Defining Value in Pathology
Strategies for Survival

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Key Learning Objectives

• To learn how an integrated laboratory service can leverage quality management thinking, Lean and ISO to improve testing service levels and capabilities that provide enhanced value to clinician practices

• To understand the critical role of designing and implementing systems and subsystems of management that focus on lab quality and cost control

• To understand the V-(alue) metrics of importance in defining the value of the medical laboratory and the pathologist in the changing clinical care continuum

Disruptive Changes

• Reimbursement
  – Fee for service on way out
  – Bundled payments, capitation, P4P

• Physician practice models

• Genetic based personalized medicine

• Lab economies of scale vs value
  – IPD decline, OPD growth
  – Access to OPD and outreach

Volume Driven Healthcare
Incentive: Do More

Value Driven Healthcare
Incentive: Do Better

Paradigm Change
Volume → Value

• New delivery care models
  † efficiencies, coordination of care, outcomes, satisfaction
  ↓ spending $5
  – ACA- ACOs, Medical Homes
  – Hospital consolidations & acquisition priv practices
  – Clinically integrated private physician networks

• New payment models
  – Pay-for-Value reimbursement
    • PQRS, HCAHPS, Medicare Shared Savings Program

• ↑ primary care pay and ↓ specialty care pay
  – PAMA 2014 clinical lab reimbursement reductions
    • 30% 2017-2019 (10%/yr); 45% 2020-2022 (15%/yr)
Survival
Hear the wave before you see it

"If you don't like change, you will like irrelevance even less"
-Gen. Eric Shinseki

Volume
FTE
Reimbursement


Problem Background
The Laboratory is unrecognized as an asset to coordinate care, foster health system integration and cost control. More likely seen as cost center.

Hypothesis
We have either not created systems to do so or articulated the case for high value well.

Current Condition
1. Of the cost, 75% of the E&M
2. Up to 75% clinical decision-making
3. Underdeveloped lab systems to support call for coordination of care, system integration, cost control

Problem Analysis WHY?
1. No one asked us to and it's hard work
2. Hard to quantify clinical and cost success
3. Don't have good metrics to share
4. Don't have appropriate management subsystems

Target Condition
Document & achieve recognition for coordination, care integration & system savings
Obtain support for lab innovation & growth

Action Plan
Create subsystems & metrics to show value

The Value (V) KPI Metric
• The currency of healthcare is now $$ rather than time -John Waugh
• Are you still pursuing TAT as your lab's measure of success?

Performance => Productivity => Value $$ Metrics
Cost per test, cost per episode of care, cost control, cost avoidance
Lab costs per adjusted discharge

We still waste more than we use. We waste men, we waste materials, we waste everything, and consequently we have to work too hard and too long to accomplish what in the end amounts to very little.”

"It's the work not the man that manages"

"The business of management is to manage. The thing to be managed is work"
Customer Satisfaction in consolidating & integrating systems

Leverage Lean & ISO Management Systems

“Systems don’t produce quality, people do”

But systems provide standardization for people to:

- Deliver high quality consistently
- Focus on specific requirements of new and existing customers
- Identify poor quality rapidly and correct non-conformances
- Engage the workforce in continuous improvement
- Adopt preventive, not just corrective actions

The Processes of Managing for Continuous Improvement
Deviation Management Process

Daily deviations are encountered
- Stop
- Record on shared drive spreadsheet
- Classify defect
- Rapid resolution corrective actions

Monthly deviations are tabulated and summarized

Monthly PDCA (A3)
The Team
- Problem Background
- Hypothesis
- Current Condition
- Problem Analysis (RCA)
- Target Condition
- Implementation Plan
- Action plan
- Results
- Effectiveness Check (Metrics)

All Employees
- Stop
- Record on shared drive spreadsheet
- Classify defect
- Rapid resolution corrective actions

Managers and Leaders
- Evaluate trends
- Identify the most common and the critical few
- Prioritize improvements

Continuous Process

Taxonomy
Deviation Classification Categories

<table>
<thead>
<tr>
<th>Main Categories</th>
<th>Number of Subclassification Categories</th>
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<tbody>
<tr>
<td>Order Defects</td>
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<tr>
<td>Specimen Defects</td>
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<td>Testing Defects</td>
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Deviation Management Surveillance Trending

Top 35 Defects

Specimen Integrity
- Redraw = dissatisfaction
- Integrity = safety

Customer supplier meetings with OR Nursing Team Leaders
- Educated at RN meeting at HS
- One on one education to not use generic part types when specimens delivered to the lab
- Reduced extremity part type choices, 24 to 12

Customised part type ordering lists were updated for each speciality

First customer supplier meeting (Pathology and OR admin)

Second customer supplier meeting with OR Nursing at Main Campus

Customer supplier meeting (Pathology and OR admin)

Epic Orders Improvement - All Hospitals

Daily Management Board

Q-TIPS
- Quality
- Time
- Inventory
- Productivity
- Safety

“A legacy of quality”
Visual Management At-a-Glance

- Each square has all days of month
- Color each per performance
- GREEN: METRIC MET THRESHOLD
- RED: METRIC FAILED THRESHOLD

Trendlines
- Trend challenging metrics
- Day, week, month, year...
- BLUE: THRESHOLD
- RED: TIME OF FAILURE
- GREEN: TIME PASSING THRESHOLD

Countermeasures:
- Corrective & Preventive Actions
- Assign responsibility and accountability for completion
- Associated PDCA - A3 Projects

DM Metrics June 2013-2014

<table>
<thead>
<tr>
<th>LAB Division</th>
<th>No. Daily Metrics in 1 yr</th>
<th>No. Long term &gt;6 mo</th>
<th>No. Short term 1-6 mo</th>
<th>No. derived process improvements</th>
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<td>9</td>
<td>3</td>
<td>4</td>
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<td>53</td>
<td>42</td>
<td>34 15 14 8 5</td>
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No. Unique Metrics/Year: 22

QTIPS Domain Usage

Critical Value Defect Rate
First 3 months...

Steady Drop in Critical Value Callback Failures
**Critical Value Defect Rate**

*First 8 months…*

- **Dec 12**: 0.7/day
- **Aug 13**: 0.3/day

<table>
<thead>
<tr>
<th>Date</th>
<th>Number of CV missed</th>
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<td>Aug 13</td>
<td>0.3/day</td>
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<td>Dec 21</td>
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<td>Aug 16</td>
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<td>Aug 23</td>
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**Initial Performance**

- Defect Rate = 0.7%
- \(3.99\) \(\sigma\)

**Sustained Improvement**

- Defect Rate = 0.08%
- \(4.66\) \(\sigma\)

**Deployment**

- Implementation of new EMR
- Standardization of EMR orders
- Reduced staffing
- Replenishment of staffing
- Inconsistent comprehension of procedure
- Simplification of procedure and re-training

**Sustenance and Continual Improvement**

- Reduction in Critical Value Defects.

This graph represents the improvement in the performance of our laboratory’s safety (S) metric related to notification and documentation of a critical value notification to an ordering provider. It represents the initial gains in performance during deployment (December 2012-May 2013), subsequent monitoring of performance (April 2013-August 2014) impacted by varied root-causes (↑) and improvements through countermeasures (↓).

- **Initial Improvement**
  - Defect Rate = 0.11%
  - \(4.57\) \(\sigma\)

**Sustained Success !**

- Total Savings $50,270,000

**Molecular Profile**

<table>
<thead>
<tr>
<th>Targeted Therapeutic</th>
<th>Cost of Treatment</th>
<th>Pharma Cost Savings</th>
<th>Pharma Cost Savings</th>
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<tbody>
<tr>
<td>EGF (Gefitinib)</td>
<td>$72,000</td>
<td>$14,184,000</td>
<td>$14,832,000</td>
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<tr>
<td>ALK FISH (Crizotinib)</td>
<td>$72,000</td>
<td>$12,600,000</td>
<td>$13,248,000</td>
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<tr>
<td>BRAF (Vemurafenib)</td>
<td>$120,000</td>
<td>$1,560,000</td>
<td>$2,880,000</td>
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<tr>
<td>HER2 FISH (Herceptin)</td>
<td>$70,000</td>
<td>$1,560,000</td>
<td>$14,560,000</td>
</tr>
<tr>
<td>KRAS (Cetuximab)</td>
<td>$125,000</td>
<td>$5,750,000</td>
<td>$4,750,000</td>
</tr>
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</table>

**Pharmacy Cost Savings**

<table>
<thead>
<tr>
<th>Molecular Profile</th>
<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td>EGF (Gefitinib)</td>
<td>$46,274,000</td>
<td>$50,270,000</td>
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</table>

**Cost Savings associated with LOS**

- Average reduction LOS = 4.78 days
- Average reduction Costs/LOS = $19,822.66 per Candida sepsis episode
- Projected annualized LOS cost savings = $1,110,069.00
- Plus annual lab savings = $1,225,069.00

**Hospital LOS Improvement**

- ~33% decrease in overall TAT ID reporting
- Annual lab testing cost savings = $115,000

**V-Metrics LOS & Cost/LOS**

- ~33% decrease in overall TAT ID report translates to:
  - ~33% decrease LOS (~14 to 9 days)
  - LOS = $4147/day
Value Metrics

Won’t always be cost and productivity but….

Downstream episode of care efficiencies and clinical outcomes

Relating to Value Metrics

The language of the hospital C-Suite
- Risk Adjusted LOS (case type and severity)
- Emergency Room LOS
- Case Mix Adjusted Episode Costs
- Risk Adjusted Early Readmission Rate
- Average Time Emergency Department (ED) Door to Bed Average Time
- ED Treatment to Release
- Divert Hours for ED
- Pharmacy cost/DRG
- RVUs/DRG
- Cost per unit of service
- Salary Expense per Adjusted Patient Day
- Full Time Equivalents (FTE) per Adjusted Patient Day
- Supply Expense per Adjusted Patient Day

Are You Ready to Unleash the Power of Pathology’s V-Man?

“Improved efficiency is only meaningful when it leads to cost reduction. This requires producing the required amount with the least resource.”

“Efficiency improvement must be looked at not only at the level of individual people, lines staffed by teams of people, and groups of these lines but as efficiency of the entire system.”

- Taiichi Ohno