

Using Lab Information to Reduce Downstream Healthcare Costs: Case Studies

Presented by Ran Whitehead, Chief Executive at
PeaceHealth Laboratories

May 17, 2017



CardinalHealth

Essential to care™

Logistics
Product
Business
Patient

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.



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The spirit of healing®

\$2.5 BILLION

10 HOSPITALS

16,000+ Caregivers

800+ Physicians

And a reference lab



12

Laboratories



Ketchikan Laboratory
(Ketchikan, AK)



Bellingham Laboratory
(Bellingham, WA)



Sacred Heart Medical
Center/RB Laboratory
(Springfield, OR)



Longview Laboratory
(Longview, WA)



Friday Harbor Laboratory
(Friday Harbor, WA)



Vancouver Laboratory
(Vancouver, WA)



Florence Laboratory
(Florence, OR)



Roseburg Laboratory
(Roseburg, OR)



Central Laboratory at
Riverbend Annex
(Springfield, OR)



Sacred Heart Medical
Center/UD Laboratory
(Eugene, OR)



Cottage Grove
Laboratory
(Cottage Grove, OR)



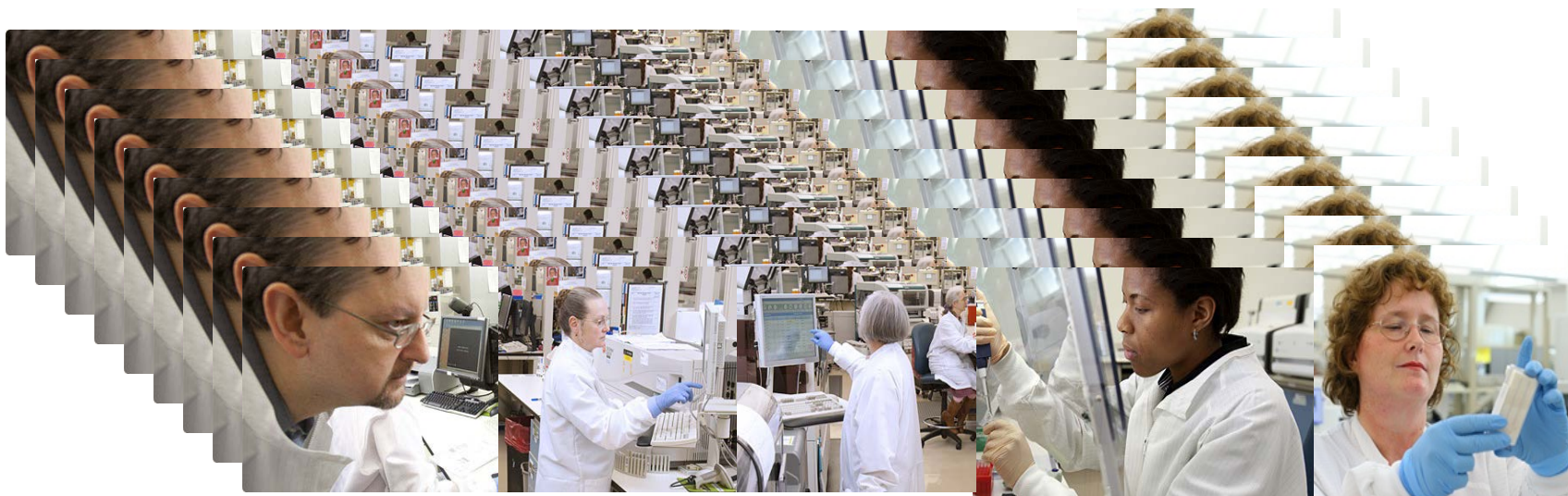
44

PSCs/IOP's



45 CARS





900 CAREGIVERS



\$130M IN REVENUE

\$7M+ BILLED PROCEDURES

4 Pathology Groups 45+ Pathologists



PeaceHealth
Southwest Medical Center



LABORATORY AND PATHOLOGY



NW PATHOLOGY

pathology
consultants^{PC}

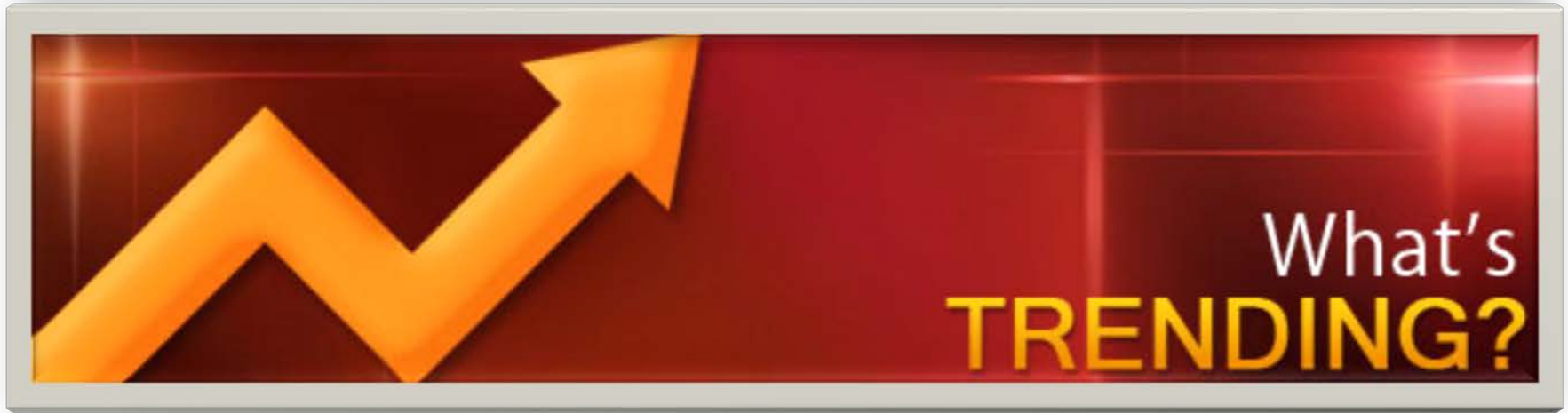
Transition to Quest Partnership

May 1, 2017

- Outreach Laboratory Business Sale
- Laboratory Management Agreement

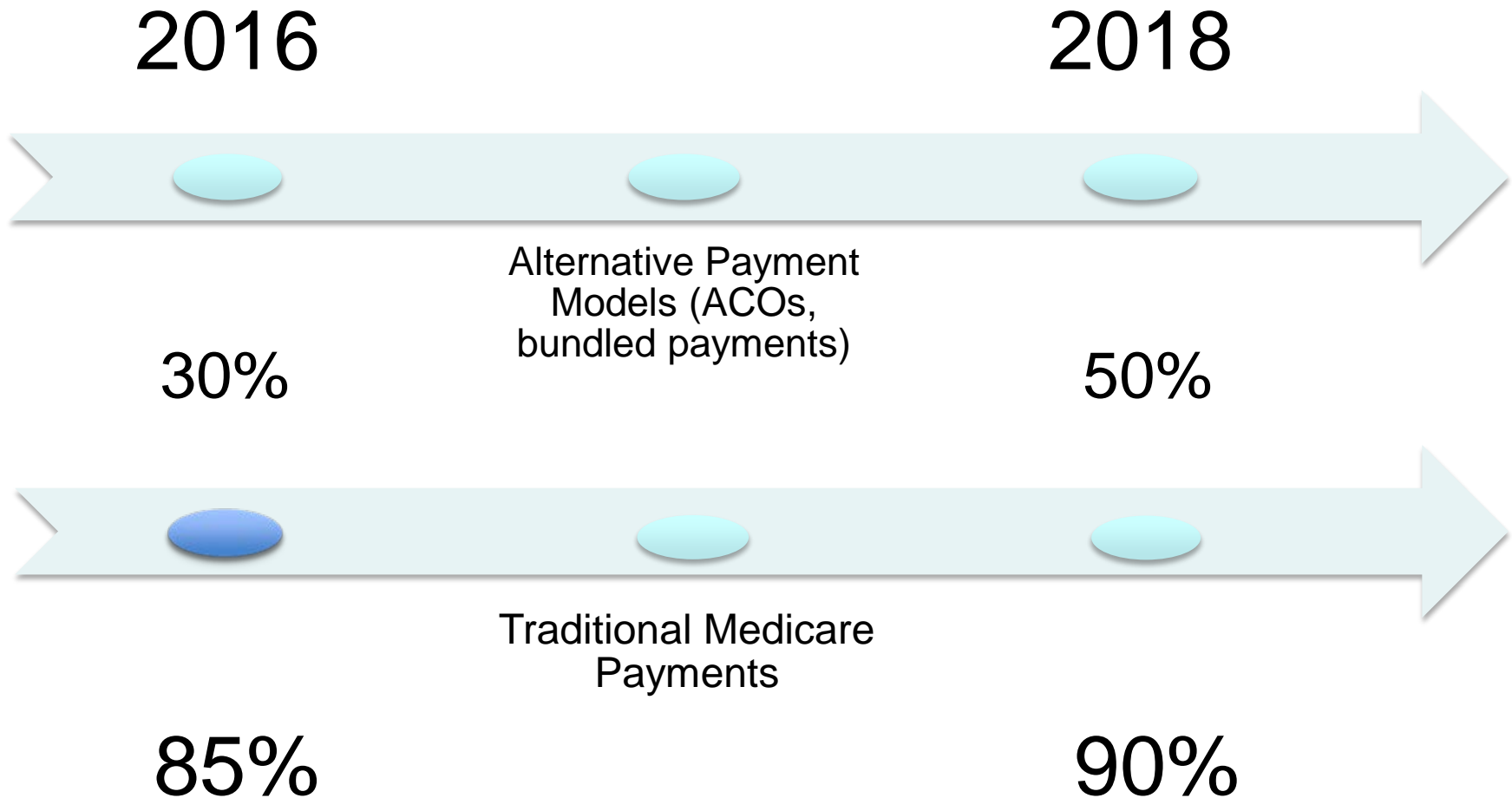


Volume to Value



$$Value = \frac{Quality}{Cost}$$

HHS Value Reimbursement Schedule



Lower Reimbursement

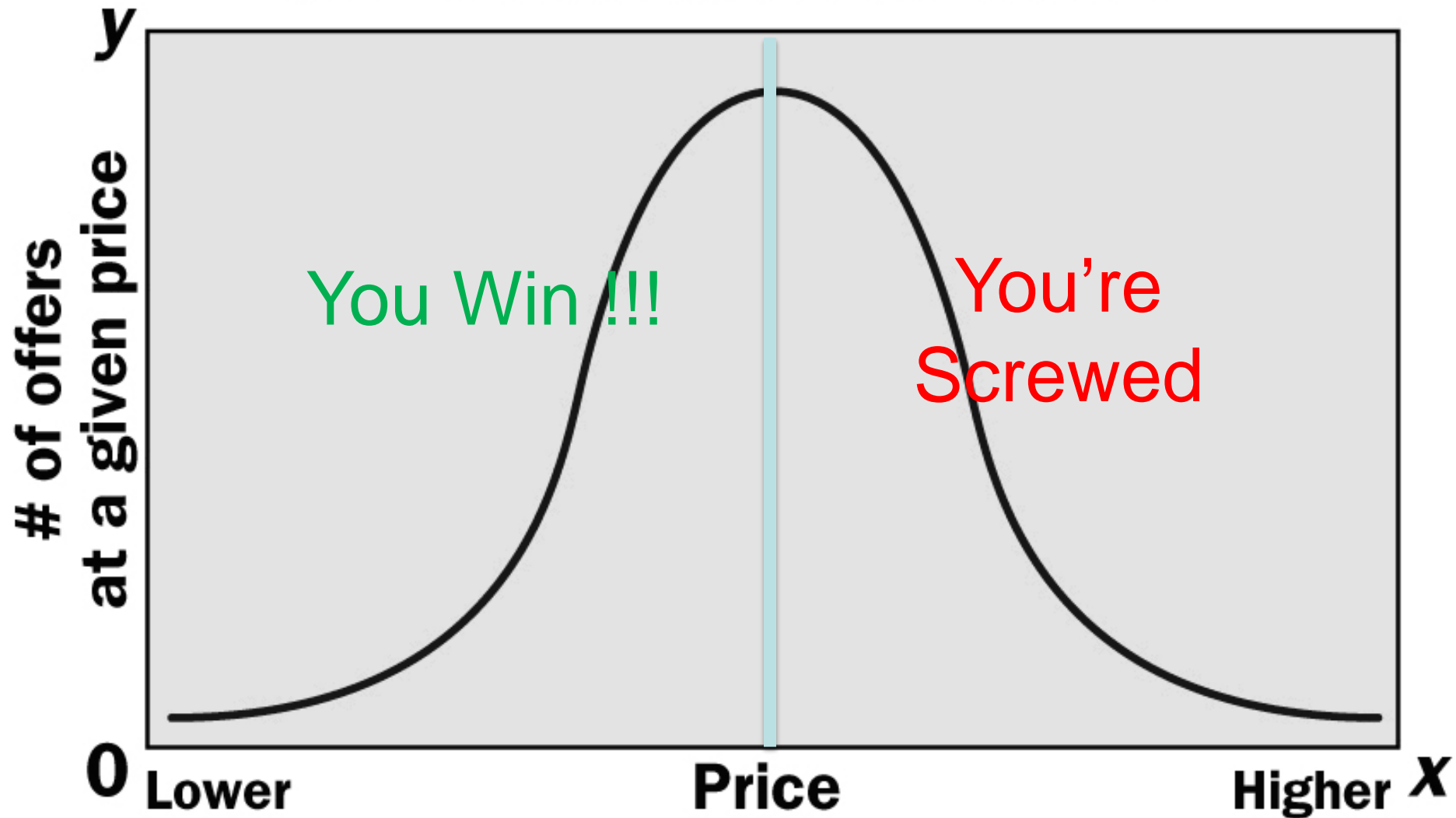


PAMA

“Part Access Mostly Annoyance”

20%

The Standard Bell Curve



Reimbursements To Clinical Laboratories



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

- *Atul Gawande*

Gawande, A: Overkill. An Avalanche of Unnecessary Care is Harming Patients Physically and Financially. What Can We Do About It? New Yorker, May 11, 2015.

PHL Value Strategies



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



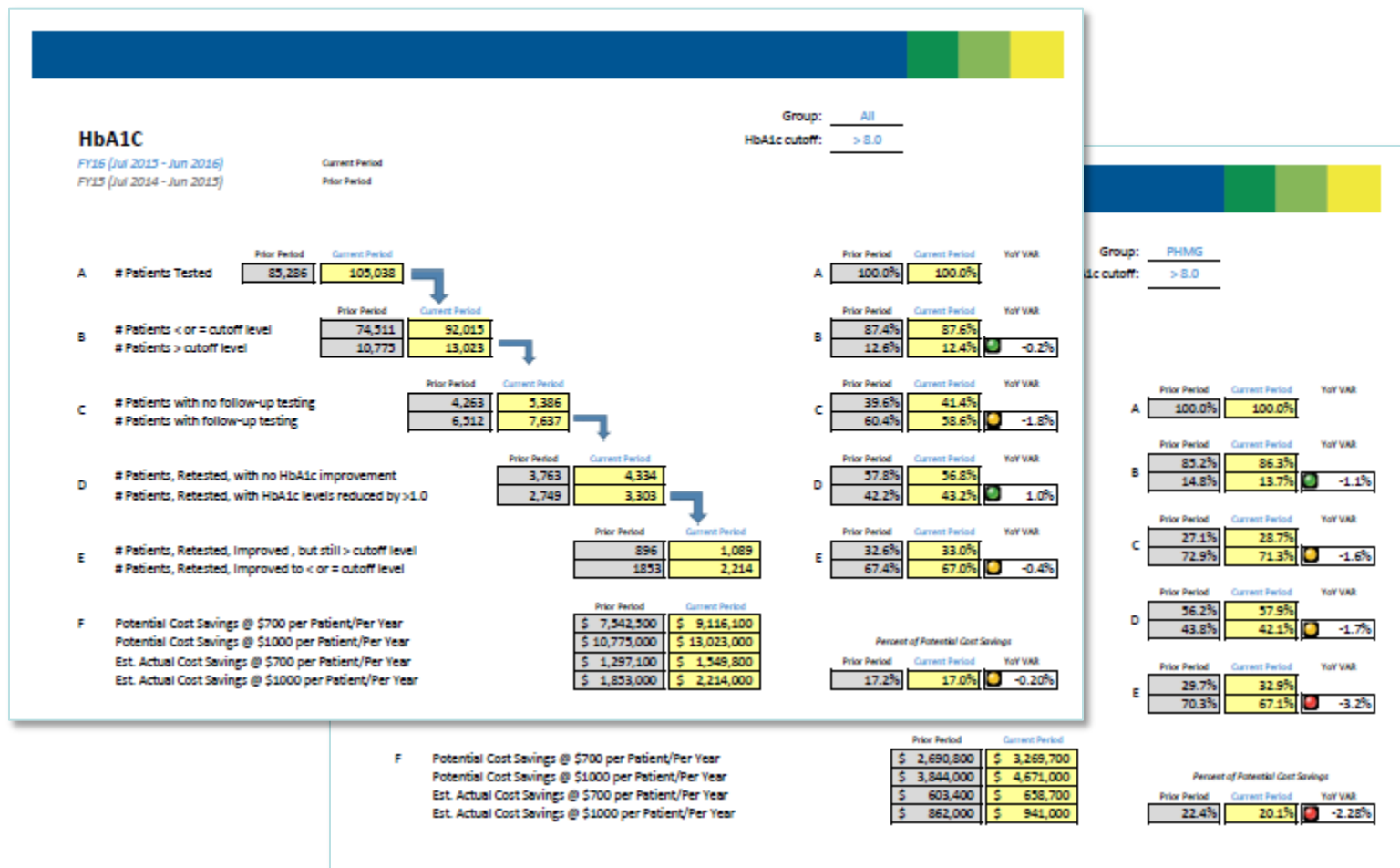
HbA1c



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HbA1c

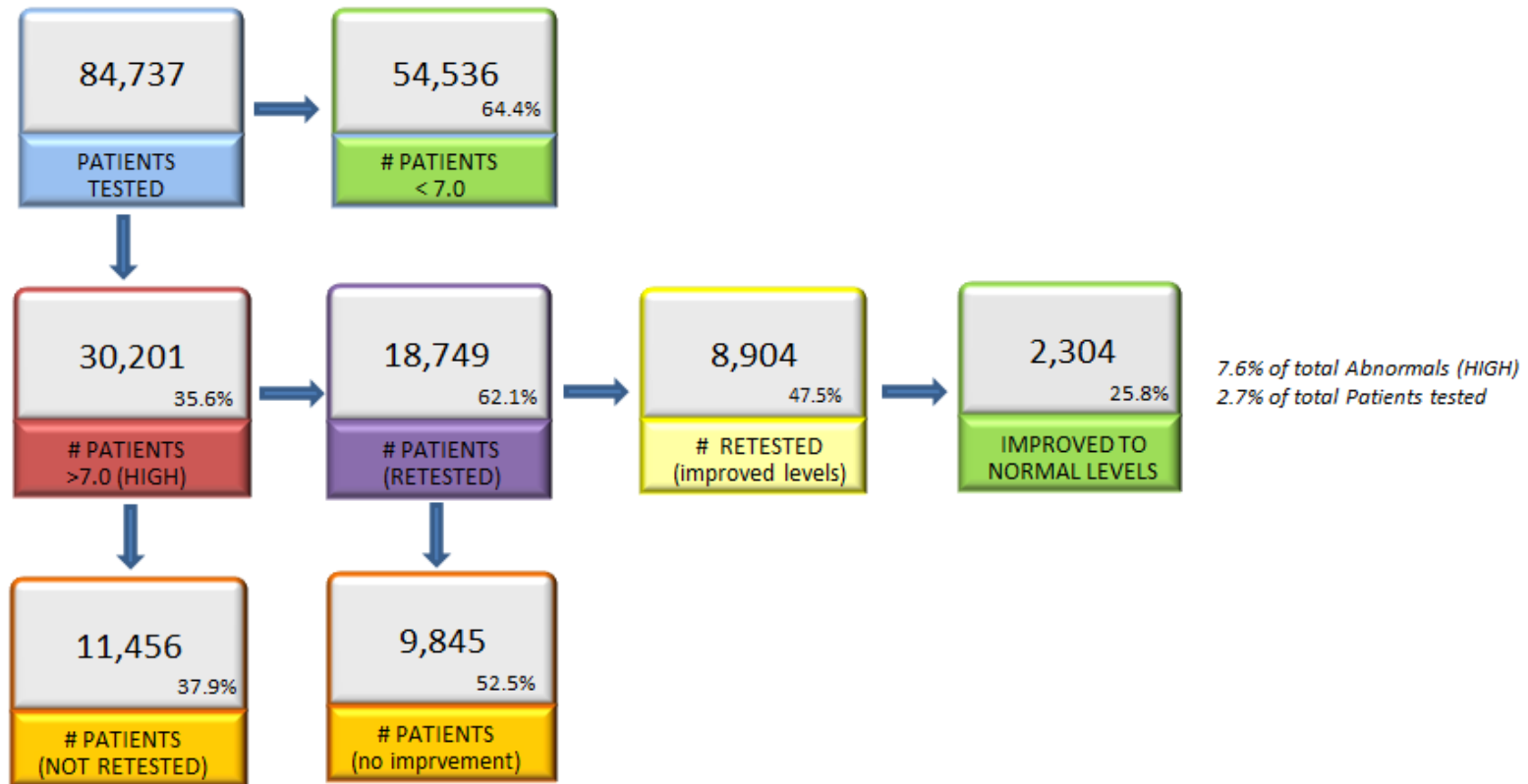


HbA1c Report

Population Health Analytics

HbA1C

15 month period (Jan 2014 - April 2015)



Bottom Line: Follow Up Testing and Improved Values Are Poor

Pain Management



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PtProtect®

Pain Management Panel





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



PM DISC TOOL

PtProtect® Discrepancy Report

Program is designed to improve monitoring of prescribed controlled medications.

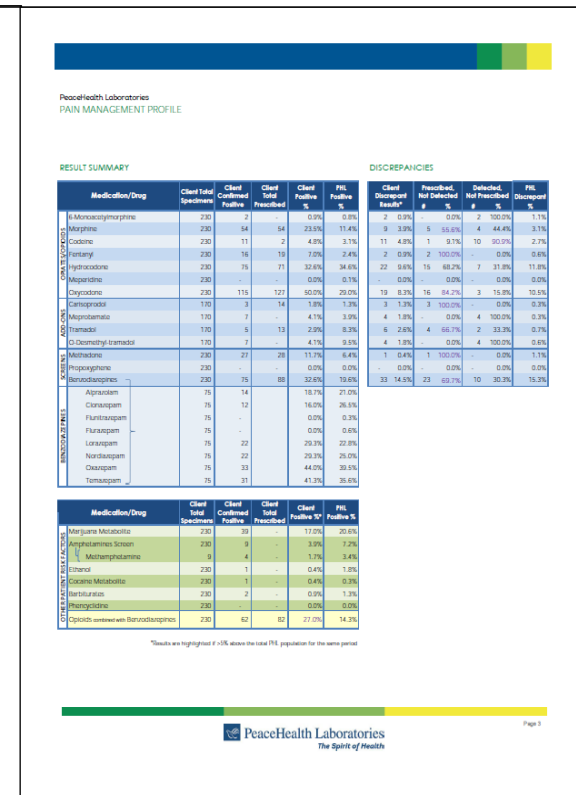
These panels help determine whether your patient is:

- 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!

Clinic Summary: 9 Months	Results
# Ordering Physicians:	717
# Pain Medications Prescribed:	146,781
# Patients w/ Pain Prescriptions:	87,173
# PM Volume:	3,442
PM Rate (Volume to Patients):	3.9%
PM Disc Rate:	38%
PM Safety Factors Rate:	61%

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

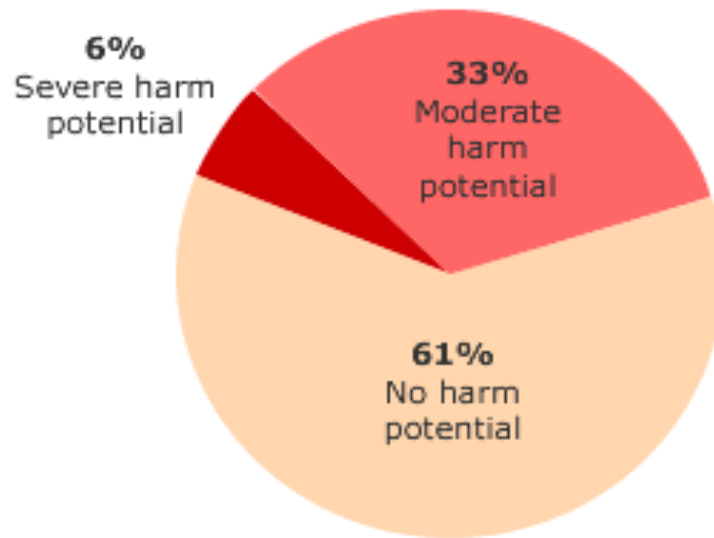


- 75% of Americans do not always take medication as directed (non-adherence)
- Non-adherence adds up to \$290 billion in avoidable costs to health care system annually¹
- Physician visits cost \$2,000 per patient annually

¹ Viswanathan et al, Ann Intern Med. 2012;157:785-795

Medication non-adherence is common

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

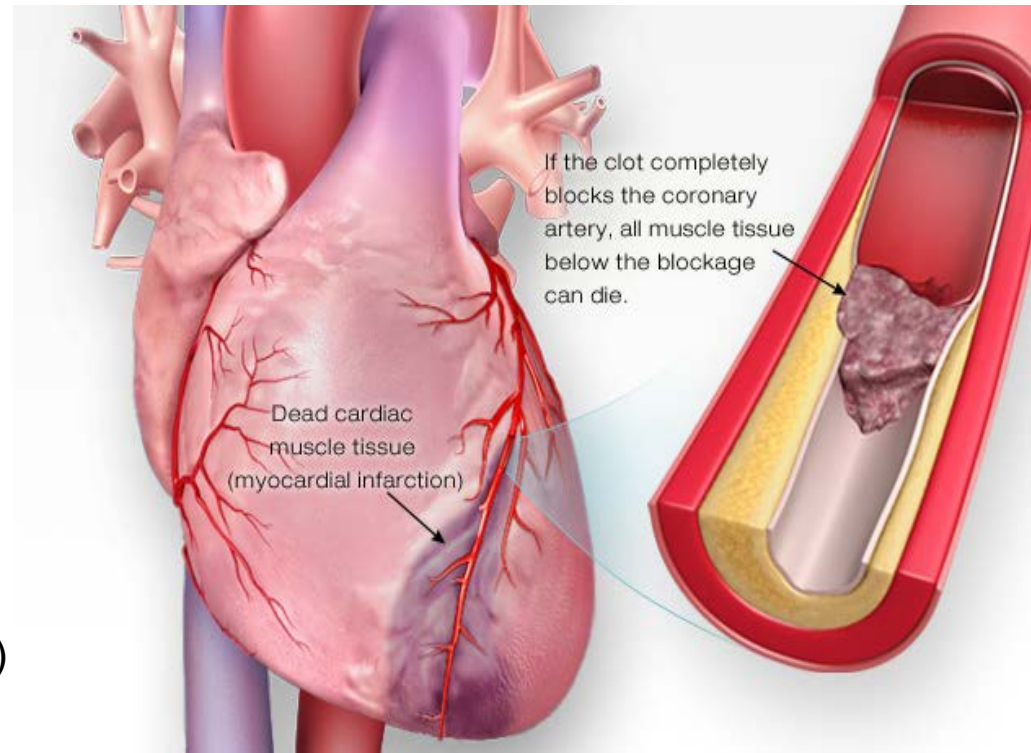


* Discrepancies between admission medication orders medication history obtained through interview.

Source: Cornish PL, Knowles SR, Marchesano R, et al. Unintended medication discrepancies at the time of hospital admission. Arch Intern Med. 2005;165:424-429.]

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



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Laboratory Testing^{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.”

¹ Frequency of Diagnostic Testing in Critical Care and Med/Surg Environments. Premiere; PeaceHealth Ketchikan Medical Center, 2014. PeaceHealth St. Joseph Medical Center, 2014.

² Zhi, M. et al: The Landscape of Inappropriate Laboratory Testing: A 15-Year Meta-Analysis. PLOS One, 8:11, November 2013.
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0078962>

³ Gawande, A: Overkill. An Avalanche of Unnecessary Care is Harming Patients Physically and Financially. What Can We Do About It? New Yorker, May 11, 2015.

⁴ Institute of Medicine: Improving Diagnosis in Health Care. Quality Chasm Series. Report in Brief, September, 2015.

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

Sam Terese, CEO & President, Alverno Clinical Laboratories; Executive War College 2015

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)



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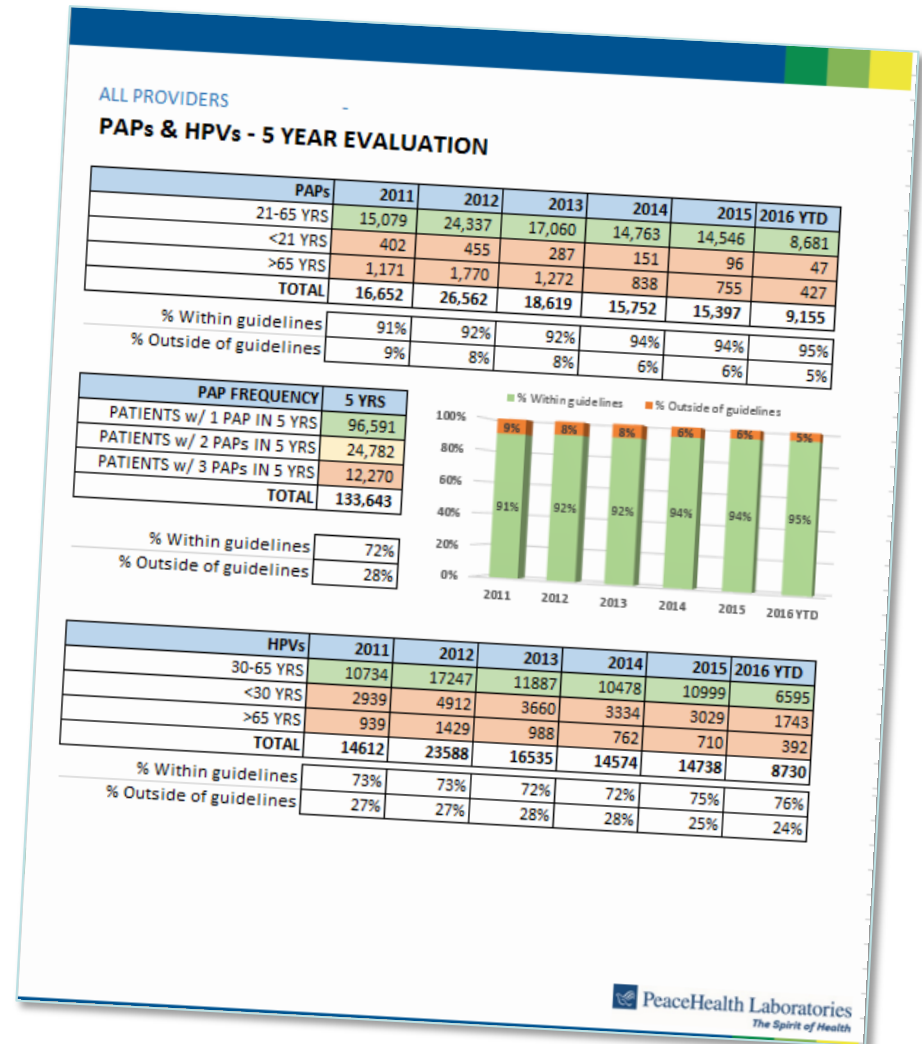
The Spirit of Health

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

SAMPLE CLIENT / 99999
Evaluation Period: Jul 2013 - Feb 2014


Summary


	This Period	Last Period	Var %
Test Volume	3,785	3,466	9.2%
Patient Volume	2,016	1,685	19.6%
#Tests / Patient	1.9	2.1	-8.7%

Top 10 Tests Ordered

Rank	Test #	Test Description	Volume
1	40070	T3, FREE	216
2	41600	ESTRADIOL RIA	173
3	41750	PROGESTERONE	159
4	43370	VITAMIN D, 25-HYDROXY	145
5	40220	TSH/FREE T4 PANEL	133
6	30000	COMPREHENSIVE METABOLIC	116
7	89540	ZINC, SERUM	98
8	43546	LIPID PANEL, ADVANCED	98
9	87135	TESTOSTERONE T&F, WOM/CHIL	93
10	41350	FERRITIN	90

Laboratory Measures

TAT Score		98.4%
Target: > 90%		

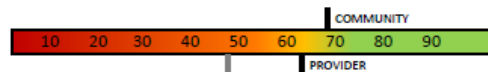
Processing Errors		0.02%
Target: < 0.03%		

Key Health Indicators

HbA1c

% of Patients with an abnormal HbA1c within the last 3 years
that have had a follow-up visit and re-tested within the past 5 months

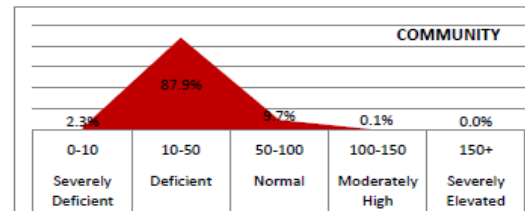
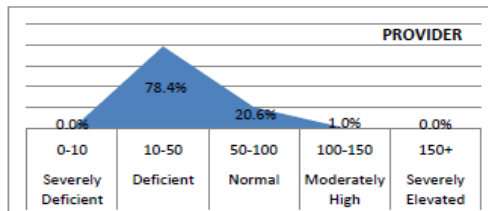
This Period	Last Period	Var %
59.0%	45.8%	13.2%



Vitamin D

% of Patients with Normal Vitamin D levels ranging between 50 - 100 ng/ml

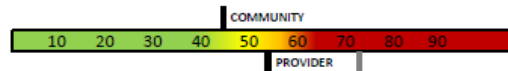
This Period	Last Period	Var %
20.6%	17.9%	2.7%



Pain Management (Discrepancies)

% of Patients with Discrepancies to prescribed Pain medications

This Period	Last Period	Var %
50.2%	67.4%	-17.2%



Test Recommendations

Currently Ordering:

40550	TESTOSTERONE, TOTAL SERUM
89320	VITAMIN D 1,25-DIHYDROXY
40580	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
40535	TESTOSTERONE, TOTAL & FREE
67102	OCCULT BLOOD, STOOL-IMMUNO
40513	TESTOSTERONE FREE & TOTAL, FEM/CHILD, LC MS/MS
58775	THYROGLOBULIN EVALUATION

Reason for Recommendation:

New Test Code for Adult Males (Alert: Jul 2013)
Commonly mis-ordered test. *See Notes.
New Test Code for Adult Males (Alert: Jul 2013)
Improved Test (Alert: Sep 2013)
Comparable In-House Test Now Offered (Alert: Feb 2014)
Comparable In-House Test Now Offered (Alert: Jul 2013)

Questions?

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