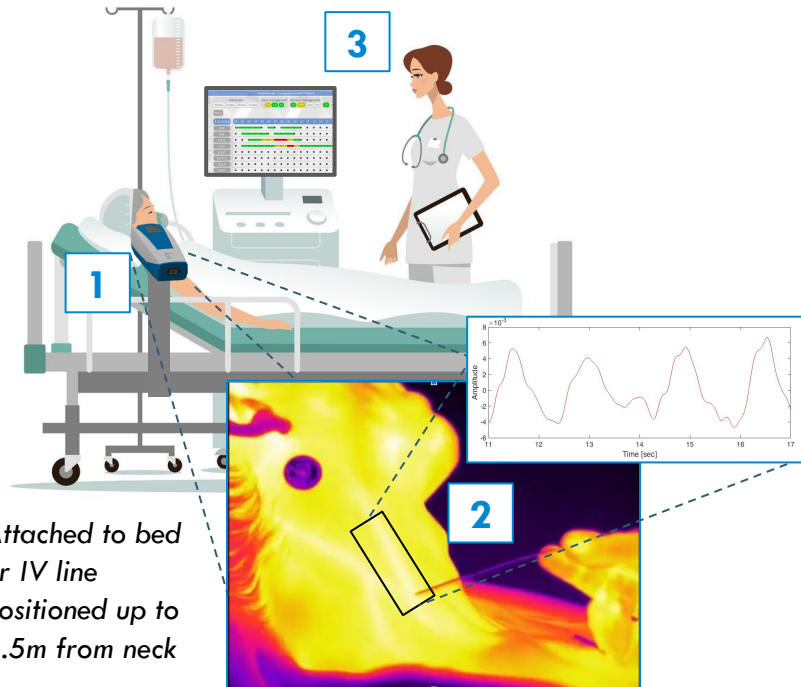
\$avings:

(1) ↓ Avoidable ICU days saves hospital
\$2-8K p/d
+\$3K-150K p/adverse event avoided

(2) ↓ Length of stay saves hospital
\$2-4K p/d

(3) Insurer saves \$9K per heart failure admission avoided
Hospitals: ↓30-day readmission fines

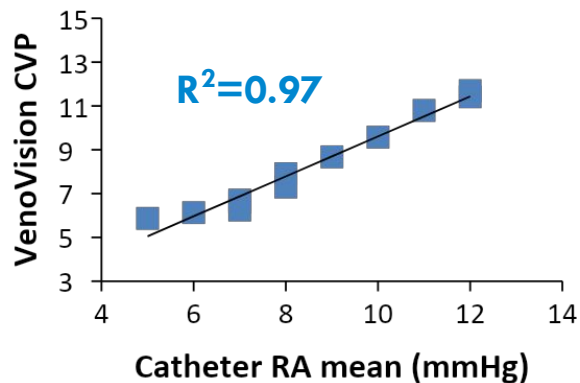
How VenoVision collects readings: Thermal imaging & ML



1. **Point & Press:** Position VVC-100 in-line with the neck area.
2. **AI/ML analyzes** real-time thermal recordings of the jugular vein.
3. **Vitals are sent over FHIR** to the EMR for review.

Proof-of-concept clinical data

1. Proof-of-concept 1st in-human clinical trial (NCT04179851)

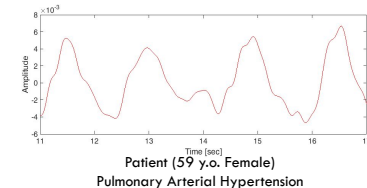
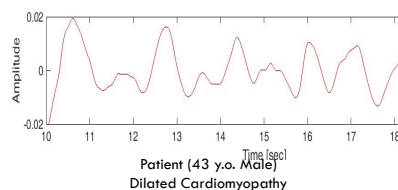


12 statistically significant patients (n=15) with Mean RA ≤ 12 mmHg showed a strong correlation from VenoVision to the catheter Swan Ganz measurements.

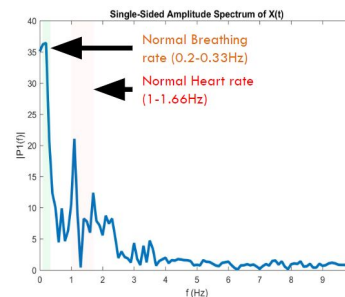
[Read Report](#) | Presented at [ICI 2018](#) & [Israel Heart 2020](#)

2. Additional data & patterns identified

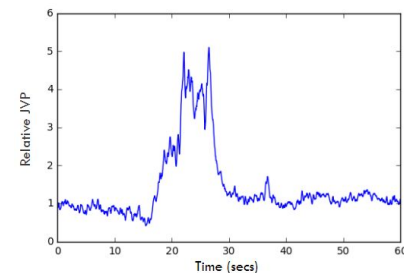
a) Venous waveform pattern of cardiac dysfunctions:



b) Heart rate & breathing rate:



c) Hepatojugular reflux test:



Traction: Clinical trial data, IP, Prototype, 510(k) pathway



1st In-Human Clinical Trial

Strong correlation to invasive Swan Ganz readings



המרכז הרפואי
שערי צדק
SHAARE ZEDEK
MEDICAL CENTER

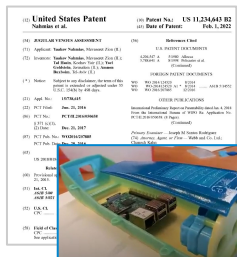


THE HEBREW
UNIVERSITY
OF JERUSALEM



1st Patent Granted & Prototyped

All IP transferred to Delaware C-Corp



US Patent 11,234,643



Launch Funding: Health Wildcatters

"Most Innovative Award"
M2D2 Impact 2023



HEALTH WILDCATTERS



LOWELL • WORCESTER

M2D2



FDA Pre-Sub on 510(k) & Reimbursement Plan

510(k) pathway feedback.
Reimbursement & HEI model.
Product development plan
validated with MPR Associates.

Seeking partners for product dev. to be on-market end 2026

GTM: Phased product strategy in a \$33B market

TAM
\$33B

SAM
\$5.65B

SOM (5yr rev.)
\$440M



Hospital:
CVP & Waveform

TAM \$525M

5 devices in 6K hospitals,
1M admissions, 5 yrs



Hospital: Perioperative & Rural Health
R&D: Cardiac Output, PCWP Warning & more

TAM \$5.3B

1 device per 3 patients
50% of 28M post-ops, 5yrs



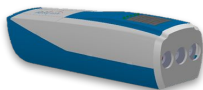
Home/SNF: Remote Patient Monitoring

TAM \$27.6B

6M HF patients
monitored monthly, 5yrs

GTM: Hardware + pay per use revenue model

Target
COGS
<\$800



Device + Per Patient Fee



Hospital
Large hptl: \$3M
(5yrs)

\$5,000 + \$75 p/admission
 <\$100 p/patient (50% perioperative patients)

- Covered by DRG payment + NTAP (CMS)
- ✓ Fewer hospital days, improved care
- ✓ Save \$2-10K p/day (eg. frees up ICU beds)
- ✓ 1yr ROI Factor = 6 for obese HF alone!

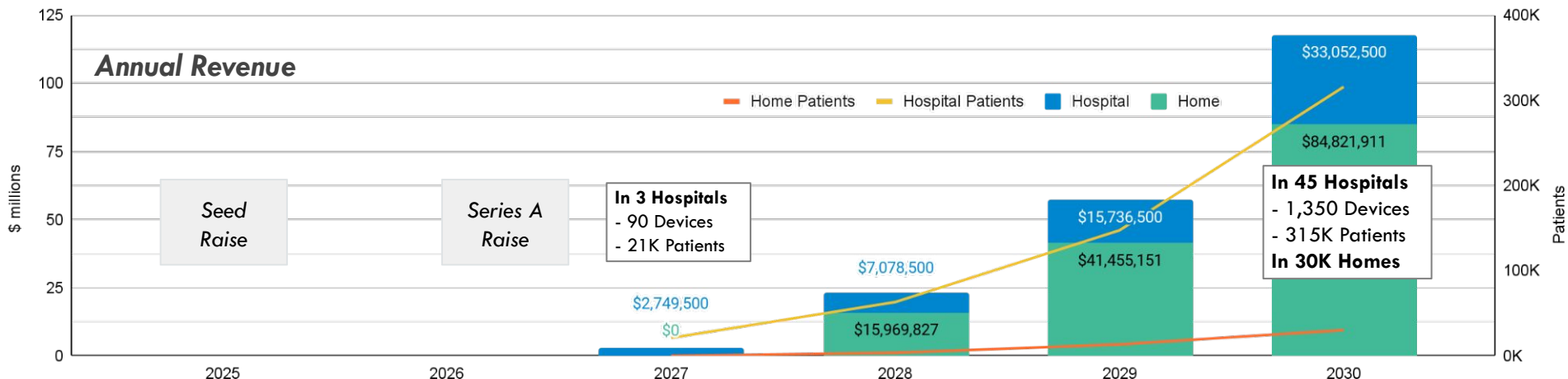


Home Telemed.
1 patient: \$4.6K
(5yrs)

\$2,500 + \$35 p/month RPM
 Telemedicine firm bills insurer \$140-390 p/m

- Covered as % of CPT codes (RPM+CCM)
- ✓ Fewer (re)hospitalizations
- ✓ Insurer saves 2-5x on telemed. vs 1 admission

On US market 2026-7 | Potential for exit by 2030



2025-26 Goal:

Product Development

- Autonomous device R&D
- FDA Breakthrough Designation
- Testing & clinical trial
- FDA 510(k) submission

2026-27 Goal:

1st Hospital Sales

- HEI/Outcome-based trials
- Home market product dev.
- NTAP authorization by CMS

2027-28 Goal:

Expand to Home Market

- NTAP claimed by hospitals
- Hospital-to-home & home-telemedicine sales
- New indications dev. & trials

2029-30 Goal:

Continued Expansion

- Monitoring index product
- CPT Code for Outpatient, ASC & Physician's Office
- Align for exit

Collaborations from 2027 with large medical device firms towards exit

Example exits



Edwards

Part of a
multi-company
deal of \$1B

Baxter

\$200M

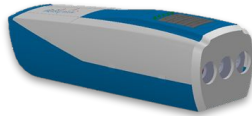
\$40M

PHILIPS

Just under
\$100M

VenoVision vs non-invasive competition

VenoVision VVC-100



Non-Approved
ECG-Seismology-
Acoustic Correlation



Lung Congestion
Dielectric Sensing Thoracic Impedance



**Manometer
NIRS**



**JVP Visual
Assessment**



Ultrasound



Direct measure of CVP:

No new score/black-box AI



Contactless:

No patches, no leads



Easy-to-Use: no specialist
training & quick to set up



Obese patients
& all skin colors



Hospital
& Home



			✓	—	✓
			✓		
✓	✓				
TBD	✓	✓	—		—
✓	✓				

VenoVision is led by its founders from BioDesign Israel

Hands-On Leadership



Nadav Linkin (CTO)
Medical AI, RAQA & Product Specialist
>20 years in Med-Tech & Start-ups

- Oridion Medical (acq. by Covidien/Medtronic)
- Textrix Inc (acquired by Sun Microsystems)
- Condensys (backed by Sun Microsystems)



Jonathan Maron, (President)
Senior Manager in Multinational
+5 years Intl. Leadership

- Original BioDesign team member
- Kenes Group (medical associations)
- Business analyst, incl. for NASDAQ co.

Co-Founders from BioDesign



Prof. Yaakov Nahmias
 Chair of Bioengineering, HUJI

 **Tissue Dynamics** 



Prof. Tal Hasin, M.D.
 Head of Heart Failure Unit
 Shaare Zedek Medical Center



Adjunct Team



Regulatory Pathway
FDA Breakthrough Device
 (Readiness & Application)

lean **RAQA**

Lean RAQA Lead: **Michelle Lott**



Reimbursement Strategy
Initial Budget Impact Model

TTi HEALTH RESEARCH & ECONOMICS

TTi Lead: **Dr. April Zambelli-Weiner, PhD**



Legal & Corporate Affairs
Incorporation & ongoing

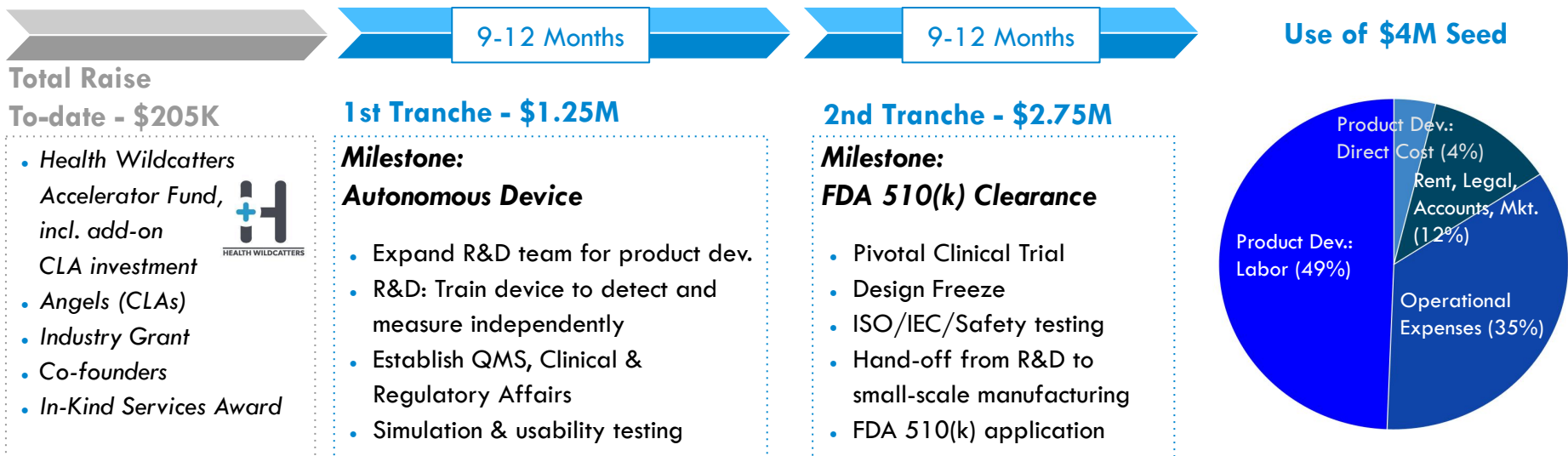
 **POLSINELLI**

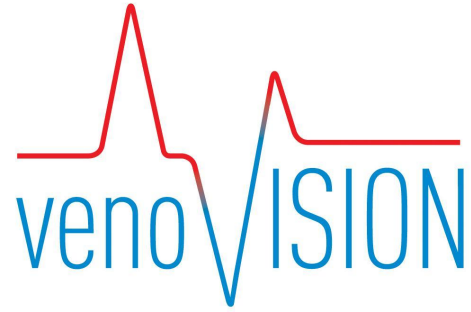
Legal Partner: **Matt Eckert**



Seed round to reach commercialization

\$4M seed round in tranches to submit for FDA 510(k) clearance within 24 months.





Join us to better personalize therapy
& improve the lives of millions



\$33B patient monitoring market that can save thousands of dollars per patient:

- ✓ Proof-of-concept, patented & prototyped
- ✓ FDA 510(k) pathway planned
- ✓ Aiming to be on market by end of 2026.

Contact: Jonathan Maron, President, jmaron@venovision.com

Thank You