



# PNEUMERIC

Improving care in trauma for those affected by pneumothorax

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# The Clinical Condition: Pneumothorax



A pneumothorax is a collapsed lung. A pneumothorax occurs when air leaks into the space between the lung and chest wall. Tension Pneumothorax is especially deadly.

- **Pneumothorax = “Air in chest”**
- **100% fatality rate** if not treated immediately
- **A major cause of preventable trauma mortalities** (1-2)



# The Problem: Standard of Care Fails Often

The failure rate of needle decompression is 20-50%<sup>(3-5)</sup>

- Thoracostomy catheter decompresses air in the thoracic cavity

*“Wait... did it work?”*

- Gold standard = Listen for a “gush of air”

*How quiet is an ambulance, accident scene, battlefield, etc.?*

- Economic cost of injury mortality

*U.S. economic cost of fatal injuries in 2019 was \$2.2 trillion (CDC)*



3. J. M. Aho, C. A. Thiels, M. M. El Khatib, D. S. Ubl, D. V Laan, K. S. Berns, E. B. Habermann, S. P. Zietlow, M. D. Zielinski, Needle thoracostomy: Clinical effectiveness is improved using a longer angiocatheter., J. Trauma Acute Care Surg. 80, 272–7 (2016).

4. D. V Laan, T. D. N. Vu, C. A. Thiels, T. K. Pandian, H. J. Schiller, M. H. Murad, J. M. Aho, Chest wall thickness and decompression failure: A systematic review and meta-analysis comparing anatomic locations in needle thoracostomy., Injury 47, 797–804 (2016).

5. Naik ND, Hernandez MC, Anderson JR, Ross EK, Zielinski MD, Aho JM. Needle decompression of tension pneumothorax with colorimetric capnography. Chest. 2017;152:1015–20. - DOI

# The Solution: Pneumeric Capnospot<sup>®</sup>

*Visual Detection Device Removes Operator “Guesswork”*

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- **Rapid, efficient, visual detection of needle placement**
- **FDA clearance with superiority claim** granted March 2023
- Designed and developed at **Mayo Clinic**
- Compelling animal and human data suggest clear superiority to the current standard of care
- **Customers and leading distributors** are current purchasers of the Capnospot<sup>®</sup>



*FDA 510(k) cleared with a superiority claim to the standard of care*

# Pneumeric Capnospot<sup>®</sup>

## Competitive Analysis – Defining the New Standard of Care

	Cost	Easily Portable	Level of Difficulty	Setup Time	Binary Confirmation	False Positive
Capnospot <sup>®</sup>	\$20	Yes	Easy	Minimal	Yes	No
Spring-Loaded Angiocatheters	\$35	Yes	Advanced	Minimal	Yes	Yes
Ultrasound	>\$1,500	No	Advanced	Extensive	No	No
Water Seal Chamber	\$500	No	Advanced	Extensive	No	No

Angiocatheter average selling price of ~\$20. Average Needle Decompressions ~4 per patient.  
Saving just one Angiocatheter justifies the economic cost of the Capnospot<sup>®</sup>

# Pneumeric Capnospot<sup>®</sup>

## Patent Protection

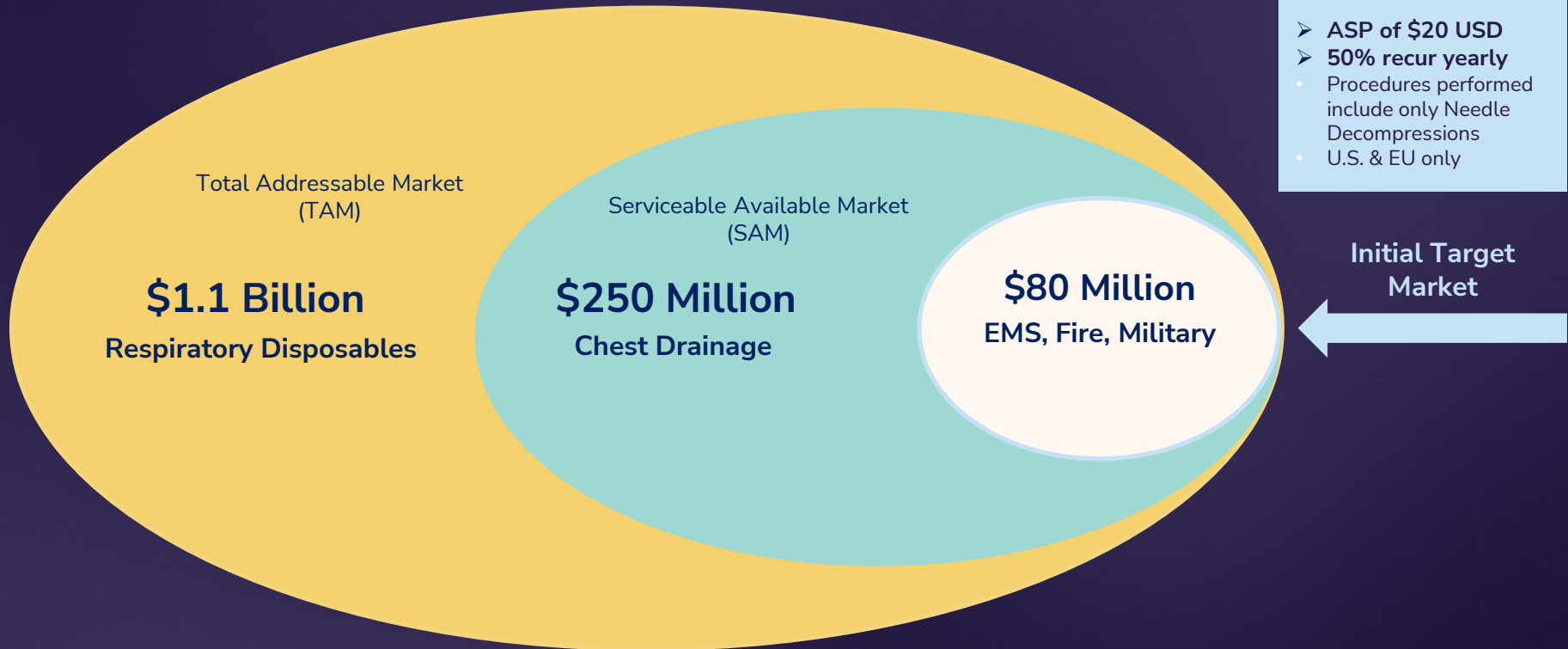
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- **Two (2) Issued U.S. Utility Patents:**
  - **US 10,842,920 B2** – Qualitatively detects CO<sub>2</sub> after chest decompression.
  - **US 10,335,524 B2** – Quantitative measurement of CO<sub>2</sub> and pressure of gas coming out of the chest.
- **PCT Patent** – U.S. Patent in Ports of Trade
- **U.S. Provisional Patent** – Device Design



***Broad exclusion of methods, design, and sensing modalities  
for devices that test gas expelled from the thorax***

# Addressable Market Estimates (U.S. & EU)



# Unit Economics

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*Pneumeric is a B2B2C company that utilizes both a wholesale distributor (~85% of sales) and retail direct-to-user (~15% of sales) model.*

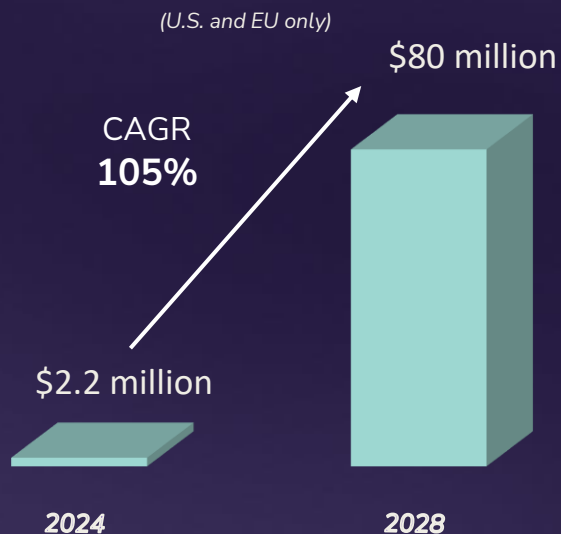
	<b>Wholesale</b>	<b>Retail</b>
Average Order Value (AOV)	\$18.00 per unit	\$33.00 per unit
COGS	(\$3.00) per unit	(\$3.00) per unit
<i>Gross Margin (%)</i>	83%	90%
Customer Acquisition Cost (CAC)	\$0	(\$2.00) per unit
Post-Marketing Profit (Loss)	\$15.00 per device	\$28.00 per device

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# Forward-Looking Projections

*Evidence generation from clinical studies will lead to practice guideline adoption*

Estimated Revenues at 5% and 80%  
Market Penetration, Respectively (USD)




# Go-To-Market Strategy

## CIVILIAN Initial Target Market

Segment	Marketing Partner	Distributors	Decision Maker
EMS		 	Medical Director, Individual Providers
Fire & Rescue			Medical Director, Individual Providers
Hospital Emergency Rooms			Medical Director, Individual Providers
Air Ambulance			Medical Director

## MILITARY Secondary Target Market

DoD Special Forces		Doctrine & Unit Commanders
DoD Military		Doctrine & Unit Commanders
DoD Hospital		Medical Director, Individual Providers

# Development Timeline



# Exit Strategy

We believe Pneumeric would potentially be attractive to several categories of acquirers\*:

Colorimetric  
Endotracheal Device  
Manufacturers



Trauma Kit  
Suppliers  
(OEM)



Chest Tube  
Manufacturers  
(OEM)

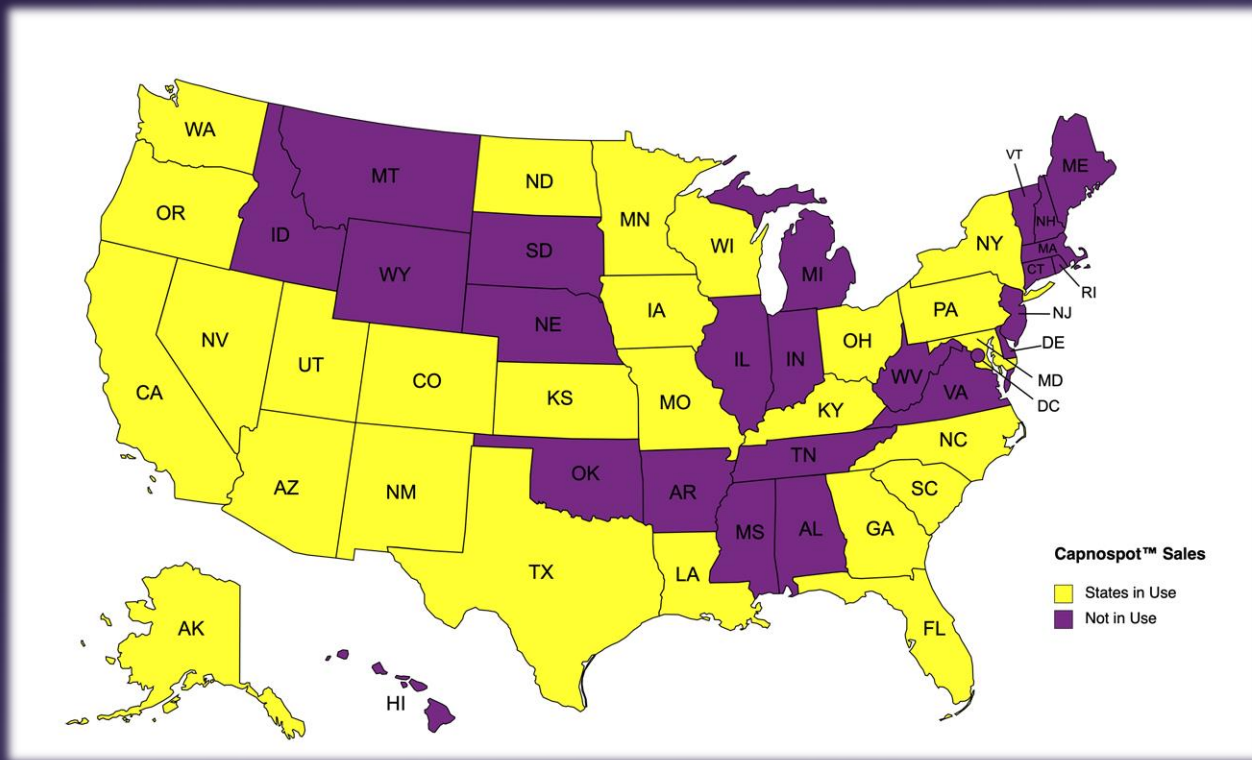


Angiocatheter  
Manufacturers  
(OEM)



\* The Company is not actively involved in merger discussions with any of the above-named companies.

# Capnospot<sup>®</sup> is becoming the standard.





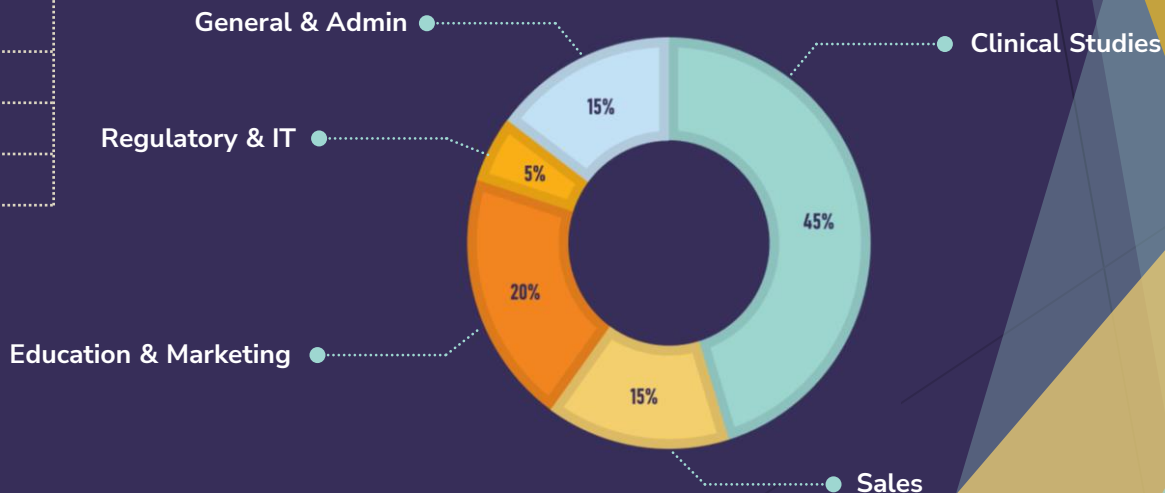
# PNEUMERIC SUMMARY SLIDE

Pneumeric, Inc. is a medical device company aimed at improving care in trauma for those affected by pneumothorax. The Pneumeric Capnospot® is an indispensable visual detection device for detection of a life-threatening condition, tension pneumothorax, in the prehospital space. The condition occurs in approximately 5% of all major trauma and requires immediate care. Designed and developed at Mayo Clinic, the Capnospot® received FDA clearance in March 2023 with a superiority claim over the current standard of care.

Pneumeric seeks **\$1 million** in Series A Preferred Equity at a \$10 million pre-money valuation to accelerate sales of the Capnospot® worldwide.

## Use of Proceeds – Series A Round

Angel Funds	\$950k
Founders	\$250k
Friends & Family	\$1 million



# Recognition

## Awards

**Mayo Clinic Office of Translation to Practice**  
*Startup Grant Funding*

**TPDF**  
*Startup Grant Funding*

**MN Cup**  
*Best Southern Minnesota Company*  
*Best Greater Minnesota Company*

**UMN**  
*Emerging Medical Innovation Valuation Competition*

**Columbia Business School**  
*Lang Fund Innovation Prize*

**SoCalBio**  
*Top Biotech Startup*

**YoungStartup**  
*Top Innovation Seed Stage*



**New York Weekly**



**KIVO DAILY**



# Pneumeric Team



**John Aho M.D., Ph.D.** – CEO & Chief Medical Officer – Inventor. General trauma surgeon and engineer. 20+ patents and 90+ manuscripts in medical devices and clinical reduction to practice. KOL in the trauma space and pneumothorax care.



**Jonathan Sackner-Bernstein, M.D.** – Chief Regulatory Officer – formerly a senior official at the United States Food and Drug Administration.



**Todd Wiltshire, CFO & Chief Investment Officer** – 30+ years of experience in finance, most recently at Fidelity Investments Capital Markets as VP.



**Sasha Gentling, CFA** – Co-Founder – 10+ years in finance. Previously at Mayo Clinic Treasury Services. Sasha received her MBA from Columbia University and is a CFA charterholder.



**Justyn Whitson** - Director of Sales & Marketing – 12+ years in Public Safety Law Enforcement and Emergency Medical Services. Market specialist in the chest trauma space.



Legal Team – Full-service law firm headquartered in Minneapolis, MN.



IP Legal Team – Fish & Richardson P.C.



NAGL MedTech™ – Pneumeric, Inc. designated manufacturer.



Accounting – EideBailly. Top CPA and consulting firm.

# THANK YOU



**PNEUMERIC**  
CAPNOSPOT

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