Pros and Cons of Selling the Laboratory

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Medical Director, Consultative Services

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Pros and Cons of Selling the Laboratory

PRESENTED BY DR. ANDREW FLETCHER

Agenda

• Market Challenges
• Market Pressures
• Pros and Cons of Different Options
• Alternatives
Market Challenges

- System and physician office consolidation
- Potential for FDA oversight
- Increase in outpatient care
- Disruptive technologies
- Reimbursement reform
- Precision medicine
- Consumer directed care/patient satisfaction
- EHR integration/connectivity
Scoring Algorithm

System-wide

- Net Patient Revenue: 5%
- Net Patient Revenue Growth: 12%
- Net Operating Profit Margin: 15%
- Days Sales Outstanding: 8%
- Current Ratio: 10%

Laboratory-specific

- Revenue/Laboratory Square Footage: 20%
- Laboratory Estimated Gross Operating Margin*: 30%

*Calculated based on an estimate of lab payments. System Medicare mix could skew this calculation as can be seen in certain systems, particularly closed or partially closed systems.
This map represents the total score of system and laboratory financial strength among all health systems nationwide. The color scale is based on an algorithm that weights system-wide financial health and laboratory-specific metrics. The size of the circle corresponds to the size of the health system as determined by Net Patient Revenue. General regional trends indicate systems with the most laboratory and system financial stress seem to be found in the Northwest and Northeast.
Recent Lab Acquisitions
### Acquisitions: Laboratory Scores

Impact from the laboratory-specific metrics were mixed, suggesting this is a secondary or tertiary reason for selling, but not always a primary metric in making “sell” decisions. There is one exception, who showed healthy system financial metrics, but here shows relatively poor laboratory-specific financial health.

％ = percentile ranking by metric for each system versus all systems

<table>
<thead>
<tr>
<th>Health System</th>
<th>Lab Score</th>
<th>Lab Sq Ft</th>
<th>Rev/Lab Sq Ft</th>
<th>%</th>
<th>Lab Gross Margin</th>
<th>%</th>
<th>Affiliated Physician</th>
<th>Revenue/Physician</th>
<th>%</th>
<th>Out Pat %</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22.10</td>
<td>105,597</td>
<td>1,401</td>
<td>31</td>
<td>52%</td>
<td>53</td>
<td>1,718</td>
<td>1,131,327</td>
<td>31</td>
<td>49%</td>
<td>41</td>
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<td>37.65</td>
<td>55,099</td>
<td>2,917</td>
<td>66</td>
<td>71%</td>
<td>81</td>
<td>965</td>
<td>1,700,410</td>
<td>85</td>
<td>29%</td>
<td>10</td>
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<tr>
<td></td>
<td>32.28</td>
<td>8,152</td>
<td>4,742</td>
<td>87</td>
<td>50%</td>
<td>50</td>
<td>360</td>
<td>1,106,788</td>
<td>27</td>
<td>73%</td>
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<tr>
<td></td>
<td>45.97</td>
<td>62,078</td>
<td>6,271</td>
<td>92</td>
<td>82%</td>
<td>92</td>
<td>1,350</td>
<td>1,635,580</td>
<td>81</td>
<td>39%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>12.50</td>
<td>37,910</td>
<td>2,808</td>
<td>63</td>
<td>3%</td>
<td>0</td>
<td>1,440</td>
<td>1,642,530</td>
<td>88</td>
<td>78%</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>25.93</td>
<td>2,221,224</td>
<td>262</td>
<td>6</td>
<td>72%</td>
<td>83</td>
<td>2,653</td>
<td>1,357,809</td>
<td>59</td>
<td>62%</td>
<td>70</td>
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<tr>
<td></td>
<td>20.06</td>
<td>1,927,569</td>
<td>120</td>
<td>4</td>
<td>60%</td>
<td>64</td>
<td>2,955</td>
<td>1,357,261</td>
<td>59</td>
<td>41%</td>
<td>23</td>
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<tr>
<td></td>
<td>18.75</td>
<td>103,445</td>
<td>1,708</td>
<td>39</td>
<td>37%</td>
<td>36</td>
<td>2,440</td>
<td>1,255,903</td>
<td>46</td>
<td>39%</td>
<td>20</td>
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<tr>
<td></td>
<td>30.26</td>
<td>635,540</td>
<td>2,619</td>
<td>62</td>
<td>57%</td>
<td>60</td>
<td>13,392</td>
<td>1,250,449</td>
<td>46</td>
<td>47%</td>
<td>37</td>
</tr>
</tbody>
</table>
## Acquisitions: Health System Scores

<table>
<thead>
<tr>
<th>Health System</th>
<th>System Score</th>
<th>Net Patient Revenue</th>
<th>%</th>
<th>Revenue Growth</th>
<th>%</th>
<th>Net O.M.</th>
<th>%</th>
<th>DSO</th>
<th>%</th>
<th>Current Ratio</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>27.02</td>
<td>1,943,619,221</td>
<td>83</td>
<td>5.3%</td>
<td>65</td>
<td>-2.9%</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17.01</td>
<td>1,640,895,169</td>
<td>80</td>
<td>-8.9%</td>
<td>5</td>
<td>-2.7%</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30.16</td>
<td>398,443,505</td>
<td>35</td>
<td>3.5%</td>
<td>50</td>
<td>11.3%</td>
<td>88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>35.82</td>
<td>2,208,033,423</td>
<td>87</td>
<td>3.5%</td>
<td>50</td>
<td>34.5%</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>32.38</td>
<td>2,365,242,878</td>
<td>50</td>
<td>3.3%</td>
<td>38</td>
<td>11.9%</td>
<td>88</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>19.27</td>
<td>3,602,267,075</td>
<td>94</td>
<td>1.0%</td>
<td>29</td>
<td>24.2%</td>
<td>5</td>
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</tr>
<tr>
<td></td>
<td>18.91</td>
<td>4,010,704,953</td>
<td>95</td>
<td>0.0%</td>
<td>23</td>
<td>-8.1%</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>32.83</td>
<td>3,064,402,973</td>
<td>92</td>
<td>8.4%</td>
<td>81</td>
<td>-0.7%</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28.54</td>
<td>16,746,015,566</td>
<td>100</td>
<td>3.6%</td>
<td>51</td>
<td>0.4%</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From a system perspective, most of the acquisitions show a negative net operating margin.

% = percentile ranking by metric for each system versus all systems
Growth Strategy

Market Characteristics

- Reference Testing: ~$4 billion market
- Hospital Outreach: ~$17 billion market
- Inpatient: ~$27 billion market

DGX Opportunity

- Grow reference and advanced diagnostics business
- Acquire and/or partner on outreach business
- Professional Laboratory Services (PLS)
From the System’s Perspective

“We’ve watched carefully as other organizations have [outsourced their laboratories] and obviously we have concerns. I would have concern about alignment of mission. We think the lab is integral to the care of patients, and it will become rapidly more so with personalized medicine and the ability of information systems to deliver data in ever more powerful ways.”

—Robert Stallone
VP Laboratory Medicine, Northwell Health
Lessons Learned: Association of Pathology Chairs
FINDINGS FROM SURVEY REGARDING EXPERIENCE WITH OUTSOURCING RELATIONSHIPS

Outsource Arrangement Status

- Most JV arrangements were initiated by private lab and health system CEOs and often did not include input from pathology or laboratory leadership.
- Monetary gain was the major driving factor; however, the financial gains often fell short of expectations:
  - Test pricing eventually began to increase
  - Lack of utilization control incentive by outsourced lab
  - On-site lab shrank in size to the detriment of patient satisfaction
  - Lack of clinician satisfaction
- Several systems have begun the process of reversing the decision to outsource laboratory
Pros and Cons of Different Options
Potential Partnership Structures

- Acquisition
- Joint Venture
- Lab Management
- Consultation
Acquisition

Pros:
- Full laboratory process standardization and automation
- Economies of scale
- Immediate cash influx
- Reduction in operating costs

Cons:
- Hospital gives up ownership and control of laboratory
- Challenge of clinical integration
- Consolidation of testing
- Geographic distance from Hospital to regional testing center
- Reduction in FTE
- Misalignment of mission
- No incentive for Stewardship
- Lost revenue growth from Outreach
- Difficult to reverse
Joint Venture

Pros:

• Shared equity of laboratory
• Shared equity of laboratory growth opportunities
• Facilitates proper laboratory stewardship alignment
• Allows for laboratory process standardization
• Opportunities for economies of scale

Cons:

• Specific terms will dictate willingness of both parties
• Complexities of billing and reimbursement around bundled payments (i.e. DRG and OPPS)
• Interdependencies required for success
• Legal considerations, perceived inducement, etc.
• Fee schedule considerations.
Lab Management

Pros:

• Hospital maintains full equity of laboratory
• Allows for laboratory process standardization and best practices
• Ability to achieve laboratory growth opportunities
• Synergistic cost savings opportunities could be realized by both parties including LIS, reagent purchases, and other integral systems

Cons:

• How are employees managed?
• Benefits, salary, leadership or other levels
• Alignment of mission and incentive
• Staffing and workflow
Consultative

Pros:

• Hospital maintains full equity
• Drives improved Stewardship
• Allows for laboratory best practices improving efficiency
• Recommendations on how to achieve laboratory growth opportunities

Cons:

• No cash influx and possible fee
• May leave unrealized potential opportunities on the table for both entities
• Most of execution burden falls to Hospital
Financial Impact of Selling the Lab
Three Focus Areas

Laboratory Stewardship | Laboratory Efficiencies | Laboratory Growth
## Laboratory Stewardship

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Total Charges</th>
<th>Potential Annual Savings</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>195-bed hospital (Northeast)</td>
<td>$19,600,111</td>
<td>$4,128,087</td>
<td>21%</td>
</tr>
<tr>
<td>419-bed hospital (Upper Midwest)</td>
<td>$94,511,717</td>
<td>$12,804,082</td>
<td>14%</td>
</tr>
<tr>
<td>Children’s hospital (Upper Midwest)</td>
<td>$12,635,262</td>
<td>$1,266,516</td>
<td>10%</td>
</tr>
<tr>
<td>237-bed hospital (South)</td>
<td>$43,047,787</td>
<td>$10,698,392</td>
<td>25%</td>
</tr>
<tr>
<td>161-bed hospital (Southwest)*</td>
<td>$77,926,758</td>
<td>$9,942,054</td>
<td>13%</td>
</tr>
<tr>
<td>645-bed hospital (Southwest)*</td>
<td>$211,943,118</td>
<td>$37,916,511</td>
<td>18%</td>
</tr>
<tr>
<td>199-bed hospital (Southwest)*</td>
<td>$70,251,035</td>
<td>$15,813,898</td>
<td>23%</td>
</tr>
<tr>
<td>535-bed hospital (Southwest)*</td>
<td>$144,127,890</td>
<td>$27,008,611</td>
<td>19%</td>
</tr>
<tr>
<td>208-bed hospital (Southwest)*</td>
<td>$56,348,672</td>
<td>$10,973,516</td>
<td>19%</td>
</tr>
<tr>
<td>338-bed hospital (Southwest)*</td>
<td>$78,046,058</td>
<td>$13,476,036</td>
<td>17%</td>
</tr>
</tbody>
</table>

**Average**

This sampling of 10 engagements represent an average of **18%** annual savings we found from the utilization analysis reports. These are typically the highest opportunities within the hospital, but other smaller opportunities likely exist.

*All part of one system that collectively also averaged 18% in savings for over $638.6M in total charges*
Laboratory Efficiencies

Case Study | 1,660-bed health system in Northeast

- Lab efficiencies not the focus
- Retrospectively found ~10% in potential opportunity

Potential Opportunity: ~10%

Case Study | University of Utah

- ARUP was already managing the hospital labs, but the university was managing the clinics.
- Consolidation of Point-of-Care (POC) Oversight
  - Standardize test methodologies
  - Standardize procedures and reporting
  - Standardize regulatory compliance oversight
  - Standardize validation and quality

Annual Savings: 34%
Using the national data set of health systems, we see the average total lab revenue to be just shy of $425M. Chi Solutions/Accumen has estimated the average outreach program to be $24.9M of the average total charges of all systems. All systems could benefit up to 6% (at minimum) from an outreach program, but existing programs would have to be considered individually.

Using average net monthly revenues of $6,000 per primary care physician and $4,000 per specialty care physician, the addressable market was determined. The market of just affiliated-physician leakage, in this case, represented over $163M.
## Potential Savings/Growth Opportunity

<table>
<thead>
<tr>
<th>Category</th>
<th>Potential Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Stewardship</td>
<td>~16–18%</td>
</tr>
<tr>
<td>Laboratory Efficiencies</td>
<td>~6–20%</td>
</tr>
<tr>
<td>Laboratory Growth</td>
<td>~6–10%</td>
</tr>
<tr>
<td><strong>Potential Total</strong></td>
<td>~28–48%</td>
</tr>
</tbody>
</table>
Overview: Hospital “X”

<table>
<thead>
<tr>
<th>Lab</th>
<th>Revenue $244 (30% of $813M charges)</th>
<th>Costs $82</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Margin $162 (60%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>System</th>
<th>Revenue $1,780</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Costs $1,737</td>
</tr>
<tr>
<td></td>
<td>Margin $43 (2.4%)</td>
</tr>
</tbody>
</table>

| Patient Mix          | 52% Inpatient; 48% Outpatient     |

| Lab % of DRG Charges | 9.5%                             |

*All figures in $ millions
# Laboratory Stewardship Effect at Hospital “X”

<table>
<thead>
<tr>
<th></th>
<th>Lab</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$127 inpatient only</td>
<td>$1,780</td>
</tr>
<tr>
<td>Costs</td>
<td>$43</td>
<td>$1,737</td>
</tr>
<tr>
<td>Margin</td>
<td>$84</td>
<td>$43</td>
</tr>
</tbody>
</table>

After 16% lab stewardship effect

<table>
<thead>
<tr>
<th></th>
<th>Lab</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$107 inpatient only</td>
<td>$1,780</td>
</tr>
<tr>
<td>Costs</td>
<td>$36</td>
<td>$1,730</td>
</tr>
<tr>
<td>Margin</td>
<td>$71</td>
<td>$50</td>
</tr>
</tbody>
</table>

Resulting change in margin

| Margin              | $71                        | $50                      |

*$All figures in $ millions

$7M
Laboratory Stewardship

Blood utilization

Reference Test Formulary

In-house Testing

Ancillary services coordination
## Laboratory Efficiencies Effect

<table>
<thead>
<tr>
<th></th>
<th>Lab</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$244</td>
<td>$1,780</td>
</tr>
<tr>
<td>Costs</td>
<td>$82</td>
<td>$1,737</td>
</tr>
<tr>
<td>Margin</td>
<td>$162</td>
<td>$43</td>
</tr>
<tr>
<td>After 15% lab efficiency effect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>$244</td>
<td>$1,780</td>
</tr>
<tr>
<td>Costs</td>
<td>$70</td>
<td>$1,725</td>
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<tr>
<td>Margin</td>
<td>$174</td>
<td>$55</td>
</tr>
<tr>
<td>Resulting change in margin</td>
<td></td>
<td>$12M</td>
</tr>
</tbody>
</table>

*All figures in $ millions*
Laboratory Efficiencies - Recommendation

Centers of Excellence
• Consolidate testing within the system utilizing existing system strengths

Centralization of Laboratory Services
• Stat and other essential testing only performed at hospitals (UofU model)
• Build/lease new facility or leverage existing laboratory space
• >30% total potential savings
• (note: does not account for details such as LIS, courier, support, etc.)

Make vs. Buy
• Further evaluation on deciding what to perform vs. send out may net additional growth and savings opportunities

Laboratory Management
• Aid change management efforts in embracing a new model through the entire system
• Such a model could positively support long-term or short-term interests while avoiding the cons of an outsourced model
# Laboratory Growth Effect

<table>
<thead>
<tr>
<th></th>
<th>Lab</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td>$117 out/nonpatient</td>
<td>$1,780</td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td>$39</td>
<td>$1,737</td>
</tr>
<tr>
<td><strong>Margin</strong></td>
<td>$78</td>
<td>$43</td>
</tr>
<tr>
<td><strong>After 10% lab growth effect</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Revenue</strong></td>
<td>$129 out/nonpatient</td>
<td>$1,792</td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td>$43</td>
<td>$1,741</td>
</tr>
<tr>
<td><strong>Margin</strong></td>
<td>$86</td>
<td>$51</td>
</tr>
</tbody>
</table>

| **Resulting change in margin** |                     |                      |
| **Margin**                  | $8M                  |                      |

*All figures in $ millions
**Cost improvements are assumed due to lab efficiency effect
Laboratory Market Size Estimate by Patient Type

- **Nonpatient**
  - 22%
  - $16.5B

- **Outpatient**
  - 41%
  - $30.7B

- **Inpatient**
  - 37%
  - $27.8B

Market Size: $75B
# Laboratory Growth—Recommendation

## Planning Tools
- Outreach Infrastructure Evaluation
- Market Opportunity Assessment
- Business Planning Templates

## Operational Tools
- Courier Services
- Outreach Services Development
- Technical Assessments
- Compliance
- Direct Cost Analysis
- Interface

## Marketing & Sales Tools
- Marketing Strategy
- Marketing Collateral
- Sales Management & Training
## Potential Savings/Growth for Hospital “X”

<table>
<thead>
<tr>
<th>Category</th>
<th>Potential Range</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Stewardship</td>
<td>~16–18%</td>
<td>$7M</td>
</tr>
<tr>
<td>Laboratory Efficiencies</td>
<td>~6–20%</td>
<td>$12M</td>
</tr>
<tr>
<td>Laboratory Growth</td>
<td>~6–10%</td>
<td>$8M</td>
</tr>
<tr>
<td>Potential Total</td>
<td>~28–48%</td>
<td>$27M</td>
</tr>
</tbody>
</table>
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Review

• Market Challenges
• Market Pressures
• Pros and Cons of Different Options
• Financial impact of selling the lab
Thank You!