Laboratory Value Pyramid as the Essential Blueprint for Volume-to-Value Journey

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Presentation Objectives

- Examine the value of laboratory
- Describe how the Laboratory Value Pyramid (LVP) provides an essential and strategic roadmap for making the transition from volume to value
- Discuss how leveraging technology can improve quality and enhance clinical effectiveness for high value patient outcomes
- Measure the direct impact of laboratory test results on organizational performance
- Describe how the Laboratory can contribute to performance driven healthcare
John T Mather Hospital

Our Mission is to be the Best Community Hospital in New York State

- 248 Bed Community Hospital established in 1929
- Located North Shore on Long Island in Suffolk County
- Continually changing to meet the needs of the community
- Magnet Status
- U.S. News & World Report’s Best Hospital 2016 Rankings
  Ranked #19 in New York State
- Patient Safety Score "A" from Leapfrog Group, 9 consecutive quarters
- Four Stars from CMS, Aug 2016, the highest on Long Island
John T Mather Laboratory

Who Are We?

- JCAHO Accredited
- JCAHO Gold Seal
- 2.4 million tests/year
- Automated Lab since 2001
- 1800 sq. feet of space
- 72 FTEs
- HR Cost- 33%
- Average TAT- <30 minutes
The Value of Laboratory Information
Laboratory Diagnostics Information…

The Case for Investment

• Medical risk and quality management
• Improves medical decision-making
• Changes the course of disease
• Reduces the burden of disease

Total Healthcare Spending:

- $3.40 trillion in 2016 or $10,345 per person
- $3.20 trillion in 2015 or $9,990 per person
- $2.60 trillion in 2010 or $8,686 per person
- $2.00 trillion in 2005 or $6,697 per person

Source: CMS.gov
The Case for Investment

Labs are only 3% of
Laboratory Value Pyramid

LEVEL 1
INTERNAL
Achieve Normalcy & Predictability

LEVEL 2
INTERNAL
Establish & Meet Standards of Value

LEVEL 3
EXTERNAL
Deliver Value That Exceeds Expectation

LEVEL 4
EXTERNAL
Use Benchmarks to Achieve Best-in-class

Beyond Lab Outside
Lab Inward

NOT at LEVEL 1?

NO WORRIES!
A thousand mile journey begins with a single step

Lao Tzu
Provides the organization with direction for the future and brings the promise of a better future.
Don’t abandon your dreams because of those who lack the vision!
Key Questions to Consider When Ordering a Test

- Is the test meaningful?
- Does the test enhance decision making?
- Is this an appropriate order or not?
- Is the test highly useful or not?
- Will the test change patient management?
Patient outcomes are improved when the correct test is ordered
Adding Value with Lab Tests

• Goal is to improve patient outcomes while reducing the cost per episode of care

• Lab can spend a bit more money, but contribute to millions in cost savings
## Process Modification

<table>
<thead>
<tr>
<th>Define</th>
<th>Measure</th>
<th>Analyze</th>
<th>Improve</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>Map process</td>
<td>Sources of variation</td>
<td>Map future</td>
<td>Quality control</td>
</tr>
<tr>
<td>Business case</td>
<td>Measure waste</td>
<td>Sources of waste</td>
<td>Plan improvements</td>
<td>Speed control</td>
</tr>
<tr>
<td>Objective</td>
<td>Measure variation</td>
<td>Sources of Overburden</td>
<td>Apply Improvements</td>
<td>Sharing of Knowledge</td>
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<tr>
<td>Team</td>
<td>Measure performance</td>
<td>Root causes</td>
<td>Evaluate impact</td>
<td></td>
</tr>
<tr>
<td>Process</td>
<td>Measurement system</td>
<td>Bottlenecks</td>
<td>Document changes</td>
<td>Standarize</td>
</tr>
</tbody>
</table>

15
Does Your Process Leave Your Staff Tired?
Let’s Take a Look.......
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Laboratory Value Pyramid
Level 1 and 2
Laboratory Based Initiatives
Strategic Plan for Laboratory

• Maintain or Improve Quality Levels
• Free Up Valuable Time and Resources
  - Identify biggest productivity barriers
  - Streamline process
  - Eliminate duplicate efforts
  - Create a proactive vs. reactive culture
• Leverage Critical Intelligence to Drive Decisions
  - Rapid TAT
• Create Real Time Knowledge for better patient outcomes
• Assure patient safety with patient centric approaches
Leveraging Technology

• Improve quality and reliability of laboratory testing, including the reduction of turnaround time for laboratory results

• Realize a cost benefit by containing the cost per laboratory test while delivering improved clinical effectiveness

• Reduce errors, thereby improving patient safety

• Avoid costs of adding FTEs to our laboratory staff in a market where highly trained technologists are limited
Key Questions

• How can Laboratory resources, skills, core competency, and automation/technology support the organization's strategic plan, vision, and priorities?

• How will automation/technology fulfill our mission and vision of moving forward?

• How will advantages be created by implementing automation/technology?

• Will automation/technology strengthen the Hospital and the Laboratory’s overall competitive position?
Basic Metabolic Panel

Receipt to Release TAT - ED

<table>
<thead>
<tr>
<th>Year</th>
<th>Meets Goal (30 minutes)</th>
<th>Not Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 2012</td>
<td>39.7%</td>
<td>60.3%</td>
</tr>
<tr>
<td>2013</td>
<td>74.1%</td>
<td>25.9%</td>
</tr>
<tr>
<td>2014</td>
<td>76.9%</td>
<td>23.1%</td>
</tr>
<tr>
<td>2015</td>
<td>74.3%</td>
<td>25.7%</td>
</tr>
</tbody>
</table>
ED Lactate

Receipt to Release TAT

% Meets Goal (30 minutes)
% Not Met

% Met Goal

Dec 2012 | 2013 | 2014 | 2015
---|---|---|---
50.0% | 80.0% | 90.0% | 90.0%
10.0% | 10.0% | 10.0% | 10.0%
Urinalysis

• Valuable Tool

• To diagnosis and monitor renal and urinary tract illnesses
Traditional Urinalysis

• Macroscopic Physical examination
  - Observation of the color, odor, turbidity
  - Determination of pH and specific gravity

• Chemical tests
  - Performed to detect glucose, ketone bodies, protein, bilirubin and nitrate

• Microscopic sediment analysis
  - RBC, WBC, Crystals, Casts
Instrument Technology

Innovative Technology

• Types of technology
  - Fluorescent flow cytometry
  - Digital flow imaging (Auto-Particle Recognition)
Process Optimization

Define
- Automate manual process for urinalysis
- Reduce subjectivity and review rates

Measure
- Create workflow map of current process
- Improve current Turnaround time
- Review UTI rates

Analyze
- Identify bottlenecks/barriers
- Reduce errors

Improve
- Quality
- Reduce subjectivity
- Reduce unnecessary testing

Control
- Costs
- Process
Urine Specimen Processing

Prior to Automated Analyzer

1. Specimen(s) delivered to urine workstation
2. Bar code ID into Clinitek
3. Visual Observation of color and clarity
4. Enter color and clarity into Clinitek
5. Dip reagent strip into urine
6. Place reagent strip on to Clinitek testing platform
7. Review Clinitek print out of chemistry test results
   - NO microscopy- Report in LIS
   - If microscopy is required-
     - Hand carry urine specimen(s) to centrifuge
     - Spin urine in centrifuge for 5 minutes @1400 rpms
     - Specimen(s) retrieved from centrifuged
     - Hand carry urine specimen(s) to microscope
     - Decant urine specimen(s) retaining 0.5 mL in collection tube
     - Place drop of specimen on slide
8. Perform manual microscopic examination
9. Specimen results are manually recorded on Clinitek print out
10. Enter results into LIS
11. Release Specimen results to LIS
   - In EMR
Flow Chart for Automated Urinalysis

Specimen is:
- collected
- delivered to Lab
- accessioned in LIS
- delivered to workstation

Specimen is:
- Place onto automated urine analyzer

Specimen Results
Auto-validated/Reviewed

Specimen Disposition
Process Modification Improvement

• Process modification improvement by leveraging automated technology

Decrease in Process Steps for Urine Chem Only

% 96 -

Decrease in Process Steps for Both Chem and Micro Urines

% 94 -
Clinical Impact

- Implementation of Rules Based Middleware
- Rapid Reporting of Actionable Information

Source: Mather Quality Data
Integration of Slidemaker and Stainer into Hematology Analyzer
CBC Turnaround Time ED

In-Lab TAT

Old Process
Average TAT 13 min 2014-2015

New Process
Average TAT 7 min 2015-2016
Workflow for Hematology Analyzer Prior to Integration of Slidemaker/Stainer
Workflow for Hematology Analyzer with Integrated Slide Maker/Stainer

1. Sample received at testing station
   - Sample placed in rack
2. Rack placed on XN-3000
3. XN-3000 processes sample
4. Normal results auto-validated to EMR
5. Results auto-reviewed by Middleware using laboratory defined rules (WAM)
6. PBS required based on lab defined rules
   - Slide maker/Stainer prepares PBS (scribes slide with name, sample ID and date, prepares monolayer based on HCT from CBC, PBS is air dried and stained)
   - Slide maker reads barcode and automatically identifies samples requiring PBS
7. PBS is transferred to Cellavision
8. Cellavision result reviewed by MT
9. Results released to EMR
10. Release abnormal values to EMR
11. Abnormal results are reviewed
Flow Chart for Integrated Slidemaker and Stainer

1. Specimen is received at workstation and sample is placed in rack.
2. Rack is placed onto automated hematology analyzer.
3. Specimen results are auto-validated/reviewed.
4. Specimen disposition is determined.
Clinical Impact

- Implementation of Rules Based Middleware- WAM
- Rapid Reporting of Actionable Information

Decreased TAT - 56%

Hematology Analyzer
Manual vs. Automated Slide Preparation

Manual “Hands-On” Slides

Automated Slide Preparation “Hands-Free” Slides
# Process Improvement Metrics

<table>
<thead>
<tr>
<th>DECREASED</th>
<th>INCREASED</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Total In-Lab TAT</td>
<td>✓ Slide Preparation Consistency</td>
</tr>
<tr>
<td>✓ Labor Intensive Manual Tasks</td>
<td>✓ Operational Efficiency/ Productivity</td>
</tr>
</tbody>
</table>

- **Decrease in “Hands-on” Steps**
  - Decrease In-Lab TAT: -58%

- **Decrease of Total Workflow Steps**
  - Decrease of Total Workflow Steps: -42%

- **Decrease in Manual Non-Value Added Steps**
  - Decrease in Manual Non-Value Added Steps: -100%
Workstation Consolidation
Lab Goals for Success from Volume to Value

- Drive out waste to drive out costs
- Employ Lean labor planning; manage retention & attrition
- Refocus on reagent and supply savings
- Use Lean management
- Create automated lean work cells—no more silos
- Manage lab orders and test utilization
- Standardize everything—equipment, policies, processes, job descriptions, etc.
- Leverage technology, connectivity, and data mining
Laboratory Value Pyramid

Level 3
Urine Culture Screening
Mather Case Study

- Evaluate the UTI flag as a screen
- Based on WBC and bacteria results
- Orders for both UA and culture
- Collection Methods - minimum sample volume 4mL
  - Clean Catch urines in sterile cups – no additive
  - Clean Catch urines poured off into tube containing preservative
- Analyzed within 1 hour after collection or refrigerated
- Culture performed at reference laboratory
Clinical Impact

- Implementation of Rules Based Middleware
- Rapid Reporting of Actionable Information

Source: Mather Quality Data
Urine Culture Screening Results

Bacteria Positive Threshold: 125 cells/µl
Urine Culture Positive Threshold: 10,000 CFU/ml

Sensitivity- .86  NPV- 0.96
Specificity- .60  PPV- 0.27

Positive Agreement- 27.3%
Negative Agreement- 96.0%

Source: Mather Quality Data
Making the Financial Case at Mather

Balancing Healthcare Costs

• Number of Annual Urine Cultures- 17,354
• Number of Positive Urine Cultures- 4,213
• Cost of Urine Negative Culture Screening- $6.70
• Number of Negative Urine Cultures- 13,141
Financial Impact of Culture Reduction

Total Cost Avoidance/Reduction with Urine Culture Screening is $88,044
Reducing Hospital Acquired Infections (HAIs)
Leveraging Technology

Culture
The Gold Standard

Molecular Diagnostics

1. Insert swab into Sample Reagent vial and break

2. Vortex and dispense Sample into Specimen Port

3. Insert Cartridge and start assay
Active Surveillance For MRSA

Cost-Benefit Molecular Testing (PCR)

Laboratory Costs

Screened high risk patients
2008 – 2014
12,785 patients (~ 1,825/yr)

• PCR Assay ~ $51 per test
• Total Screening Cost
  $657,325
• NO ADDITIONAL FTEs
• MRSA testing performed 24/7

MRSA Infections

248 bed hospital
(2007 vs. 2014)
62.0 fewer infections @ $35,000
Financial Impact of Rapid Screening and Reporting For HAI’s

Total Cost Avoidance/Reduction with MRSA Testing/Screening is $1,512,675
Clinical Impact and Financial Metrics

- Implementation of an Active MRSA High Risk Screening Program
- Rapid Reporting of Actionable Information
- Increased Awareness of HAI’s

Decreased Infection Rate: 84% -

Cost Reduction: 84% -
Algorithm for Rapid Accurate Diagnosis of C. diff

**GDH (antigen)/Toxin A/ B (EIA)**

- **Negative (GDH & Toxin A/ B)**
  - No further tests
  - **Tox neg**
    - Colonized
  - **Tox pos**
    - Disease

- **Positive**
  - **Toxin A/ B**
    - **Tox neg**
      - Severe disease (negative window?)
      - Recommend other test be run and/or treat (PCR)
C. Diff Cost Savings (2010-2014) Using a Simultaneous Two Test Algorithm

100% of patients tested with PCR

8243 patient samples → PCR $40 per test → $329,720

Simultaneous Two Test Algorithm

8243 patient samples → Simultaneous GDH and Toxin A/B $12 per test → $98,916

Ag+ Tox− 9%
Ag+ Tox+ 11%
Ag− Tox− 80%

PCR 925 samples $37,000

REPORT

REPORT

Cost/Savings of Simultaneous GDH/Toxin vs. PCR testing

TOTAL PCR = $329,720
TOTAL TWO TEST ALGORITHM = $135,916
SAVINGS = $193,804

Over 90% of test results reported in <45 minutes
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Laboratory Value Pyramid

Level 4

Choosing Wisely Initiative
The Choosing Wisely Committee has been chartered by the Mather Medical Board to focus on ways to provide safer, higher-quality care to patients while optimizing the use of healthcare resources.

“Choosing Wisely” is an initiative of the ABIM Foundation and supported by over 26 subspecialty societies. Each society has published a list of guidelines relevant to their subspecialty to provide guidance to physicians and their patients about the appropriate use of tests and procedures. The goal is to help both patients and providers make more effective care choices.

This committee will review guidelines to stimulate discussion about the need – or lack thereof – for many frequently ordered tests or treatments and to develop tools to reinforce appropriate use at Mather.
Propose guidelines for clinical efficiency and effectiveness in the workup and management of common hospital-based conditions to be endorsed by the Medical Board.
Objectives

• Better matching of care to needs

• High value, population specific

• Change Practice to Science — is central to addressing underuse of effective care and overuse of ineffective care
If only changing clinician behavior were this easy!
Key Performance Indicators

- Challenge/Opportunity
- Process and Quality
- Patient Benefit
  - Patient safety and satisfaction
  - Outcomes (LOS, mortality, re-admissions)
  - Avoid unnecessary treatment(s)
  - Appropriate level of care
- Cost
What We Need to Know

• What caused it to happen?

• Will it happen again?

• Is this a sign of other things?

• Is it deadly?
Key Questions to Consider

- Can patient outcomes and satisfaction levels be improved? **YES**
- Can we demonstrate measurable outcomes? **YES**
- What are the savings potential? **YES**
- Can clinical practice be changed? **YES**
Meeting Format

Standard Presentation Format

• Meeting Objectives
• Mather Data/Statistics
• What Do We Need to Know
• Patient Case Study
• Evidence-based Guidelines
• Best Practices
• Typical Cost of Care
• Do’s and Don’ts
• Recommendations
• Next Steps
Teamwork

Choosing Wisely Committee should include:

- Senior Hospital Leadership
- Chief Medical Officer
- Chief Information Medical Officer
- Hospitalists
- Intensivists
- Cardiologists
- ED Clinicians
- Clinical Laboratory
- Pharmacists
- Nursing Management/Staff
- Finance
Choosing Wisely Initiatives

Clinical Pre-Test Probability and D-dimer
- Wells Score
- D-dimer Test

Chest Pain Accelerated ED Protocol
- Serial Draws
- Single Troponins

HF and BNP
- Pre-discharge BNP
- NYHA Classification
- HF and Iron deficiency and Anemia

Syncope
- CHESS Score

Echo
- List reason for ECHO

Work in Progress....
HF and Iron Deficiency
Iron deficiency and anemia are common in HF patients

- Anemia is associated with worsening HF symptoms, increased morbidity & mortality

- Iron deficiency is a major reason for development of anemia

- Iron is essential for oxygen metabolism and energy production
Iron Deficiency is Common in HF Patients

- 37% of 546 CHF patients were iron deficient
- Iron deficiency (ID) was a strong, independent predictor of unfavorable outcome
- 3-year survival rate was 66.7% in patients without ID vs. 53.6% in patients with ID

Figure 2  Kaplan–Meier curves reflecting 3-year event-free survival rates in patients with systolic chronic heart failure with vs. without iron deficiency.
Hemoglobin Levels for CHF Inpatients
Admissions April 1, 2015 - March 31, 2016

N = 474 Patients

<table>
<thead>
<tr>
<th>Hgb Level</th>
<th>Count of Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;12</td>
<td>281</td>
<td>59.28%</td>
</tr>
<tr>
<td>&gt;= 12</td>
<td>193</td>
<td>40.72%</td>
</tr>
<tr>
<td>Total</td>
<td>474</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Population: Inpatients admitted between April 1, 2015 and March 31, 2016 with a primary discharge diagnosis of CHF.
Source: SCM
## Serum Iron & Ferritin Levels for CHF Inpatients

Admissions April 1, 2015 – March 31, 2016

<table>
<thead>
<tr>
<th>Serum Iron Level</th>
<th>Last Ferritin &lt; 100 ng/mL</th>
<th>Last Ferritin &gt;= 100 ng/mL</th>
<th>No Ferritin Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 40 ug/dL</td>
<td>36</td>
<td>23</td>
<td>3</td>
</tr>
<tr>
<td>&gt;= 40 ug/dL</td>
<td>23</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>35</td>
<td>5</td>
</tr>
</tbody>
</table>

Population: Inpatients admitted between April 1, 2015 and March 31, 2016 with a primary discharge diagnosis of CHF.

Source: SCM

Only 53% (19/36) of patients with Fe <40 and Ferritin <100 left with a prescription for Fe at discharge
Diagnosis of Iron Deficiency

- Biochemical parameters
  - Serum iron
  - Ferritin
  - Transferrin
  - Transferrin saturation (TSAT)
Laboratory Anemia Work-up

Hematology Parameters

• Based on entire RBC population
  - Hgb
  - HCT
  - MCV
  - RDW

• Based on reticulocyte population
  - Reticulocyte Hemoglobin (RET-He/CHr)
What is Reticulocyte Hemoglobin?

(RET–He/CHr)

• Measured at cellular level
• Early detection of iron deficiency
• Monitors acute changes in hemoglobin incorporation into the erythron
• More sensitive than indirect chemical measurements
• Detects non-responders to ESA (Functional Iron Deficiency)
• RET-He > 28 pg/cell indicates that sufficient iron is available for incorporation into the red cell

• RET-He < 28 pg/cell indicates that not enough iron is available to produce healthy RBC’s

• Reference Range
  Adults: 28.2 –36.6 pg/cell
Clinical Utility of RET-He

• To identify iron deficiency early
• To monitor erythropoiesis
• To monitor the response to iron and Erythropoietin therapy
Screening Assessment for ID/IDA in Heart Failure Patients

- Hgb is ≤ 12 gm/dL
- Reticulocyte count and RET-H\(\ell\), if RET-H\(\ell\) ≤ 28 pg/cell
- Fe- ≤ 40µg/mL
  - TIBC- ≤ 20%
  - TSAT- ≤ 20%
  - Ferritin- ≤ 100ng/mL
ANEMIA ASSESSMENT SCREENING
INTEGRATED PROCESS

**Specimen is:**
- Received at workstation
- Placed in testing rack

**Rack is:**
- Placed on automated hematology analyzer

**Specimen results**
- auto-validated/reviewed

**Specimen disposition**
The Value is Unquestionable…

Saves Lives and Dollars

• RET-He…..Anemia management test

- Cost < $1.00
- Rapid screening
- Prevents progression to Iron deficiency anemia
- Promotes rapid intervention….. reduced blood collection……improves patient outcomes… enhances patient care management
Choosing Wisely Initiative
Clinical Pre-Test Probability Assessment and D-dimer as a First Screen for PE and DVT
D-dimer and Patient Age

ED Arrivals May 1, 2015 - April 27, 2016

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Count of Encounters</th>
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<tbody>
<tr>
<td>10-19</td>
<td>32</td>
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<tr>
<td>20-29</td>
<td>148</td>
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<tr>
<td>30-39</td>
<td>131</td>
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<td>40-49</td>
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<td>50-59</td>
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<td>60-69</td>
<td>153</td>
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<tr>
<td>70-79</td>
<td>128</td>
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<tr>
<td>80-89</td>
<td>81</td>
</tr>
<tr>
<td>90 and up</td>
<td>26</td>
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</table>

Source: SCM
Statistics

• 99% of ED cases had no documentation of any CPTP assessment

• 1154- Total Number of D-dimers ordered between May 2015 and April 2016
  - 919 (85%) D-dimer and no angiography
  - 157 (15%) D-dimer and angiography
• ED- 107 (68%) Positive D-dimer (>500ng/mL) had Angiography

• Angiography Results
  - 101 Negative
  - 4 Positive
  - 2 Equivocal
• ED- 50 patients (32%) with Negative D-dimer (<500 ng/mL) had Angiography

• Angiography Results
  - 50 Negative
    - 32 triple CCTA
    - 2 double
    - 8 single
    - 9 V/Q Scan

• Average Patient Age- 49.5
Not all D-dimer Tests are Created Equal

- FDA cleared for **Exclusion** of PE and DVT in low and moderate risk outpatients
- Not all D-dimer tests support an exclusion strategy
- **Negative Predictive Value**- (NPV reflects the ability of a test to rule out the disease)
- NPV > 99% at a cut-off of 500ng/mL
DVT/PE Risk Assessment Algorithm

Clinical Pre-Test Probability (CPTP) Wells Score

Low or Moderate Risk
DVT ≤2  PE ≤5

D-dimer Negative (<500 ng/mL)

STOP

High Risk
DVT ≥3  PE ≥6

D-dimer Positive (>500 ng/mL)

Continue Examination

NPV >99% when CPTP and D-dimer are combined for safe exclusion of VTE in suspected outpatients
- No further testing
- No anticoagulant treatment
- Improved patient management
- No radiation exposure
- Cost savings

Follow-up with imaging procedures such as:
- CCTA/Pulmonary angiography
- V/Q Scan
- Compression ultrasonography (CUS)

Other investigations for differential diagnosis
Cost Savings

- Cost saving for the hospital
  - Avoid unnecessary imaging procedures
    - CCTA- $1511
  - Contrast Media/Meds- $57.82
    - Contrast Media- $46.98
    - Meds- $10.84
  - Human Resources
    - RN and CT Tech- $60.00
$1628.82/pt \times 50 = $81,441
The Value is Unquestionable…

Saves Lives and Dollars

D-dimer…..DVT/PE Exclusion strategy when combined with CPTP

- Cost - $9.00
- Rapid screening in less than 1 hour
- Promotes accurate (NPV >99%) exclusion of VTE in low to moderate risk outpatients
- Improves patient outcomes
- Enhances patient care management by closing the case and avoiding unnecessary diagnostic/imaging testing
- Frees up beds quicker in ED, thereby eliminating bottlenecks and holds
HEART Pathway

Chest Pain/Suspected ACS

HEART Score

Low Risk (0-3)
- Serial Troponins 0, 3 hours
  - Negative TnI ≤ 0.06 ng/mL
    - Early Discharge

High Risk (7-10)
- Serial Troponins 0, 3 hours
  - Positive TnI ≥ 0.06 ng/mL
    - Cardiology Consult and Admit
      - Stress Testing or Cardiac Imaging
  - Negative TnI ≤ 0.06 ng/mL
    - Admit to Observation or Inpatient
Choosing Wisely can successful shift us from fee for service to High Value Based Patient Outcomes and Improved Patient Satisfaction!
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What’s Next
Lessons Learned

• Continuous assessment of the initiatives
• Keep communication open
• Information Technology role is essential
• Change is slower than expected
• Collaboration among all stakeholders is paramount for success
• Demonstrate your knowledge
• Educate and be prepared
Keys for Success

- Demonstrate your knowledge
- Network, network, network
- Capture the informal opportunities
- Capture the formal opportunities
- Assemble a team
- Attend committee meetings
- Become a liaison
- Capitalize on existing communication
We Must Break Out of Our Silos for High Value Cost Appropriate Care
There has to be something for everyone!
Executive Summary

• The Laboratory Value Pyramid (LVP) provides an essential and strategic roadmap for making the transition from volume to value.

• Implementation of the LVP demonstrates how the Laboratory can directly contribute to enhanced patient care and outcomes at each level by implementing advanced technology and data to support evidence based practices.

• The LVP provides at each level a communication forum that fosters Laboratorian/clinician collaborations and engagement, that enables initiatives that results in reduce costs and infection rates, effective test utilization for improve quality, patient management and reduce costs.

• The LVP allows the Laboratory to increase their value proposition and visibility, while becoming an integrated member of the healthcare delivery team.
A thousand mile journey begins with a single step

Lao Tzu
LQC 2017

a great BIG THANK YOU!