POINT OF CARE TESTING and TECHNOLOGIES IN PRIMARY CARE

An MGH Practice Experience
(A New Day in the life of a PCP....)

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Point of Care Technology Research Network (POCTRN) in Primary Care Webinar

CIMIT & Stoeckle Center, MGH

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Financial Disclosures

None
Agenda

- POC TESTING (POCT) – why primary care?
- Challenges of POCT in Primary Care
- POCT at APF/MGH
- What does the future hold for POC in primary care?
POCT is for all:

- Clinicians/care teams want (need!) it

- Patients are expecting (demanding!) it
Any successful POC technology must:

- change/improve how we manage patients/deliver care (Behavioral)

- Improve, adapt, and scale to clinical workflow (Operational)
Selected Traditional POCT Tests in Primary Care

- Rapid Strep A
- Rapid Influenza
- Dipstick urinalysis
- Pregnancy testing
- Glucose
- Fecal occult blood
- PT-INR
Why hasn’t POCT really taken off? The technology is already here (and getting better)…

- Inherent trust in “centrally located” testing (gold std.)
- Cost/Reimbursement
- Data Management and Integration
- Compliance
- Hesitancy to adopt cool but unproven technology
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%)
Other Factors Impacting POCT in Primary Care

- Timing and Accuracy of the test (15-30 min visit)
- Space
- Scale to entire population/practice
- Need for certifiable skills (phlebotomy, CLIA, etc.)
- Impact of the test on patient care (experience, efficiency)
- Clinical impact of the test on the practice (disease mgmt)
Traditional Lab Testing Options

1. Send patient to central lab AFTER visit
   - Inconvenient
   - May never show up
   - Can’t review results at time of visit (relearn)
   - Requires follow up communication +/- additional visits

2. Send patient to a central lab BEFORE visit
   - Inconvenient – extra trip/costs (travel, parking, wages)
   - May never show up
   - Review results at time of visit
   - Only labs that can be anticipated, may need 2nd draw
Lab Testing Options

3. Draw blood at office visit and send to central lab

- Order what is needed (acute, chronic, screening)
- Can’t review results at time of visit (re-learn)
- Requires follow up communication +/- additional visits

4. **ALTERNATIVE: POINT OF CARE TESTING (POCT)**

- No extra trips – order what is needed (acute, chronic, screening)
- Review results at time of visit
- Letters, phone calls, re-visits potentially eliminated

**AS A PATIENT (AND PROVIDER) WHICH WOULD YOU PREFER?**
POCT Outcome Domains

• Medical: (Live longer, QOL, disease control)
• Financial: (more cost effective care)
• Operational: (Improve LOS, improve efficiency, streamline processes)
• Experiential: (Satisfaction -- patient/care team)
Study of Impact of POCT at APF

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

- HbA1c (diabetes) – (5 min, fingerstick)
- Lipid panel (cholesterol) – (12 min, needle)
- 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
## Breakdown of Patients

<table>
<thead>
<tr>
<th>Visit Type</th>
<th>Control Patients</th>
<th>POCT Patients</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total patients</strong></td>
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<tr>
<td>New Pt</td>
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<td>54</td>
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</tr>
<tr>
<td>Annual</td>
<td>32</td>
<td>42</td>
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<tr>
<td>Follow-up</td>
<td>39</td>
<td>53</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>149</strong></td>
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<tr>
<td><strong>Mean age</strong></td>
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<tr>
<td>New Pt</td>
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<td>40</td>
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<tr>
<td>Annual</td>
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<td>0.10</td>
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<td>Follow-up</td>
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<td><strong>50</strong></td>
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<tr>
<td><strong>Gender (% male/ % female)</strong></td>
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<td></td>
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<tr>
<td>New Pt</td>
<td>59 / 41</td>
<td>61 / 39</td>
<td>0.85</td>
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<tr>
<td>Annual</td>
<td>59 / 41</td>
<td>57 / 43</td>
<td>1.0</td>
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<td>Follow-up</td>
<td>64 / 36</td>
<td>49 / 51</td>
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<td><strong>Total</strong></td>
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<td><strong>Percent with DM</strong></td>
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<tr>
<td>New Pt</td>
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<td>24</td>
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<tr>
<td>Annual</td>
<td>44</td>
<td>45</td>
<td>1.0</td>
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<tr>
<td>Follow-up</td>
<td>54</td>
<td>58</td>
<td>0.68</td>
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<td><strong>Total</strong></td>
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<td>0.33</td>
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<td><strong>Percent with dyslipemia</strong></td>
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<td>New Pt</td>
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<tr>
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<td><strong>Percent with hypertension</strong></td>
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<td>Follow-up</td>
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<td>45</td>
<td>0.53</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
<td><strong>34</strong></td>
<td>0.80</td>
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Patient Satisfaction with POCT

- Anonymous patient satisfaction survey end of visit
- Scores rate 1 to 4 (4 = most satisfied)
- Survey identified the POC tests performed and asked for additional comments.
“Compared with your past experiences of physician office visits that did not have POC testing, please rank your overall level of satisfaction with today’s office visit”
Patient Satisfaction with POCT Results

Mean satisfaction score = 3.96

Patients really liked it:

- Wonderful to have the results and directions for medications in the office .... It made the plan clear...a true time saver.
- It is so much easier to test at the office while I am here.
- It was great to be able to consult immediately with the doctor having the results in front of us.
- I think it’s good to get the results while still talking to the doctor.
DO NOT FEED OR MOLEST ALLIGATORS
$500.00 FINE
Florida Statute 372.667

NOTICE
NO SWIMMING
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 Practice Efficiency Metrics

Advantages

• Fewer tests ordered ($)
• Eliminated letters and phone calls ($)
• Reduced follow up visits ($)
• Improved management with results at time of visit
• Improved patient satisfaction

What about cost effectiveness?
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

<table>
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<tr>
<th>Description</th>
<th>$US per Patient</th>
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<tbody>
<tr>
<td>Cost for POCT</td>
<td>(25.25)</td>
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<tr>
<td>Estimated visit revenues*</td>
<td>31.87</td>
</tr>
<tr>
<td>Per patient margin</td>
<td>6.62</td>
</tr>
<tr>
<td>Improved practice efficiency</td>
<td>24.64</td>
</tr>
<tr>
<td>EST SAVINGS per PATIENT VISIT**</td>
<td><strong>$31.26</strong></td>
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</table>

* depends on the payer mix of the practice.
**does NOT include insurance reimbursement from POCT itself.

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Lessons and Next Steps

- POCT in primary care can impact:
  - Patient Satisfaction
  - Practice Efficiency
  - Costs of care

- Area for future studies:
  - Sustainable scalability across larger/diverse practices
  - Impact on Disease Outcome, Patient Engagement
  - Role in different payment structures (FFS, value based, ACO)
  - Quality incentive programs

- Demonstrates value of collaborative research in primary care clinical environment
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
Any POC health technology must:

- Impact BEHAVIOR: change/improve how we manage patients and deliver care

- Impact OPERATIONS: Improve, adapt, and scale to clinical workflow

Do it right ➔ engaged patients, efficient care teams.
POS Technology and Other Industries

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Point of Care Testing In Primary Care Today
...STILL AT BLOCKBUSTER...BUT RIGHT DIRECTION!

Decentralizing but with an IMPERATIVE to integrate
For Researchers and Clinicians….

- Focus on addressing clinical challenge vs pushing specific technology
- Start bidirectional dialogue/collaborations early, involve end-user!
- Wavelengths and nanometers vs symptoms and outcomes
- Consider multiple clinical environments
- Behavioral impact
- Workflow impact
Thank You!

https://apf.partners.org