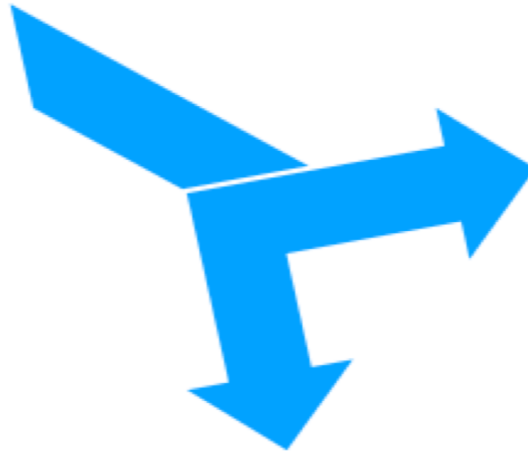


# *DeTour* Sheath System



Anand Brahmandam, MBBS  
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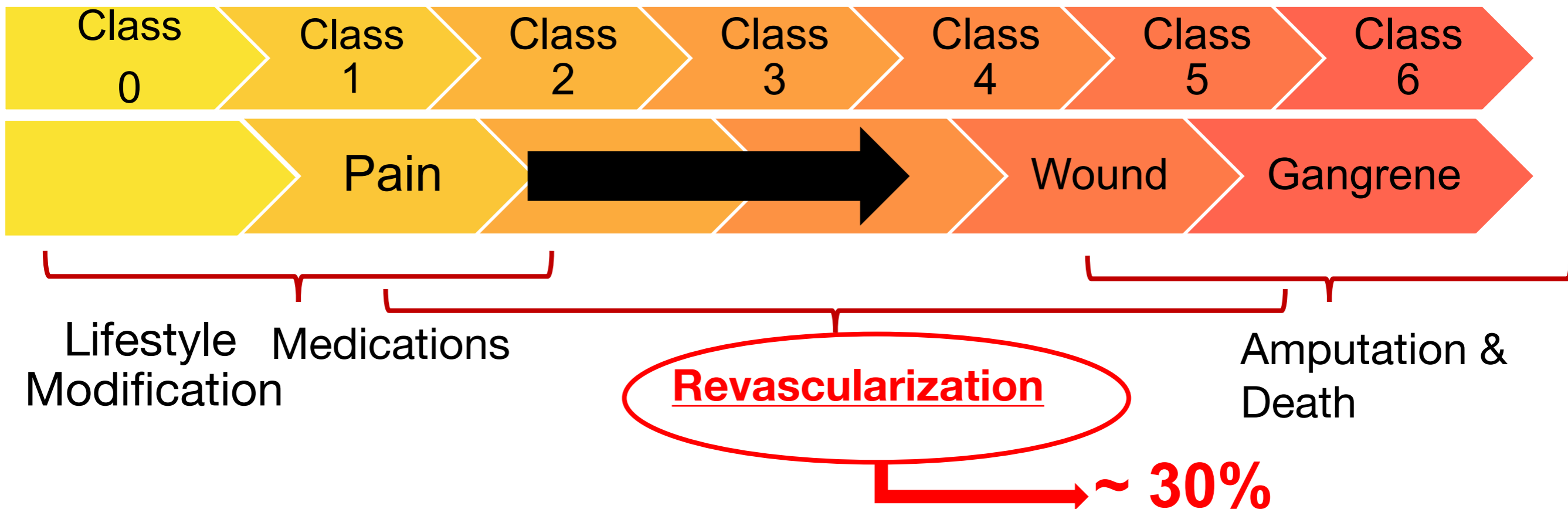
Abhay Ramachandra, PhD  
Biomedical Engineering

Alan Dardik, MD PhD  
Division of Vascular Surgery

# Problem:

## PAD is a Major Public Health Crisis

- Peripheral arterial disease: > 200 million persons
- ~900,000 procedures per year
- Estimated Healthcare cost ~\$6 Billion per year



<sup>1</sup> Crique et al Epidemiology of Peripheral arterial disease [Circ Res.](#) 2015 Apr 24;116(9):1509-26. doi: 10.1161/CIRCRESAHA.116.303849.

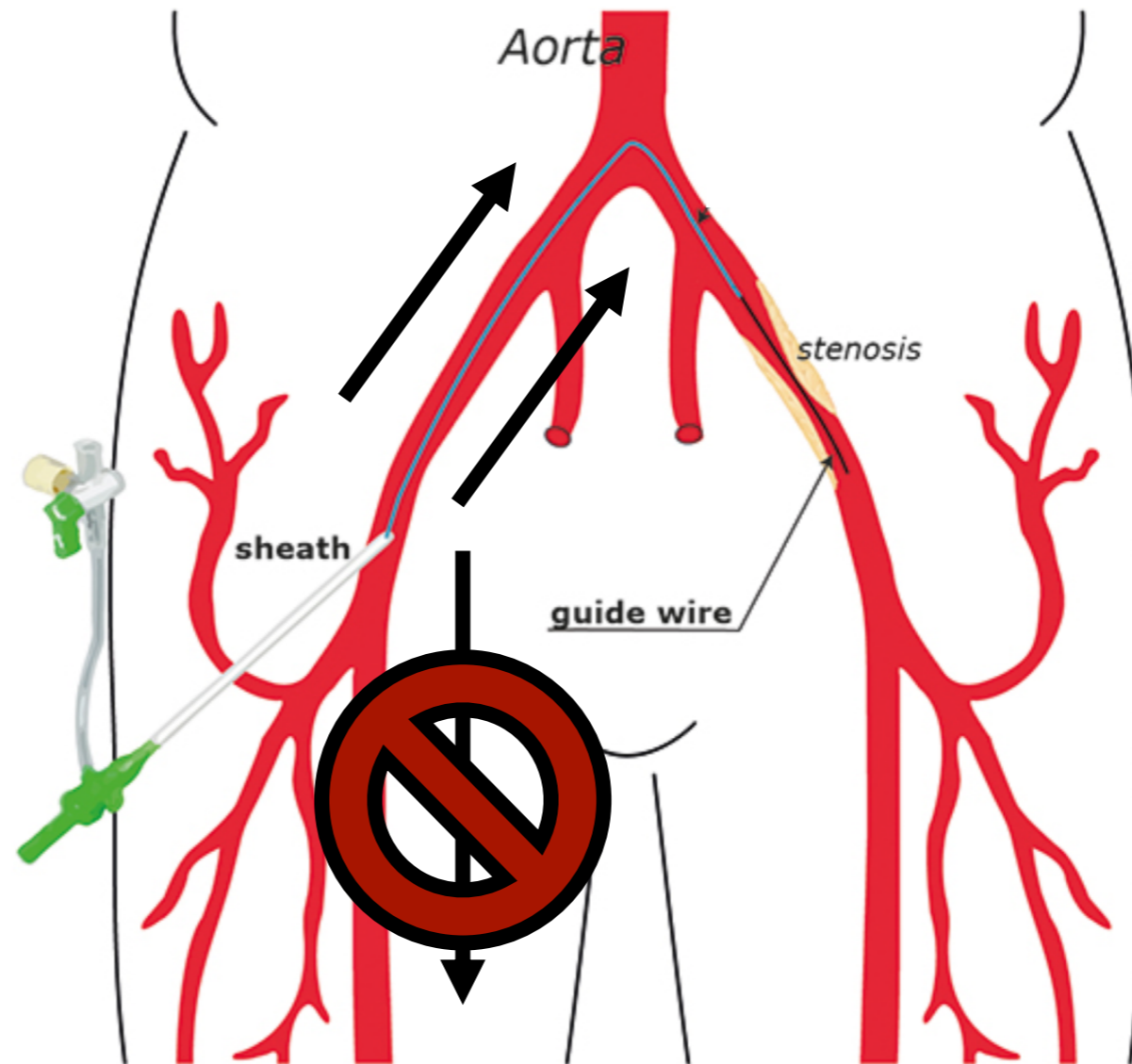
<sup>2</sup> Jim et al. Population-based analysis of inpatient vascular procedures and predicting future workload and implications for training [J Vasc Surg.](#) 2012 May;55(5):1394-9; discussion 1399-400.



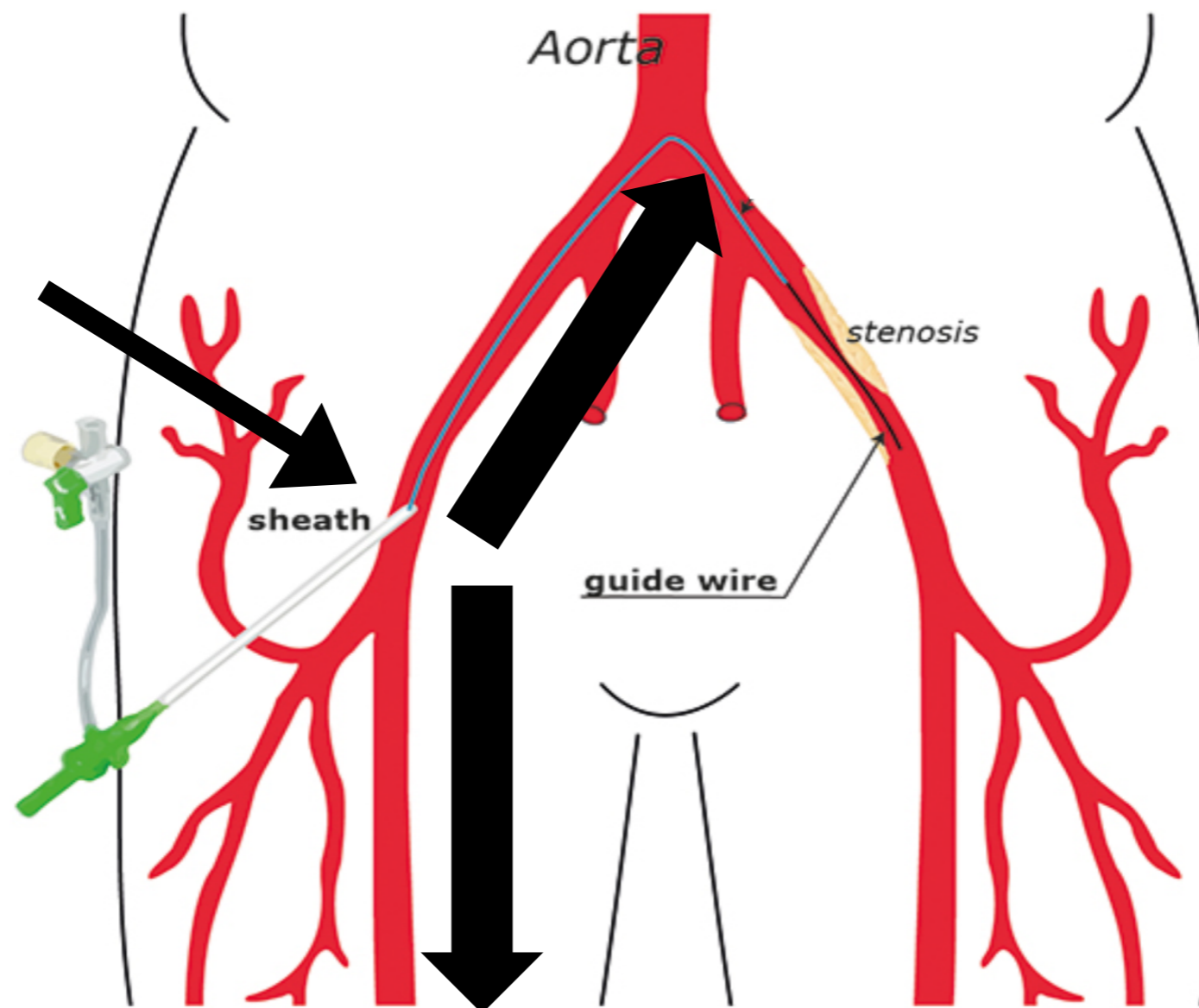
# Problem: Angiography Fraught with Risks

- Groin Hematoma (4.5%)
  - Pseudoaneurysm (~1%)
  - Closure device related (1%-7%)
  - AV Fistula (~1%)  
(70% need intervention)
  - Arterial Dissection (~ 7%)
  - Embolization (~ 1% to 4%)
  - In-situ Arterial thrombosis (~1%)
  - Acute Renal Injury (Contrast related; ~3%)
- Cost: ~ \$40,000 per event (~\$ 400 Million per year)

# Current Practice: Unidirectional Sheath



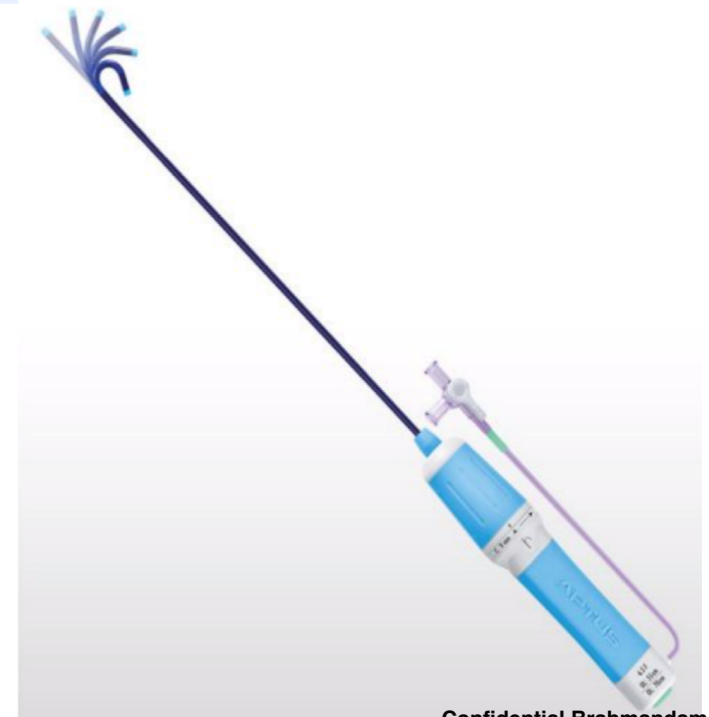
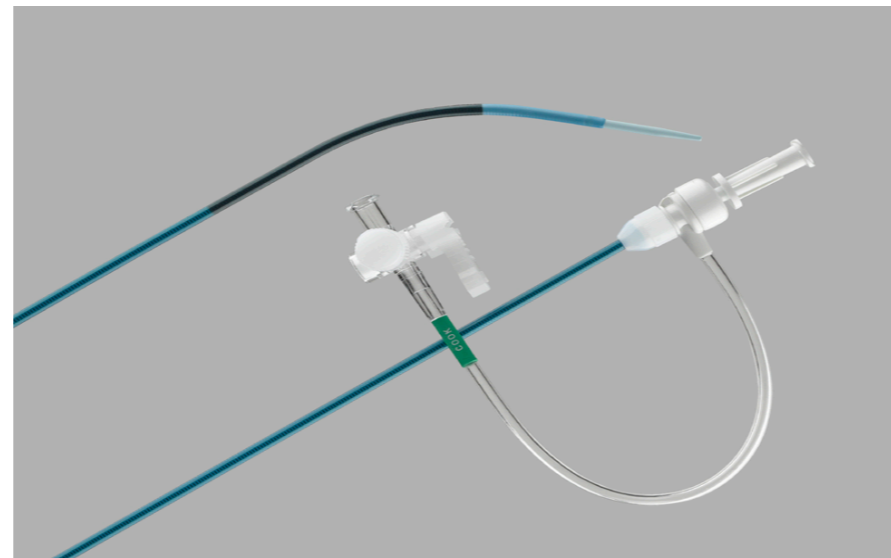
# Solution: Single Access Bidirectional Sheath



# Current Landscape:

| Company        | Product           | Feature               |
|----------------|-------------------|-----------------------|
| Cordis Medical | Avanti/Brite Tip  | Unidirectional access |
| Merit Medical  | Prelude           | Unidirectional access |
| Cook Medical   | Ansel/Reveal      | Unidirectional access |
| Terumo Medical | Terumo<br>FineDuo | Unidirectional access |
|                | Dryseal           | Unidirectional access |
| Medtronic      | Tourguide         | Unidirectional access |

**No bi/multi directional access**



# Market Opportunity/Size:

- Total U.S. market for PAD interventions ~ \$3.4 Billion
- Targeted market ~ \$1.8Billion (53% of all procedures)
- Hepatobiliary Imaging & Treatment
- Non-Medical Uses: Plumbing, ducts



# Projected Market:

- Customers:

Hospitals/Health Systems

Outpatient Angiography Suites/Cath labs

Office based Labs (OBLs)

- End users: Vascular Surgeons

Interventional Radiologists

Cardiologists

Interventional Pulmonologists/Nephrologists

# Value Proposition:

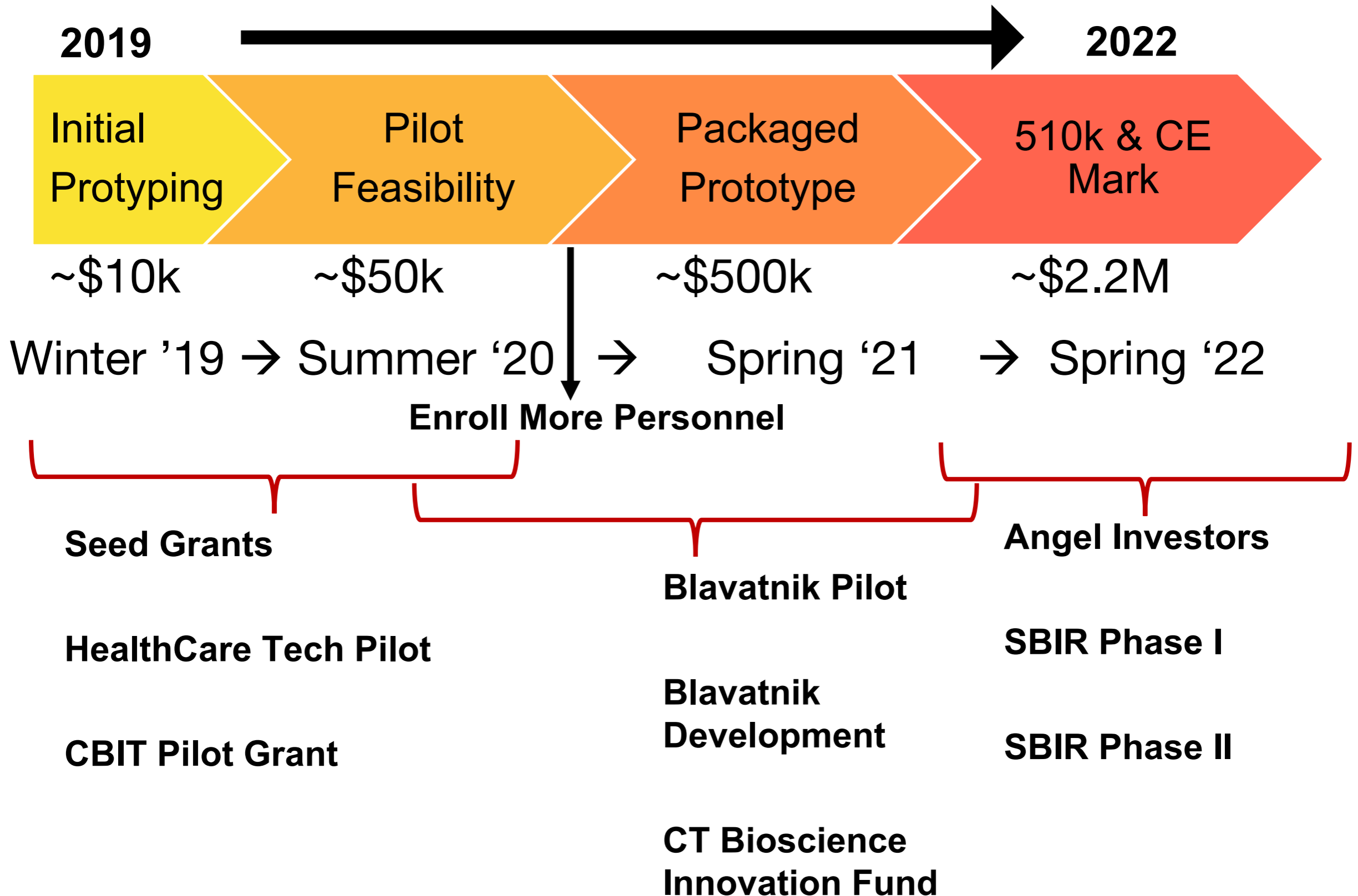
Large Scale ↓ Interventions/Cost saving

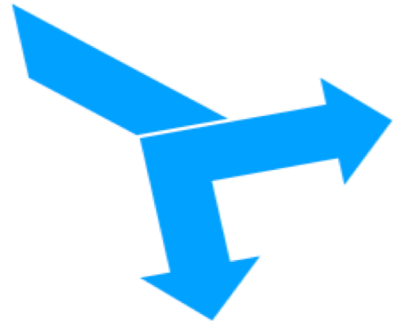
- ↓ **Interventions** (~100,000 procedures per year)
- ↓ **Closure** devices (~\$45 million savings)
- ↓ **Complications** by 50% (~\$100 million savings)
- ↓ **Hospital length of stay** ~2 days (~\$400 million savings)
- Overall **cost savings** for hospitals and outpatient centers (~\$600-800 million per year)

# Value Proposition: Seamless Integration with Current Technology

- First generation device aimed at diagnostic procedures
- Seamless integration with existing technologies (Balloons/Stents/Catheters)
- Reimbursed by existing CPT codes (currently only primary procedure reimbursed)
- Projected Sheath Cost → (~ \$350 per unit)

# Timeline / Funding Request:





# *DeTour* Team



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