Learning Objectives

Analyze the “real” value of laboratory information.

Identify sources of concrete examples of where laboratory information provides downstream value.

Evaluate new financial models for laboratory reimbursement and/or cost containment.

Discuss the most effective ways to become an advocate for laboratory testing.
$2.5 BILLION

10 HOSPITALS

16,000+ Caregivers

800+ Physicians

And a reference lab
Patient Service Centers

Oregon, Washington and Alaska

44

PSCs/IOP’s

45 CARS

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900 CAREGIVERS
$130M IN REVENUE

$7M+ BILLED PROCEDURES
4 Pathology Groups
45+ Pathologists
Transition to Quest Partnership
May 1, 2017

- Outreach Laboratory Business Sale
- Laboratory Management Agreement
Volume to Value

Value = \frac{\text{Quality}}{\text{Cost}}
HHS Value Reimbursement Schedule

2016

30%

Alternative Payment Models (ACOs, bundled payments)

2018

50%

Traditional Medicare Payments

85%

90%
Lower Reimbursement

PAMA

“Part Access Mostly Annoyance”

20%
Reimbursements To Clinical Laboratories

The Standard Bell Curve

You Win !!! You’re Screwed

Reimbursements To Clinical Laboratories
“Waste is not just consuming a third of health-care spending; it’s costing people’s lives.”

- Atul Gawande

PHL Value Strategies

- Diabetes Management: HbA1c
- Pain Management: PtProtect
- Medication Safety: RxAdhere
- Test Utilization
- Women’s Health (in development)
HbA1c
HbA1c Report

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Population Health Analytics

HbA1C

15 month period (Jan 2014 - April 2015)

84,737
PATIENTS TESTED

54,536
# PATIENTS < 7.0

30,201
# PATIENTS > 7.0 (HIGH)

18,749
# PATIENTS (RETESTED)

8,904
# RETESTED (improved levels)

2,304
IMPROVED TO NORMAL LEVELS

11,456
# PATIENTS (NOT RETESTED)

9,845
# PATIENTS (no improvement)

7.6% of total Abnormals (HiGH)
2.7% of total Patients tested

Bottom Line: Follow Up Testing and Improved Values Are Poor
Pain Management
37% Discrepant
Pain Management

Discrepant Result:
A Pain Medication is detected, but not prescribed
A Pain Medication is prescribed, but not detected

Discrepancy Rate:
The percent of the total specimens, with prescription information provided, where one or more discrepancies are identified in the interpretative comments
Program is designed to improve monitoring of prescribed controlled medications.

These panels help determine whether your patient is:

• Taking or potentially diverting medications currently prescribed
• Taking pain medications that are not prescribed
• Using drugs of abuse

The use and misuse of prescription pain medications is a growing problem.

The possibility of adverse drug interactions makes this a significant patient and community safety issue, particularly if the patient:

• Combined prescriptions from multiple prescribers or other sources
• Uses controlled substances recreationally
• Diverts prescribed medications for financial gain
Case Study – Pain Medications
Are Physicians Testing Patients?

• Large Medical Group : >700 Physicians

• Large Patient Population: >87K

• Pulled Narcotic Rx’s: >146,000

Historical Discrepancy Rates = 40%
Only ~4% of Patients Tested!

<table>
<thead>
<tr>
<th>Clinic Summary: 9 Months</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td># Ordering Physicians:</td>
<td>717</td>
</tr>
<tr>
<td># Pain Medications Prescribed:</td>
<td>146,781</td>
</tr>
<tr>
<td># Patients w/ Pain Prescriptions:</td>
<td>87,173</td>
</tr>
<tr>
<td># PM Volume:</td>
<td>3,442</td>
</tr>
<tr>
<td>PM Rate (Volume to Patients):</td>
<td>3.9%</td>
</tr>
<tr>
<td>PM Disc Rate:</td>
<td>38%</td>
</tr>
<tr>
<td>PM Safety Factors Rate:</td>
<td>61%</td>
</tr>
</tbody>
</table>
Medication Reconciliation
“Medications do not work in patients who do not take them.”

- C. Everett Koop, MD
Former Surgeon General of the United States
What is RxAdhere?

Tandem mass spectrometry (LC-MS/MS) plasma test that…

• confirms the presence or absence of 198 commonly prescribed medications that are…

• used to treat common chronic conditions.
RxAdhere Drug Classes (198 medications)

- Anticonvulsants (1st & 2nd generation)
- Antihypertensives
- Antiarrhythmics
- Analgesics
- Benzodiazepines
- NSAID
- Anticoagulants
- Antidepressants
- Antipsychotics
- Antipsychotics
- Antidepressants
- Antipsychotics
- Stimulants
- Oral hypoglycemics
- Anesthetic, Adjunct
- Antihistamine
- Antitussive
- Drugs of Abuse

http://www.peacehealthlabs.org/lab-services/Pages/RXAdhere.aspx
Outpatient Findings

• 41% of patients were non-adherent for at least one prescribed medication

• 31% of outpatients used at least one medication not in the medical record

Bottom Line: Medication Issues Drives >50% of Readmissions
RxAdhere Utility – Inpatient

• Reduce inpatient ADE’s ($136 billion annual cost)
  – Identify medications not in medical record 
    (e.g., antiepileptics, anticoagulants, antiplatelets)
  – Identify non-adherence 
    (e.g., antihypertensives, lamotrigine, clozapine)
• Reduce extended hospital stays/expense
RxAdhere Utility – Ambulatory

• Reduce medication non-adherence ($300 billion annual cost)
  – Improve outcomes for common chronic conditions
    ▪ Diabetes mellitus: oral hypoglycemics
    ▪ Depression: antidepressants
    ▪ Psychosis: antipsychotics
    ▪ Hypertension: antihypertensives
    ▪ CHD/MI: antihypertensives, anticoagulants/antiplatelets, antiarrhythmic
    ▪ HF: diuretics, beta-blockers, ACEI, angiotensin II receptor blockers and digoxin
    ▪ Seizures: anticonvulsants
  – Improve medication treatment decisions
    ▪ Changing dose
    ▪ Changing medication

• Reduce hospital admissions and office visits
Medication non-adherence is common

- 75% of Americans do not always take medication as directed (non-adherence)

- Non-adherence adds up to $290 billion in avoidable costs to health care system annually¹

- Physician visits cost $2,000 per patient annually

Medication non-adherence is common

- More than half of patients have >1 unintended medication discrepancies* at hospital admission

* Discrepancies between admission medication orders medication history obtained through interview.

Non-adherence to anticoagulants can be life threatening!

- Out of town transfer patient
- Patient had a clopidogrel (Plavix) prescription for arterial thrombosis prophylaxis
- Assumed at admission this was an active Rx and patient was adherent
- Patient placed on clopidogrel
- One week post-discharge, patient dies from coronary thrombosis (clot)
- Rx was actually expired and the patient was non-adherent

RxAdhere would have identified non-adherence and prompted a clopidogrel Rx at discharge
Non-adherence to antihypertensives can lead to unintentional hypotension and ICU stay.

RxAdhere can identify antihypertensive non-adherence.
Preventable tonic-clonic seizure and extended hospital stay

- Patient admitted for urgent appendectomy
- Day three at discharge, patient has (“grand mal”) seizure
- Pharmacy unaware patient had Rx for phenytoin and topiramate from non-system neurologist
- Patient stay extended 2 days

RxAdhere would have identified phenytoin and topiramate use.
Laboratory Test Utilization
An Introduction: Volume to Value
Laboratory Testing\textsuperscript{1,2}

- Is the highest-volume medical activity.
- Accounts for 5 Billion tests per year
- Accounts for more than 80\% of patient data
- Accounts for 5\% of healthcare expense
- Transcends inpatient-outpatient populations (“Population Health”)
- Drives clinical decision-making
  - Test expense
  - Inspires more expensive downstream costs
  - Affects imaging and pharmacy orders, procedures, hospital stays, etc.
  - Causes direct, and especially indirect harm. 3,4 “Unnecessary Care.”

Test Utilization Tools

• Lab Analytics
• Education
• Intervention … examples
  – CareConnect “Duplicate Lab Order Alert:” May reduce utilization 20+% 1
  – Molecular oncology: Pathologists cancel/initiate “appropriate” test orders
  – Specialists: “Appropriate” tests ordered only by specialists
Case Study: Rapid MRSA Testing By PCR
14 Week Study

- 76% De-Isolation Rate
- Vancomycin Utilization Reduced by 10 days/1,000 days of therapy
- Improved Nursing Workflow….Donning and Doffing PPE
- Lab Turn Around Time <2hrs
- $200K Savings in 14 Weeks
Women’s Health
(In development)
GUIDELINES: According to Choosing Wisely and the American Academy of Family Physicians

- Don't perform Pap smears on women younger than 21
- Don't perform Pap smears on women over 65
- Don't perform routine Pap smears in women 30-65 years of age
- Don't screen women younger than 30 for cervical cancer with HPV testing, alone or in combination with Cytology
- Don't screen women older than 65 for cervical cancer who have had adequate prior screening and are not otherwise at high risk of cervical cancer

PAP/HPV TOOL
PeaceHealth Laboratories:
Adding Value To Our Health System

### Summary

<table>
<thead>
<tr>
<th>Test Volume</th>
<th>This Period</th>
<th>Last Period</th>
<th>Var %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Volume</td>
<td>3,785</td>
<td>3,406</td>
<td>9.2%</td>
</tr>
<tr>
<td>Patient Volume</td>
<td>2,016</td>
<td>1,685</td>
<td>19.6%</td>
</tr>
<tr>
<td>#Tests / Patient</td>
<td>1.9</td>
<td>2.1</td>
<td>-8.7%</td>
</tr>
</tbody>
</table>

### Key Health Indicators

<table>
<thead>
<tr>
<th>Test Description</th>
<th>This Period</th>
<th>Last Period</th>
<th>Var %</th>
</tr>
</thead>
<tbody>
<tr>
<td>HbA1c</td>
<td>59.0%</td>
<td>45.8%</td>
<td>13.2%</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>20.6%</td>
<td>17.9%</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

### Top 10 Tests Ordered

<table>
<thead>
<tr>
<th>Rank</th>
<th>Test #</th>
<th>Test Description</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40070</td>
<td>T3 FREE</td>
<td>218</td>
</tr>
<tr>
<td>2</td>
<td>41630</td>
<td>ESTRADIOLRIA</td>
<td>173</td>
</tr>
<tr>
<td>3</td>
<td>41175</td>
<td>PROGESTERONE</td>
<td>159</td>
</tr>
<tr>
<td>4</td>
<td>43370</td>
<td>VITAMIN D,25-HYDROXY</td>
<td>145</td>
</tr>
<tr>
<td>5</td>
<td>43220</td>
<td>TSH,FREE T4 PANEL</td>
<td>135</td>
</tr>
<tr>
<td>6</td>
<td>30000</td>
<td>COMPREHENSIVE METABOLIC</td>
<td>116</td>
</tr>
<tr>
<td>7</td>
<td>88540</td>
<td>ZINC SERUM</td>
<td>98</td>
</tr>
<tr>
<td>8</td>
<td>43548</td>
<td>LIPID PANEL,ADVANCED</td>
<td>95</td>
</tr>
<tr>
<td>9</td>
<td>87135</td>
<td>TESTOSTERONE T&amp;F,WOM,CHIL</td>
<td>93</td>
</tr>
<tr>
<td>10</td>
<td>41350</td>
<td>PERNITIN</td>
<td>90</td>
</tr>
</tbody>
</table>

### Laboratory Measures

- **TAT Score**
  - Target: > 90%
  - 98.4%

- **Processing Errors**
  - Target: < 0.03%
  - 0.02%

### Pain Management (Discrepancies)

<table>
<thead>
<tr>
<th>This Period</th>
<th>Last Period</th>
<th>Var %</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.2%</td>
<td>67.4%</td>
<td>-17.2%</td>
</tr>
</tbody>
</table>

### Test Recommendations

- **Currently Ordering**
  - 40530: TESTOSTERONE,TOTAL SERUM
  - 85320: VITAMIN D,25-HYDROXY
  - 40560: TESTOSTERONE,TOTAL & FREE
  - 67106: OCCULT BLOOD,STOOL SPECIM
  - 87135: TESTOSTERONE T&F,WOM,CHIL
  - 96720: THYROGLOBULIN & TG ABS

- **Recommended Alternative**
  - 40530: TESTOSTERONE,TOTAL MALE
  - 43370: VITAMIN D,25-HYDROXY
  - 40565: TESTOSTERONE,TOTAL & FREE
  - 67102: OCCULT BLOOD,STOOL IMMUNO
  - 40512: TESTOSTERONE FREE & TOTAL, FEM, CHILD, LC MS/MS
  - 58775: THYROGLOBULIN EVALUATION

- **Reason for Recommendation**
  - New Test Code for Adult Males (Alert: Jul 2018)
  - Commonly mis-ordered test. See Notes.
  - Improved Test (Alert: Sep 2018)
  - Comparable In-House Test Now Offered (Alert: Feb 2019)
Thank you