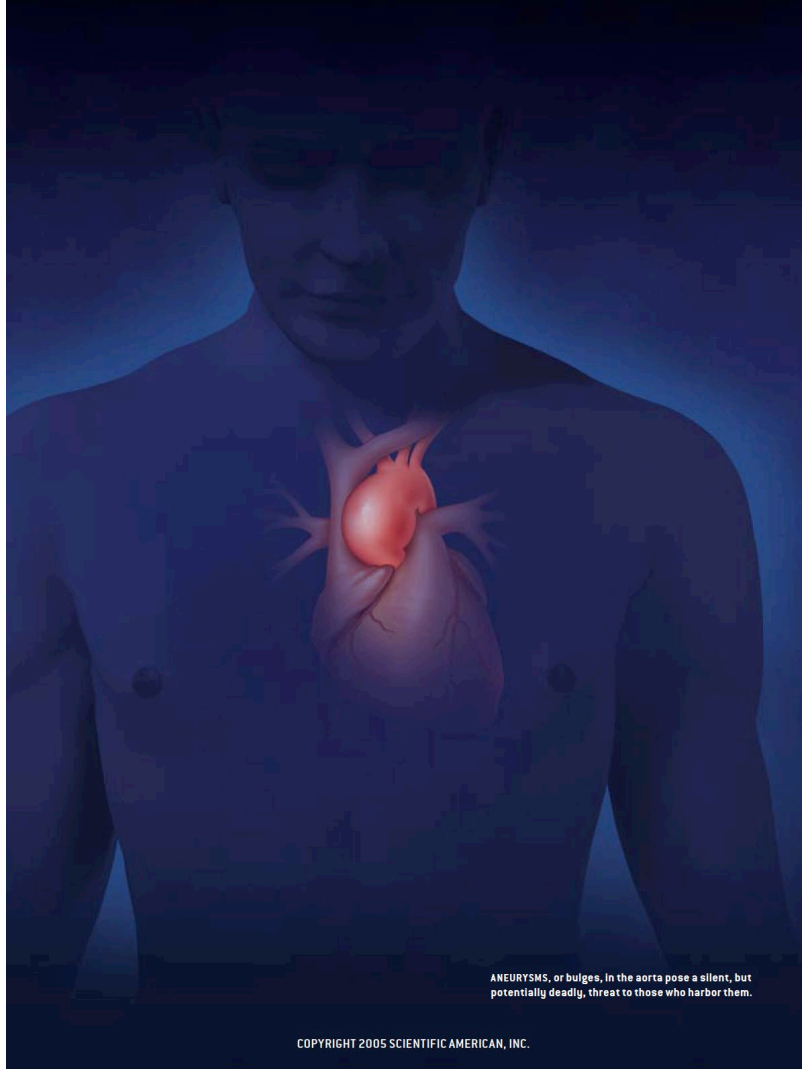


AI-powered risk assessment tool for thoracic aortic aneurysm

Enhancing clinical decision-making for aortic repair surgery



- **THE PROBLEM:** Aneurysm disease--A “silent killer”
- No symptoms until ruptures or splits (“aortic dissection”)
- 14th highest cause of death in United States
- 8% of all sudden deaths

Worldwide guidelines for aortic decision-making developed at Yale

Huge database (>4000 patients followed for decades)

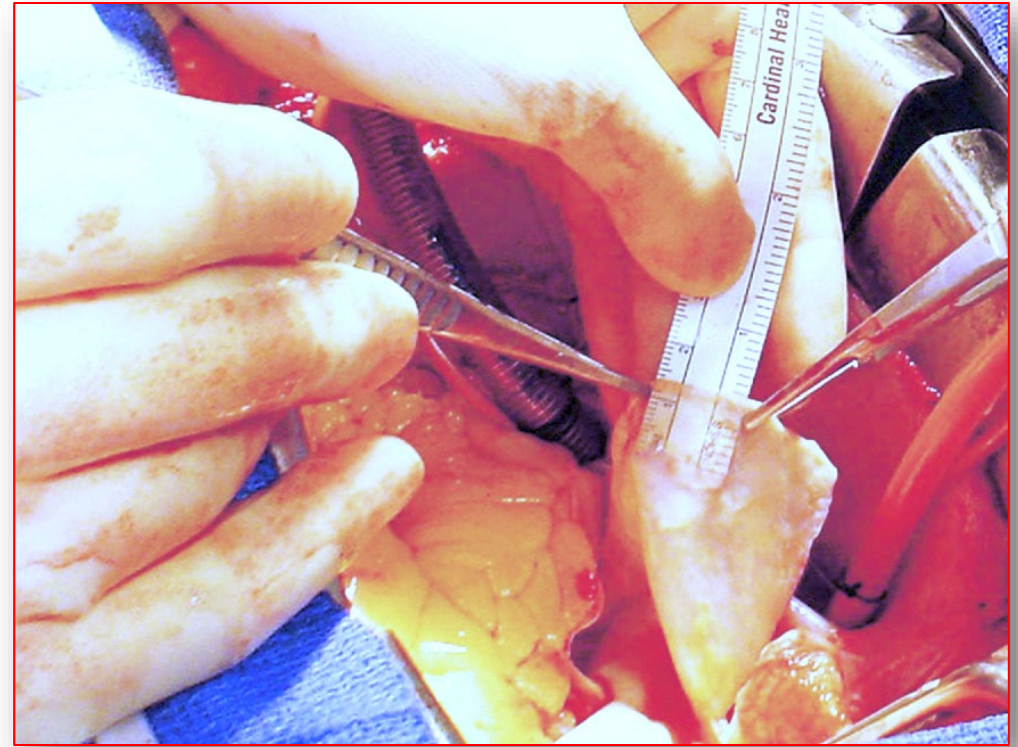
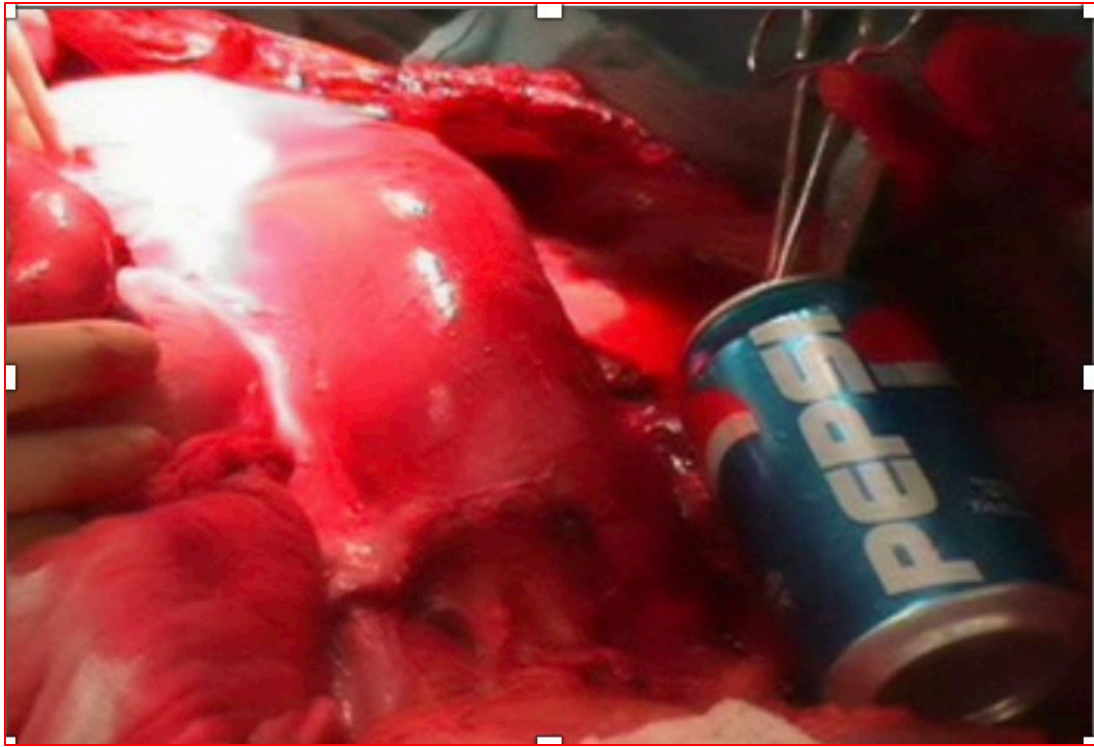
Unique resource for developing prediction tools

Decision to operate currently based on Yale studies:

Aortic diameter > 5 cm

Yale studies basis for both US and European Guidelines in aortic care

Thoracic Aortic Aneurysm



Yale-EMERGE Team is uniquely positioned to transition from simple diameter to an AI-based Aortic Risk Calculator for deciding when to operate for thoracic aortic aneurysm



John Elefteriades, MD

- Co-founder / Chief Medical Officer
- Former Chief of Cardiothoracic Surgery (Yale)
- William W.L. Glenn Professor of Surgery (Cardiac)
- Founder of Aortic Institute at Yale
- #1 expert in thoracic aneurysm in the world
(*expertscape* and Scholar GPS)
- 635 medical publications, 11 books
- Inventor of “cooling catheter” for spinal cord protection in aortic surgery
- Honorary degrees from University of Liege, University of Parma

CLINICAL EXPERTISE



Danny Saksenberg

- Pioneer in Machine Learning with extensive experience in AI applications
- Proven track record in developing healthcare AI solutions
- Lecturer on AI at prestigious institutions including Yale, Stanford, and Singularity University
- Founder and director of numerous startups and established businesses

AI + COMMERCIAL EXPERTISE

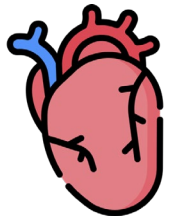
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The Problem

Aortic aneurysms pose significant risks of dissection, rupture, and death.

Current risk assessment methods are suboptimal.



Standard of Care

Manual assessment based on aortic size alone.

Likely other important variables ignored/unaccounted.



Inflection Point

Increasing aneurysm prevalence due to aging population.

Need for more accurate, personalized risk assessments to improve patient outcomes.



THE UNMET NEED: To develop a novel, modern, automated, sophisticated, more accurate Aortic Risk Calculator tool.

➤ **THE MEANS:** Leverage Yale Aortic Institute's unique database to populate Emerge AI risk calculation programs.

Why now?

Market readiness

Growing demand for AI-driven solutions in healthcare to improve decision-making and patient outcomes.



Data availability

Yale's has assembled the largest and most-detailed aortic-aneurysm dataset in the world



FDA Status

- Initial inquiry submitted to FDA
- Aiming to position as tool to assist in gauging next year's risk of adverse event
- As no diagnosis or therapeutic recs being made, possible no FDA regulation will apply

IP Status

- Patent filed
- No prior similar art yet identified
- Yale Database hard to reproduce
 - 4000+ patients/120 variables
 - 25-year duration
 - Precise, verified aortic measurements

UNIQUE SOLUTION/THERAPEUTIC PRODUCT

UNIQUENESS

- Innovative AI-powered, web-based application
- Powered by unique Yale Aortic Institute database—largest in world
- Provides personalized risk assessments for dissection, rupture, or death in aortic aneurysm patients.

KEY FEATURES

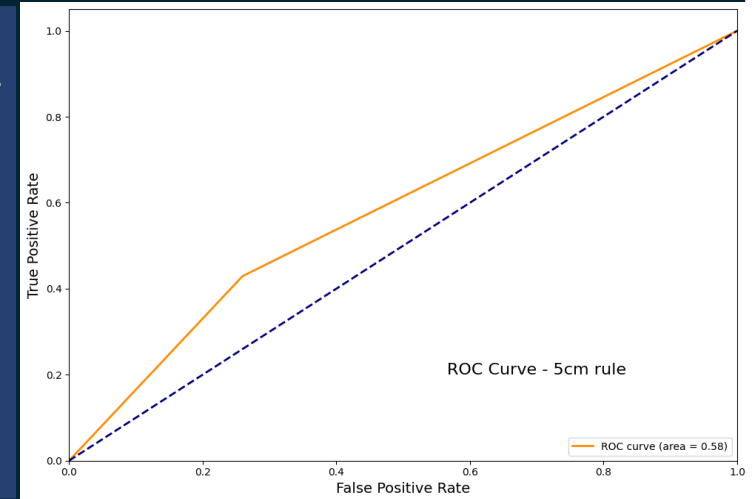
- Advanced machine learning algorithms for accurate predictions.
- User-friendly interface seamlessly integrates into clinical workflows.
- Continuous learning to improve with more data.
- Substantially more accurate – reduces unnecessary surgery by 75%
- Reduces fatalities from failure to repair aortic aneurysms
- Personalized assessments vs. one-size-fits-all traditional methods.

COMMERCIAL POTENTIAL

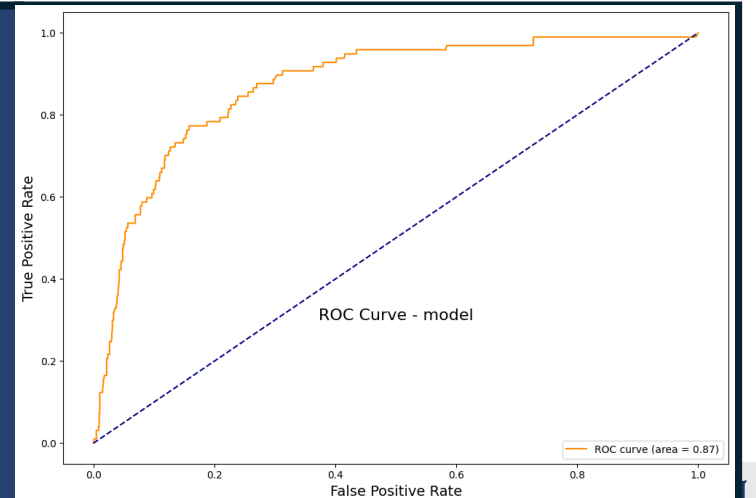
- Most major University Hospitals in the world now have an Aortic Program
- They need an Aortic Risk Calculator for (1) clinical care and (2) Legal risk mitigation.

NEGATIVE PREDICTIVE (SAFETY) VALUE 98%

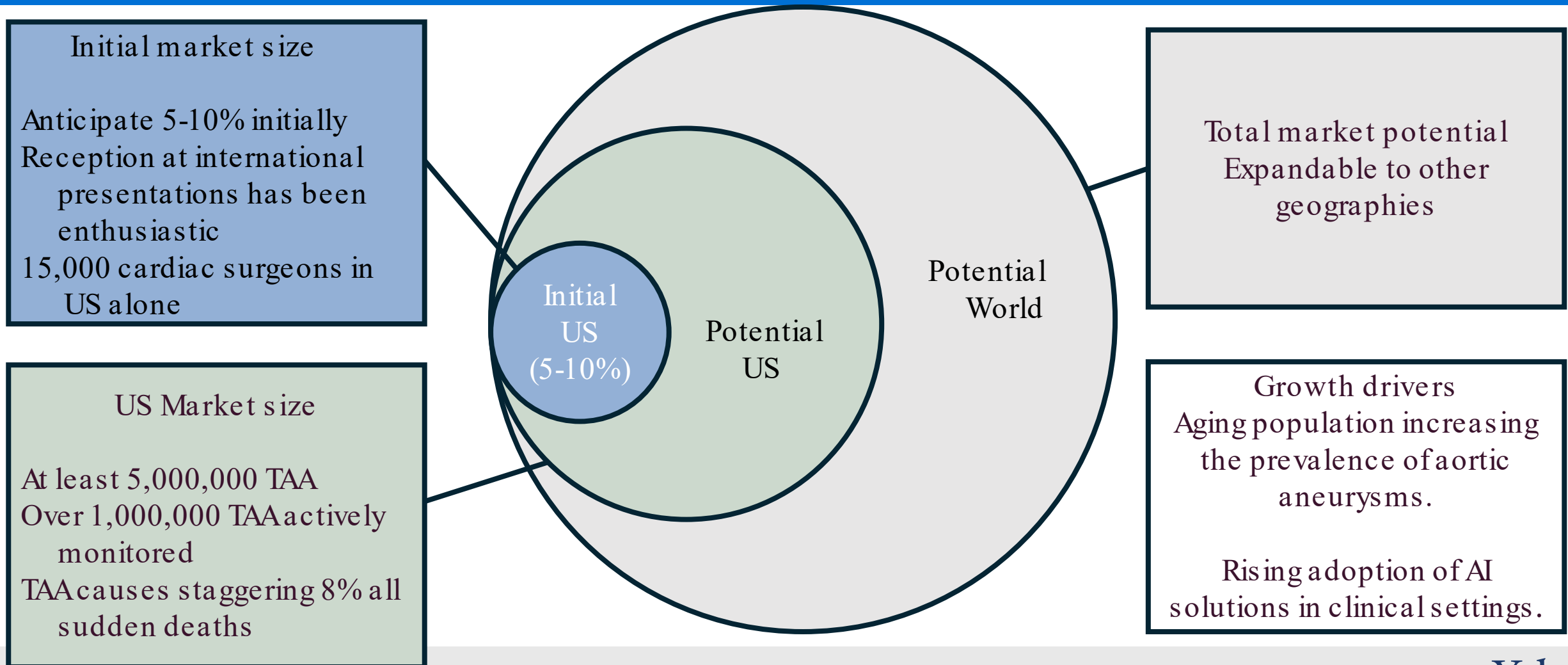
Current accuracy



Our solution

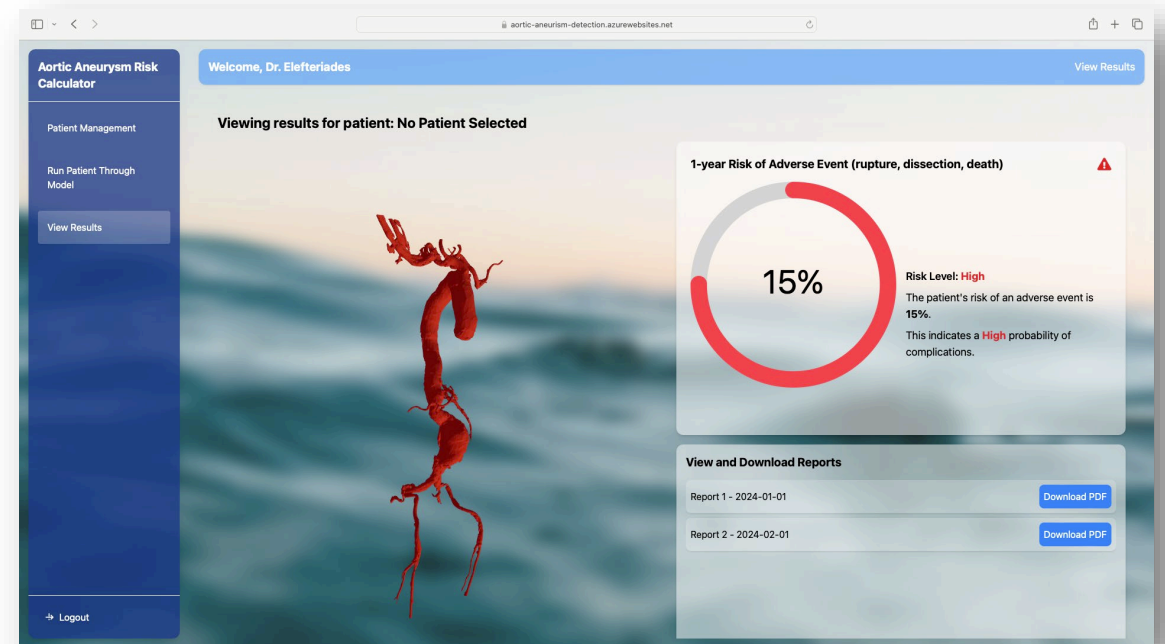
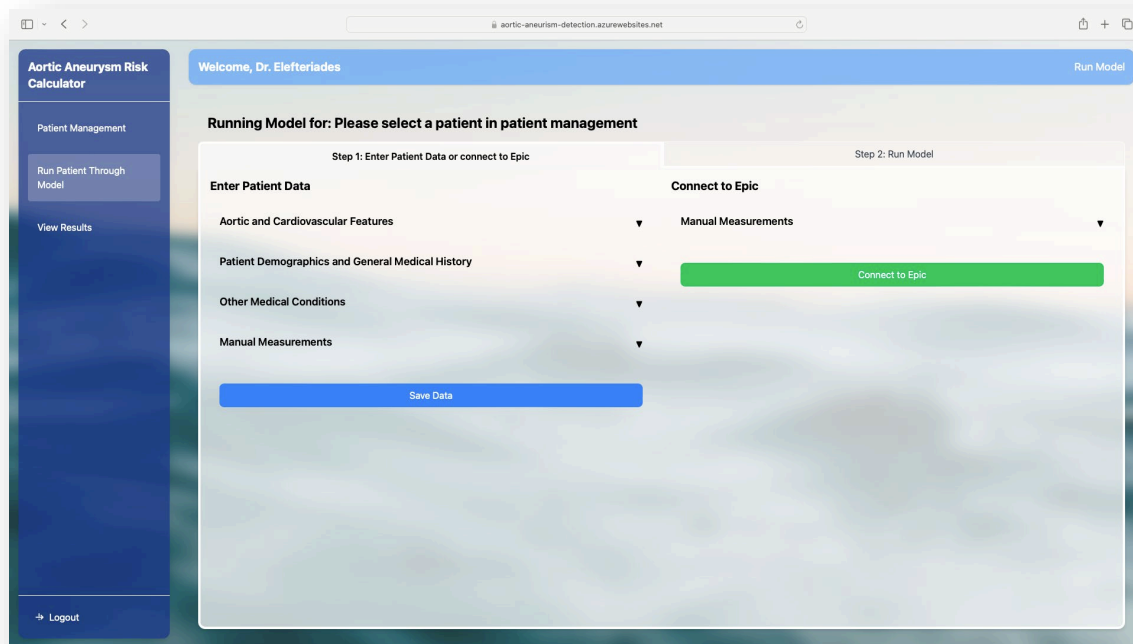


WHAT IS THE MARKET OPPORTUNITY FOR TAA (Thoracic Aortic Aneurysm)?



IMPLEMENTATION

Initial screens have been developed



Timeline for Milestones

FY 2025

- Raise_seed funding
- Automate aortic size measurements (currently manual)
- Enhance product--Improve User Interface (UI) and User Experience (UX)
- Achieve regulatory approval - FDA submission and approval process (if deemed necessary)

FY 2026

- Security & Compliance - Implement robust cybersecurity measures and QMS
- Build broader team - including marketing, finance, and compliance
- Enter Market

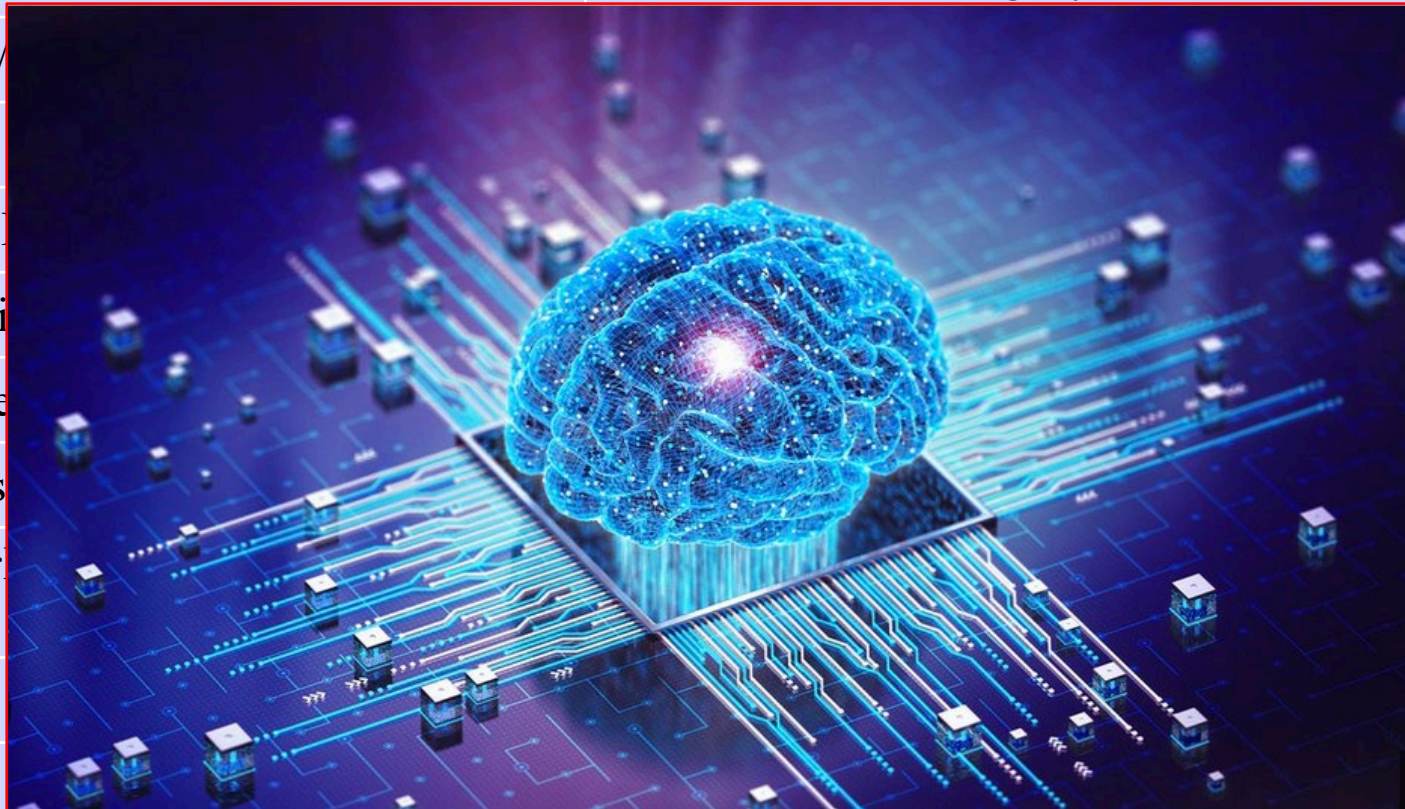
Budget itemFDA	Short-term budget
Tool Enhancement	\$50,000
UI/UX improvement	\$50,000
FDA regulatory consulting	\$40,000
Cybersecurity	\$80,000
QMS compliance	\$50,000 initial
IP Protection	\$30,000 initial

TOTAL

\$300,000

Non-dimensional Criteria

	TOPIC	TAKE HOME MESSAGE
	Diameter (Brief)	Good start—Served us well.
1	Pain	Pain mandates surgery.
2	Length/	
3	Genes	
4	Family	
5	Bicuspi	
6	Diabete	
7	Aortic s	
8	Biomar test)	
9	KIF6	
10	Root vs	
11	PET Imaging	PET“light-up” implies activity and rupture risk
	Judgment	KEY



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