LIS consultants
continued from page 20

gotations—namely through their in-depth knowledge of which companies discount and which do not. “Some vendors quote the list price but don’t expect anyone to pay that, while other vendors may not move off the stated price but may offer additional software modules baked into the quote,” Dr. Friedman says. While peers can provide some insight into vendor pricing habits, LIS consultants often have a better knowledge of vendor pricing strategies. And some have worked for LIS companies, giving them an insider perspective.

Once a laboratory has narrowed the field to just a few vendors, a good consultant won’t push the facility in a particular direction, the experts say. Rather, the consultant will offer unbiased opinions that help the institution’s selection committee make a decision.

To help ensure that a consultant isn’t “in bed” with a particular vendor, laboratory decision-makers should inquire about the results of the consultant’s last 10 engagements before hiring that person, Weiner says. They should also ask if the consultant has significant stock holdings in any particular LIS company or is on a retainer with an LIS company; notes Wimberly. Once hired, the consultant should be willing to sign a conflict of interest/non-disclosure agreement, he adds.

When vetting potential LIS consultants through reference checks and face-to-face conversations, laboratories should look for someone with extensive industry experience, honesty, and integrity, the experts say. Dr. Aller says working with a consultant who maintains a small, niche practice that focuses on laboratory information systems. If a hospital requires the laboratory to work with a larger, general health care or information technology consulting firm, laboratory leaders should request a list of the firm’s recent laboratory engagements, find out which lab systems were selected, and get a list of references to check, he advises.

The bottom line is that if laboratories choose to work with an LIS expert, they should enlist an expert, they should enlist an expert who understands the LIS market in December 2010.

Part 1 of 10

| Antek HealthWare (a CompuGroup Medical company) | Cerner
| Paul Taylor | Lori Cross
| paul.taylor@cgm.com | lcross@cerner.com
| 229 Business Center Drive, Rutherfordton, NC 28136 | 2800 Rockcreek Parkway, Kansas City, MO 64117
| 410-517-0330 | 816-201-1125
| www.cgmsa.com | www.cerner.com

Name of laboratory information system

LabDAG Laboratory Information System

Cerner Millennium PathNet

First ever/Most recent LIS installation (based on September 2011 survey deadline)

1991/September 2011

1982/August 2011

Last major product release for featured LIS

March 2008

2008

Total No. of contracts for sites operating LIS

2,593

2,005

* Hospital/Independent lab contracts in U.S.

230/342

208/305

** Clinic or group practice contracts in U.S./Public health lab contracts in U.S.

10/ (clinics)

7/ (public health labs)

** Contracts for other U.S. sites/Contracts for foreign sites

116

121

* No. of these contracts that went live between August 2010–August 2011

Contracts signed not yet operational (hospital/independent labs/other sites)

124

—

** Total No. of contracts (live and not live) signed between Aug. 2010–Aug. 2011

2,498 (9-Dubai, Longnawi, Malawi, Tanzania, Virgin Islands)

Not tracked

Percentage of high-volume* sites installed/Low-volume** sites installed

No. of employees in entire company

312

68

* Percentage of sites installed in low-volume organizations.

No. of billed tests generated annually by labs using this LIS

Not tracked

1–100+ (average, 10)

Central hardware or service type

Intel/AMD

HP, Compaq, IBM RS/6000

Operating system(s)

Windows 2008, 7, XP

HP-UX, AIX, VMS

Database and tools

Oracle

Oracle

Language(s) on which system is available for development

Yes

Yes

French, German, Spanish

Features/modules (listed as percent of five sites or based on availability)

* Chemistry and hematology/Bar-coded collection labels

Microbiology/Public health microbiology

Blood bank donor and transfusion

Surgical pathology/Cytology

Molecular pathology/Cytogenetics/Flow cytometry

His or EMR interface for admissions/discharge/transfer (ADT)

His or EMR interface for order entry/Results reporting

His or EMR interface for packaging results into PDF format

His or EMR interface for packaging results into COAD1 format/COAD2 format

Ad hoc reporting/Reports-based system

Management and/or statistical reporting

Outreach and/or/commercial laboratory

Compliance checking/Billing and accounts receivable

Materials management and inventory

Test partition/Remote faxing and printing

HIPAA-standard transaction formats

Web-based remote inquiry of reports/Web access for order entry

Specimen management and tracking

Compliance and quality assurance tools/Environmental health services

Methods of charging for ASP service

Fixed fee

Transaction based

ASP information conduit operates over the Internet operates over the Internet

Total No. of sites operating LIS (No. of these sites outside the U.S.)

2,948 (9–Dubai, Longnawi, Malawi, Tanzania, Virgin Islands)

560,000+–21,000,000

Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)

11 (0/2/9–clinics, POLs, reference labs)

11 (0/2/9–Canada, Egypt, Malaysia, Saudi Arabia, Singapore, U.K., Mexico, Australia, United Arab Emirates)

First ever/Most recent LIS installation (based on September 2011 survey deadline)

1991/September 2011

1982/August 2011

Software provides indexed field in each test definition for LOINC code

Yes

Yes

Software provides indexed field in each test definition for SNOMED CT

Yes

Yes

Market modules for other hospital departments (percent of installs lab only)

no (offer user-defined report writer and custom reporting)

yes (offer user-defined report writer and custom programming)

LIS can report lab data that is in focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for:

• Microbiology data (culture and sensitivity)

• Other reportable diseases (blood, lead, immunology, etc.)

• Tumor diagnosis or registry data (using MARCOM Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)

LIS consultants
Lab consultants

Laura Hegwer is a writer in Lake Bluff, Ill.

| Lisa Cross | 816-201-1125
| www.cerner.com | www.cgm.com

Notes

* generate <500,000 billed tests annually, or <200 bed hospitals, or <200 requisitions per day

** generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day

*** Total No. of sites operating LIS (No. of these sites outside the U.S.)

LIS consultants
Lab consultants

124 —

—

LIS can report lab data that is in focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for:

• Microbiology data (culture and sensitivity)

• Other reportable diseases (blood, lead, immunology, etc.)

• Tumor diagnosis or registry data (using MARCOM Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)

LIS consultants
Lab consultants

LIS can report lab data that is in focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for:

• Microbiology data (culture and sensitivity)

• Other reportable diseases (blood, lead, immunology, etc.)

• Tumor diagnosis or registry data (using MARCOM Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)

LIS consultants
Lab consultants

LIS consultants
Lab consultants

LIS consultants
Lab consultants
### Laboratory Information Systems

#### Part 10 of 10

<table>
<thead>
<tr>
<th>Clinical Information Systems</th>
<th>Clinical Software Solutions</th>
<th>Clinlab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of laboratory information system</td>
<td>First ever/Most recent LIS installation (based on September 2011 survey deadline)</td>
<td>Name of LIS</td>
</tr>
<tr>
<td>CIS LAB</td>
<td>1981/August 2011</td>
<td>First ever/LIS</td>
</tr>
<tr>
<td>CLIN1 LIS</td>
<td>2011</td>
<td>Most recent LIS</td>
</tr>
<tr>
<td>Clinlab LIS</td>
<td>2011</td>
<td>Total No. of contracts for sites operating LIS</td>
</tr>
<tr>
<td></td>
<td>27/35</td>
<td>1981/August 2011</td>
</tr>
<tr>
<td></td>
<td>1/1</td>
<td>July 2011</td>
</tr>
<tr>
<td></td>
<td>2 (net, dialysis/3)</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>(hospital, independent lab)</td>
<td>38/3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>9/5</td>
</tr>
<tr>
<td></td>
<td>(medical diagnostics label/1)</td>
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<tr>
<td></td>
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<td>1/0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>(hospital)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(2/0/2)</td>
<td>(2/0/1)</td>
</tr>
<tr>
<td></td>
<td>(molecular diagnostics lab)</td>
<td>(molecular diagnostics lab)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(hospital)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1-29a)</td>
</tr>
</tbody>
</table>
| | | 71%

#### No. of employees in entire company

- CIS LAB: 9
- CLIN1 LIS: 15+
- Clinlab LIS: 6

#### No. of billed tests generated annually by labs using this LIS

- CIS LAB: 110,000–1,500,000
- CLIN1 LIS: 5–143 (average, 36)
- Clinlab LIS: 10,000–500,000 (mean, 100,000)

#### Central hardware or service type

- CIS LAB: CTL, Dell, HP, others
- CLIN1 LIS: manual intervention necessary to restore operation or system continues uninterrupted (user's option)
- Clinlab LIS: client/server manual intervention necessary to restore operation or system continues uninterrupted (user's option)

#### Total cost for largest LIS installation

- CIS LAB: $150,000 (annual maintenance fee, $14,000)
- CLIN1 LIS: $250,000 (annual maintenance fee, $50,000)
- Clinlab LIS: $10,000 (annual maintenance fee, $1,000)

#### Percentage of high-volume* sites installed/Low-volume** sites installed

- CIS LAB: 98%/9%
- CLIN1 LIS: 9%/99%
- Clinlab LIS: 71%/29%

#### Other vendors to which this system has a lab-related interface

- CIS LAB: Beckman Coulter, Siemens, Ortho, Integrated Lab Automation Solutions, Olympus, Roche, others
- CLIN1 LIS: Beckman Coulter, Siemens, Ortho, PTV LabSystems, Olympus, Roche, Abbott, others
- Clinlab LIS: CareEvolve, others

#### LIS provides validation or testing tools

- CIS LAB: yes (client's choice)
- CLIN1 LIS: yes (IA/OC)
- Clinlab LIS: no

#### Software provides indexed field in each test definition for LOINC code

- CIS LAB: yes
- CLIN1 LIS: yes
- Clinlab LIS: yes

#### LIS supports use of SNOMED CT

- CIS LAB: yes
- CLIN1 LIS: yes
- Clinlab LIS: yes

#### No. of different types of lab instruments interfaced and operational with LIS

- CIS LAB: 300+
- CLIN1 LIS: 85
- Clinlab LIS: 153

#### Total cost for smallest LIS installation

- CIS LAB: $12,500 (annual maintenance fee, $6,000)
- CLIN1 LIS: $10,000 (annual maintenance fee, $14,000)
- Clinlab LIS: $10,000 (annual maintenance fee, $1,000)

#### Distinctive features (supplied by company)

- CIS LAB: • Price, purchase, or leasing terms
- CLIN1 LIS: • Distinguishable features
- Clinlab LIS: • Distinguishable features

---

**Tabulation does not represent an endorsement by the College of American Pathologists.**

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**Note:** a dash in lieu of an answer means company did not answer question or question is not applicable.

**First ever/LIS installation (based on September 2011 survey deadline):**

Last major product release for featured LIS

Total No. of contracts for sites operating LIS

- Hospital/Independent lab contracts in U.S.
- Client or group practice contracts in U.S.
- Contracts for other U.S. sites/Contracts for foreign sites

- No. of those contracts that went live between August–October 2011

- Contracts signed but LIS not yet operational in hospitals/independent labs/other sites

- Total No. of contracts (live and not live) signed between Aug. 2010–Aug. 2011

- Total No. of sites operating LIS (No. of those sites installed outside the U.S.)

- Percentage of high-volume* sites installed/Low-volume** sites installed

**No. of employees in entire company**

- CIS LAB: 9
- CLIN1 LIS: 15+
- Clinlab LIS: 6

**No. of billed tests generated annually by labs using this LIS**

- CIS LAB: 110,000–1,500,000
- CLIN1 LIS: 5–143 (average, 36)
- Clinlab LIS: 10,000–500,000 (mean, 100,000)

**Programming language(s)**

- Delphi, Visual Basic, MS Cobol, C++, others

**Databases and tools**

- Windows, SCO Unix, Sybase SQL, Microsoft SQL

**System includes full transaction logging**

- Languages (other than English) offered on system

**Features/modules (listed as percent of live installs or based on availability)**

- Chemistry and hematology/bar-coded collection labels
- Microbiology/Public health microbiology
- Blood bank donor and transfusion
- Surgical pathology/Cytology
- Molecular pathology/Cytogenetics
- HIS or EMR interface for admissions/discharge/transfer (ADT)
- HIS or EMR interface for order/results reporting
- HIS or EMR interface for packaging results into PDF format
- HIS or EMR interface for packaging results into CD/DA format
- Ad hoc reporting/Bluesys-based system
- Management and/or statistical reporting
- Outreach and/or commercial laboratory
- Compliance checking/Billing and accounts receivable
- Materials management and inventory
- Test partition/Remote faxing and printing
- HIPAA-standard transaction formats
- Web-based remote inquiry of reports/Web access for order entry
- Specimen management and tracking
- Compliance and quality assurance tools/Environmental health

**Complete LIS application service provider solution**

- ASP solution for physician order entry and results reporting

**Method of charging for ASP service**

- Client software required

**ASP information conduit**

- Client contracts supported from data center not operated by client

**How data center is operated**

- By vendor

**LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for:

- Microbiology (culture and sensitivity)
- Other reportable diseases (blood, lead, immunology, etc.)
- Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)

**LIS allows third-party updates of tables and rules/Image capture, display, reporting**

- • ICD codes, LOINC, SNOMED

**Languages (other than English) offered on system**

- Chinese, Spanish (for reports)

**System includes full transaction logging**

- Microsoft SQL, C-ISAM, RDBMS, Interface

**Databases and tools**

- Microsoft SQL, C-ISAM, RDBMS, Interface

**Languages (other than English) offered on system**

- Chinese, Spanish (for reports)

**Features/modules (listed as percent of live installs or based on availability)**

- Chemistry and hematology/bar-coded collection labels
- Microbiology/Public health microbiology
- Blood bank donor and transfusion
- Surgical pathology/Cytology
- Molecular pathology/Cytogenetics
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**Languages (other than English) offered on system**

- Chinese, Spanish (for reports)

**System includes full transaction logging**

- Microsoft SQL, C-ISAM, RDBMS, Interface

**Databases and tools**

- Microsoft SQL, C-ISAM, RDBMS, Interface

**Languages (other than English) offered on system**

- Chinese, Spanish (for reports)
### Laboratory Information Systems

<table>
<thead>
<tr>
<th>Name of laboratory information system</th>
<th>Common Cents Systems</th>
<th>Comp Pro Med</th>
<th>Computer Programs and Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carl Barringer</td>
<td>Hal Peterson</td>
<td>Sales Department</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:carl.barringer@apolioms.com">carl.barringer@apolioms.com</a></td>
<td><a href="mailto:hpeterson@compromed.com">hpeterson@compromed.com</a></td>
<td><a href="mailto:sales@compnet.com">sales@compnet.com</a></td>
</tr>
<tr>
<td></td>
<td>4701 Trousdale Drive, Suite 119, Nashville, TN 37220</td>
<td>3419 Mendocino Ave., Santa Rosa, CA 95403</td>
<td>660 Wall St, Mobile, AL 36689</td>
</tr>
</tbody>
</table>

#### First ever/Most recent LIS installation
- **Based on September 2011 survey deadline**
- **Total No. of contracts for sites operating LIS**
- **Hospital/Independent lab contracts in U.S.**
- **Clinic or group practice contracts in U.S./Public health lab contracts in U.S.**
- **Contracts for other U.S. sites/Contracts for foreign sites**
- **No. of those contracts that went live between August 2010–August 2011**
- **Contracts signed last LIS not yet operational (hospital/independent labs/other sites)**
- **Total No. of contracts (live and not live) signed between Aug. 2010–Aug. 2011**
- **Total No. of sites operating LIS (No. of those sites outside the U.S.)**
- **Percentage of high-volume** sites installed/Low-volume** sites installed

#### No. of employees in entire company
- **Total cost for largest LIS installation**

#### Central hardware or service type
- **How central server failure is handled**

#### Programming language(s)
- **Operating system(s)**
- **Databases and tools**
- **System includes full transaction logging**

#### Languages (other than English) offered on system

#### Features/modules listed as percent of live installs or based on availability
- **Chemistry and hematology**
- **Microbiology/Public health microbiology**
- **Blood donor and transfusion**
- **Surgical pathology/Cytology**
- **Molecular pathology/Genomics/Cytometry**
- **HIS or EMR interface for admissions/discharge/transfer (ADT)**
- **HIS or EMR interface for order entry/results reporting**
- **HIS or EMR interface for packaging results into PDF format**
- **HIS or EMR interface for packaging results into CD/DVD format**
- **Ad hoc reporting/Arbitrary outcome analysis**
- **Management and/or statistical reporting**
- **Outreach and/or commercial laboratory**
- **Compliance checking/Billing and accounts receivable**
- **Materials management and inventory**
- **Test partition/Remote faxing and printing**
- **HIPAA-standard transaction formats**
- **Web-based remote inquiry of reports/Web access for order entry**
- **Specimen management and tracking**
- **Compliance and quality assurance tools/Environmental health**

#### Complete LIS application service provider solution
- **ASP solution for physician order entry and results reporting**
- **Method of charging for ASP service**
- **Client software required**
- **ASP information conduit**
- **Client contracts supported from data center not operated by client**

#### LIS can report lab data that is of focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats**
- **Microbiology data**
- **Other reportable diseases**
- **Tumor registry or diagnostic registry data**

#### Total laboratory automation systems to which LIS can interface

#### Other vendors to which LIS has a lab-related interface

#### Total No. of contracts (live and not live) signed between Aug. 2010–Aug. 2011

#### Percentage of high-volume/Low-volume sites installed

#### Other modules for other hospital departments (percent of installs lab only)

#### No. of different types of lab instruments interfaced and operational with LIS

#### Contracts signed last hospital not yet operational (hospital/independent labs/other sites)

### Notes
- *Note: a dash in lieu of an answer means company did not answer question or question is not applicable*

---

**Contact Information**

- **Carl Barringer**
  - **Email:** carl.barringer@apolioms.com
  - **Phone:** 600-805-9278

- **George W. Petersen**
  - **Email:** hpetersen@compromed.com
  - **Phone:** 707-578-0239

- **Sales Department**
  - **Email:** sales@compnet.com
  - **Phone:** 800-711-2774

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**November 2011 Page 25**
### Laboratory information systems

<table>
<thead>
<tr>
<th>Name of laboratory information system</th>
<th>Lab/GEN</th>
<th>Intellilab</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLS2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSS (Computer Service and Support)</td>
<td>Jim O'Neill</td>
<td><a href="mailto:jimm@cssis.com">jimm@cssis.com</a></td>
</tr>
<tr>
<td></td>
<td>609-653-6444</td>
<td><a href="http://www.cssis.com">www.cssis.com</a></td>
</tr>
<tr>
<td></td>
<td>83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20/15/2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>no/0</td>
<td></td>
</tr>
<tr>
<td>Total No. of contracts for sites operating LIS</td>
<td>98</td>
<td>83</td>
</tr>
<tr>
<td>Hospital/Independent lab contracts in U.S.</td>
<td>0/0</td>
<td>7/54</td>
</tr>
<tr>
<td>Clinic or group practice contracts in U.S./Public health lab contracts in U.S.</td>
<td>0/0</td>
<td>17/0</td>
</tr>
<tr>
<td>Contracts for other U.S. sites.Contracts for foreign sites</td>
<td>0/0</td>
<td>0/5</td>
</tr>
<tr>
<td>Total No. of contracts that went live between August 2010-August 2011 Contracts signed but LIS not yet operational (hospital/department/other sites)</td>
<td>3 (0/0/0)</td>
<td>7 (0/0/0)</td>
</tr>
<tr>
<td>Total No. of contracts (live and not live) signed between Aug. 2010-Aug. 2011</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Total No. of sites operating LIS (No. of sites outside the U.S.)</td>
<td>98 (1–United Arab Emirates)</td>
<td>83 (5)</td>
</tr>
<tr>
<td>Percentage of high-volume* sites installed/Low-volume** sites installed</td>
<td>42%/56%</td>
<td>20%/80%</td>
</tr>
<tr>
<td>No. of employees in entire company</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>No. of employees dedicated to LIS development, installation, and support</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>No. of billed tests generated annually by labs using this LIS</td>
<td>22,000–3,500,000 (mean, 775,000)</td>
<td>20,000–6,200,000 (mean, 980,000)</td>
</tr>
<tr>
<td>Range in no. of user workstations in sites operating LIS</td>
<td>2–58 (average, 29)</td>
<td>1–200 (average, 15)</td>
</tr>
<tr>
<td>Central hardware or service type</td>
<td>IBM</td>
<td>Windows/Dell</td>
</tr>
<tr>
<td>How central server failure is handled</td>
<td>manual intervention necessary to restore operation or system continues uninterrupted (user's option)</td>
<td>manual intervention necessary to restore operation or system continues uninterrupted (user's option)</td>
</tr>
<tr>
<td>Programming language(s)</td>
<td>C++</td>
<td>MSM, Caché, Visual Basic</td>
</tr>
<tr>
<td>Operating system(s)</td>
<td>AIX 6.1</td>
<td>Windows</td>
</tr>
<tr>
<td>Databases and tools</td>
<td>Microsoft SQL, MySQL, Lab Base</td>
<td>MSSM, Caché</td>
</tr>
<tr>
<td>System includes full transaction logging</td>
<td>yes</td>
<td>under development</td>
</tr>
<tr>
<td>Languages (other than English) offered on system</td>
<td>none</td>
<td>—</td>
</tr>
<tr>
<td>Features/modules (listed as percent of live installs or based on availability)</td>
<td>Chemistry and hematology/Bar-coded collection labels</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Microbiology/Public health microbiology</td>
<td>86%/—</td>
<td>15%/—</td>
</tr>
<tr>
<td>Blood bank donor and transfusion</td>
<td>—</td>
<td>15%/20%</td>
</tr>
<tr>
<td>Surgical pathology/Cytology</td>
<td>12%/31%</td>
<td>15%/20%</td>
</tr>
<tr>
<td>Molecular pathology/Cytogenetics/Flow cytometry</td>
<td>—</td>
<td>not available/not available</td>
</tr>
<tr>
<td>HIS or EMR interface for admissions/discharge/transfer (ADT)</td>
<td>—</td>
<td>50%</td>
</tr>
<tr>
<td>HIS or EMR interface for order entry/Results reporting</td>
<td>67%/81%</td>
<td>75%/90%</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into PDF format</td>
<td>0/70%</td>
<td>70%/70%</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into CDA1 format/CDA2 format</td>
<td>0/70%</td>
<td>available in March 2012/available in March 2012</td>
</tr>
<tr>
<td>Ad hoc reporting/Fluores-based system</td>
<td>74%/100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Management and/or statistical reporting</td>
<td>100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Outreach and/or commercial laboratory</td>
<td>42%</td>
<td>75%</td>
</tr>
<tr>
<td>Compliance checking/Billing and accounts receivable</td>
<td>100%/92%</td>
<td>90%/75%</td>
</tr>
<tr>
<td>Materials management and inventory</td>
<td>—</td>
<td>not available/not available</td>
</tr>
<tr>
<td>Test partition/Remote faxing and printing</td>
<td>25%/100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td>HIPAA-standard transaction formats</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Web-based remote inquiry of reports/Web access for order entry</td>
<td>70%/41%</td>
<td>50%/40%</td>
</tr>
<tr>
<td>Specimen management and tracking</td>
<td>100%</td>
<td>0</td>
</tr>
<tr>
<td>Compliance and quality assurance tools/Environmental health</td>
<td>100%/—</td>
<td>25%/20%</td>
</tr>
</tbody>
</table>

**Complete LIS application service provider solution**
- yes
- no

**ASP solution for physician order entry and results reporting**
- yes
- no

**Method of charging for ASP service**
- fixed fee
- no fee

**Client software required**
- browser based
- —

**ASP information conduit**
- operates over the internet
- —

**Client contracts supported from data center not operated by client**
- —
- 0

**How data center is operated**
- by vendor
- —

**LIS can report lab data that is of focus mean use guidelines to public health agencies via automated electronic transmission using formats**:  
- Microbiology data (culture and sensitivity)
- Other reportable diseases (blood, lead, immunology, etc.)
- Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, Vol. VI, version 4.0, April 2011 edition)
- yes
- yes
- no
- —
- —
- no

**Other vendors to which system has a lab-related interface**
- Aspyra, McKesson, eClinicalWorks, Medisoft, SSC Soft Computer, GE Healthcare
- NextGen, GE Healthcare, Allscripts, Varian, Emdeer, Cerner, Sunquest, McKesson
- Beckman Coulter, Siemens, Ortho, Integrated Laboratory Automation Solutions, Olympus America
- NextGen, GE Healthcare, Allscripts, Varian, Emdeer, Cerner, Sunquest, McKesson

**Total laboratory automation systems to which LIS can interface**
- Beckman Coulter, Siemens, Ortho, Integrated Laboratory Automation Solutions, Olympus America
- NextGen, GE Healthcare, Allscripts, Varian

**LIS provides validation or testing tools**
- yes (Ingenix)
- yes (Ingenix, CSS/no)
- yes
- yes/no
- yes/no
- —
- no
- —

**Software provides indexed field in each test definition for LOINC code**
- yes
- no
- yes
- no
- yes
- no
- no
- no

**LIS uses support of SNOMED CT**
- no
- yes
- no
- yes

**Market modules for other hospital departments (percent of installs lab only)**
- yes (100%)
- yes (50%)

**Total cost for smallest LIS installation**
- $22,500 (annual maintenance fee, $250)
- $6,000 (annual maintenance fee, $1,000)
- $36,390

**Total cost for largest LIS installation**
- $2,000–500,000 (mean, 980,000)
- $10,934

**Distinguishing features (supplied by company)**
- *generic*>500,000 billed tests annually, or >300 bed hospitals, or >500 requisitions per day
- *generate*<500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
- *generate*>500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
- *fully integrated with Impac Software medical oncology information system
- *reflex rules engine*
- *microbiology module

---

Note: a dash in lieu of an answer means company did not answer question or question is not applicable.

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**Tabulation does not represent an endorsement by the College of American Pathologists.
### Laboratory information systems

#### Name of laboratory information system
- **Epic**: Beaker Laboratory Information System
- **LAB/HAX**: LabTrak
- **LabTrak**: Dell Intel

#### Features/Modules (listed as percent of live installs or based on availability)
- **Chemistry and hematology/Bar-coded collection labels**: 100%/100%
- **Microbiology/Public health microbiology**: 100%/100% available but not installed
- **Blood bank donor and transfusion**: not available
- **Surgical pathology/Cytology**: not available
- **Molecular pathology/Cytogenetics/Flow cytometry**: 25%/13%
- **His or EMR interface for admissions/discharge/transfer (ADT)**: 100%/100%
- **Nis of EMR interface for order entry/Results reporting**: 100%/100%
- **His or EMR interface for packaging results into PDF format**: not available
- **His or EMR interface for packaging results into CDA1 format/CDA2 format**: not available
- **Ad hoc reporting/Rule-based system**: 100%/100%
- **Management and/or statistical reporting**: 100%
- **Outreach and/or commercial laboratory**: 38%
- **Compliance checking/Billing and accounts receivable**: not available
- **Materials management and inventory**: 100%/100%
- **Test partition/Remote testing and printing**: 100%
- **HIPAA-standard transaction formats**: 100%
- **Web-based remote inquiry of reports/Web access for order entry**: not available/not installed/13%
- **Specimen management and tracking**: 100%
- **Quality and compliance assurance tools/Environmental health**: 100%/not available

#### Complete LIS application service provider solution
- **ASP solution for physician order entry and results reporting**: no
- **Method of charging for ASP service**: Client contracts supported from data center not operated by client
- **ASP information conduit**: not available
- **How data center is operated**: 50

#### Total laboratory automation systems to which LIS can interface
- Beckman Coulter, Siemens, Roche Diagnostics

#### Total cost for largest LIS installation
- $100,000 (annual maintenance fee, $1,500)
- $30,000 (annual maintenance fee, $3,900)
- $19,999 (annual maintenance fee, $250)

#### Distinguishing features (supplied by company)
- Provides seamless data transfer from LIS to patient's chart without need for interfaces integrated/handheld specimen collection, specimen tracking, quality control, and more
- Every customer can contribute to design and direction of application

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**Tabulation does not represent an endorsement by the College of American Pathologists.**

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**Note:** a dash in lieu of an answer means company did not answer question or question is not applicable
### Laboratory Information Systems

#### Name of laboratory information system

<table>
<thead>
<tr>
<th>System</th>
<th>LabNet</th>
<th>LigoLab LIS</th>
<th>Horizon Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>First ever/Most recent LIS installation (on or before 2011 survey deadline)</td>
<td>2006/September 2011</td>
<td>2001</td>
<td>2002</td>
</tr>
<tr>
<td>Last major product release for featured LIS</td>
<td>January 2011</td>
<td>July 2011</td>
<td>March 2011</td>
</tr>
<tr>
<td>Total No. of contracts for sites operating LIS</td>
<td>300+</td>
<td>257</td>
<td>134</td>
</tr>
<tr>
<td><strong>Hospital/Independent lab contracts in U.S.</strong></td>
<td>15/58</td>
<td>8/12</td>
<td>12/3</td>
</tr>
<tr>
<td><strong>Clinic or group practice contracts in U.S.</strong></td>
<td>250+R</td>
<td>6/9</td>
<td>3/0</td>
</tr>
<tr>
<td><strong>Contracts for other U.S. sites/Contracts for foreign sites</strong></td>
<td>5 (research/2) (hospitals)</td>
<td>5/0</td>
<td>5/0 (hospitals)</td>
</tr>
<tr>
<td><strong>No. of those contracts that went live between August 2010–August 2011</strong></td>
<td>2 (1/10)</td>
<td>14 (4/27)</td>
<td>11 (10/10)</td>
</tr>
<tr>
<td><strong>Total No. of contracts (live and not live) signed between Aug. 2010–Aug. 2011</strong></td>
<td>7</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total No. of sites operating LIS (No. of those sites outside the U.S.)</strong></td>
<td>300+ (–Caribbean)</td>
<td>24 (0)</td>
<td>256 (–Canada, Saudi Arabia)</td>
</tr>
<tr>
<td>Percentage of high-volume** sites installed/Low-volume** sites installed</td>
<td>5%/&lt;95%</td>
<td>40%/&lt;90%</td>
<td>85%/&lt;95%</td>
</tr>
</tbody>
</table>

#### No. of employees in entire company
- LabNet: 22
- LigoLab LIS: 16
- Horizon Lab: 44,000

#### No. of billed tests generated annually by labs using this LIS
- LabNet: 2,000–500,000 (mean, 10,000)
- LigoLab LIS: —
- Horizon Lab: not tracked

#### Range in No. of user workstations in sites operating LIS
- LabNet: 1–75 (average, 5)
- LigoLab LIS: —
- Horizon Lab: 10–400 (average, 35)

#### Central hardware or service type
- LabNet: Dell, Hewlett-Packard
- LigoLab LIS: Intel
- Horizon Lab: HP, IBM, Dell

#### How central server failure is handled
- LabNet: manual intervention necessary to restore operation or system continues uninterrupted (user’s option)
- LigoLab LIS: installed/installed
- Horizon Lab: installed/installed

#### Programming language(s)
- LabNet: C++, Windows
- LigoLab LIS: Java, C++, SQL
- Horizon Lab: Delphi, C, Java, .Net

#### Operating systems
- LabNet: Windows
- LigoLab LIS: Windows, Oracle
- Horizon Lab: Red Hat Enterprise Linux

#### Databases and tools
- LabNet: none
- LigoLab LIS: yes
- Horizon Lab: yes

#### Features/modules (listed as percent of live installs or based on availability)
- **Chemistry and hematology/Bar-coded collection labels**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed
- **Microbiology/Public health microbiology**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed
- **Blood bank donor and transfusion**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed
- **Surgical pathology/Pathology**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed
- **HIS or EMR interface for admissions/discharge/transfer (ADT)**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed
- **HIS or EMR interface for order entry/Results reporting**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed
- **HIS or EMR interface for packaging results into PDF format**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed
- **HiPAA-standard transaction formats**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed
- **Web-based remote inquiry of reports/Access to web for order entry**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed
- **Specimen management and tracking**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed
- **Compliance and quality assurance tools/Environmental health**
  - LabNet: installed
  - LigoLab LIS: installed
  - Horizon Lab: installed

#### Complete LIS application service provider solution
- LabNet: yes
- LigoLab LIS: yes
- Horizon Lab: yes

#### ASP solution for physician order entry and results reporting
- LabNet: fixed fee
- LigoLab LIS: fixed fee
- Horizon Lab: fixed fee

#### Method of charging for ASP service
- LabNet: browser-based
- LigoLab LIS: through Horizon Outreach and Lab
- Horizon Lab: through Horizon Outreach for Lab (for both features)

#### Client contracts supported from data center not operated by client
- LabNet: 0
- LigoLab LIS: 0
- Horizon Lab: 3

#### How data center is operated
- LabNet: by vendor
- LigoLab LIS: by vendor
- Horizon Lab: by vendor

#### LIS can report lab data that is focused of meaningful use guidelines to public health agencies via automated electronic transmission using formats** for:
- **Microbiology data (culture and sensitivity)**
  - LabNet: yes
  - LigoLab LIS: yes
  - Horizon Lab: yes
- **Other reportable diseases (blood, lead, immunology, etc.)**
  - LabNet: yes
  - LigoLab LIS: yes
  - Horizon Lab: yes
- **Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)**
  - LabNet: yes
  - LigoLab LIS: yes
  - Horizon Lab: yes

#### Other vendors to which system has a lab-related interface
- LabNet: Beckman Coulter, Siemens, Roche Diagnostics
- LigoLab LIS: Cerner, Allscripts, NextGen, GE Healthcare, eClinicalWorks, LabSoft, Siemens, others
- Horizon Lab: Elekta Software, Sunquest, Cerner, Meditech

#### Total laboratory automation systems to which LIS can interface
- LabNet: Beckman Coulter, Siemens, Ortho, PVT, LabSystems, Olympus, Roche, Abbott, others
- LigoLab LIS: —
- Horizon Lab: interfaces to lab automation systems available via Data Innovations

#### LIS provides validation or testing tools
- LabNet: no
- LigoLab LIS: no (proprietary)
- Horizon Lab: yes (internal McKesson tools)

#### LIS allows third-party updates of tables and rules/image capture, display, reporting
- LabNet: no
- LigoLab LIS: yes
- Horizon Lab: yes (AQA, CMS, Rensburg Institute, others/no

#### Software provides indexed field in each test definition for LOINC code
- LabNet: yes
- LigoLab LIS: yes
- Horizon Lab: yes

#### Provide LOINC dictionary for each new installation
- LabNet: no
- LigoLab LIS: yes
- Horizon Lab: yes

#### LIS supports use of SNOMED CT
- LabNet: no
- LigoLab LIS: no
- Horizon Lab: no

#### Market modules for other hospital departments (percent of installations)
- LabNet: none
- LigoLab LIS: yes
- Horizon Lab: yes (50%)

#### No. of different types of lab instruments interfaced and operational with LIS
- LabNet: 350+ (User group that meets regularly)
- LigoLab LIS: 5
- Horizon Lab: 350+ (User group that meets regularly)

#### User can modify screens
- LabNet: no (off custom programming)
- LigoLab LIS: yes (offer user-defined report writer and custom programming)
- Horizon Lab: yes (offer user-defined report writer and custom programming)

#### LIS total cost for smallest LIS installations
- LabNet: $10,000 (annual maintenance fee, $1,000)
- LigoLab LIS: $100,000 (annual maintenance fee, $10,000)
- Horizon Lab: $35,000 (annual maintenance fee, $7,000)

#### Distinguishing features/supplied information
- **Value**
  - comprehensive and integrated system with document imaging, specimen tracking, clinical, molecular, AP, digital pathology, billing, more
- **Ease of use**
  - autoverification; fully automated QA/QC, touch-screen capability, rule-based system, robust, scalable, and open software
- **User-definable flexibility**
  - includes anatomic pathology system contracts

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*Note: a dash in lieu of an answer means company did not answer question or question is not applicable.

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**Total No. of contracts for sites operating LIS include:**
- **Hospital/Independent lab contracts in U.S.**
- **Clinic or group practice contracts in U.S.**
- **Contracts for other U.S. sites/Contracts for foreign sites**
- **No. of those contracts that went live between August 2010–August 2011**
- **Total No. of contracts (live and not live) signed between Aug. 2010–Aug. 2011**
- **Total No. of sites operating LIS (No. of those sites outside the U.S.)**
- **Percentage of high-volume** sites installed/Low-volume** sites installed

**Method of charging for ASP service**
- **fixed fee**
- **fixed fee or transaction based (user’s option)**

**Language(s) offered on system**
- none

**System includes full transaction logging**
- no

**Databases and tools**
- SQL

**How central server failure is handled**
- manual intervention necessary to restore operation or system continues uninterrupted (user’s option)

**Range in No. of user workstations in sites operating LIS**
- 1–75 (average, 5)

**Total laboratory automation systems to which LIS can interface**
- Beckman Coulter, Siemens, Ortho, PVT, LabSystems, Olympus, Roche, Abbott, others

**Total No. of contracts for sites operating LIS**
- 300+ 25‡ 134

**Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)**
- 2 (1/1) 14 (4/27) 11 (10/10)

**Last major product release for featured LIS**
- January 2011

**Total cost for largest LIS installations**
- $100,000 (annual maintenance fee, $10,000)

**Features/modules (listed as percent of live installs or based on availability)**
- 100%/100%

---

**LIS can report lab data that is focused of meaningful use guidelines to public health agencies via automated electronic transmission using formats** for:
- Microbiology data (culture and sensitivity)
- Other reportable diseases (blood, lead, immunology, etc.)
- Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)

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**Other vendors to which system has a lab-related interface**
- Beckman Coulter, Siemens

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**Total No. of sites operating LIS (No. of those sites outside the U.S.)**
- 300+ (–Caribbean)
<table>
<thead>
<tr>
<th>Feature/Module (listed as percent of live installs or based on availability)</th>
<th>Requirements</th>
<th>Functionality</th>
<th>MS Dynamics, CMS, others</th>
<th>Cerner, Siemens, others</th>
<th>Allscripts, GE Healthcare, Siemens, Sunquest, CPSI, Meditech, Keane, GE Healthcare, NextGen, Allscripts, Healthland, others</th>
<th>Cerner, Siemens, others</th>
<th>Allscripts, GE Healthcare, Siemens, Sunquest, CPSI, Meditech, Keane, GE Healthcare, NextGen, Allscripts, Healthland, others</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemistry and Hematology/Blood-Draw Collection Lables</strong></td>
<td>90%/85%</td>
<td>not available</td>
<td>5%</td>
<td>90%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Microbiology/Pathology Microbiology</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Blood bank donor and transfusion</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Surgical pathology/Cytology</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Molecular pathology/Genetics/Flow cytometry</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for admissions/discharge/transfer (ADT)</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for order entry/results reporting</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for packaging results into PDF format</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for packaging results into CAD1 format/CAD2 format</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Ad hoc reporting/Rules-based system</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Management and/or statistical reporting</strong></td>
<td>10%</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Outreach and/or commercial laboratory</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Compliance checking/Billing and accounts receivable</strong></td>
<td>10%/80%</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Materials management and inventory</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Test partition/Remote faxing and printing</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>HIPAA-standard transaction formats</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Web-based remote inquiry of reports/Web access for order entry</strong></td>
<td>-</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Specimen management and tracking</strong></td>
<td>1%</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Compliance and quality assurance tools/Environmental health</strong></td>
<td>100%/not available</td>
<td>not available</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Total Laboratory Automation Systems to which LIS can Interface Planned for Future:**

- Beckman Coulter, Siemens, Ortho, Olympus, Roche, Abbott, Bayer, Sysmex
- Diagnostics, Olympus America, Roche
- Medcom Information Systems, 2117 Wrestling Ave., Hoffman Estates, IL 60169
- 847-895-1563
- www.emis.com
- Medcom Lab Manager
- AutoLIMS
- Orchard Harvest LIS

**Central Hardware or Service Type:**

- WhiteBox
- IBM, Dell, HP other compatible
- HP Business Class

**Manual Intervention Necessary to Restore Operation:**

- 100%/100%
- 100%/100%
- 100%/100%

**How Central Server Failure is Handled:**

- Manual intervention necessary to restore operation
- Manual intervention necessary to restore operation or system continues uninterrupted (user's option)
- System continues uninterrupted (user's option)

**Programming Language(s):**

- C++
- Adabe Flex
- Java, HTML

**Operating System(s):**

- Windows
- Windows XP Professional, Vista, Server 2003

**Databases and Tools:**

- 40, 64-bit
- Oracle, Microsoft SQL server 2008, 2005
- Microsoft SQL server 2008, 2005

**Languages** (other than English) offered on system:

- Hebrew
- Spanish
- None

**Features/Modules (listed as percent of live installs or based on availability):**

- Chemistry and Hematology/Blood-Draw Collection Labels
- Microbiology/Pathology Microbiology
- Blood Bank Donor and Transfusion
- Surgical Pathology/Cytology
- Molecular Pathology/Genetics/Flow Cytometry
- HIS or EMR Interface for Admissions/Discharge/Transfer (ADT)
- HIS or EMR Interface for Order Entry/Results Reporting
- HIS or EMR Interface for Packaging Results into PDF Format
- HIS or EMR Interface for Packaging Results into CAD1 Format/CAD2 Format
- Ad Hoc Reporting/Rules-Based System
- Management and/or Statistical Reporting
- Outreach and/or Commercial Laboratory
- Compliance Checking/Billing and Accounts Receivable
- Materials Management and Inventory
- Test Partition/Remote Faxing and Printing
- HIPAA-Standard Transaction Formats
- Web-Based Remote Inquiry of Reports/Web Access for Order Entry
- Specimen Management and Tracking
- Compliance and Quality Assurance Tools/Environmental Health

**Total Number of Contracts (Live and Not Live) Signed between August 2010-August 2011:**

- 95%/5%
- 40%/60%
- 26%/74%

**Percentage of High-Volume* Sites Installed/Low-Volume** Sites Installed:

- 95%/5%
- 40%/60%
- 26%/74%

**Central Hardware or Service Type:**

- WhiteBox
- IBM, Dell, HP other compatible
- HP Business Class

**Manual Intervention Necessary to Restore Operation:**

- 100%/100%
- 100%/100%
- 100%/100%

**How Central Server Failure is Handled:**

- Manual intervention necessary to restore operation
- Manual intervention necessary to restore operation or system continues uninterrupted (user's option)
- System continues uninterrupted (user's option)

**Programming Language(s):**

- C++
- Adabe Flex
- Java, HTML

**Operating System(s):**

- Windows
- Windows XP Professional, Vista, Server 2003

**Databases and Tools:**

- 40, 64-bit
- Oracle, Microsoft SQL server 2008, 2005
- Microsoft SQL server 2008, 2005

**Languages** (other than English) offered on system:

- Hebrew
- Spanish
- None

**Features/Modules (listed as percent of live installs or based on availability):**

- Chemistry and Hematology/Blood-Draw Collection Labels
- Microbiology/Pathology Microbiology
- Blood Bank Donor and Transfusion
- Surgical Pathology/Cytology
- Molecular Pathology/Genetics/Flow Cytometry
- HIS or EMR Interface for Admissions/Discharge/Transfer (ADT)
- HIS or EMR Interface for Order Entry/Results Reporting
- HIS or EMR Interface for Packaging Results into PDF Format
- HIS or EMR Interface for Packaging Results into CAD1 Format/CAD2 Format
- Ad Hoc Reporting/Rules-Based System
- Management and/or Statistical Reporting
- Outreach and/or Commercial Laboratory
- Compliance Checking/Billing and Accounts Receivable
- Materials Management and Inventory
- Test Partition/Remote Faxing and Printing
- HIPAA-Standard Transaction Formats
- Web-Based Remote Inquiry of Reports/Web Access for Order Entry
- Specimen Management and Tracking
- Compliance and Quality Assurance Tools/Environmental Health

**Total Number of Contracts (Live and Not Live) Signed between August 2010-August 2011:**

- 95%/5%
- 40%/60%
- 26%/74%
### Laboratory Information Systems

#### Name of laboratory information system

<table>
<thead>
<tr>
<th>LabWeb</th>
<th>LabHealth</th>
<th>Soft.lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psycho Systems</td>
<td>Jeff Caspari</td>
<td>SCC Soft Computer</td>
</tr>
<tr>
<td>Liza-Jean Clifford</td>
<td><a href="mailto:jcaspari@labhealth.com">jcaspari@labhealth.com</a></td>
<td>Ellie Vahman</td>
</tr>
<tr>
<td>25 Birch St., Bldg. B, MIlford, MA 01757</td>
<td>252 Old Nyack Turnpike, Spring Valley, NY 10977</td>
<td><a href="mailto:ellie@softcomputer.com">ellie@softcomputer.com</a></td>
</tr>
<tr>
<td>2008/2010</td>
<td>2011</td>
<td>2011</td>
</tr>
<tr>
<td>1990/September 2011</td>
<td>2011 August 2011</td>
<td>2011</td>
</tr>
</tbody>
</table>

#### First ever/ Most recent LIS installation (based on September 2011 survey deadline)

<table>
<thead>
<tr>
<th>Year/Last major product release for featured LIS</th>
<th>Year/Last major product release for featured LIS</th>
<th>Year/Last major product release for featured LIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008/2010</td>
<td>2011</td>
<td>2011</td>
</tr>
<tr>
<td>1990/September 2011</td>
<td>2011 August 2011</td>
<td>2011</td>
</tr>
</tbody>
</table>

#### Total No. of contracts for sites operating LIS

<table>
<thead>
<tr>
<th>No. of employees in entire company</th>
<th>No. of employees dedicated to LIS development, installation, and support</th>
<th>No. of billed tests generated annually by labs using this LIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>49</td>
<td>7</td>
<td>50,000 - 5,000,000 (mean, 250,000)</td>
</tr>
<tr>
<td>37</td>
<td>6</td>
<td>4 - 95</td>
</tr>
<tr>
<td>1,786</td>
<td>1,350</td>
<td>150,000 - 20,000,000+ (mean, 1,000,000)</td>
</tr>
<tr>
<td>2 - 120 (average, 20)</td>
<td>10 - 4,000+ (average, 80)</td>
<td></td>
</tr>
</tbody>
</table>

#### Central hardware or service type

- **How central server failure is handled**
  - Manual intervention necessary to restore operation

#### Programming language(s)

- **Operating system(s)**
  - Windows
  - AIX, Windows

#### Databases and tools

- **Database(s)**
  - Microsoft SQL server
  - Hyperion Interactive Reporting

- **Tools**
  - RightFax

#### System includes full transaction logging

- **Languages (other than English) offered on system**
  - French
  - ABN forms available in Spanish

#### Features/Modules (listed as percent of five labs installed or as available)

- **Chemistry and hematology/Bar-coded collection labels**
  - 100%/100%
  - 75%/not available

- **Microbiology/Health microbiology**
  - 90%/90%
  - 50%/25%

- **Blood donor and transfusion**
  - 86%/86%
  - 25%/not available

- **Surgical pathology/Cytology**
  - 90% available/not installed/installed
  - 30%/30%/30%

- **Molecular pathology/Cytogenetics/Flow cytometry**
  - 90%/not available/not installed/not installed
  - 75%/75%/75%

- **HIS or EMR interface for admissions/discharge/transfer (ADT)**
  - 90%/not available
  - 75%/75%/75%

- **Clinical lab or EMR interface for order/results reporting**
  - 90%/not available
  - 75%/75%/75%

- **HIS or EMR interface for packaging results into PDF format**
  - 90%/not available
  - 75%/75%/75%

- **HIS or EMR interface for packaging results into CD ADAM format/CD4A format**
  - 90%/not available
  - 75%/75%/75%

- **Ad hoc reporting/ Rules-based system**
  - 90%/not available
  - 75%/75%/75%

- **Management and/or statistical reporting**
  - 90%/not available
  - 75%/75%/75%

- **Outreach and/or commercial laboratory**
  - 90%/not available
  - 75%/75%/75%

- **Compliance checking/Billing and accounts receivable**
  - 90%/not available
  - 75%/75%/75%

- **Materials management and inventory**
  - 90%/not available
  - 75%/75%/75%

- **Test partition/ Remote testing and printing**
  - 90%/not available
  - 75%/75%/75%

- **HIPAA-standard transaction formats**
  - 90%/not available
  - 75%/75%/75%

- **Web-based remote inquiry of reports/Web access for order entry**
  - 90%/not available
  - 75%/75%/75%

- **Specimen management and tracking**
  - 90%/not available
  - 75%/75%/75%

- **Compliance and quality assurance tools/Environmental health**
  - 90%/not available
  - 75%/75%/75%

#### Complete LIS application service provider solution

<table>
<thead>
<tr>
<th>Client contracts supported from data center not operated by client</th>
<th>How data center is operated</th>
<th>LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>New income</td>
<td>by vendor</td>
<td>Microbiology data (culture and sensitivity)</td>
</tr>
<tr>
<td>15</td>
<td>by vendor</td>
<td>Other reportable diseases (blood, lead, immunology, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. IV, version 4.0, April 2011 edition)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other reportable diseases (blood, lead, immunology, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other reportable diseases (blood, lead, immunology, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other reportable diseases (blood, lead, immunology, etc.)</td>
</tr>
</tbody>
</table>

#### Other vendors to which system has a lab-related interface

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Vendor</th>
<th>Vendor</th>
</tr>
</thead>
<tbody>
<tr>
<td>McKesson, Meditech, Siemens, Allscripts, CPSI, QuadraMed, Keanne, Seacoast, others, Beckman Coulter, Siemens, Ortho, Olympus, Roche, Abbott, others</td>
<td>Cerner, Allscripts, others</td>
<td>4medica, Allscripts, CareEvolve, Healthland, McKesson, Meditech, Cerner, GE, others, Beckman Coulter, Siemens, Ortho, PVT LabSystems, Olympus, Roche, Abbott, others</td>
</tr>
</tbody>
</table>

#### Total laboratory automation systems to which LIS can interface

<table>
<thead>
<tr>
<th>LIS provides validation or testing tools</th>
<th>LIS allows third-party updates of tables and rules/image capture, display, reporting</th>
<th>Software provides indexed field in each test definition for LOINC code</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes/proprietary and blood bank guidelines</td>
<td>yes/proprietary and blood bank guidelines</td>
<td>yes/proprietary and blood bank guidelines</td>
</tr>
<tr>
<td>yes/proprietary and blood bank guidelines</td>
<td>yes/proprietary and blood bank guidelines</td>
<td>yes/proprietary and blood bank guidelines</td>
</tr>
</tbody>
</table>

#### LIS supports use of SNOMED CT

<table>
<thead>
<tr>
<th>Market modules for other hospital departments (percent of installs lab only)</th>
<th>Total cost for smallest LIS installation****</th>
<th>Total cost for largest LIS installation****</th>
</tr>
</thead>
<tbody>
<tr>
<td>no/yes</td>
<td>$24,000 (annual maintenance fee, $600)</td>
<td>$34,000 (annual maintenance fee, $6,900)</td>
</tr>
<tr>
<td>no/yes</td>
<td>$20,000 (annual maintenance fee, $5,000)</td>
<td>$28,000 (annual maintenance fee, $6,900)</td>
</tr>
<tr>
<td>no/yes</td>
<td>$20,000 (annual maintenance fee, $5,000)</td>
<td>$28,000 (annual maintenance fee, $6,900)</td>
</tr>
<tr>
<td>no/yes</td>
<td>$120,000 (annual maintenance fee, $1,900)</td>
<td>$180,000 (annual maintenance fee, $27,000)</td>
</tr>
</tbody>
</table>

#### Distinguishing features (supplied by company)

* *generator* = >500 billed tests annually, or >200 bad hospitals, or >50 requisitions per day
**generator** = >600 billed tests annually, or >300 bad hospitals, or >80 requisitions per day

<table>
<thead>
<tr>
<th>Distinguishing features not provided</th>
<th>Distinguishing features not provided</th>
<th>Distinguishing features not provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIS completely rewritten in 2011 using the most up-to-date browser-based technology</td>
<td>LIS completely rewritten in 2011 using the most up-to-date browser-based technology</td>
<td>LIS completely rewritten in 2011 using the most up-to-date browser-based technology</td>
</tr>
<tr>
<td>ability to create custom programming quickly and inexpensively</td>
<td>ability to create custom programming quickly and inexpensively</td>
<td>ability to create custom programming quickly and inexpensively</td>
</tr>
<tr>
<td>consulting services to help labs generate new income</td>
<td>consulting services to help labs generate new income</td>
<td>consulting services to help labs generate new income</td>
</tr>
<tr>
<td>innovative, comprehensive, and integrated suite of genetics modules for molecular, cytogenetics, HLA/immunogenetics, biochemistry, flow cytometry</td>
<td>innovative, comprehensive, and integrated suite of genetics modules for molecular, cytogenetics, HLA/immunogenetics, biochemistry, flow cytometry</td>
<td>innovative, comprehensive, and integrated suite of genetics modules for molecular, cytogenetics, HLA/immunogenetics, biochemistry, flow cytometry</td>
</tr>
<tr>
<td>powerful, integrated lab-specific outreach tools</td>
<td>powerful, integrated lab-specific outreach tools</td>
<td>powerful, integrated lab-specific outreach tools</td>
</tr>
<tr>
<td>core lab multi-site and specimen-tracking module</td>
<td>core lab multi-site and specimen-tracking module</td>
<td>core lab multi-site and specimen-tracking module</td>
</tr>
</tbody>
</table>

Tabulation does not represent an endorsement by the College of American Pathologists.
**Laboratory information systems**

**Part 9 of 10**

<table>
<thead>
<tr>
<th>Name of laboratory information system</th>
<th>Schuyler Lab</th>
<th>Novaus Lab</th>
<th>STARLIMS CLINICAL LIS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First ever/Most recent LIS installation</strong> (based on September 2011 survey deadline)</td>
<td>1994/September 2011</td>
<td>1983/2011</td>
<td>2001/August 2011</td>
</tr>
<tr>
<td><strong>Last major product release for featured LIS</strong></td>
<td>September 2011</td>
<td>2010</td>
<td>August 2011</td>
</tr>
<tr>
<td><strong>Total No. of contracts for sites operating LIS</strong></td>
<td>796</td>
<td>47</td>
<td>66</td>
</tr>
<tr>
<td><strong>Hospital/Independent lab contracts in U.S.</strong></td>
<td>139/252</td>
<td>44/1</td>
<td>1/5</td>
</tr>
<tr>
<td><strong>Clinic or group practice contracts in U.S./Public health labs in U.S.</strong></td>
<td>349/110</td>
<td>0/1</td>
<td>0/26</td>
</tr>
<tr>
<td><strong>Contracts for other U.S. sites/Contracts for foreign sites</strong></td>
<td>40 (veterinary, school/36 (hospitals, PGLS, reference labs)</td>
<td>0/1</td>
<td>7 (bacteriology laboratory, bio, biobanks, others/31 (hospitals, reference labs, others)</td>
</tr>
<tr>
<td><strong>No. of those contracts that went live between August 2010–August 2011</strong></td>
<td>34</td>
<td>17 (17/30)</td>
<td>23</td>
</tr>
<tr>
<td><strong>Contrats signed but LIS not yet operational (hospital/independent labs/other sites)</strong></td>
<td>34</td>
<td>3</td>
<td>26 (10/17/30)</td>
</tr>
<tr>
<td><strong>Total No. of contracts (live and not live) signed between Aug. 2010–Aug. 2011</strong></td>
<td>786 (88-Guam, Caribbean, Canada)</td>
<td>74 (1-Canada)</td>
<td>118 (36-U.K, Germany, Romania, China, others)</td>
</tr>
<tr>
<td><em><em>Percentage of high-volume</em> sites installed/Low-volume</em>* sites installed</td>
<td>30%/70%</td>
<td>40%/35%</td>
<td>37%/98%</td>
</tr>
<tr>
<td><strong>No. of employees in entire company</strong></td>
<td>23</td>
<td>400,000+</td>
<td>76</td>
</tr>
<tr>
<td><strong>No. of employees dedicated to LIS development, installation, and support</strong></td>
<td>23</td>
<td>400,000+</td>
<td>80</td>
</tr>
<tr>
<td><strong>No. of billed tests generated annually by labs using this LIS</strong></td>
<td>5,000–7,000,000,000 (mean, 10,000)</td>
<td>80,000–3,000,000,000 (mean, 650,000)</td>
<td>10,000–100,000,000</td>
</tr>
<tr>
<td><strong>Range No. of user workstations in sites operating LIS</strong></td>
<td>1–64 (average, 3)</td>
<td>6–75 (average, 20)</td>
<td>5–1,000</td>
</tr>
<tr>
<td><strong>Central hardware or service type</strong></td>
<td>PC (Dell recommended)</td>
<td>manual intervention necessary to restore operation</td>
<td>hardware independent—Sun, Unix, Linux (DB server), Windows (application server), other manual intervention necessary to restore operation or system continues uninterrupted (user’s option)</td>
</tr>
<tr>
<td><strong>How central server failure is handled</strong></td>
<td>manual intervention necessary to restore operation</td>
<td>manual intervention necessary to restore operation</td>
<td></td>
</tr>
<tr>
<td><strong>Programming language(s)</strong></td>
<td>C</td>
<td>C++</td>
<td>C++, Net</td>
</tr>
<tr>
<td><strong>Operating system(s)</strong></td>
<td>Windows XP, Vista, 7</td>
<td>Linux</td>
<td>Windows</td>
</tr>
<tr>
<td><strong>Databases and tools</strong></td>
<td>Pervasive, TerriWeb</td>
<td>Sybase</td>
<td>SQL server 2000, 2008, Oracle 106, 11g</td>
</tr>
<tr>
<td><strong>System includes full transaction logging</strong></td>
<td>no</td>
<td>yes</td>
<td>French, Spanish, Chinese, Czech, Polish, others</td>
</tr>
<tr>
<td><strong>Languages (other than English) offered on system</strong></td>
<td>no</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td><strong>Features/modules (listed as percent of live installs or based on availability)</strong></td>
<td>100%/40%</td>
<td>100%/100%</td>
<td>55%/98%</td>
</tr>
<tr>
<td><strong>Chemistry and hematology/Blood group and blood typing</strong></td>
<td>70%/12% (via W.H.O)</td>
<td>98%/9% installed</td>
<td>10%/98%</td>
</tr>
<tr>
<td><strong>Microbiology/Public health microbiology</strong></td>
<td>10%/10% installed</td>
<td>10%/98% installed</td>
<td>10%/98%</td>
</tr>
<tr>
<td><strong>Blood bank donor and transfusion</strong></td>
<td>not available/not available/1%</td>
<td>not available/not available/1%</td>
<td></td>
</tr>
<tr>
<td><strong>Surgical pathology/Cytology</strong></td>
<td>40%</td>
<td>40% installed</td>
<td>28%/98%/9%</td>
</tr>
<tr>
<td><strong>Molecular pathology/Cytogenetics/Flow cytology</strong></td>
<td>not available/available/1%</td>
<td>not available/available/1%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for admissions/discharge/transfer (ADT)</strong></td>
<td>installed</td>
<td>installed</td>
<td>5%</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for order entry/Results reporting</strong></td>
<td>50%/49%</td>
<td>installed</td>
<td>5%</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for packaging results into PDF format</strong></td>
<td>35%</td>
<td>installed</td>
<td>5%</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for packaging results into CD/ADAM format</strong></td>
<td>35%</td>
<td>installed</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Ad hoc reporting/Advanced search tools</strong></td>
<td>not available/available/1%</td>
<td>not available/available/1%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Compliance checking and/or reporting systems</strong></td>
<td>100%/installed</td>
<td>100%/installed</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Materials management and inventory</strong></td>
<td>installed</td>
<td>installed</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Specimen management and tracking</strong></td>
<td>not available/available/1%</td>
<td>not available/available/1%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Compliance and quality assurance tools/Environmental health</strong></td>
<td>30%</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Complete LIS application service provider solutions</strong></td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>ASP solution for physician order entry and results reporting</strong></td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Method of charging for ASP service</strong></td>
<td>—</td>
<td>fixed fee or monthly fee</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Client software required</strong></td>
<td>—</td>
<td>browser based</td>
<td>yes</td>
</tr>
<tr>
<td><strong>ASP information conduit</strong></td>
<td>—</td>
<td>operates over the Internet or requires use of VPN</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Client contracts supported from data center not operated by client</strong></td>
<td>—</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>How data center is operated</strong></td>
<td>—</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats</strong>* (supplied by company):**</td>
<td>—</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Microbiology data (culture and sensitivity)</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Other reportable diseases (blood lead, immunology, etc.)</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Other vendors to which system has a lab-related interface</td>
<td>425-487-0179</td>
<td><a href="http://www.starlims.com">www.starlims.com</a></td>
<td><a href="mailto:ed.krasovec@starlims.com">ed.krasovec@starlims.com</a></td>
</tr>
<tr>
<td><strong>Total laboratory automation systems to which LIS can interface</strong></td>
<td>94/0</td>
<td>0/1</td>
<td>7 (biotech immunology lab, bio, biobanks, others/31 (hospitals, reference labs, others)</td>
</tr>
<tr>
<td>Total cost for largest LIS installation**** $70,000 (annual maintenance fee, $3,500) — $3,500,000 (annual maintenance fee, $275,000)</td>
<td>$70,000 (annual maintenance fee, $3,500) — $3,500,000 (annual maintenance fee, $275,000)</td>
<td>$75,000 (annual maintenance fee, $8,000)</td>
<td>$3,000,000 (annual maintenance fee, $275,000)</td>
</tr>
<tr>
<td><strong>Distinguishing features (supplied by company)</strong></td>
<td>+free SchuyLab Basic: a streamlined version of SchuyLab LIS, with modules that can be upgraded so lab’s LIS can grow with lab</td>
<td>+free SchuyLab Basic: a streamlined version of SchuyLab LIS, with modules that can be upgraded so lab’s LIS can grow with lab</td>
<td>+free SchuyLab Basic: a streamlined version of SchuyLab LIS, with modules that can be upgraded so lab’s LIS can grow with lab</td>
</tr>
<tr>
<td><strong>User can modify screens</strong></td>
<td>yes (offer user-defined report writer)</td>
<td>yes (offer user-defined report writer)</td>
<td>yes (offer user-defined report writer and custom programming)</td>
</tr>
<tr>
<td><strong>Total cost for smallest LIS installation</strong>** $5,000 (annual maintenance fee, $5,000) — $75,000 (annual maintenance fee, $75,000)</td>
<td>$5,000 (annual maintenance fee, $5,000) — $75,000 (annual maintenance fee, $75,000)</td>
<td>$5,000 (annual maintenance fee, $5,000) — $75,000 (annual maintenance fee, $75,000)</td>
<td></td>
</tr>
</tbody>
</table>

Tabulation does not represent an endorsement by the College of American Pathologists.
## Laboratory Information Systems

### Name of laboratory information system

<table>
<thead>
<tr>
<th>Laboratory Information System</th>
<th>Sunquest Laboratory</th>
<th>TD-Synergy Suite†</th>
<th>Thermo Scientific Clinical LIMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>First ever/Most recent LIS installation (based on September 2011 survey deadline)</td>
<td>2011</td>
<td>2009</td>
<td>2011</td>
</tr>
<tr>
<td>Total No. of contracts for sites operating LIS</td>
<td>400+</td>
<td>1000+</td>
<td>12</td>
</tr>
<tr>
<td>Hospitals/Independent lab contracts in U.S.</td>
<td>350+</td>
<td>400+</td>
<td>10</td>
</tr>
<tr>
<td>—</td>
<td>400+</td>
<td>400+</td>
<td>10+</td>
</tr>
<tr>
<td><em>Clinical</em> or Group practice contracts in U.S./Public health lab contracts in U.S.</td>
<td>—</td>
<td>200+</td>
<td>—</td>
</tr>
<tr>
<td>Contracts for other U.S. sites/Contracts for foreign sites</td>
<td>200+ (hospitals, research labs)</td>
<td>1 (research laboratory)</td>
<td>2 (public health, blood center)</td>
</tr>
<tr>
<td>No. of those contracts that went live between August 2010–August 2011</td>
<td>4</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Contracts signed but LIS not yet operational (hospitals/Independent labs/other sites)</td>
<td>26</td>
<td>1000+</td>
<td>12</td>
</tr>
<tr>
<td>Total No. of contracts operating LIS (No. of these sites outside the U.S.)</td>
<td>1,000+</td>
<td>200+</td>
<td>12</td>
</tr>
<tr>
<td>Percentage of high-volume* sites installed/Low-volume** sites installed</td>
<td>75%/50%</td>
<td>75%/50%</td>
<td>40%/60%</td>
</tr>
<tr>
<td>No. of employees in entire company</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>— No. of employees dedicated to LIS development, installation, and support</td>
<td>615</td>
<td>210+</td>
<td>—</td>
</tr>
<tr>
<td>No. of billed tests generated annually by labs using this LIS</td>
<td>—</td>
<td>140,000–200,000,000 (mean, 10,000,000)</td>
<td>—</td>
</tr>
<tr>
<td>— No. of these tests in range of No. of tests generated (average, 300)</td>
<td>4–1000</td>
<td>10–800</td>
<td>—</td>
</tr>
<tr>
<td>Central hardware or service type</td>
<td>HP, IBM</td>
<td>IBM</td>
<td>Windows</td>
</tr>
<tr>
<td>How central server failure is handled</td>
<td>Manual intervention necessary to restore operation</td>
<td>—</td>
<td>Hardware independent: Sun, Unix, Linux, IBM, others</td>
</tr>
<tr>
<td>Programming language(s)</td>
<td>C++, C+, C#, Java</td>
<td>C++, C#, C#</td>
<td>C++, PowerBuilder</td>
</tr>
<tr>
<td>Operating system(s)</td>
<td>Unix, Windows, Linux</td>
<td>—</td>
<td>Windows</td>
</tr>
<tr>
<td>Databases and tools</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>System includes full transaction logging</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Languages (other than English) offered on system</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Features/modules (listed as percent of live installs or based on availability)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Chemistry and hematology/Bar-coded collection labels</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Microbiology/Public health microbiology</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Blood bank donor and transfusion</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Surgical pathology/Cytology</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Molecular pathology/Ontogenetics/Flow cytometry</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>HIS or EMR interface for admissions/discharge/transfer (ADT)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>HIS or EMR interface for order entry/Results reporting</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into PDF format</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into CD1 format/CD2 format</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Ad hoc reporting/Rules-based system</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Management and/or statistical reporting</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Outreach and/or commercial laboratory</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Compliance checking/Billing and accounts receivable</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Materials management and inventory</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Test partition/Remote faxing and printing</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>HIPAA-standard transaction formats</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Web-based remote inquiry of reports/Web access for order entry</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Specimen management and tracking</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Compliance and quality assurance tools/Environmental health</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Complete LIS application service provider solution</td>
<td>no</td>
<td>no</td>
<td>—</td>
</tr>
<tr>
<td>ASP solution for physician order entry and results reporting</td>
<td>no</td>
<td>no</td>
<td>—</td>
</tr>
<tr>
<td>Method of charging for ASP service</td>
<td>no</td>
<td>no</td>
<td>—</td>
</tr>
<tr>
<td>Client software required</td>
<td>no</td>
<td>no</td>
<td>—</td>
</tr>
<tr>
<td>ASP information conduit</td>
<td>no</td>
<td>no</td>
<td>—</td>
</tr>
<tr>
<td>Client contracts supported from data center not operated by client</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>How new data is operated</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>LIS can report lab data that is of focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats** for:</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Microbiology data (culture and sensitivity)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Other reportable diseases (blood, lead, immunity, etc.)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. 1, version 4.0, April 2011 edition)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Other vendors to which system has a lab-related interface</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Total laboratory automation systems to which LIS can interface</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>LIS provides validation or testing tools</td>
<td>yes (client test plans)</td>
<td>yes (host emulation tools, test environments)</td>
<td>yes (Thermo automated tools)</td>
</tr>
<tr>
<td>LIS allows third-party updates of tables and rules/image capture, display, reporting</td>
<td>yes (IMI CAP)</td>
<td>yes (SNOMED, 3M, CLIS)</td>
<td>yes (open system through extensions/yes)</td>
</tr>
<tr>
<td>Software provides indeed field in each test definition for LOINC code</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Provide LOINC dictionary for each new installation</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>LIS supports use of SNOMD CT</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Market modules for other hospital departments (percent of installs lab only)</td>
<td>yes (95%)</td>
<td>no</td>
<td>—</td>
</tr>
<tr>
<td>No. of different types of lab instruments interfaced and operational with LIS Source Code/User group that meets regularly</td>
<td>yes</td>
<td>yes</td>
<td>—</td>
</tr>
<tr>
<td>User can modify screens</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Total cost for smallest LIS installation****</td>
<td>$100,000 (annual maintenance fee, $20,000)</td>
<td>$2,000,000 (annual maintenance fee, $500,000+)</td>
<td>$50,000 (annual maintenance fee, $9,000)</td>
</tr>
<tr>
<td>Total cost for largest LIS installation****</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**Generates $500,000 billed annually, or >200 bed hospitals, or >500 requisitions per day

**Generates <$500,000 billed annually, or <200 bed hospitals, or <500 requisitions per day

***HL7 2.5.1, LOINC, SNOMED, etc.

****Includes hardware, software, installation, and training

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Note: a dash in lieu of an answer means company did not answer question or question is not applicable.