Achieve Cost Savings Using Labor Productivity and Expense Benchmarks
Achieve Major Cost Savings by Understanding and Implementing Labor Productivity and Expense Benchmarks

**Speaker:**

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Applied Management Systems, Inc. (AMS)

SBrommer@aboutams.com
Speaker Biography

Sharon M. Brommer
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MT (ASCP)
MS, Biological Sciences
MBA, Healthcare Administration
Certified in Lean Six Sigma
 Former Diagnostic Services Administrator
Fellow, ACHE
Current:
Sr. Vice President, AMS, Inc.
**founded:** 1967  
**offices:** Burlington, MA; Columbia, MD

**clients:** 750+  
**engagements:** 6,000+  
(58% in Northeast)

**staff:** Clinical and administrative experts, management engineers

**expertise:** Content area experts in all hospital operational departments

**hospital projects:** Hospital-wide benchmarking, Strategic planning

**laboratory projects:**

- Operational assessments
- Labor productivity benchmarking
- Expense benchmarking
- Strategic planning
- Market opportunity assessments
- Laboratory consolidations
- Facilities planning
- Lean Six Sigma projects
- Quality assessments
- Regulatory compliance
Topics for today’s session

• Introduction: The Focus on Achieving Cost Savings

• Labor Productivity Benchmarking
  • Internal and external benchmarks
  • Function-based benchmarking

• Utilizing Labor Productivity Data

• Utilizing Expense Benchmarks to Reduce Costs
  • Salary, non-salary and total cost per test
Learning objectives focus on practical applications of labor and expense benchmarks

1. Define labor productivity benchmarks and understand how to calculate them

2. Assess staffing needs by applying labor benchmarks
   - Overall laboratory and departmental
   - Utilizing labor productivity to achieve savings and to forecast

3. Understand how to measure and improve cost per test performance using expense benchmarks
INTRODUCTION:
THE FOCUS ON COST SAVINGS
Changes in Medicare reimbursement for IPs

- Patient Protection and Affordable Care Act (PPACA): Medicare payments to hospitals are related to quality measures
  - A hospital’s performance in Hospital Value Based Purchasing (VBP) will be based on its performance according to specific measures
- VBP bonuses and penalties are on top of the Readmissions Penalties of up to 2%, for hospitals with higher than expected readmissions rates
  - In 2013, Medicare raised payments to 1,231 hospitals and reduced payments to 1,451 hospitals
  - The average bonus was 0.24% and the average penalty was 0.26%
VBP Measures for 2015

- 12 Clinical Process of Care measures
- 8 Patient Experience of Care dimensions (HCAHPS)
- 3, 30-Day Outcome Mortality measures
  - Acute Myocardial Infarction (AMI)
  - Heart Failure (HF)
  - Pneumonia (PN)
- 1 Agency for Healthcare Research and Quality (AHRQ) Composite measure: Patient Safety Indicator (PSI-90)]
- 1 HealthcareAssociated Infection: Central Line-Associated Blood Stream Infection (CLABSI)
- 1 Efficiency measure: Medicare Spending Per Beneficiary (MSPB)
Major changes to the laboratory landscape

1. Reimbursement
2. Mergers and Acquisitions
3. Outsourcing
Medicare fee schedule changes impact lab reimbursement

• 2014: Bundling of all labs (except Molecular tests) to a hospital outpatient visit fee (OPPS)
  • Essentially reimburses hospitals for individual lab tests with a bundled payment, like a DRG for inpatient care

• CLFS and PFS Changes
  • Molecular Dx code stacking changes in 2013
  • CLFS fees down 0.75% in 2014
  • Significant impact on pathology reimbursement (88305, 88342)

<table>
<thead>
<tr>
<th>Clinical Laboratory Fee Schedule Updates 2012-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
</tr>
<tr>
<td>2013</td>
</tr>
<tr>
<td>2014</td>
</tr>
</tbody>
</table>
Congress passes the Sustainable Growth Rate (SGR) patch on March 31, 2014

- 12-month patch to the correction to the SGR formula intended to reduce cuts to physician payments, and CLFS tests. Also delays ICD-10 to 10/1/2015.
- Beginning 1/1/2016, and every 3 years thereafter, each lab must report (to CMS) the payment rate paid by each private payor and the volume of such tests for each such private payor.
- For existing clinical diagnostic lab tests: Beginning 1/1/2017, the CMS payment amount shall equal the weighted median determined for each test (based on reported payment data).
- From 2017-2019, payment amounts determined in this way should not result in a reduction greater than 10% each year and from 2020-2022, greater than 15% each year.
- Additional rules apply to Advanced Diagnostic Laboratory Tests, including annual reporting of payments, and newly introduced tests.
Laboratory environment focused on mergers and acquisitions in 2013/2014

• 20 lab acquisitions in 2013
  • Quest Diagnostics’ acquisitions included UMass Labs in MA, Dignity Health outreach labs in CA, and ConVerge Diagnostics Services in MA
  • LabCorp acquired, among others, MuirLab, Dignity Health outreach in AZ, and Genesis Clinical Lab in Chicago

• March 2014: Quest completed the purchase of Solstas Lab Partners, with major labs in NC, VA and TN, for approximately $570 million
Hospital lab outsourcing is the next market opportunity for national labs

- National labs are becoming more aggressive in the hospital laboratory management market
- In a November 2012 article, a senior Quest executive outlined Quest's focus on hospital lab outsourcing, particularly those hospitals with between 100 and 500 beds
  - Their promise: to cut 8-20% of costs by using Quest’s buying power and economies of scale
  - Website offers full and limited lab management services in a link targeted to hospital executives
- January 2014: Sonic Healthcare presentation on hospital partnership strategy, employing a LLC model

LABOR PRODUCTIVITY AND FUNCTION-BASED BENCHMARKING
Labor productivity is defined as the rate of output per worker per unit of time.

- Most commonly used units for lab productivity:
  - Tests per paid full-time equivalent (FTE)
    \[
    \frac{1,000,000 \text{ tests}}{67.31 \text{ paid FTEs}} = 14,650 \text{ tests/paid FTE}
    \]
  - Paid hours per billed test (ph/bt)
    \[
    \frac{140,000 \text{ paid hours}}{1,000,000 \text{ billed tests}} = 0.14 \text{ ph/bt}
    \]

2080 hours = 1.0 FTE
Productivity monitoring provides a quantitative, objective answer

- Respond to those “feels-like”, qualitative questions

- Optimize labor resources
  - The right *number* (FTEs) of
  - The right *individuals* (skills) at
  - The right *time* (schedule) doing
  - The right *things* (tasks, process) in
  - The right *way* (performance excellence)
Use targets as a budgeting and planning tool

- Use targets to budget for the labor component of lab expenses
- Identify when adjustments are needed due to change in volume, process or work functions
  - Plan instrument acquisition decisions
  - Guide workstation design and modification
  - Identify when changes to skill mix are required
- Productivity monitoring is not just about cutting staff
Average age of an MT is 42.0 years

SOURCE: The American Society for Clinical Pathology’s 2013 Wage Survey of Clinical Laboratories in the United States
One client’s experience with the aging workforce

Cumulative Number of Staff Approaching Retirement Age (65 yrs.); Management and Techs (Combined)

Median Ages
Managers: 52 yrs.
Techs: 54 yrs.
Cytotechs: 44 yrs.
Histotechs: 33 yrs.

21% of techs
9% of managers

48% of techs
27% of managers
An example of “the edge of adventure”

Standalone community hospital lab in MA
- 1.6M bt (at the time) with a large outreach program

Operating far beneath the benchmark has telltale signs
- This lab ‘felt’ like they were understaffed. They were.
Benchmark: *noun*

- “something that can be used as a way to judge the quality or level of other, similar things” *(Merriam Webster)*

- **a**: a point of reference from which measurements may be made
- **b**: something that serves as a standard by which others may be measured or judged

- **Benchmarks** can be used to set goals for:
  1. Labor productivity
  2. Expenses
  3. Quality and Service standards (turnaround time, error rates)
Use *Internal benchmarks* to track change

• Utilize *internal benchmarking* to monitor performance within your lab or system, and track changes over time
  • You can calculate your own targets
  • Remember that productivity is dynamic!
  • Monitor frequently
    > As often as significant data can be reported
    > Helps identify the effect of significant volume changes (new or lost clients) that have occurred during the fiscal year
    > Evaluate success/failure of a process change
  • Utilize data to justify staffing or equipment needs
Use *External benchmarks* to compare performance to others’

- Use caution when applying *external benchmarks*
  - Identify the appropriate peer group
    - Has another department selected your peer group?
    - Is it based on hospital inpatient data?
    - Is it based on laboratory-specific data?
    - Do you know the data collection definitions?
    - How are test menu, and systems or service issues addressed?
  - Be aware of potential variances caused by self-reporting
Overall lab benchmark comparisons should account for these major lab differentiators

- Total billable lab tests
- Rapid Response Lab (RRL) with limited test menu
- No Anatomic Pathology or Core AP
- No Microbiology or Core Microbiology

- Outreach Lab (ORL) program with off-site phlebotomy and other services
- No inpatient phlebotomy
Actual labor productivity is compared to a target benchmark range

Productivity ratio = paid hours per billed test

\[
\frac{140,000 \text{ paid hours}}{1,000,000 \text{ billed tests}} = 0.14 \text{ ph/bt}
\]

Lower is better
## Size and scope will impact productivity

### Laboratory Labor Productivity vs. Benchmark Range

<table>
<thead>
<tr>
<th>Location</th>
<th>Total Billed Tests (Performed)</th>
<th>Lab FTEs</th>
<th>PH/BT</th>
<th>AMS Range (PH/BT)</th>
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<td>357.45</td>
<td>0.14</td>
<td>0.13 - 0.17</td>
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<td>93.26</td>
<td>0.29</td>
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<tr>
<td>Hospital C</td>
<td>34,263</td>
<td>4.62</td>
<td>0.28</td>
<td>0.26 - 0.30</td>
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<tr>
<td>Hospital D</td>
<td>378,260</td>
<td>39.45</td>
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<tr>
<td>Hospital E</td>
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<td>34.65</td>
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<tr>
<td>Hospital F</td>
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<tr>
<td>System Total</td>
<td>7,412,950</td>
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AMS utilizes function-based benchmarking

• Data sources
  • Developed through the compilation of information from several areas
    > AMS Comparative Database (at least biennial review)
    > Professional Societies and Publications
    > Surveys and Studies
    > Professional Experience

• Function-based benchmarks
  • Based on AMS benchmark definitions
  • Best Practice targets
  • Customized ranges

<table>
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<th>Percentile</th>
<th>Ph/BT</th>
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<tr>
<td>10</td>
<td>0.14</td>
</tr>
<tr>
<td>20</td>
<td>0.15</td>
</tr>
<tr>
<td>30</td>
<td>0.17</td>
</tr>
<tr>
<td>40</td>
<td>0.19</td>
</tr>
<tr>
<td>50</td>
<td>0.20</td>
</tr>
<tr>
<td>60</td>
<td>0.21</td>
</tr>
<tr>
<td>70</td>
<td>0.23</td>
</tr>
<tr>
<td>80</td>
<td>0.26</td>
</tr>
<tr>
<td>90</td>
<td>0.30</td>
</tr>
<tr>
<td>Average</td>
<td>0.21</td>
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25-50th
Productivity ratio numerator = \textit{paid} hours

PAID hours = Worked + Non-productive hours

- Paid hours reflect who is performing the work
- Specific skills included in benchmark definitions \textit{(what’s in; what’s out)}
- \textit{Use biweekly Labor Distribution Report}
- Ensure data is easily captured
- 2,080 hours per FTE
Productivity ratio denominator = *billed* tests

Know what to include and exclude per benchmark definitions *(what’s in; what’s out)*

- Ensure data is easy to capture
- Updated CDM versus current billing rules
- Normalized among labs (usually)
Example: System labs requiring customization

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RRL; Limited menu
875k bt sent to Core; Grossing of all surgicals
RRL; 196k bt sent to Core lab
RRL; Limited menu; With ORL phlebs
What’s the reason for the Δ?

- Data accuracy
- Minimum staffing
- Excessive non-productive time
- Barriers

AMS Benchmark Range: 0.13-0.15 ph/bt

Actual

0.11 0.12 0.13 0.14 0.15 0.16 0.17 ph/bt

AMS Benchmark Range: 0.13-0.15 ph/bt

Actual

0.11 0.12 0.13 0.14 0.15 0.16 0.17 ph/bt

You are here
Determine benchmark range, then set your target to what’s right for your lab

AMS Benchmark Range: 0.13-0.15 ph/bt

Operations that provide specialized services or require manual tasks outside the lab’s control

Highly automated, efficient operations utilizing best practices
Next step is to drill down through the productivity cascade

High Level Benchmark

Drill Down to Department (Cost Center)
- Chemistry
- Hem/Coag
- Molecular Diagnostics
- Specimen Processing

Deeper Drill Down into Operations
- Workstation design
- Level of Automation
- Workflow
- Service (TAT) demands
A departmental drill-down could reveal opportunities not seen in the overall data.

You’d be hoppy with this, right?

**Overall Productivity vs. Benchmark**

AMS Customized Benchmark Range: 0.13-0.17 ph/bt
A departmental drill-down could reveal opportunities not apparent in the overall data

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</thead>
<tbody>
<tr>
<td>Chemistry/Tox</td>
<td>2,531,121</td>
<td>39.42</td>
<td>0.032</td>
<td>0.04 - 0.06</td>
<td>0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10</td>
</tr>
<tr>
<td>Hematology</td>
<td>943,824</td>
<td>33.05</td>
<td>0.07</td>
<td>0.10 - 0.12</td>
<td>0.06 0.07 0.08 0.09 0.10</td>
</tr>
<tr>
<td>Microbiology</td>
<td>543,284</td>
<td>60.58</td>
<td>0.23</td>
<td>0.19 - 0.24</td>
<td>0.17 0.18 0.19 0.20 0.21 0.22 0.23 0.24 0.25</td>
</tr>
<tr>
<td>Immunology</td>
<td>522,899</td>
<td>16.14</td>
<td>0.06</td>
<td>0.06 - 0.08</td>
<td>0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10</td>
</tr>
<tr>
<td>Molecular Microbiology</td>
<td>171,201</td>
<td>4.96</td>
<td>0.06</td>
<td>0.10 - 0.12</td>
<td>0.06 0.07 0.08 0.09 0.10</td>
</tr>
<tr>
<td>Flow Cytometry</td>
<td>17,831</td>
<td>4.08</td>
<td>0.48</td>
<td>0.18 - 0.22</td>
<td>0.16 0.18 0.20 0.22 - - - 0.48 0.50</td>
</tr>
<tr>
<td>Molecular Genetics</td>
<td>19,079</td>
<td>11.98</td>
<td>1.31</td>
<td>1.30 - 1.65</td>
<td>1.21 1.30 1.39 1.48 1.56 1.65 1.74 1.83 1.91</td>
</tr>
<tr>
<td>Histology</td>
<td>125,769</td>
<td>47.17</td>
<td>0.78</td>
<td>0.50 - 0.64</td>
<td>0.50 0.54 0.57 0.61 0.64 0.68 0.71 0.75 0.78</td>
</tr>
<tr>
<td>Cytology</td>
<td>90,422</td>
<td>23.80</td>
<td>0.55</td>
<td>0.41 - 0.50</td>
<td>0.39 0.41 0.43 0.46 0.48 0.50 0.52 0.55 0.57</td>
</tr>
</tbody>
</table>
AMS productivity ranges by laboratory section

Typical Test Distribution by Lab Section

- **Histology**: 0.47 - 0.50 ph/bt
- **Cytology**: 0.38 - 0.44 ph/bt
- **Blood Bank**: 0.28 - 0.35 ph/bt
- **Microbiology**: 0.16 - 0.19 ph/bt
- **Hematology**: 0.12 - 0.14 ph/bt (<200,000 bt)
  - 0.07 - 0.90 ph/bt (>200,000 bt)
- **Chemistry**: 0.05 - 0.07 ph/bt (<300,000 bt)
  - 0.04 - 0.06 ph/bt (>300,000 bt)

Greater productivity with increased volume and automation

May 4-7, 2014 • Rio All-Suites Hotel and Casino • Las Vegas, Nevada
Ensure accuracy of departmental data

Cardinal rules to calculate accurate ph/bt

1. Allocate staff based on where work is performed
   • Allocate evening/night shifts
   • Blend benchmarks, if needed

<table>
<thead>
<tr>
<th>LAB SECTION</th>
<th>BT</th>
<th>FIXED FTE</th>
<th>LOW PH/BT</th>
<th>REQD LOW PD HRS</th>
<th>HIGH PH/BT</th>
<th>REQD HIGH PD HRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>255,476</td>
<td>0.05</td>
<td>12,774</td>
<td>0.07</td>
<td>17,883</td>
<td></td>
</tr>
<tr>
<td>Hematology</td>
<td>142,385</td>
<td>0.12</td>
<td>17,086</td>
<td>0.14</td>
<td>19,934</td>
<td></td>
</tr>
<tr>
<td>Fixed FTE for a function outside lab</td>
<td>0.5</td>
<td></td>
<td>1,040</td>
<td></td>
<td>1,040</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>397,861</td>
<td></td>
<td>30,900</td>
<td></td>
<td>38,857</td>
<td></td>
</tr>
</tbody>
</table>

VOLUME WEIGHTED RANGE 0.08 0.10
REQUIRED PAID FTEs 14.9 18.7

2. Ensure billed test volume by section is accurate
   • Separate the send-out volume
   • Performed vs. handled tests
Same rules apply when benchmarking lab sections

• Know what to include and exclude per benchmark definitions *(what’s in; what’s out)*

• Consider specific staffing requirements
  • By workstation
  • Off-shifts
  • Minimum staffing situations
## Hematology Sample Staffing (<200k BT)

### Your Hospital

**Current Staffing Pattern - Laboratory**

Hematology - 6131

---

Annualized Billables: 154,300

---

### Number of Staff

<table>
<thead>
<tr>
<th>Area</th>
<th>Skill Mix</th>
<th>Time</th>
<th>Shift Length (hours)</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thur</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
<th>Replacement Factor</th>
<th>Paid Hours per Week</th>
</tr>
</thead>
</table>

**Days**

- Lab Supervisor, Chem/Hem
  - Time: days
  - Number of Staff: 8
  - Shift Length: 8 hours
  - Mon: 0.5, Tue: 0.5, Wed: 0.5, Thu: 0.5, Fri: 0.5, Sat: 1.00, Sun: 1.00
  - Replacement Factor: 1.00
  - Paid Hours per Week: 20.0

- Tech: Cell counter, manuals
  - Time: 7:00 - 15:30
  - Number of Staff: 8
  - Shift Length: 8 hours
  - Mon: 1.0, Tue: 1.0, Wed: 1.0, Thu: 1.0, Fri: 1.0, Sat: 1.10, Sun: 1.0
  - Replacement Factor: 1.10
  - Paid Hours per Week: 61.6

- Tech: Differentials
  - Time: 7:30 - 16:00
  - Number of Staff: 8
  - Shift Length: 8 hours
  - Mon: 1.0, Tue: 1.0, Wed: 1.0, Thu: 1.0, Fri: 1.0, Sat: 1.10, Sun: 1.0
  - Replacement Factor: 1.10
  - Paid Hours per Week: 44.0

- Tech: Coag/Urines
  - Time: 7:00 - 15:30
  - Number of Staff: 8
  - Shift Length: 8 hours
  - Mon: 1.0, Tue: 1.0, Wed: 1.0, Thu: 1.0, Fri: 1.0, Sat: 1.10, Sun: 1.0
  - Replacement Factor: 1.10
  - Paid Hours per Week: 61.6

Three workstations are Coagulation and Urines; with 2 techs sharing the workload on Sysmex, diffs and manual tests.

**Evenings**

- Tech: Cell counter, diffs
  - Time: 15:00 - 23:30
  - Number of Staff: 8
  - Shift Length: 8 hours
  - Mon: 1.0, Tue: 1.0, Wed: 1.0, Thu: 1.0, Fri: 1.0, Sat: 1.00, Sun: 1.00
  - Replacement Factor: 1.12
  - Paid Hours per Week: 62.7

- Tech: Coag/Urines
  - Time: 15:00 - 23:30
  - Number of Staff: 8
  - Shift Length: 8 hours
  - Mon: 0.8, Tue: 0.8, Wed: 0.8, Thu: 0.8, Fri: 0.8, Sat: 0.8, Sun: 0.8
  - Replacement Factor: 1.12
  - Paid Hours per Week: 50.2

**Nights**

- Tech
  - Time: 23:00 - 07:00
  - Number of Staff: 8
  - Shift Length: 8 hours
  - Mon: 0.6, Tue: 0.6, Wed: 0.6, Thu: 0.6, Fri: 0.35, Sat: 0.6, Sun: 1.12
  - Replacement Factor: 0.35
  - Paid Hours per Week: 35.4

---

Total Weekly Paid Hours (total worked plus replacement hours): 335.5

Total Annual Paid Hours: 17,445

Total Paid FTEs (total worked plus replacement FTEs): 8.39

Paid Hours per billable: 0.11

Benchmark Range: 0.12-0.14
Consider the following influencing factors when evaluating sectional productivity

<table>
<thead>
<tr>
<th>Section</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry and Hematology</td>
<td>• Automation and Autoverification&lt;br&gt;• Esoteric testing: Toxicology, Special hem and coag&lt;br&gt;• Attendance at bone marrows</td>
</tr>
<tr>
<td>Microbiology</td>
<td>• Functions: order entry; planting&lt;br&gt;• Automation&lt;br&gt;• Test complexity</td>
</tr>
<tr>
<td>Blood Bank</td>
<td>• Donor services&lt;br&gt;• High Outpatient volume + automation&lt;br&gt;• Product issue (albumin and other products)</td>
</tr>
<tr>
<td>Histology and Cytology</td>
<td>• Transcription vs. Voice Recognition&lt;br&gt;• IHC and Automation&lt;br&gt;• Attendance at FNAs&lt;br&gt;• Blocks/Histotech FTE and Slides/Cytotech FTE</td>
</tr>
</tbody>
</table>
Consider the following influencing factors when evaluating Administration & Support

<table>
<thead>
<tr>
<th>Service</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| Phlebotomy               | • Inpatient phlebotomy performed by Nursing  
                          | • Outreach phlebotomy                                                         |
| Outreach Services        | • Registration; Couriers  
                          | • Customer Service: Client calls per FTE  
                          | • Billing: Paid hours per requisition                                         |
| IT                       | • Level of support for LIS, Outreach, other software and hardware             |
| Specimen Processing      | • Manual vs. loading of automated line  
                          | • Reference lab                                                               |
| POCT                     | • Performance vs. oversight  
                          | • Extent of program and services provided                                     |
UTILIZING LABOR PRODUCTIVITY DATA
Implement lab wide practices to improve productivity

- **Equipment**
  - Reduce # of workstations
  - Automate

- **Labor resource management**
  - Staff to demand
  - Standardize work

- **IT solutions**
  - Autoverification
  - Bidirectional interfaces
  - Auto-print reports
  - Eliminate paper
Hematology Validated Tests by Hour of Day (Avg. of 5 weekdays)

0.10 Ph/BT vs. 0.12 – 0.14

BT volume

Gap

Tests Validated (Avg of 5 weekdays)

Hour of Day

Hemo Staffing - Weekday Weekdays

Techs

# of Techs

Hemo Staffing - Weekday

Weekdays

May 4-7, 2014 • Rio All-Suites Hotel and Casino • Las Vegas, Nevada
Use sectional targets to forecast for change

**Example:** Sale of a large, regional lab’s Outreach business line with volume transitioning to buyer’s lab

- Initial projections based on movement of client volume to the national lab over a period of approximately 20 months
- Timing of staff reductions were announced when the transaction was announced
  - Reductions planned in months 1, 4, 8, 11 and at end-state
- Productivity targets were applied **in each lab section** with planned client volume reduction **for each section**
  - Actual volume and staffing assessed 2 months prior
  - Targets adjusted to account for declining volume, fixed staff, workstations, etc., as volume decreased
Use a spreadsheet to calculate the required paid FTEs

1. Project **monthly** billed test volume
2. Set the target ph/bt
3. Calculate the required paid FTEs

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Total Billed Tests (BT)</th>
<th>Target PH/BT</th>
<th>Total Paid FTEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>124,583</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Hematology</td>
<td>38,333</td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td>Microbiology</td>
<td>19,167</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>Blood Bank</td>
<td>9,583</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td><strong>Monthly</strong></td>
<td><strong>191,667</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Annual</strong></td>
<td><strong>2,300,000</strong></td>
<td></td>
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<td>Chemistry</td>
<td>124,583</td>
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<td>35.9</td>
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<td>17.7</td>
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<tr>
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</tr>
<tr>
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<td><strong>0.08</strong></td>
<td><strong>90.1</strong></td>
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<tr>
<td><strong>Annual</strong></td>
<td><strong>2,300,000</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UTILIZING EXPENSE BENCHMARKS TO REDUCE COSTS
Total expenses include salary and non-salary components

• Know what to include and exclude per benchmark definitions *(what’s in; what’s out)*

  • Salary: Follow same definitions as used for FTEs and billed tests
    > Excludes Outreach, benefits

  • Non-salary: Excludes Outreach, building rent and utilities, bad debt, depreciation, taxes, medical director contracts, blood products
AMS expense benchmarks are based primarily on test volume

### < 600,000 bt

<table>
<thead>
<tr>
<th>Salary Cost per Test</th>
<th>$/bt</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.25</td>
<td>3.50</td>
</tr>
</tbody>
</table>

AMS Benchmark Range: $4.25 - $5.50/bt

<table>
<thead>
<tr>
<th>Non-Salary Cost per Test</th>
<th>$/bt</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.75</td>
<td>3.00</td>
</tr>
</tbody>
</table>

AMS Benchmark Range: $3.50 - $4.25/bt

<table>
<thead>
<tr>
<th>Total Cost per Test</th>
<th>$/bt</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.25</td>
<td>7.50</td>
</tr>
</tbody>
</table>

AMS Benchmark Range: $8.50 - $9.50/bt

### 600,000-1,500,000 bt

<table>
<thead>
<tr>
<th>Salary Cost per Test</th>
<th>$/bt</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.25</td>
<td>3.50</td>
</tr>
</tbody>
</table>

AMS Benchmark Range: $4.00 - $4.75/bt

<table>
<thead>
<tr>
<th>Non-Salary Cost per Test</th>
<th>$/bt</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.75</td>
<td>3.00</td>
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</table>

AMS Benchmark Range: $3.00 - $3.75/bt

<table>
<thead>
<tr>
<th>Total Cost per Test</th>
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</tr>
</thead>
<tbody>
<tr>
<td>7.25</td>
<td>7.50</td>
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</table>

AMS Benchmark Range: $7.50 - $8.50/bt
Expense targets should reflect test complexity

- Expenses per billed test will differ from benchmarks with significant variations in test mix
  - Rapid Response Lab or a Stat Lab versus highly complex, esoteric lab
  - Consider special circumstances for a Core Microbiology or Anatomic Pathology lab
High salary cost per test is related to either poor productivity, high wages, or both

- If you adjust your FTEs to within the productivity (ph/bt) range, and adjust salary expenses accordingly, does your salary cost/test fall within the range?
  - If not,
    - Wages per hour may be high, or
    - Skill mix is not optimal, or
    - Both
  - Salary cost/test influenced by regional market
    - CA as high as $5.25-6.25/bt
Translate your labor expense savings based on productivity opportunities

- Example from one of the small, hospital-based, system labs
  - 32.40 paid FTEs perform 272,127 billed tests (on-site + reference tests), per year
  - Actual vs. target productivity
    - Reduction of 6.7 FTEs = savings of $257,131/year, or $0.94/test
      > Savings reflects skill mix; excludes fringe benefits
Non-salary expenses may be influenced by supply contracts, reference lab costs, etc.

Most common influencing factors

- Reagent contracts
  - High volume → high discount

- Reference lab cost per test and utilization
  - Target <$20/CPT (community hospital)

- Equipment related
  - Reagent rental agreements versus capital purchases
  - Service contracts
Next step is to drill down through the productivity cascade

High Level Benchmark

Drill Down to Department (Cost Center)
- Chemistry
- Hem/Coag
- Molecular Diagnostics
- Specimen Processing

Deeper Drill Down into Operations
- Workstation design
- Level of Automation
- Workflow
- Service (TAT) demands
One lab’s experience with cost savings initiatives

• 35% reduction between 2008 and 2012 ($4.98/bt)
• Equivalent to $3,085,205 annual savings based on FY11 billed test volume
Thank you for attending!

Any questions?

Contact information:

• Sharon Brommer
• sbrommer@aboutams.com