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

Ambulatory Practice of the Future - MGH
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
Ambulatory Practice of the Future - MGH

**Knowledge & Data**
- Team/Patient (portal)
- Team/Team
- Patient/Patient

**POC Technology**
- Dz Information
- Education
- SDM
- Imaging
- Therapeutics
- Dz mgmt
- Self-Mgmt wearables
- *POCT

**Diagnosis & Management**
- Check in Kiosks
- Virtual visit (email, phone, video)
- Sync vs Asynchronous

**Communication & Connection**
- Team/Team
- Patient/Patient

*Clinical Pull → Integration → Behavior Change*
POCT Outcome Domains

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

*few studies to date have proven these*
POC Research in Primary Care: Where’s the beef?

- **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.
Total Number of Tests Per Patient

Overall 21% Decrease in tests per patient p<0.0001

Telephone Calls Per Patient

Overall 89% Decrease In calls per patient p<0.0001

Letters Sent Per Patient

Overall 85% Decrease In letters per patient p<0.0001

Visits Resulting From An Abnormal Test Result

Overall 61% Decrease In visits per patient
p= 0.0002

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

Cost for POCT: $(25.25)

Estimated visit revenues*: $31.87

Per patient margin: 6.62

Improved practice efficiency: 24.64

EST SAVINGS per PATIENT VISIT**: $31.26

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

Decentralizing but with an IMPERATIVE to integrate
Innovative Change Happens at the Speed of Humanity

Healthcare
Pioneer Practices and Industry
Patients
POC Technologies
Experience
Outcomes
Patient/Practice of Future

TODAY
POCTRN / NIH
TOMORROW
POC Technology Migration: An Imperative for Cross-Network and Cross-Disciplinary Collaboration

Stakeholders

- End Users
- Patients
- Academics
- Industry
- Enabling technologies
- Family
- Patient Groups
- Community
- Insurers
- Regulators
- Investors
THANK YOU