

# Point of Care Testing in Primary Care: Facilitators and Barriers to Adoption

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# Any successful POC technology must:

- change/improve how we manage patients/deliver care -- **Behavioral impact**
- Improve, adapt, and scale to clinical workflow  
**Operational Impact**
- (make financial sense)

# POS Technology and Other Industries



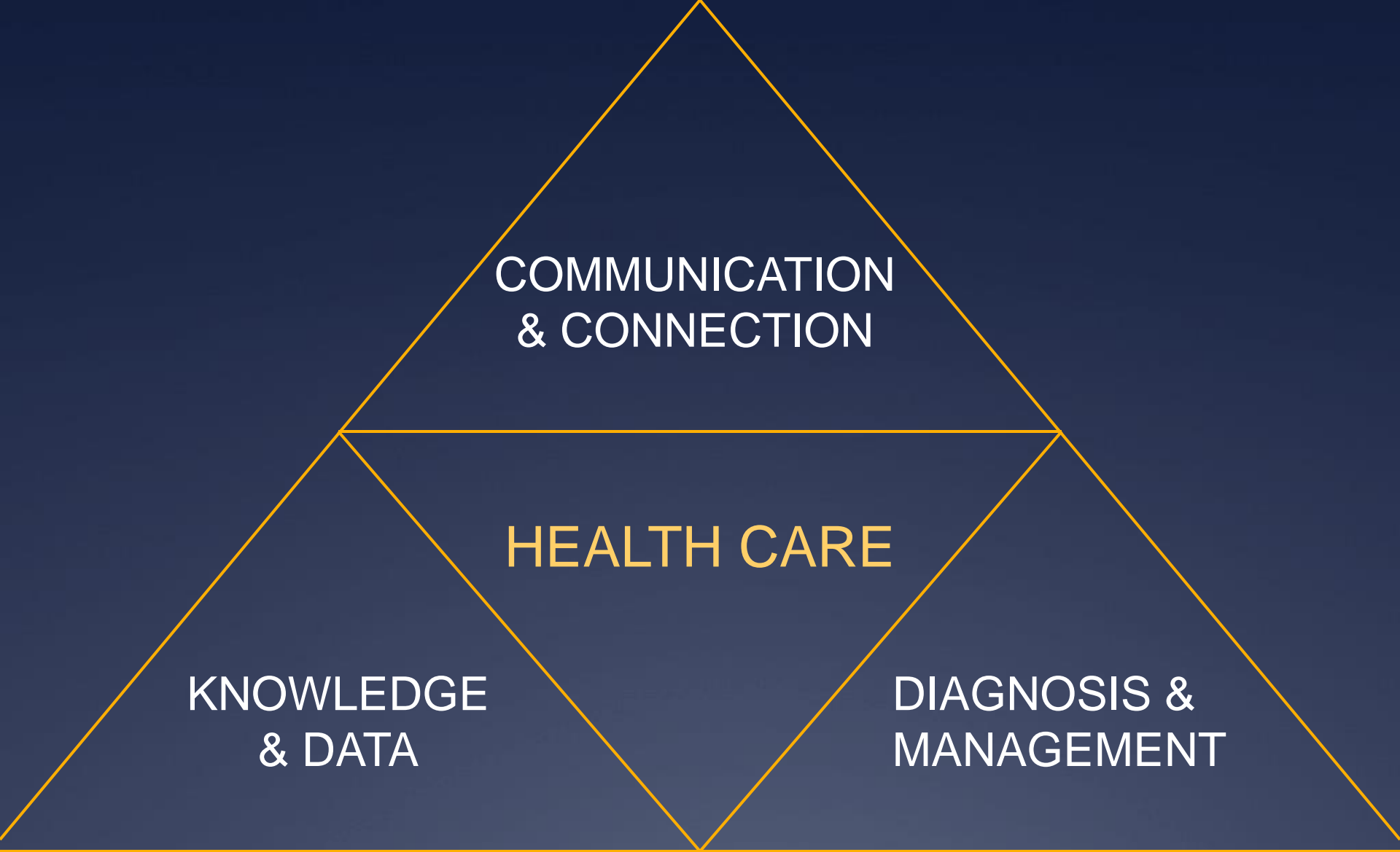
# POS Technology and Other Industries



# Health Care

A continuum or spectrum of actions, interactions, and relationships:

- provide diagnostic; treatment; educational and preventive services for disease, illness or impairment
- enable wellness

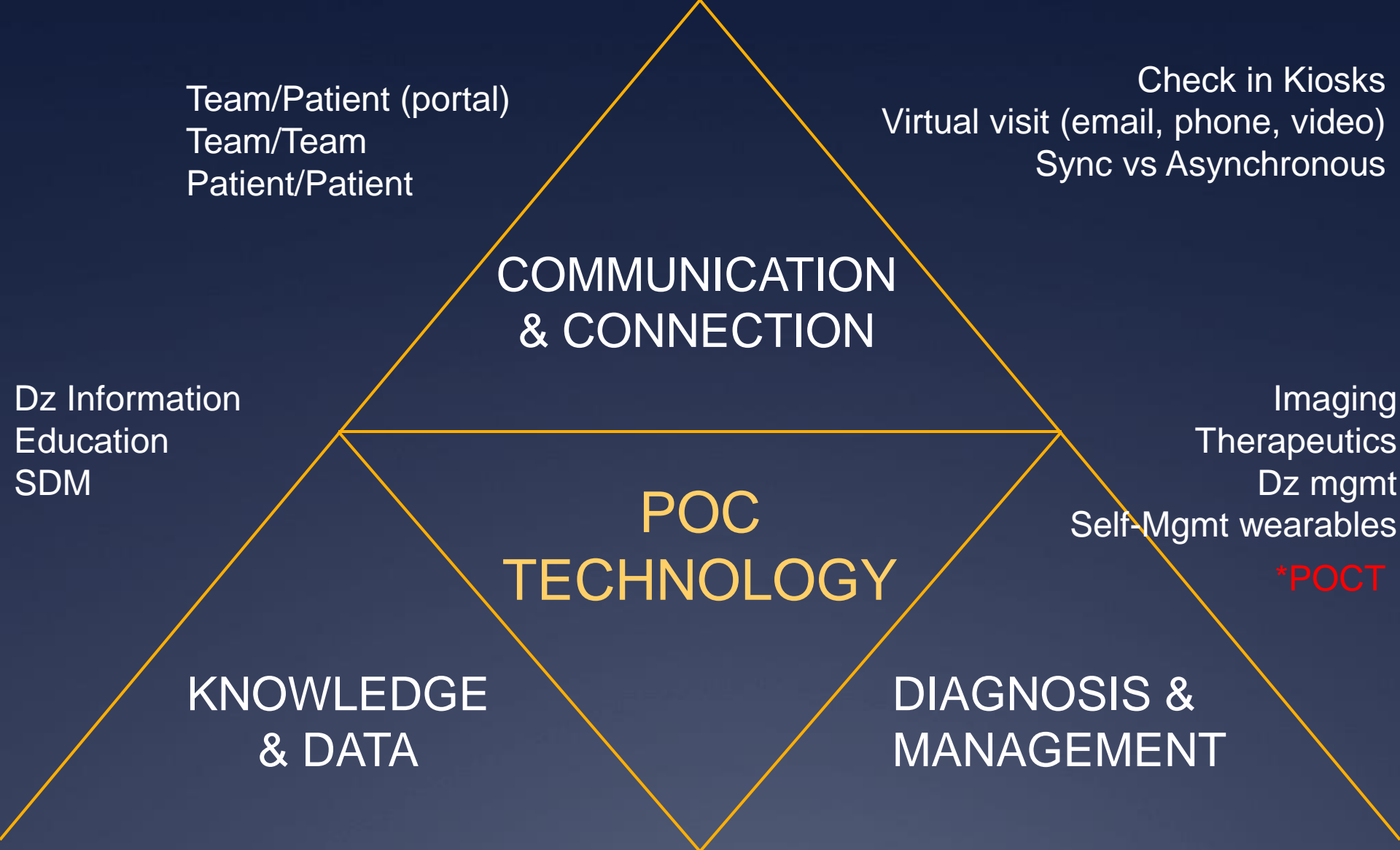


**COMMUNICATION  
& CONNECTION**

**HEALTH CARE**

**KNOWLEDGE  
& DATA**

**DIAGNOSIS &  
MANAGEMENT**



Team/Patient (portal)  
Team/Team  
Patient/Patient

Check in Kiosks  
Virtual visit (email, phone, video)  
Sync vs Asynchronous

## COMMUNICATION & CONNECTION

Dz Information  
Education  
SDM

Imaging  
Therapeutics  
Dz mgmt  
Self-Mgmt wearables  
**\*POCT**

## POC TECHNOLOGY

KNOWLEDGE  
& DATA

DIAGNOSIS &  
MANAGEMENT

**\*CLINICAL PULL → INTEGRATION → BEHAVIOR CHANGE**

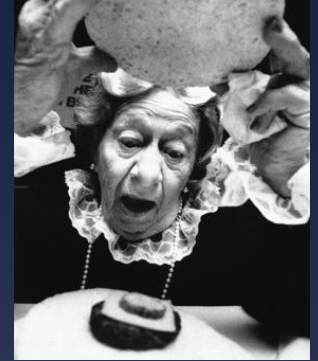
# POCT Outcome Domains

- **Medical:** (QOL, disease control, life expectancy)
  - **Financial:** (more cost effective care)
- } harder
- **Operational:** (Improve LOS, improve efficiency, streamline workflow processes)
  - **Experiential:** (Satisfaction -- patient/care team)
- } easier

\*few studies to date have proven these\*



# POC Research in Primary Care: Where's the beef?



# articles

- Medline 1996 to Present search (8/2014):

➤ Point of Care Systems/Testing/Technology	10,236	
➤ Primary Care	70,313	
✓ POC and Primary Care	328	3.2%

- PubMed online (8/2014):

➤ Point of Care	11,809	
➤ Primary Care	231,894	
✓ POC and Primary Care	1,009	8.5%

# Study of Impact of POCT at APF

## Patient Satisfaction and Metrics of practice efficiency before and after POCT

- HbA1c (diabetes) – (5 min, fingerstick vs 2 days)
- Lipid panel (cholesterol) – (12 min, phlebotomy vs 1 day)
- Comprehensive metabolic panel (chemistry/kidney/liver)

## Metrics included

- Patient satisfaction
- Total number of tests ordered per patient
- Letters and phone calls to patients
- Revisits due to abnormal test results

## Cost Savings

Revenue – costs + efficiency

# Patient Satisfaction with POCT Results

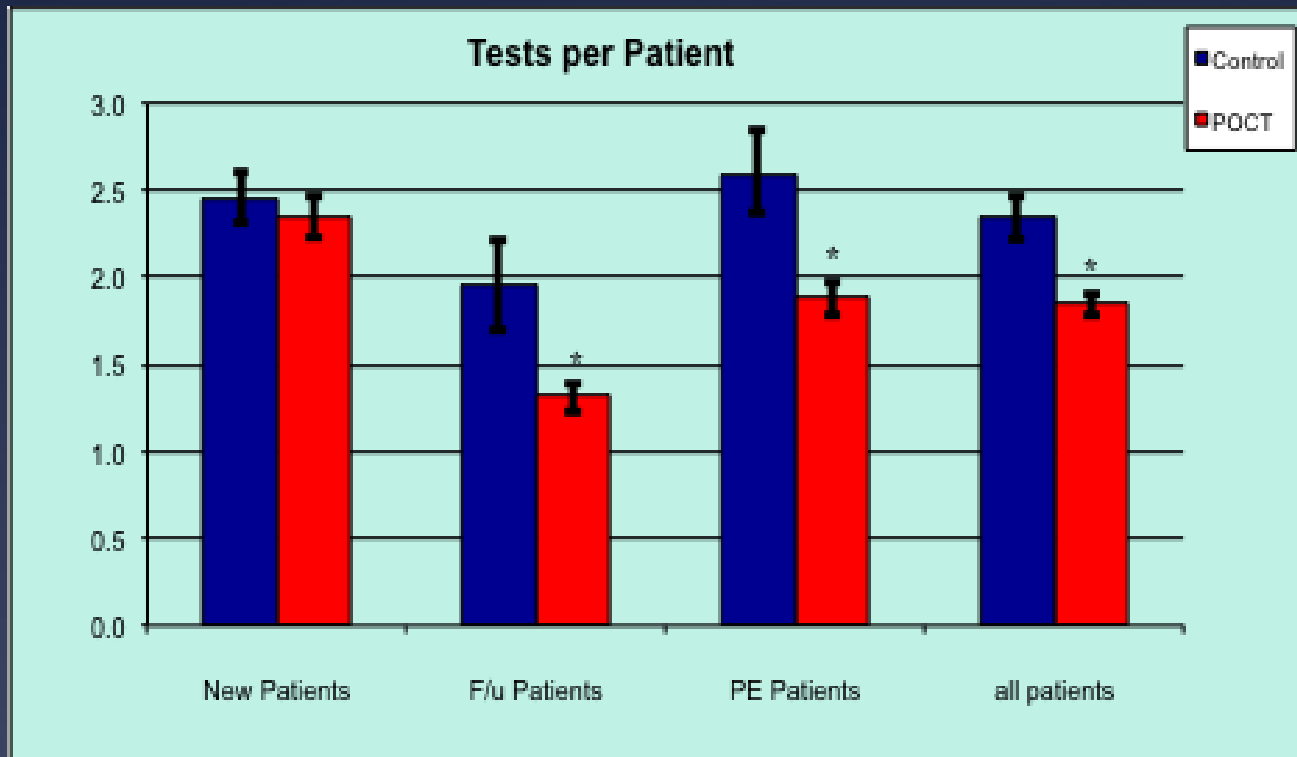
Mean satisfaction score = 3.96 (scale 1-4)

## Patients really liked it:

- Wonderful to have the results and directions for medications while I was here .... It made the plan clear...a true time saver.
- It is so much easier to test at the office and get results all in one visit.
- It was great to be able to consult immediately with the provider having the results in front of us.
- I think it's good to get the results while still talking to the doctor.

*Clin Chem Acta* 2013; 424:8-12.

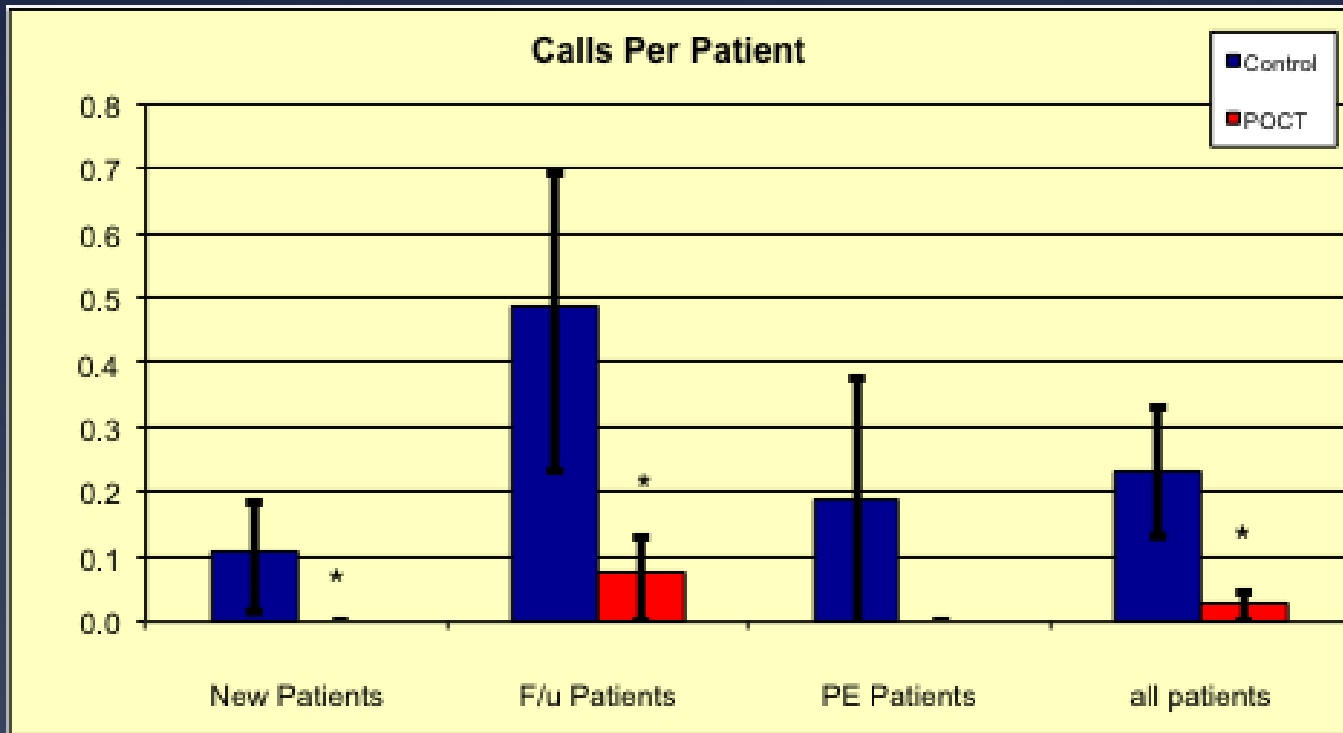
# Total Number of Tests Per Patient



Overall 21%  
Decrease  
in tests per patient  
 $p < 0.0001$

*Am J Clin Path* 2014; 142: 640-646.

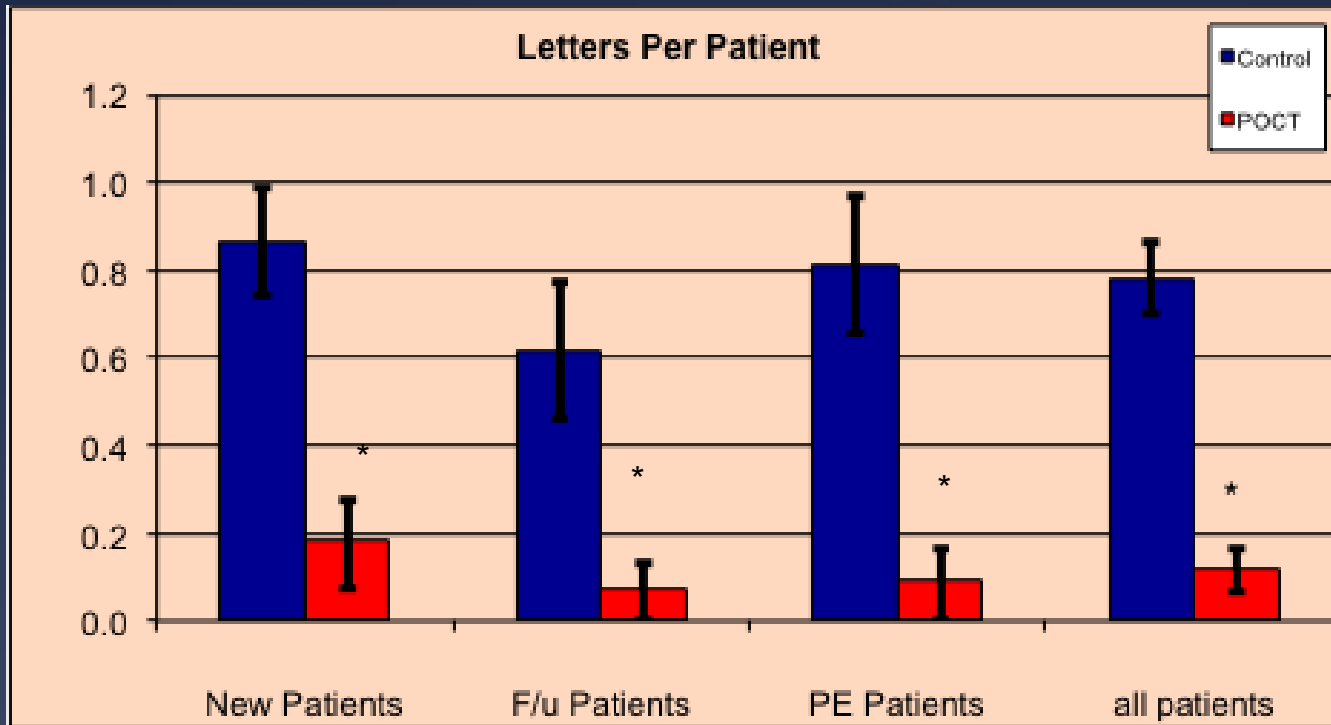
# Telephone Calls Per Patient



Overall 89%  
Decrease  
In calls per patient  
 $p < 0.0001$

*Am J Clin Path* 2014; 142: 640-646.

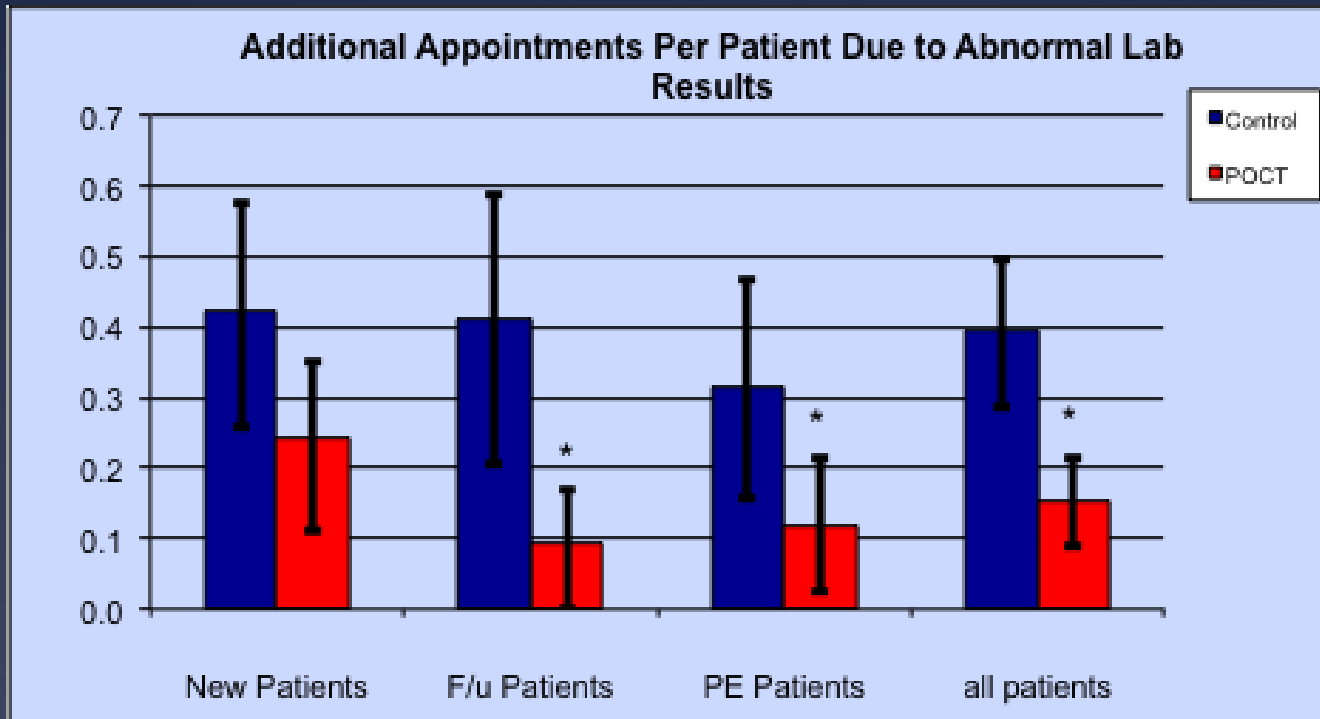
# Letters Sent Per Patient



Overall 85%  
Decrease  
In letters per patient  
 $p < 0.0001$

*Am J Clin Path* 2014; 142: 640-646.

# Visits Resulting From An Abnormal Test Result



Overall 61%  
Decrease  
In visits per patient  
 $p = 0.0002$

*Am J Clin Path* 2014; 142: 640-646.

# POCT Cost/Revenue Analysis

Cost of testing (reagents, consumables, phlebotomy, labor)

Revenue from visit (Medicare level 3 + \$3.00 phlebotomy)

Estimated savings from improved practice efficiency

- savings from reduced # of tests \$6.69/pt
- cost of a simple letter 4.64
- phone call 5.66
- follow up visit 7.65

efficiency savings

\$24.64/pt





# POCT Cost/Revenue Analysis

	\$US per Patient
Cost for POCT	(25.25)
<u>Estimated visit revenues*</u>	<u>31.87</u>
Per patient margin	6.62
<u>Improved practice efficiency</u>	<u>24.64</u>
<b>EST SAVINGS per PATIENT VISIT**</b>	<b>\$31.26</b>

\* depends on the payer mix of the practice.

\*\* does NOT include insurance reimbursement from POCT itself.

# Challenges to Implementing POCT in Primary Care

- Financial viability
- Cost for Instruments and consumables
- CLIA certification (most practices WAIVED only)
- Timing of test (10-30 min office visit)
- Space
- Accuracy of the test (has to compete with standard)
- Sample Acquisition (finger stick, phlebotomy, urine)

# Sample Acquisition: A Sea change?



- Place on skin, micro needles, vacuum
- 20-200uL blood
- Pain free
- Divorce sample acquisition from the visit?
- New paradigm in acquisition and testing workflow?

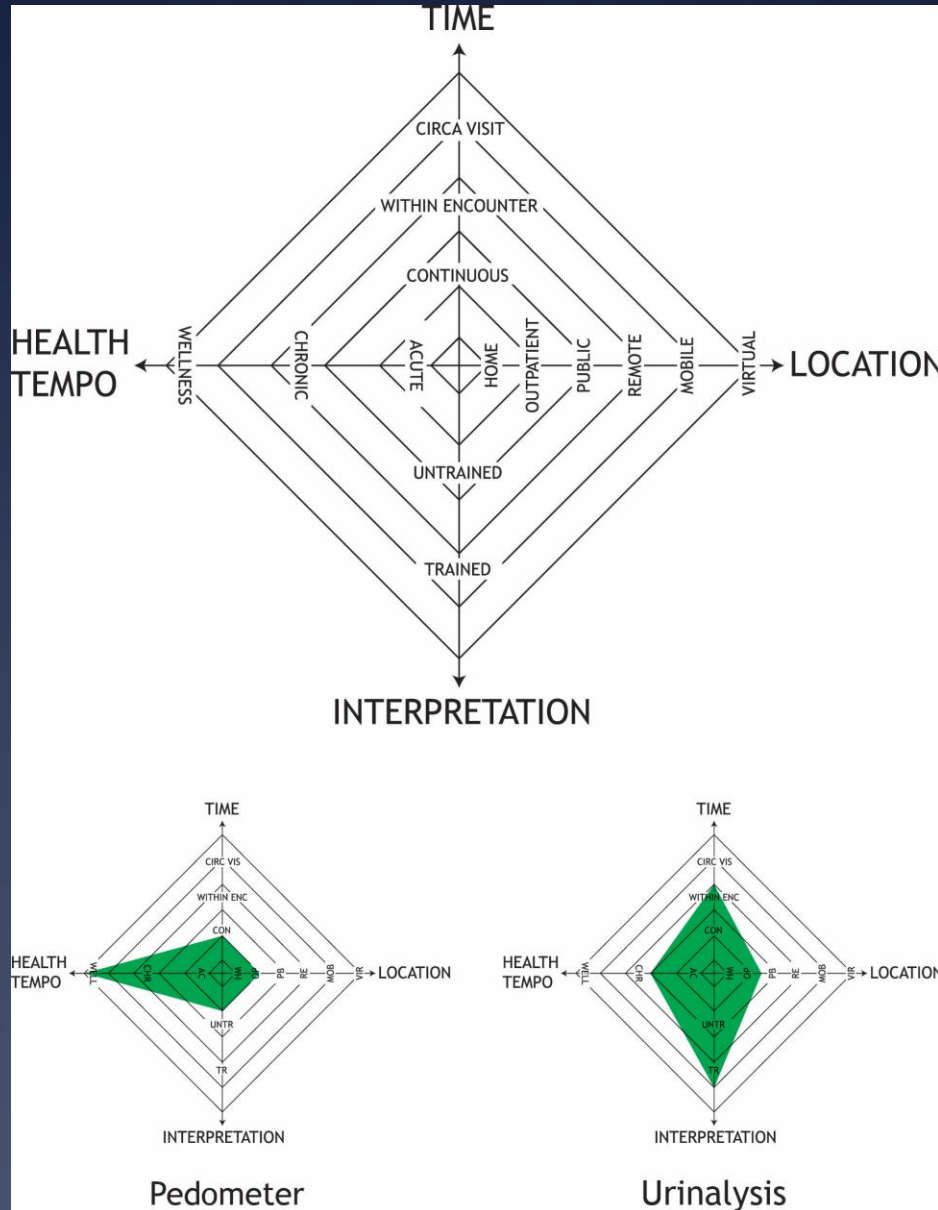
# Challenges to Implementing POCT in Primary Care

- Validation and costs for setup
- Policies & procedures & documentation
- Operator training, QC and regulatory compliance
- Data Mgmt & Integration EHR (avg \$7-12k)
- Billing
- Reimbursement (FFS, global/capitated with carve out)
- Will patients accept it?
- Scale to entire practice/population, workflow

# Point of Care Testing In Primary Care Today

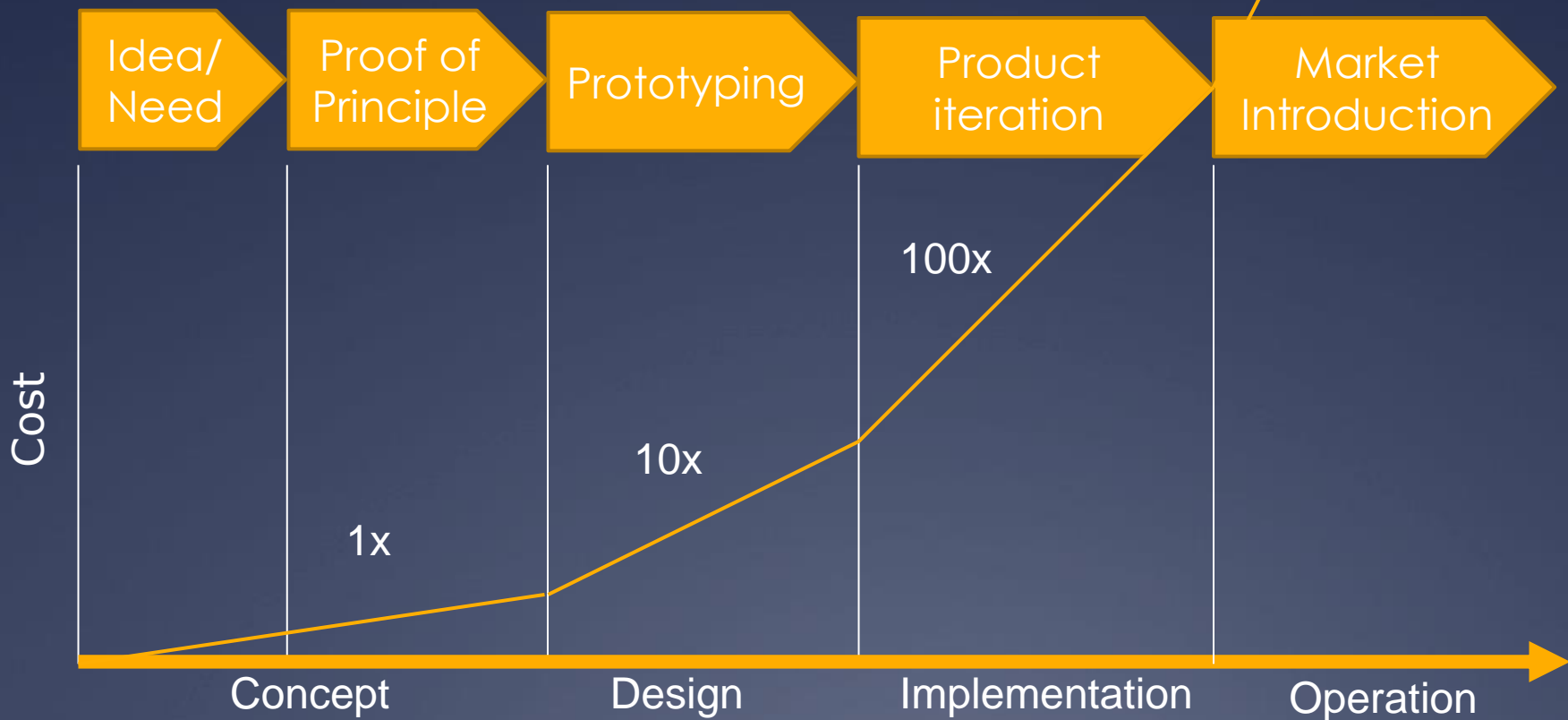


# POC Testing Framework



# Bridging the Industry/Practice Chasm: Need for *Early Collaboration* Relative Cost of Errors (rule of 10's)

Design = 10x Concept error  
Implementation = 10x Design error  
Operation = 10x Implementation error





# ...STILL AT BLOCKBUSTER...BUT RIGHT DIRECTION!

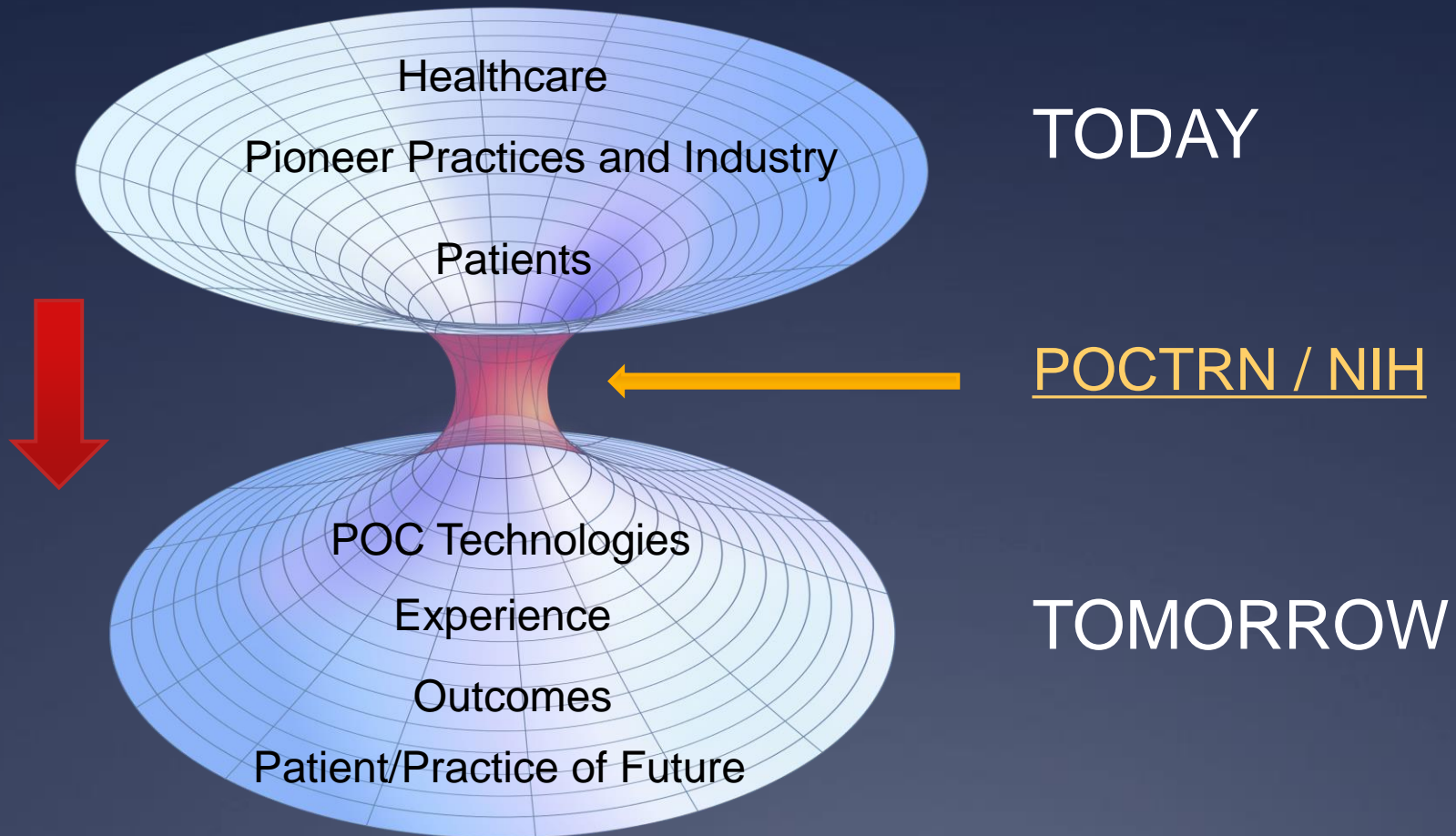


Decentralizing but with an **IMPERATIVE** to integrate

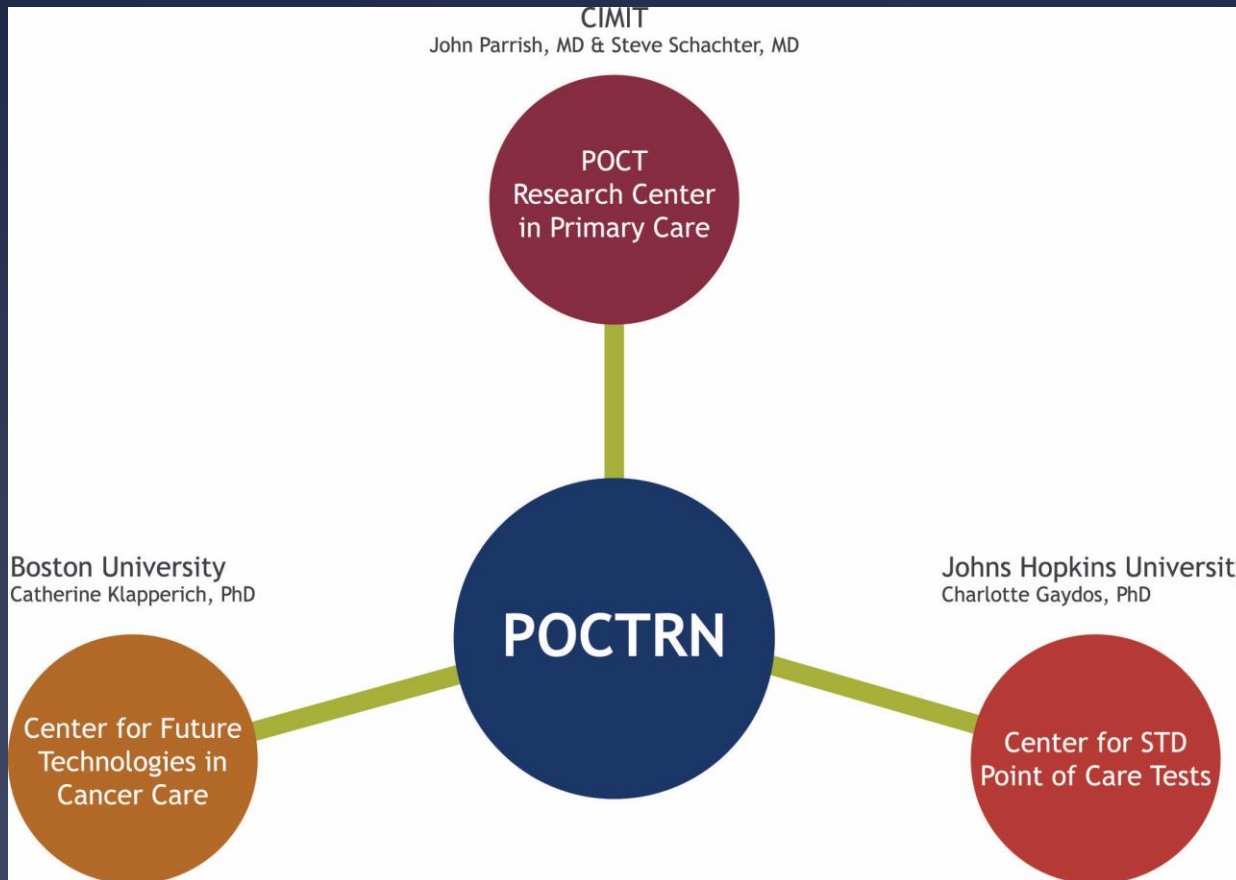




# Innovative Change Happens at the Speed of Humanity



# POC Technology Migration: An Imperative for Cross-Network and Cross-Disciplinary Collaboration



## Stakeholders

- End Users
- Patients
- Clinicians
- Academics
- Industry
- Enabling technologies
- Family
- Patient Groups
- Community
- Culture
- Insurers
- Regulators
- Investors

# THANK YOU

