Tabulation does not represent an endorsement by the College of American Pathologists.
| Feature/module (listed as percent of live installs or based on availability) | Yes | No | Other
| --- | --- | --- | ---
| Chemistry and hematology | 100% | 95% | 5%
| Bar-coded collection labels | 100% | 55% | 30%
| Handheld devices for bedside-positive patient ID | 10% | 75% | 30%
| NCCLS POC-1A standard interface for POC devices | installed | 75% | 30%
| Microbiology/public health microbiology | 100% | 75% | 30%
| Blood bank donor and transfusion | 75% | 75% | 30%
| Surgical pathology/cytology | 10% | 10% | 30%
| Molecular pathology/cytogenetics | 50% | 50% | 30%
| Flow cytometry | 50% | 50% | 30%
| HIS or EMR interface for A/D/F | 100% | 75% | 30%
| HIS or EMR interface for order entry/results reporting | 100% | 75% | 30%
| HIS or EMR interface for packaging results into PDF format | installed | 75% | 30%
| HIS or EMR interface for packaging results into CDA1 format/CDA2 format | not available/installed | 75% | 30%
| Ad hoc reporting/rule-based system | 100% | 100% | 75% | 30%
| Management and statistical reporting | 100% | 100% | 75% | 30%
| Outreach and commercial laboratory | 50% | 40% | 30%
| Compliance checking/billing and accounts receivable | installed | 75% | 30%
| Materials management and inventory | installed | 75% | 30%
| Test partition/remote faxing and printing | installed | 75% | 30%
| HIPAA-standard transaction formats | 100% | 100% | 75% | 30%
| Web-based remote inquiry of reports/Web access for order entry | less than 10% | 30% | 30%
| Specimen management and tracking | 100% | 90% | 30%
| Compliance and quality assurance tools | 100% | 100% | 75% | 30%
| HLA (tissue typing) | 10% | 10% | 30%
| Environmental health/newborn screening | installed | 100% | 75% | 30%
| Stem cell laboratory | installed | 100% | 75% | 30%

**Software provides index field in each test definition for LOINC code?**
- Yes
- No

**Provide LOINC dictionary for each new installation?**
- Yes
- No

**LIS supports validation or testing tools?**
- Yes
- No

**LIS provides virtualization support?**
- Yes (certification guidelines, documentation, consulting services)
- Yes
- No

**LIS provides surveillance data to public health agencies via computer-to-computer interface using CDC, HL7, LOINC, SNOMED standards?**
- Microbiology data
- 48 sites
- 3 sites
- available but not in use
- available but not in use

**Information systems interfaced**
- McKesson, Siemens, Epic, Cerner, others
- Siemens, Healthland, Medical Manager, Allscripts, MedicaLogic, others

**LIS supports integration of LIS data with other hospital departments and systems?**
- Yes (certification guidelines, documentation, consulting services)
- Yes
- No

**Market modules for other hospital departments?**
- Yes (50%)
- Yes (25%)

**No. of different lab instruments interfaced with LIS**
- Source code/User group that meets regularly
- User can modify screens
- Query languages to retrieve information from LIS database
- Total cost for LIS hardware/software/monthly maintenance
- Largest cost for LIS hardware/software/monthly maintenance

**Distinguishing features (supplied by vendor)**
- 30 years of continuous innovation in the LIS market
- Support for increased efficiencies through key capabilities such as online secondary review (pre- and post-verification), automated verification throughout multiple departments, expert rules, integrated document imaging for requisitions, advanced quality control, more support for the entire clinical lab within a single LIS and EMR architecture
- Versatile and flexible for any size facility
- Web access and customization available
- Fully integrated with other hospital departments and systems

**Note:** a dash in lieu of an answer means company did not answer question or question is not applicable
<table>
<thead>
<tr>
<th>Feature/Module (listed as percent of live installs or based on availability)</th>
<th>LIS Based/Available</th>
<th>Generates &gt;500,000 billed tests annually, or &gt;200 bed hospitals, or &gt;500 requisitions per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry and hematology</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Bar-coded collection labels</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Handheld devices for bedside-positive patient ID</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td>NCLCS PCT-TA standard interface for POCT devices</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td>Microbiology/public health microbiology</td>
<td>90%/10%</td>
<td>13%/not available</td>
</tr>
<tr>
<td>Blood bank donor and transfusion</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td>Surgical pathology/cytogenetics</td>
<td>available but not installed/available but not installed</td>
<td>not available/not available</td>
</tr>
<tr>
<td>Molecular pathology/cytogenetics</td>
<td>available but not installed/available but not installed</td>
<td>not available/not available</td>
</tr>
<tr>
<td>Flow cytometry</td>
<td>installed</td>
<td>2%</td>
</tr>
<tr>
<td>HIS or EMR interface for A/D/T</td>
<td>80%</td>
<td>71%</td>
</tr>
<tr>
<td>HIS or EMR interface for order entry/results reporting</td>
<td>80%/80%</td>
<td>38%/47%</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into PDF format</td>
<td>90%</td>
<td>not available</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into CD1 format/CD2 format</td>
<td>not available/not available</td>
<td>not available/not available</td>
</tr>
<tr>
<td>Ad hoc reporting/rules-based system</td>
<td>100%/available but not installed</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Management and statistical reporting</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Outreach and commercial laboratory</td>
<td>60%</td>
<td>22%</td>
</tr>
<tr>
<td>Compliance checking/billing and accounts receivable</td>
<td>100%/not available</td>
<td>100%/87%</td>
</tr>
<tr>
<td>Materials management and inventory</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td>Test partition/remote facint and printing</td>
<td>installed/60%</td>
<td>100%/90%</td>
</tr>
<tr>
<td>HIPAA-standard transaction formats</td>
<td>100%</td>
<td>not available</td>
</tr>
<tr>
<td>Web-based remote inquiry of reports/Web access for order entry</td>
<td>60%/60%</td>
<td>installed/27%</td>
</tr>
<tr>
<td>Specimen management and tracking</td>
<td>10%</td>
<td>not available</td>
</tr>
<tr>
<td>Compliance and quality assurance tools</td>
<td>30%</td>
<td>100%</td>
</tr>
<tr>
<td>HL7 (laboratory messaging protocol)</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td>Environmental NEW</td>
<td>installed/not available</td>
<td>not available/not available</td>
</tr>
<tr>
<td>Stem cell laboratory</td>
<td>not available</td>
<td>not available</td>
</tr>
</tbody>
</table>

**Completeness LIS application service provider solution?**
- No
- Yes

**ASP for physician order entry results reporting?**
- No
- Yes

**Method of charging for ASP service**
- Fixed fee
- Per user

**Client software required?**
- Requires that software be installed on a client PC
- Client software not required

**ASP information conduit**
- Operates over the Internet
- Other

**Client contracts supported from data center not operated by client**
- Supported
- Not supported

**How data center is operated**
- Client contracts supported from data center not operated by client
- Client contracts supported from data center operated by client

**LIS provides services to public health agencies via computer-to-computer interface using CDC, HL7, LOINC, SNOMED standards for:**
- Microbiology data
- Other reportable diseases
- Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. 4, version 2.2, February 2009 edition)
- Other

**Information systems interfaced**
- Meditech, Cerner, Atlas, CSS, Mysis, CareEvolve, Allscripts, eClinicalWorks, GE Healthcare, Pyramed, Medical Manager, others
- Beckman Coulter, Siemens, Olympus America, Roche
- GE Healthcare, Siemens, Intermed, Healthland, eClinicalWorks, Healthmatics, Mysis, Medical Manager, Corner, VitalWorks, others
- Not available

**LIS provides validation or testing tools?**
- No
- Yes

**LIS allows third-party updates of tables and rules/image capture, display, and reporting?**
- No
- Yes/no

**Software provides indexed field in each test definition for LOINC code?**
- Yes
- No

**Provide LOINC dictionary for each new installation?**
- Yes
- No

**LIS supports use of SNOMED CT?**
- Yes
- No

**Market modules for other hospital departments? (percent of installs lab only)**
- 60%
- 100%

**No. of different lab instruments interfaced with LIS**
- 300+
- 230+

**Source code?/User group that meets regularly?**
- Escrow/no
- Yes/other user-defined report writer, custom programming
- Escrow/no
- Yes (other user-defined report writer, custom programming)
- SQL
- Pervasive
- GE Healthcare, Siemens, Intermed, Healthland, eClinicalWorks, Healthmatics, Mysis, Medical Manager, Corner, VitalWorks, others
- Not available

**Software provides indexed field in each test definition for SNOMED CT?**
- Yes
- No

**Distinguishing features (supplied by vendor)**
- Custom software
- Extensive rules-based capabilities allow customization of system functionality
- External system interface flexibility
- Standard HL-7-based interfacing capabilities to other systems
- Specialized support
- No other

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

**Part 4 of 17**

<table>
<thead>
<tr>
<th>Name of laboratory information system</th>
<th>CPSI System</th>
<th>CLS 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First ever/most recent LIS installation (based on September survey deadline)</strong></td>
<td>1986/September 2009</td>
<td>1980/August 2009</td>
</tr>
<tr>
<td><strong>Last major product release for featured LIS</strong></td>
<td>February 2009</td>
<td>September 2009</td>
</tr>
<tr>
<td><strong>Total No. of contracts for sites operating LIS</strong></td>
<td>414</td>
<td>98</td>
</tr>
<tr>
<td><strong>• Hospital/independent lab contracts in U.S.</strong></td>
<td>413/1</td>
<td>0/79</td>
</tr>
<tr>
<td><strong>• Clinic or group practice contracts in U.S./public health lab contracts in U.S.</strong></td>
<td>0/0</td>
<td>16/2</td>
</tr>
<tr>
<td><strong>• Other contracted U.S. sites/contracts for foreign sites</strong></td>
<td>0/1</td>
<td>1 (contract research)/1 (reference lab)</td>
</tr>
<tr>
<td><strong>• No. of these contracts that went live between Sept.-Sept. 2008</strong></td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td><strong>Contracts signed by LIS but not yet operational (hospital/independent lab/other sites)</strong></td>
<td>11 (1/0/0)</td>
<td>2 (0/2/0)</td>
</tr>
<tr>
<td><strong>• Total No. of contracts (live and not live) signed between Sept.-Sept. 2008</strong></td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total No. of sites operating LIS (No. of these sites outside the U.S.)</strong></td>
<td>414 (4)</td>
<td>96 (1–Canada)</td>
</tr>
<tr>
<td><strong>Percentage of high-volume sites installed/low-volume sites installed</strong></td>
<td>1%/99%</td>
<td>42%/58%</td>
</tr>
<tr>
<td><strong>Staff to develop/install &amp; support/other</strong>* in entire firm**</td>
<td>152/953/340</td>
<td>6/9/5</td>
</tr>
<tr>
<td><strong>Staff to develop/install &amp; support/other</strong>* in US division**</td>
<td>49/220/0</td>
<td>6/9/5</td>
</tr>
<tr>
<td><strong>No. of billed tests generated annually by LIS</strong></td>
<td>148,000–6,000,000 (mean, 310,000)</td>
<td>22,587–3,387,261 (mean, 757,231)</td>
</tr>
<tr>
<td><strong>Range in No. of interactive workstations in sites operating LIS</strong></td>
<td>6–500 (mean, 100)</td>
<td>2–58 (mean, 15)</td>
</tr>
<tr>
<td><strong>Central hardware or service type</strong></td>
<td>IBM x8650</td>
<td>IBM</td>
</tr>
<tr>
<td><strong>How central server failure is handled</strong></td>
<td>manual intervention necessary to restore operation or system continues uninterrupted (lab’s choice)</td>
<td>manual intervention necessary to restore operation or system continues uninterrupted (lab’s choice)</td>
</tr>
<tr>
<td><strong>Programming language(s)</strong></td>
<td>Visual C++, AcuCobol</td>
<td>C++</td>
</tr>
<tr>
<td><strong>Operating system(s)</strong></td>
<td>Red Hat Linux</td>
<td>AIX 6.1</td>
</tr>
<tr>
<td><strong>Databases and tools</strong></td>
<td>Acucorp</td>
<td>MS SQL, MySQL, Lab Base</td>
</tr>
<tr>
<td><strong>System includes full transaction logging?</strong></td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Languages (other than English) offered on system</strong></td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Features/modules (listed as percent of live installs or based on availability)</strong></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Chemistry and hematology</strong></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Bar-coded collection labels</strong></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Handheld devices for bedside-positive patient ID</strong></td>
<td>16%</td>
<td>not available</td>
</tr>
<tr>
<td><strong>• NCCLS POC-1A standard interface for POC devices</strong></td>
<td>1%</td>
<td>not available</td>
</tr>
<tr>
<td><strong>• Microbiology/public health microbiology</strong></td>
<td>100%/0</td>
<td>86%/not available</td>
</tr>
<tr>
<td><strong>• Blood bank donor and transfusion</strong></td>
<td>0</td>
<td>not available</td>
</tr>
<tr>
<td><strong>• Surgical pathology/cytology</strong></td>
<td>1%/1%</td>
<td>12%/31%</td>
</tr>
<tr>
<td><strong>• Molecular pathology/cytogenetics</strong></td>
<td>0/0</td>
<td>not available/not available</td>
</tr>
<tr>
<td><strong>• Flow cytometry</strong></td>
<td>0</td>
<td>not available</td>
</tr>
<tr>
<td><strong>• HIS or EMR interface for A/D/T</strong></td>
<td>100%</td>
<td>0</td>
</tr>
<tr>
<td><strong>• HIS or EMR interface for order entry/results reporting</strong></td>
<td>100%/100%</td>
<td>67%/81%</td>
</tr>
<tr>
<td><strong>• HIS or EMR interface for packaging results into PDF format</strong></td>
<td>100%</td>
<td>81%</td>
</tr>
<tr>
<td><strong>• HIS or EMR interface for packaging results into CDI format/CD2 format</strong></td>
<td>100%/100%</td>
<td>40%/not available</td>
</tr>
<tr>
<td><strong>• Ad hoc reporting/rules-based system</strong></td>
<td>100%/100%</td>
<td>74%/100%</td>
</tr>
<tr>
<td><strong>• Management and statistical reporting</strong></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Outreach and commercial laboratory</strong></td>
<td>100%</td>
<td>42%</td>
</tr>
<tr>
<td><strong>• Compliance checking/billing and accounts receivable</strong></td>
<td>100%/100%</td>
<td>100%/82%</td>
</tr>
<tr>
<td><strong>• Materials management and inventory</strong></td>
<td>100%</td>
<td>0</td>
</tr>
<tr>
<td><strong>• Test partition/remote faxing and printing</strong></td>
<td>100%/100%</td>
<td>25%/100%</td>
</tr>
<tr>
<td><strong>• HIPAA-standard transaction formats</strong></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Web-based remote inquiry of reports/Web access for order entry</strong></td>
<td>40%/10%</td>
<td>52%/41%</td>
</tr>
<tr>
<td><strong>• Specimen management and tracking</strong></td>
<td>not available</td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Compliance and quality assurance tools</strong></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>• ILA (tissue typing)</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>• Environmental health/newborn screening</strong></td>
<td>0/0</td>
<td>0/0</td>
</tr>
<tr>
<td><strong>• Stem cell laboratory</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Complete LIS application service provider solution?</strong></td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td><strong>ASP for physician order entry and results reporting?</strong></td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Method of charging for ASP service</strong></td>
<td>fixed fee</td>
<td>fixed fee</td>
</tr>
<tr>
<td><strong>Client software required</strong></td>
<td>browser based and requires that software be installed on a client PC</td>
<td>browser based and requires that software be installed on a client PC</td>
</tr>
<tr>
<td><strong>ASP information conduit</strong></td>
<td>operates over Internet or requires use of a VM or other dedicated connection</td>
<td>operates over the Internet or requires use of a VM or other dedicated connection</td>
</tr>
<tr>
<td><strong>Client contracts supported from data center not operated by client</strong></td>
<td>28</td>
<td>39</td>
</tr>
<tr>
<td><strong>How data center is operated</strong></td>
<td>by vendor</td>
<td>by vendor</td>
</tr>
<tr>
<td><strong>US provides surveillance data to public health agencies via computer-to-computer interface using CDC, IHL, LOINC, SNOMED standards for:</strong></td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>• Microbiology data</strong></td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td><strong>• Other reportable diseases</strong></td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td><strong>• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. IV, version 2.2, February 2009 edition)</strong></td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td><strong>Information systems interfaced</strong></td>
<td>Asyptra, McKesson, Lygos, SCC Soft Computer, eClinicalWorks, Medisoft, GE Healthcare, Nexlabor, others</td>
<td>Beckman Coulter, Siemens, Siemens, Olympus America, Roche, Abbott</td>
</tr>
<tr>
<td><strong>Laboratory automation systems interfaced</strong></td>
<td>planned to Beckman Coulter, Siemens, A&amp;T Corp, Roche</td>
<td>—</td>
</tr>
<tr>
<td><strong>LIS provides validation or testing tools?</strong></td>
<td>no</td>
<td>yes (Ingenix, MicroMedex, 3M NEBO, Caremedics)</td>
</tr>
<tr>
<td><strong>LIS allows third-party updates of tables and rules/image capture, display, and reporting?</strong></td>
<td>no</td>
<td>yes (Ingenix, CSS)</td>
</tr>
<tr>
<td><strong>Software provides indexed field in each test definition for LOINC code?</strong></td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Provide LOINC dictionary for each new installation?</strong></td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td><strong>LIS supports use of SNOMED CT?</strong></td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td><strong>Market modules for other hospital departments? (percent of installs lab only)</strong></td>
<td>yes (2%)</td>
<td>no</td>
</tr>
<tr>
<td><strong>No. of different lab instruments interfaced with LIS</strong></td>
<td>357 (Dawning Technologies for interface) escrow/yes (online forum; eight regional and one national meeting per year) escrow/no (200+ user-defined report writer, custom programming)</td>
<td>350</td>
</tr>
<tr>
<td><strong>Source code?/User group that meets regularly?</strong></td>
<td>yes (Financial/auditing/Clinical/Technical)</td>
<td>escrow/no</td>
</tr>
<tr>
<td><strong>User can modify screens?</strong></td>
<td>yes (offer user-defined report writer, custom programming)</td>
<td>yes (offer custom programming)</td>
</tr>
<tr>
<td><strong>Query languages to retrieve information from LIS database</strong></td>
<td>CPSI ad hoc reports, optional ODBC database</td>
<td>SQL</td>
</tr>
<tr>
<td><strong>Smallest cost for LIS hardware/software/monthly maintenance</strong></td>
<td>$95.58k/$250k/$4.583k</td>
<td>$7.5k/$19k/$0.25k</td>
</tr>
<tr>
<td><strong>Largest cost for LIS hardware/software/monthly maintenance</strong></td>
<td>$496.98k/$643.35k/$7.834k</td>
<td>$50k/$200k/$2.7k</td>
</tr>
<tr>
<td><strong>Distinguishing features (supplied by vendor)</strong></td>
<td>• fully integrated EMR HIS/LIS</td>
<td>• end-to-end reference lab automation, including comprehensive Web-based outreach, production-oriented LIS, and full lab billing software</td>
</tr>
<tr>
<td><strong>• full-service, marketing, administration, and other company functions</strong></td>
<td>Note: a dash in lieu of an answer means company did not answer question or question is not applicable</td>
<td>• patient payment portal allows patients to see their statements online and pay electronically using a credit card or electronic check</td>
</tr>
<tr>
<td><strong>• software, marketing, administration, and other company functions</strong></td>
<td>*generate &gt;500,000 billed tests annually, or &gt;200 bed hospitals, or &gt;500 requisitions per day</td>
<td>• Statistics/decision support laboratory data warehouse with ad hoc reporting across all LIS and billing data</td>
</tr>
</tbody>
</table>

Tabulation does not represent an endorsement by the College of American Pathologists.
Part 5 of 17

Custom Software Systems
DeWitt Rhaly dewitt@css-corporate.com
7012 Westbelt Drive
Nashville, TN 37209
615-250-8111 www.css-corporate.com

Epic
Conan Noronha conan@epic.com
1079 Milky Way
Verona, WI 53593
608-271-9000 www.epic.com

Name of laboratory information system
StarLab

EpicLab Laboratory Information System

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

Last major product release for featured LIS --- August 2009

Total No. of contracts for sites operating LIS --- 3

• Hospital/Inpatient lab contracts in U.S. 17/1 2/0

• Clinic or group practice contracts in U.S./public health lab contracts in U.S. 1/0 1/0

• Other contracted U.S./sites/contracts for foreign sites 0/0 0/0

• No. of those sites that went live between Sept. 2008–Sept. 2009 --- 0

Contracts signed but LIS not yet operational (hospitals/Independent labs/fewer sites) 1 (1/0/3) 61 (60/0/1–Wisconsin State Lab of Hygiene)

• Total No. of contracts (live and not live) signed between Sept. 2008–Sept. 2009 --- 16

Total No. of sites operating LIS (No. of those sites outside the U.S.) 19 34 (0)

Percentage of high-volume* sites installed/low-volume** sites installed 5%/98% 3%/97%

Staff to develop/install & support/other*** in entire firm 8/9/12 1,450/1,700/150

Staff to develop/install & support/other*** in LIS division 4/6/3 25/14/1

No. of billed tests generated annually by LIS --- 0

Range of No. of interactive workstations in sites operating LIS 2–40 1–21

Central hardware or service type
IBM xSeries --- HP 9000, HP Integrity, Sun Sparc, IBM p5 Series

How central server failure is handled
manual intervention necessary to restore operation or system continues uninterrupted (lab’s choice) system continues uninterrupted

Programming language(s)
Cobol
Visual Basic, Caché, Net

Operating system(s)
Linux Unix, Windows

Databases and tools
T-ISAM Chronicles Extended Relational Database Management System

System includes full transaction logging?
yes (LOINC)/yes yes

Languages (other than English) offered on system none none

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

• Chemistry and hematology

• Bar-coded collection labels 100% 100%

• Handheld devices for bedside-positive patient ID 80% 100%

• NCSL PCID-1A standard interface for PCID devices 5% available but not installed

• Microbiology/public health microbiology not available not available

• Blood bank donor and transfusion not available not available

• Surgical pathology/cytogenetics not available not available

• Molecular pathology/cytogenetics

• Flow cytometry

• HIS or EMR interface for A/D/T 80% 100%

• HIS or EMR interface for order/results reporting 80%/80% 100%/100%

• HIS or EMR interface for packaging results into PDF format installed installed not available/not available

• HIS or EMR interface for packaging results into CD41 format/CD42 format 35%/— 100%/100%

• Ad hoc reporting/rules-based system 45%/available but not installed 100%/100%

• Management and statistical reporting 10%/100% 100%

• Outreach and commercial laboratory 50% available but not installed not available/not available

• Compliance checking/billing and accounts receivable 100%/100% not available

• Materials management and inventory not available not available

• Test partition/remote faxing and printing available but not installed/75% 100%/100%

• HIPAA-standard transaction formats 10% available but not installed/available but not installed not available/not available

• Web-based remote inquiry of reports/Web access for order entry available but not installed/available but not installed 100%/100%

• Specimen management and tracking installed installed 100%

• Compliance and quality assurance tools — available but not installed 100%

• ILA (tissue typing) — not available

• Environmental health/newborn screening — not available/not available

• Stem cell laboratory — not available

Complete LIS application service provider solution? no no

ASP for physician order and results reporting? no no

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 — —

LIS provides surveillance data to public health agencies via computer-to-computer interface using CDC, HL7, LOINC, SNOMED standards for:

• Microbiology data

• Other reportable diseases — not available

• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 2.2, February 2009 edition) not available

Information systems interface
— —

Laboratory automation systems interfaced --- integrated with EpicCare inpatient clinical system, EpicCare ambulatory EMR available through middleware such as Data innovations

LIS provides validation or testing tools? --- yes (Data integrity, testing toolkits) yes (LOINC)/yes

LIS allows third-party updates of tables and rules/image capture, display, and reporting? no no

No. of these sites outside the U.S.) 61 (60/0/1–Wisconsin State Lab of Hygiene)

Software provides indexed field in each test definition for LOINC code? no no

Provide LOINC dictionary for each new installation? yes yes

LIS supports use of SNOMED CT? no yes

Market modules for other hospital departments? (percent of installs lab only) yes (20%) yes (0)

No. of different lab instruments interfaced with LIS Source code?/User group that meets regularly?
42 (Dawning Technologies for interface) ---

escrow/no yes (offer user-defined report writer, custom programming)

Query languages to retrieve information from LIS database Microsoft Access, other PC-based tools Reporting Workbench, SQL Report Writer, ODBC Open Access

Smallest cost for LIS hardware/software/monthly maintenance $25k/$35k/$6k

Largest cost for LIS hardware/software/monthly maintenance $250k/$350k/$6k

Distinguishing features (supplied by vendor)

• standardized screens and functions make system easy to use

• total system integration eliminates duplication of work effort

• developed from the clinical perspective with an emphasis on results reporting to improve efficiency

• part of integrated suite of applications, providing seamless data transfer from LIS to the patient’s chart without the need for interfaces

• includes an integrated anatomic pathology module that communicates with the clinical module, allowing seamless workflows between core lab, microbiology, surgical pathology, and cytology labs

• customer base has the opportunity to contribute to the design and direction of the application

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

<table>
<thead>
<tr>
<th>Feature/Module (listed as percent of live installs or based on availability)</th>
<th>Yes</th>
<th>No</th>
<th>Not Available</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemistry and hematology</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Bar-coded collection labels</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Handheld devices for bedside-positive patient ID</strong></td>
<td>not available</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td><strong>NCCLS POC-1A standard interface for POC devices</strong></td>
<td>not available</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td><strong>Microbiology/public health microbiology</strong></td>
<td>30%/10%</td>
<td>10%</td>
<td>10%/not available</td>
</tr>
<tr>
<td><strong>Blood bank donor and transfusion</strong></td>
<td>10%</td>
<td>not available/not available</td>
<td>10%/not available</td>
</tr>
<tr>
<td><strong>Surgical pathology/cytology</strong></td>
<td>95%/95%</td>
<td>95%/95%</td>
<td>95%/95%</td>
</tr>
<tr>
<td><strong>Molecular pathology/cytogenetics</strong></td>
<td>95%</td>
<td>not available/not available</td>
<td>95%/not available</td>
</tr>
<tr>
<td><strong>Flow cytometry</strong></td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for A/D/T</strong></td>
<td>available but not installed</td>
<td>available but not installed</td>
<td>70%/not available</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for order entry/results reporting</strong></td>
<td>65%/80%</td>
<td>40%/60%</td>
<td>not available/not available</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for packaging results into PDF format</strong></td>
<td>80%</td>
<td>100%</td>
<td>80%/100%</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for packaging results into CDA format</strong></td>
<td>10%/90%</td>
<td>not available/not available</td>
<td>10%/not available</td>
</tr>
<tr>
<td><strong>Ad hoc reporting/rule-based system</strong></td>
<td>10%/100%</td>
<td>100%</td>
<td>10%/100%</td>
</tr>
<tr>
<td><strong>Management and statistical reporting</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td><strong>Outreach and commercial laboratory</strong></td>
<td>55%</td>
<td>75%</td>
<td>55%/75%</td>
</tr>
<tr>
<td><strong>Compliance checking/billing and accounts receivable</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td><strong>Materials management and inventory</strong></td>
<td>not available</td>
<td>not available</td>
<td>not available/not available</td>
</tr>
<tr>
<td><strong>Test partition/remote faxing and printing</strong></td>
<td>---/100%</td>
<td>75%/80%</td>
<td>---/100%</td>
</tr>
<tr>
<td><strong>HIPAA-standard transaction formats</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td><strong>Web-based remote inquiry of results/Web access for order entry</strong></td>
<td>100%/40%</td>
<td>85%/100%</td>
<td>60%/100%</td>
</tr>
<tr>
<td><strong>Specimen management and tracking</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td><strong>Compliance and quality assurance tools</strong></td>
<td>40%</td>
<td>100%</td>
<td>40%/100%</td>
</tr>
<tr>
<td><strong>HLA (tissue typing)</strong></td>
<td>not available</td>
<td>not available</td>
<td>not available/not available</td>
</tr>
<tr>
<td><strong>Environmental health/newborn screening</strong></td>
<td>not available</td>
<td>not available</td>
<td>not available/not available</td>
</tr>
<tr>
<td><strong>Stem cell laboratory</strong></td>
<td>not available</td>
<td>not available</td>
<td>not available/not available</td>
</tr>
</tbody>
</table>

### Additional Features

- **Customized, user-defined reporting solution**
- **Advanced Web-based technology**
- **Proven outreach solution**
- **Many Web-based modules; provide outreach and integrate multiple sites, systems, and devices seamlessly, securely, and in real time**
- **Over 30 years in LIS industry with more than 1,500 LIS customers**
- **Proven Web-based technology that can be scaled from small POLs to the largest independent labs**

### Contact Information

- **EteleTest**
  - JosephRoller sales@eteltest.com
  - 213 Technology Drive
  - Irvine, CA 92618
  - 949-365-0992
  - www.eteltest.com

- **Fletcher-Flora Health Care Systems**
  - Terry Watson
  - terryw@fletcher-flora.com
  - 1501 Orangethope Way
  - Anaheim, CA 92801
  - 800-777-1471
  - www.fletcher-flora.com

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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**

### Part 7 of 17

**Name of laboratory information system:** LabPak LIS

**CentriXX Laboratory:**

<table>
<thead>
<tr>
<th>Feature/Module (listed as percent of live installs or based on availability)</th>
<th>System Includes Full Transaction Logging?</th>
<th>Windows Operating System(s)</th>
<th>Java, C++</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% installed</td>
<td>no</td>
<td>C++, Java</td>
<td></td>
</tr>
</tbody>
</table>

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

**Central Hardware or Service Type:**
- Dell

**Programming Language(s):**
- C++, Java

**Database and Tools:**
- Windows
- Unix

**System includes full transaction logging?**
- no/no

**Languages (Other than English) offered on system:**
- none/none

**Features/Modules (listed as percent of live installs or based on availability):**
- Chemistry and hematology: 100%
- Bar-coded collection labels: 100%
- Handheld devices for bedside-positive patient ID: 100%
- NCCLS POC-1A standard interface for POC devices: 100%
- Microbiology/public health microbiology: 100%
- Blood bank donor and transfusion: 100%
- Surgical pathology/cytogenetics: 100%
- Molecular pathology/cytogenetics: 100%
- Flow cytometry: 100%
- HIS or EMR interface for A/D/T: 100%
- HIS or EMR interface for order/results reporting: 100%
- HIS or EMR interface for packaging results into PDF format: 100%
- HIS or EMR interface for packaging results into CDA1 format/CDA2 format: 100%
- Ad hoc reporting/rules-based system: 100%
- Management and statistical reporting: 100%
- Outreach and commercial laboratory: 100%
- Compliance checking/billing/accounts receivable: 100%
- Materials management and inventory: 100%
- Test partition/remote figuring and printing: 100%
- HP/AA-standard transaction formats: 100%
- Web-based remote inquiry of reports/Web access for order entry: 100%
- Specimen and tracking: 100%
- Compliance and quality assurance tools: 100%
- IHLA (tissue typing): 100%
- Environmental health/newborn screening: 100%
- Stem cell laboratory: 100%
- Complete LIS application service provider solution: 100%
- ASP for physician order and results reporting: 100%
- Method of charging for ASP service: 100%
- Client software required: 100%
- ASP information conducts: 100%
- Client contracts supported from data center not operated by client: 100%
- How data center is operated: 100%
- US provides surveillance data to public health agencies via computer-to-computer interface using CDC, HL7, LOINC, SNOMED standards for: 100%
- Microbiology data: 100%
- Other reportable diseases: 100%
- Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 2.2, February 2009 edition): 100%

**Information Systems Interfaced:**
- TechNet, CPSI, Heathland, GSI Explorer, iMedica, eClinicalWorks, Medical Manager, Nextflex, GE Healthcare, Emcon, Pyramed, others
- Affinity, Epic, McKesson, GE Healthcare, Meditech, Siemens, MediSolution, others
- Beckman Coulter, Siemens, Ortho, Roche, Abbott, Bayer, Labtronics
- Meditech, GE Healthcare, Siemens, Beckman Coulter, Siemens, Ortho, Roche, Abbott, Bayer, Labtronics

**LIS Provides Validation or Testing Tools?**
- no

**LIS Supports Union of SNOMED CT?**
- yes

**Software Provides Index Field in Each Test Definition for LOINC code?**
- yes

**Market Modules for Other Hospital Departments?**
- yes (80%)

**No. of Different Lab Instruments Interfaced with LIS**
- no/no

**Source Code? User Group That Meets Regularly?**
- no/no escrow/yes

**Software Provides Index Field in Each Test Definition for LOINC Code?**
- yes

**Largest Cost for LIS Hardware/software/monthly maintenance**
- $100k/$100k/$1.5k

**LIS Supports Union of SNOMED CT?**
- yes

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**Laboratory information systems**

**Part 8 of 17**

HealthVision
Allison Kelso info@healthvision.com
5630 Riverside Drive
Irving, TX 75039
469-420-2500 www.healthvision.com

Hex Laboratory Systems
Susan Bolinger sbollinger@hexlab.com
10428 El Camino Real, Suite 308
Encinitas, CA 92024
800-729-2085 www.hexlab.com

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**Name of laboratory information system**

TDSynergy† Lab/Hex

---

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

- **Chemistry and hematology**
- **Bar-coded collection labels**
- **Handheld devices for bedside-positive patient ID**
- **NCCLS POCT-1A standard interface for POCT devices**
- **Microbiology/public health microbiology**
- **Blood bank donor and transfusion**
- **Surgical pathology/cytogenetics**
- **Molecular pathology/cytogenetics**
- **Flow cytometry**
- **HIS or EMR interface for A/D/F**
- **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 CDA1 format/CDA2 format**
- **Ad hoc reporting/rules-based system**
- **Management and statistical reporting**
- **Outreach and 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**
- **HLA (tissue typing)**
- **Environmental health/newborn screening**
- **Stem cell laboratory**

---

**Complete LIS application service provider solution?**

- No
- Yes

**ASP for physician order entry and results reporting?**

- No
- Yes

**Method of charging for ASP service**

- Fixed fee
- Browser based
- Operates over the Internet

**Client contracts supported from data center not operated by client — 50%**

- 50%

**Central server failure is handled**

- Manual intervention necessary to restore operation or system continues uninterrupted (lab's choice)
- Lab's choice

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

- French
- Spanish
- Dutch
- Flemish
- Chinese
- Italian
- German
- Korean

**System includes full transaction logging?**

- Yes
- No

**SQL server, Oracle**

- Windows
- Unix
- Linux

**Uninterrupted (lab's choice)**

- Sun
- Unix
- Linux

**Central hardware or service type**

- Sun
- Unix
- Linux
- Windows
- IBM
- HP

---

**Last major product release for featured LIS**

- February 2009
- June 2009

---

**No. of billed tests generated annually by LIS**

- 140,000–5,200,000 (mean, 675,000)

---

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

- 60%/40%
Part 9 of 17

Laboratory information systems

Name of laboratory information system
IntelliLab
LabSoft

First ever/most recent LIS installation (based on September survey deadline) 2003/September 2008
LabSoft 1902/2009

Last major product release for featured LIS September 2008
LabSoft 2008

Total No. of contracts for sites operating LIS 65
LabSoft 304+ 70

• Hospital/independent lab contracts in U.S. 1/2
61/47

• Clinic or group practice contracts in U.S./public health lab contracts in U.S. 60/1
180/3

• Other contracted U.S. sites/contracts for foreign sites 0/1 (educational)
3 (research/0

• No. of such contracts that went live between Sept. 2008–Sept. 2009 2
6

Contracts signed but LIS not yet operational (hospitals/independent labs/other sites) 1 (00/1–clinical group practice)
1 (01/10)

• Total No. of contracts (live and not live) signed between Sept. 2008–Sept. 2009 1
1

Total No. of sites operating LIS (No. of sites outside the U.S.) 177 (5–Canada)
317 (1–Trinidad)

Percentage of high-volume sites installed/low-volume sites installed 30%/70%
30%/70%

No. of billed tests generated annually by LIS 25,000–500,000
1,000–1,000,000 (mean, 10,000)

Range of No. of interactive workstations in sites operating LIS 3–50 (mean, 15)
1–77 (mean, 3)

Central hardware or service type Dell, HP manual intervention necessary to restore operation or system continues Dell manual intervention necessary to restore operation or system continues

How central server failure is handled uninterrupted (lab’s choice)
uninterrupted (lab’s choice)

Programming language(s) Visual Basic, C++ Delphi

Operating system(s) Windows 2000, 2003, XP Vista Windows

Databases and tools mVbase Microsoft SQL

System includes full transaction logging? yes —

Languages (other than English) offered on system — —

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

• Chemistry and hematology
• Bar-coded collection labels

• Handheld devices for bedside-positive patient ID not available
not available

• NCLIS POC/P1 standard interface for PCT devices — 30%

• Microbiology/public health microbiology not available
not available

• Blood bank donor and transfusion not available
not available

• Surgical pathology/pathology not available/not available 2%/not available

• Molecular pathology/cytogenetics not available/not available
not available/not available

• Flow cytometry not available
not available

• HIS or EMR interface for A/D/I installed
installed

• HIS or EMR interface for order entry/results reporting 85%/85%
70%/70%

• HIS or EMR interface for packaging results into PDF format installed
installed

• HIS or EMR interface for packaging results into CD41 format/CD42 format not available/not available
not available/not available

• Ad hoc reporting/rules-based system 100%/100%
30%/50%

• Management and statistical reporting not available
not available

• Outreach and commercial laboratory installed
installed

• Compliance checking/billing and accounts receivable 100%/100%
70%/100%

• Materials management and inventory not available
not available

• Test partition/remote fixing and printing 100%/100%
100%/100%

• HIPAA-standard transaction formats not available
not available

• Web-based remote inquiry of reports/Web access for order entry Installed/installed
30%/30%

• Specimen management and tracking not available
60%

• Compliance and quality assurance tools not available
not available

• IHL (tissue typing) not available
not available

• Environmental health/newborn screening not available/not available
not available/not available

• Stem-cell laboratory not available
not available

Complete LIS application service provider solution? no
no

ASP for physician order entry and results reporting? no
yes

Method of charging for ASP service
fixed fee

Client software required browser based

ASP information conduit operates over the Internet

Client contracts supported from data center not operated by client

How data center is operated by a third party

US provides surveillance data to public health agencies via computer-to-computer interface using CDC, H1L, LOINC, SNOMED standards for:

• Microbiology data available but not in use available but not in use

• Other reportable diseases available but not in use available but not in use

• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. 4, version 2.2, February 2009 edition) —

Information systems interfaced Siemens, Healthland, Impac, NextGen, GE Healthcare, Allscripts, QSI, others

Laboratory automation systems interfaced GE Healthcare, Epic, Mosys, Cerner, Meditech, Siemens, SCC Soft Computer, others

Laboratory information systems

LabSoft systems

LIS provides validation or testing tools? no
no

LIS allows third-party updates of tables and rules/image capture, display, and reporting? no
yes (CodinMap/no

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

Provide LOINC dictionary for each new installation? yes
no

LIS supports use of SNOMED CT? no
—

Market modules for other hospital departments? (percent of labs install only) yes (50%)
no

No. of different lab instruments interfaced with LIS 400 (Dawning Technologies and Data Innovations for interface)
200+ (Dawning Technologies and Data Innovations for interface)

Source code? User group that meets regularly?
escrow/yes (meets in person annually)

User can modify screens? no
no (offer user-defined report writer)

Query languages to retrieve information from LIS database AQL, SQL with ODBC
SQL

Smallest cost for LIS hardware/software/monthly maintenance $10k/$25k—
$3,5k/$6k

Largest cost for LIS hardware/software/monthly maintenance $30k/$200k—
$30k/$150k/$18k

Distinguishing features (supplied by vendor) fully integrated with Impac’s medical oncology information system

• intuit: easy to learn and use

• flexible and user definable

• high value and reliable

*generate >50,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day

**generate >250,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day

***other sales, marketing, administration, and other company functions

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

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

<table>
<thead>
<tr>
<th>Feature/Module</th>
<th>Installing Site</th>
<th>New Installations</th>
<th>Other Sites</th>
<th>Total Sites</th>
<th>Total Number of Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemistry</strong></td>
<td>Yes</td>
<td>700</td>
<td>Yes</td>
<td>700</td>
<td>1400</td>
</tr>
<tr>
<td><strong>Bar-coded collection labels</strong></td>
<td>Yes</td>
<td>400</td>
<td>Yes</td>
<td>400</td>
<td>800</td>
</tr>
<tr>
<td><strong>Handheld devices for bedside-positive patient ID</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>NCHS PACT-1 standard interface for PACT devices</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Microbiology/public health microbiology</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Surgical pathology/cytology</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Molecular pathology/cytogenetics</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Flow cytometry</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for A/D</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>HIS or EMR interface for order entry/results reporting</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
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<tr>
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<td>100</td>
<td>Yes</td>
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<td>200</td>
</tr>
<tr>
<td><strong>Ad hoc reporting/rules-based system</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Management and statistical reporting</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Outreach and commercial laboratory</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Compliance checking/billing and accounts receivable</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Materials management and inventory</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Text partition/remote faxing and printing</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>HIPAA-standard transaction formats</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Web-based remote inquiry of reports/Web access for order entry</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Specimen management and tracking</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Compliance and quality assurance tools</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>HLA (tissue typing)</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Environmental health/newborn screening</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td><strong>Stem cell laboratory</strong></td>
<td>Yes</td>
<td>100</td>
<td>Yes</td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
</table>

**Note:** A dash in lieu of an answer means the company did not answer the question or the question is not applicable.
Laboratory information systems

Part 11 of 17

Medical Information Technology
Paul Berthiaume pberthiaume@meditech.com
Meditech Circle
Westwood, MA 02090
781-821-3000 www.meditech.com

Medical Information Technology
Paul Berthiaume pberthiaume@meditech.com
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Westwood, MA 02090
781-821-3000 www.meditech.com

Name of laboratory information system
Meditech Laboratory Information System-Client/Server
Meditech Laboratory Information System-Magic

First ever/most recent LIS installation (based on September survey deadline)
1970/June 2009

Last major product release for featured LIS
April 2008

Total No. of contracts for sites operating LIS
not tracked

• Hospital/independent lab contracts in U.S. — —

• Clinic or group practice contracts in U.S./public health lab contracts in U.S. — —

• Other contracted U.S./sites/contracts for foreign sites — —

• No. of these contracts that were live between Sept. 2008–Sept. 2009
 43 (sites) 12 (sites)

Contracts signed but LIS not yet operational (hospital/independent labs/other sites)
39 (sites) 9 (sites)

• Total No. of contracts (live and not live) signed between Sept. 2008–Sept. 2009
 24 (sites)

Total No. of sites operating LIS (No. of these sites outside the U.S.)
300 (30–Canada, Singapore, Bahamas, United Arab Emirates, United Kingdom)
805 (68–Ireland, United Kingdom)

Percentage of high-volume sites installed/low-volume** sites installed — —

Staff to develop/install & support/other*** — in entire firm
643/1,777/499

Staff to develop/install & support/other*** — in U.S/division
23/80/3

No. of billed tests generated annually by LIS
not tracked

Range No. of interactive workstations in sites operating LIS
— —

Central hardware or service type
JWMed, Dell, IBM, EMC, HP, others
manual intervention necessary to restore operation or system continues
JWMed, Dell, IBM, EMC, HP, others
uninterrupted (lab’s choice)

How central server failure is handled
— —

Programming language(s)
Meditech Magic
Meditech Magic

Operating system(s)

Databases and tools
Meditech hierarchical database
Meditech hierarchical database

System includes full transaction logging?
yes
no

Languages (other than English) offered on system
Spanish in development
no

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

• Chemistry and hematology
 100%

• Bar-coded collection labels
 100%

• Handheld devices for bedside-positive patient ID
 100%

• NCCLS PCST-1A standard interface for PCT devices
 100%

• Microbiology/public health microbiology
 100%

• Blood bank donor and transfusion
 100%

• Surgical pathology/pathology/cytology
installed

• Molecular pathology/cytogenetics
not available/not available

• Flow cytometry
not available

• HIS or EMR interface for A/D/T
installed

• HIS or EMR interface for order entry/results reporting
installed

• HIS or EMR interface for packaging results into PDF format
installed

• HIS or EMR interface for packaging results into CD/DVD format
not available/not available

• Ad hoc reporting/rule-based system
100%/100%

• Management and statistical reporting
100%

• Outreach and commercial laboratory
installed

• Compliance checking/billing and accounts receivable
installed

• Materials management and inventory
installed

• Test partition/remote backing and printing
100%/100%

• HIPAA-standard transaction formats
100%

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

• Specimen management and tracking
100%

• Compliance and quality assurance tools
installed

• IHLA (tissue typing)
not available

• Environmental health/newborn screening
installed

• Stem cell laboratory
not available

Complete LIS application service provider solution?
no
no

ASP 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
— —

LIS provides surveillance data to public health agencies via computer-to-computer interface using CDC, HL7, LOINC, SNOMED standards for:

• Microbiology data
  —

• Other reportable diseases
  —

• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 2.2, February 2009 edition)
  HL7 in operation (Meditech does not track No. of sites using HL7)

• Other clinical data
  —

LIS in operation as an A/D/T interface (No. of sites unknown)

Information systems interfaced
Cerner, Siemens, McKesson, others

Lab automation systems interfaced
Beckman Coulter, Syneos, Roche, Bayer

LIS provides validation or testing tools?
yes (proprietary)
yes (Info-X, SNOMED)/yes

LIS allows third-party updates of tables and rules/image capture, display, and reporting?
yes (proprietary)
yes (Info-X, SNOMED)/yes

Software provides indexed field in each test definition for LOINC code?
no
no

Provide LOINC dictionary for each new installation?
— —

LIS supports use of SNOMED CT?
yes
yes

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

Staff to develop/install & support/other*** — in entire firm
— —

Staff to develop/install & support/other*** — in U.S/division
— —

No. of different lab instruments interfaced with LIS
1,000+

Source code?/User group that meets regularly?
yes (meets via Internet; in person)
yes (meets via Internet; in person)

User can modify screens?
yes (Info-X, SNOMED)/yes
yes (Info-X, SNOMED)/yes

Software provides field index in each test definition for LOINC code?
no
no

Provide LOINC dictionary for each new installation?
— —

LIS distinguishes features supplied (by vendor)

• integrated with clinical, administrative, and financial applications
  —

• provides flexibility to serve a range of organizations—from small community labs to multi-site university labs and large IDNs
  —

• automates time-consuming tasks such as paperwork, phone calls, and results verification
  —

• integrated with clinical, administrative, and financial applications
  —

• provides flexibility to serve a range of organizations—from small community labs to multi-site university labs and large IDNs
  —

• automates time-consuming tasks such as paperwork, phone calls, and results verification
  —

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

<table>
<thead>
<tr>
<th>Feature/Module (listed as percent of live installs or based on availability)</th>
<th>Feature/Module (listed as percent of live installs or based on availability)</th>
<th>Feature/Module (listed as percent of live installs or based on availability)</th>
<th>Feature/Module (listed as percent of live installs or based on availability)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical and hematology</td>
<td>90%</td>
<td>95%</td>
<td>90%</td>
</tr>
<tr>
<td>Bar-coded collection labels</td>
<td>90%</td>
<td>100%</td>
<td>90%</td>
</tr>
<tr>
<td>Handheld devices for bedside-positive patient ID</td>
<td>available but not installed</td>
<td>not available</td>
<td>available but not installed</td>
</tr>
<tr>
<td>NCCLS POC-1 standard interface for POC devices</td>
<td>10%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Microbiology/public health microbiology</td>
<td>80%/—</td>
<td>85%/25%</td>
<td>80%/—</td>
</tr>
<tr>
<td>Blood bank donor and transfusion</td>
<td>80%/—</td>
<td>15%/10%</td>
<td>80%/—</td>
</tr>
<tr>
<td>Surgical pathology/cytology</td>
<td>30%/—</td>
<td>30%/30%</td>
<td>30%/—</td>
</tr>
<tr>
<td>Molecular pathology/cytogenetics</td>
<td>20%/—</td>
<td>30%/—</td>
<td>20%/—</td>
</tr>
<tr>
<td>Flow cytometry</td>
<td>25%</td>
<td>10%</td>
<td>25%</td>
</tr>
<tr>
<td>HIS or EMR interface for A/D/O</td>
<td>30%</td>
<td>30%/30%</td>
<td>30%/30%</td>
</tr>
<tr>
<td>HIS or EMR interface for order entry/results reporting</td>
<td>30%/30%</td>
<td>55%/40%</td>
<td>30%/30%</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into PDF format</td>
<td>available but not installed</td>
<td>not available/not available</td>
<td>available but not installed</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into CD/DA1 format/DA2 format</td>
<td>not available/not available</td>
<td>100%/100%</td>
<td>not available/not available</td>
</tr>
<tr>
<td>Ad hoc reporting/rules-based system</td>
<td>40%/90%</td>
<td>100%</td>
<td>100%/90%</td>
</tr>
<tr>
<td>Management and statistical reporting</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Outreach and commercial laboratory</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Compliance checking/billing and accounts receivable</td>
<td>50%/40%</td>
<td>50%/40%</td>
<td>50%/40%</td>
</tr>
<tr>
<td>Materials management and inventory</td>
<td>50%/40%</td>
<td>50%/40%</td>
<td>50%/40%</td>
</tr>
<tr>
<td>Test partition/remote faxing and printing</td>
<td>available but not installed</td>
<td>available but not installed</td>
<td>available but not installed</td>
</tr>
<tr>
<td>HIPAA-standard transaction formats</td>
<td>100%/100%</td>
<td>100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Web-based remote inquiry of reports/Web access for order entry</td>
<td>30%/25%</td>
<td>60%/90%</td>
<td>30%/25%</td>
</tr>
<tr>
<td>Specimen management and tracking</td>
<td>50%</td>
<td>60%</td>
<td>50%</td>
</tr>
<tr>
<td>Compliance and quality assurance tools</td>
<td>50%</td>
<td>70%</td>
<td>50%</td>
</tr>
<tr>
<td>IIA (tissue typing)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Environmental health/newborn screening</td>
<td>—</td>
<td>15%/40%</td>
<td>—</td>
</tr>
<tr>
<td>Stem cell laboratory</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**Complete LIS application service provider solution?**
- No

**ASP for physician order entry and results reporting?**
- Yes

**Method of charging for ASP service**
- Fixed fee

**Client software required**
- Browser based

**ASP information conduit**
- Operates over the Internet

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

**How data center is operated**
- By vendor

**LIS provides surveillance data to public health agencies via computer-to-computer interface using CDC, H7, LOINC, SNOMED standards for:**
- Yes

**Microbiology data**
- Yes

**Other reportable diseases**
- Yes

**Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. 4, version 2.2, February 2009 edition)**
- Yes

**Information systems interfaced**
- Epic, GE, NextGen, cClinicalWorks, Cerner, Siemens, Netsmart, Reliable Health, Smart Management, Compliance Information Systems

**Laboratory automation systems interfaced**
- Siemens, Sysmex, Bayer, Beckman Coulter, Synergen, Siemens, Ortho, Olympus, Roche, Abbott, Bayer

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

**Software provides indexed field in each test definition for LOINC code?**
- Yes

**Provide LOINC dictionary for each new installation?**
- Yes

**LIS supports use of SNOMED CT?**
- Yes

**Market modules for other hospital departments? (percent of installs lab only)**
- No

**No. of different lab instruments interfaced with LIS**
- 125+

**Source code/user group that meets irregularity?**
- escrow/no

**User can modify screens?**
- yes

**Query languages to retrieve information from LIS database**
- SQL

**Smallest cost for LIS hardware/software/monthly maintenance**
- $20k/$50k/$75k

**Largest cost for LIS hardware/software/monthly maintenance**
- $250k/$400k/$55k

**Distinguishing features (supplied by vendor)**
- *extensive capabilities for integrating commercial labs with large-scale and networked primary care organizations*
- *complete billing, A/R, and management reporting for commercial labs and hospital outreach, including electronic eligibility, authorization, and more*

---

*Note: In lieu of an answer means company did not answer question or question is not applicable*
### Features/Modules (listed as percent of live installs or based on availability)

<table>
<thead>
<tr>
<th>Feature/module</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry and hematology</td>
<td>94%</td>
<td>6%</td>
</tr>
<tr>
<td>Bar-coded collection labels</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Handheld devices for bedside-positive patient ID</td>
<td>available but not installed</td>
<td>available but installed</td>
</tr>
<tr>
<td>NCCLS POCT-1A standard interface for POCT devices</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Microbiology/public health microbiology</td>
<td>75%/not available but installed</td>
<td>available but not installed</td>
</tr>
<tr>
<td>Blood bank donor and transfusion</td>
<td>15%/1%</td>
<td>not available</td>
</tr>
<tr>
<td>Surgical pathology/cytology</td>
<td>20%/2%</td>
<td>80%/80%</td>
</tr>
<tr>
<td>Molecular pathology/cytogenetics</td>
<td>available but not installed/available but not installed</td>
<td>available but not installed</td>
</tr>
<tr>
<td>Flow cytometry</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>HIS or EMR interface for A/D/F</td>
<td>not available</td>
<td>available but not installed</td>
</tr>
<tr>
<td>HIS or EMR interface for order entry/results reporting</td>
<td>available but not installed/available but not installed</td>
<td>available but not installed</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into PDF format</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into CCD format/CD2 format</td>
<td>not available/not available</td>
<td>available but not installed</td>
</tr>
<tr>
<td>Ad hoc reporting/rules-based system</td>
<td>100%/100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Management and statistical reporting</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Outreach and commercial laboratory</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Compliance checking/billing and accounts receivable</td>
<td>20%/not available</td>
<td>available but not installed</td>
</tr>
<tr>
<td>Materials management and inventory</td>
<td>not available</td>
<td>20%</td>
</tr>
<tr>
<td>Test partition/remote fixing and printing</td>
<td>available but not installed/available but not installed</td>
<td>available but not installed</td>
</tr>
<tr>
<td>HIPAA-standard transaction formats</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Web-based remote inquiry of reports/Web access for order entry</td>
<td>65%/not available</td>
<td>available but not installed</td>
</tr>
<tr>
<td>Specimen management and tracking</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Compliance and quality assurance tools</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>ILA (tissue typing)</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Environmental health/newborn screening</td>
<td>not available/not available</td>
<td>available but not installed</td>
</tr>
<tr>
<td>Stem cell laboratory</td>
<td>not available</td>
<td>not available</td>
</tr>
</tbody>
</table>

### Central Hardware or Service Type
- Dell, IBM, HP
- Client software required browser based
- System continues uninterrupted

### Languages (other than English) offered on system
- French, Spanish, Portuguese
- 4D, C++, Java, HTML
- Visual Basic 6, Visual Basic.Net
- SQL 2002

### Supporting Information Systems
- McKesson, Healthtrion, Momentum Healthcare, Per-Sci, Sphere Health, Marden Healthcare, Siemens
- Allscripts, NextGen, CPSI, Healthland, HealthQuest, Misys, GE Healthcare, NetSolutions, Mediclin, Quintaphase, Impac, Medisoft, others
- Beaman Coulter, Roche
- Beaconsofts, Orchard Harvest LIS
- Sarcom Software, Orchard Harvest LIS
- 800-856-1948, www.orchardsoft.com

### LIS Supports use of SNOMED CT?
- Yes

### Market Segments
- Yes (97%)
- No

### Total No. of contracts signed between Sept. 2008–Sept. 2009
- Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)
  - 20 (4/3/13–clinics, POIs, student health labs)
  - 104
  - 20

### 1,117
- 5,000–4,000,000 (mean, 500,000)
- 1–500 (mean, 30)

### No. of billed tests generated annually by LIS
- 20,000–10,000,000 (mean, 150,000)
- 5,000–4,000,000 (mean, 500,000)

### No. of different lab instruments interfaced with LIS
- 300+ (Data Innovations for interface)
- 400+ (Data Innovations for interface)
- 600 (meets via Internet unlimited; in person 14 times per year)
- Yes (meets in person annually)
## Laboratory Information Systems

### Part 14 of 17

**Psyche Systems Corp.**  
Lisa-Jean Clifford  
@lisa@psychesystems.com  
321 Fortune Blvd.  
Milford, MA 01757  
508-475-1500  
www.psychesystems.com

**Quality Software Systems**  
Jeff Caspari  
caspari@healthdata.com  
252 Old Nyack Turnpike  
Spring Valley, NY 10977  
845-392-4313  
www.labhealth.com

### Name of laboratory information system

<table>
<thead>
<tr>
<th>System</th>
<th>LabWeb</th>
<th>LabHealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>First ever/most recent LIS installation (based on September survey deadline)</td>
<td>1976/2009</td>
<td>1984/2009</td>
</tr>
<tr>
<td>Last major product release for featured LIS</td>
<td>2006</td>
<td>2009</td>
</tr>
<tr>
<td>Total No. of contracts for sites operating LIS</td>
<td>20</td>
<td>43</td>
</tr>
<tr>
<td>• Hospital/independent lab contracts in U.S.</td>
<td>15/3</td>
<td>3/23</td>
</tr>
<tr>
<td>• Clinic or group practice contracts in U.S./public health lab contracts in U.S.</td>
<td>0/2</td>
<td>17/0</td>
</tr>
<tr>
<td>• Other contracted U.S./sites/contracts for foreign sites</td>
<td>0/0</td>
<td>0/0</td>
</tr>
<tr>
<td>• No. of these contracts that went live between Sept. 2008–Sept. 2009</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)</td>
<td>2 (1/1/0)</td>
<td>—</td>
</tr>
<tr>
<td>• Total No. of contracts (live and not live) signed between Sept. 2008–Sept. 2009</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>Total No. of sites operating LIS (No. of these sites outside the U.S.)</td>
<td>18 (0)</td>
<td>13</td>
</tr>
<tr>
<td>Percentage of high-volume* sites installed/low-volume** sites installed</td>
<td>22%/78%</td>
<td>—</td>
</tr>
<tr>
<td>Staff to develop/install &amp; support/other*** in entire firm</td>
<td>16/20/9</td>
<td>4/4/1</td>
</tr>
<tr>
<td>Staff to develop/install &amp; support/other*** in LIS division</td>
<td>5/5/2</td>
<td>—</td>
</tr>
<tr>
<td>No. of billed tests generated annually by LIS</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Range in No. of interactive workstations in sites operating LIS</td>
<td>1–120 (mean, 20)</td>
<td>5–150</td>
</tr>
</tbody>
</table>

### Central hardware or service type

- HP, Pentium compatible  
- Manual intervention necessary to restore operation or system continues uninterrupted (lab’s choice)  
- Dell  
- System continues uninterrupted

### Programming languages(s)

- Visual Basic, .Net, C, Fortran  
- Basic, ASP.Net

### Databases and tools

- Windows Vista, XP, NT, 2000, Open VMS  
- Windows, Linux

### System includes full transaction logging?

- No  
- Yes

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

- No  
- Yes

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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Available</th>
<th>Not Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry and hematology</td>
<td>100%</td>
<td>95%</td>
</tr>
<tr>
<td>Bar-coded collection labels</td>
<td>100%</td>
<td>95%</td>
</tr>
<tr>
<td>Handheld device for bedside-positive patient ID</td>
<td>available but not installed</td>
<td>available but not installed</td>
</tr>
<tr>
<td>NCLLs PTST-1A standard interface for PTST devices</td>
<td>available but not installed</td>
<td>available but not installed</td>
</tr>
<tr>
<td>Microbiology/public health microbiology</td>
<td>33%/not available</td>
<td>80%/75%</td>
</tr>
<tr>
<td>Blood bank donor and transfusion</td>
<td>40%</td>
<td>—</td>
</tr>
<tr>
<td>Surgical pathology/cytology</td>
<td>33%/33%</td>
<td>35%/40%</td>
</tr>
<tr>
<td>Molecular pathology/cytogenetics</td>
<td>10%/10%</td>
<td>—</td>
</tr>
<tr>
<td>Flow cytometry</td>
<td>10%</td>
<td>—</td>
</tr>
<tr>
<td>HIS or EMR interface for A/D/T</td>
<td>90%</td>
<td>60%</td>
</tr>
<tr>
<td>HIS or EMR interface for order entry/results reporting</td>
<td>75%/75%</td>
<td>100%/100%</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into PDF format</td>
<td>30%</td>
<td>80%</td>
</tr>
<tr>
<td>HIS or EMR interface for packaging results into CD41 format/CD42 format</td>
<td>25%/not available</td>
<td>90%/—</td>
</tr>
<tr>
<td>Ad hoc reporting/rules-based system</td>
<td>100%/25%</td>
<td>100%/80%</td>
</tr>
<tr>
<td>Management and statistical reporting</td>
<td>100%</td>
<td>90%</td>
</tr>
<tr>
<td>Outreach and commercial laboratory</td>
<td>100%</td>
<td>90%</td>
</tr>
<tr>
<td>Compliance checking/billing and accounts receivable</td>
<td>20%/not available</td>
<td>90%/100%</td>
</tr>
<tr>
<td>Materials management and inventory</td>
<td>available but not installed</td>
<td>80%</td>
</tr>
<tr>
<td>Test partition/remote faxing and printing</td>
<td>100%/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>35%/40%</td>
<td>80%/90%</td>
</tr>
<tr>
<td>Specimen management and tracking</td>
<td>installed</td>
<td>80%</td>
</tr>
<tr>
<td>Compliance and quality assurance tools</td>
<td>not available</td>
<td>75%</td>
</tr>
<tr>
<td>IHA (tissue typing)</td>
<td>not available</td>
<td>—</td>
</tr>
<tr>
<td>Environmental health/newborn screening</td>
<td>not available/not available</td>
<td>—</td>
</tr>
<tr>
<td>Stem cell laboratory</td>
<td>not available</td>
<td>—</td>
</tr>
<tr>
<td>Complete LIS application service provider solution?</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>ASP for physician order and results reporting?</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Method of charging for ASP service</td>
<td>fixed fee</td>
<td>fixed fee</td>
</tr>
<tr>
<td>Client software required</td>
<td>browser based or requires that software be installed on a client PC</td>
<td>browser based</td>
</tr>
<tr>
<td>ASP information conduit</td>
<td>operates over Internet or requires use of a VN or other dedicated connection</td>
<td>operates over the Internet</td>
</tr>
<tr>
<td>Client contracts supported from data center not operated by client</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td>How data center is operated</td>
<td>by vendor</td>
<td>by vendor</td>
</tr>
</tbody>
</table>

### LIS provides surveillance data to public health agencies via computer-to-computer interface using CDC, HL7, LOINC, SNOMED standards for:

- Microbiology data
- Other reportable diseases
- Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 2.2, February 2009 edition)

### Information systems interfaced

- Meditech, McKesson, CPSI, Siemens, QuadraMed, Cerber, Misys, Keane,  
- SysCore, Seacoast Laboratory Data Systems, others
- Beckman Coulter, Sysmex, Siemens, Ortho, Olympus, Roche, Abbott

### Laboratory automation systems interfaced

- SysCore, Seacoast Laboratory Data Systems, others
- Beckman Coulter, Sysmex, Siemens, Ortho, Olympus, Roche, Abbott

### LIS provides validation or testing tools?

- Yes (proprietary and blood bank guidelines)  
- Yes (CodeMap)/yes  
- No —

### Provide LOINC dictionary for each new installation?

- Yes  
- Yes  
- Yes

### LIS supports use of SNOMED CT?

- Yes  
- Yes  
- No

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

- Yes (42%)  
- No

### No. of different lab instruments interfaced with LIS

- 2 sites

### Source code?/User group that meets regularly?

- Yes/no  
- Yes/no  
- Yes/no

### User can modify screens?

- Yes/no  
- Yes/no  
- Yes/no

### Escrow/yes (meets via Internet quarterly; in person biannually)

- Yes/no  
- Yes/no

### Source code?/User group that meets regularly?

- Yes/no  
- Yes/no  
- Yes/no

### Laboratory data management system interfaced

- Microsoft SQL, ODBC compliant
- Microsoft SQL, DBIC compliant

### Smallest cost for LIS hardware/software/monthly maintenance

- $4k/$20k/—
- $100k/$400k/$5k

### Largest cost for LIS hardware/software/monthly maintenance

- $5k/$10k/$5.5k
- $25k/$150k/$4k

### Distinguishing features (supplied by vendor)

- *ability to extend the life, functionality, and IT investment of LIS through each add-on modules as outreach, EMR, interfacing, and customized reporting*
- *leader in laboratory solutions for cost-conscious laboratories*
- *full anatomic pathology and clinical lab systems that are fully integrated with other systems, including other LISs, HISs, billing, and more*
- *customizations*
- *flexibility*
- *customer support*

---

Tabulation does not represent an endorsement by the College of American Pathologists.
<table>
<thead>
<tr>
<th>Part 15 of 17</th>
<th>Laboratory information systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of laboratory information system</strong></td>
<td>SoftLab</td>
</tr>
<tr>
<td><strong>First ever/most recent LIS installation (based on September survey deadline)</strong></td>
<td>1985/June 2009</td>
</tr>
<tr>
<td><strong>Last major product release for featured LIS</strong></td>
<td>April/July 2009</td>
</tr>
<tr>
<td><strong>Total No. of contracts for sites operating LIS</strong></td>
<td>327</td>
</tr>
<tr>
<td><strong>• Hospital/Inpatient lab contracts in U.S.</strong></td>
<td>269/26</td>
</tr>
<tr>
<td><strong>• Clinic or group practice contracts in U.S./public health lab contracts in U.S.</strong></td>
<td>9/3</td>
</tr>
<tr>
<td><strong>• Other contracted U.S. sites/contracts for foreign sites</strong></td>
<td>0/30 (Hospital)</td>
</tr>
<tr>
<td><strong>• No. of these contracts that went live between Sept–September 2008–2009</strong></td>
<td>8</td>
</tr>
<tr>
<td><strong>Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)</strong></td>
<td>12 (10/20)</td>
</tr>
<tr>
<td><strong>• Total No. of contracts (live and not live) signed between Sept–September 2008–2009</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>Total No. of sites operating LIS (No. of these sites outside the U.S.)</strong></td>
<td>676 (91–Canada, Brazil)</td>
</tr>
<tr>
<td><strong>Percentage of high-volume sites installed/low-volume sites installed</strong></td>
<td>60%/40%</td>
</tr>
<tr>
<td><strong>Staff to develop/install &amp; support/other</strong> in entire firm</td>
<td>4/11/8</td>
</tr>
<tr>
<td><strong>Staff to develop/install &amp; support/other</strong> in U.S. division</td>
<td>783/456/281</td>
</tr>
<tr>
<td><strong>No. of billed tests generated annually by LIS</strong></td>
<td>150,000–200,000,000+</td>
</tr>
<tr>
<td><strong>Range in No. of interactive workstations in sites operating LIS</strong></td>
<td>10–4,000 (mean, 76)</td>
</tr>
<tr>
<td><strong>Central Hardware or service type</strong></td>
<td>Manual intervention necessary to restore operation or system continues</td>
</tr>
<tr>
<td><strong>How central server failure is handled</strong></td>
<td>Manual intervention necessary to restore operation</td>
</tr>
<tr>
<td><strong>Programming language(s)</strong></td>
<td>C++, C++, Java, .Net</td>
</tr>
<tr>
<td><strong>Operating system(s)</strong></td>
<td>server: IBM AIX, workstation: Microsoft Windows</td>
</tr>
<tr>
<td><strong>Databases and tools</strong></td>
<td>Oracle, RDM++</td>
</tr>
<tr>
<td><strong>System includes full transaction logging?</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Languages (other than English) offered on system</strong></td>
<td>French, ABN forms available in Spanish</td>
</tr>
<tr>
<td><strong>Features/modules (listed as percent of live installs or based on availability)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>• Chemistry and hematology</strong></td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Bar-coded collection labels</strong></td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Handheld devices for blood-positive patient ID</strong></td>
<td>13%</td>
</tr>
<tr>
<td><strong>• NCCLS POCT-1A standard interface for POCT devices</strong></td>
<td>15%–20%</td>
</tr>
<tr>
<td><strong>• Microbiology/public health microbiology</strong></td>
<td>84%/5%</td>
</tr>
<tr>
<td><strong>• Blood bank donor and transfusion</strong></td>
<td>3% donor; 54% transfusion</td>
</tr>
<tr>
<td><strong>• Surgical pathology/cytology</strong></td>
<td>4%/47%</td>
</tr>
<tr>
<td><strong>• Molecular pathology/cytogenetics</strong></td>
<td>3%/2%</td>
</tr>
<tr>
<td><strong>• Flow cytometry</strong></td>
<td>19%</td>
</tr>
<tr>
<td><strong>• HIS or EMR interface for A/D/F</strong></td>
<td>99%</td>
</tr>
<tr>
<td><strong>• HIS or EMR interface for order entry/results reporting</strong></td>
<td>85%/88%</td>
</tr>
<tr>
<td><strong>• HIS or EMR interface for packaging results into PDF format</strong></td>
<td>Installed</td>
</tr>
<tr>
<td><strong>• HIS or EMR interface for packaging results into CDA format/CDA format</strong></td>
<td>Installed but not installed/installed but not installed</td>
</tr>
<tr>
<td><strong>• Ad hoc reporting/rules-based system</strong></td>
<td>100%/100%</td>
</tr>
<tr>
<td><strong>• Management and statistical reporting</strong></td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Outreach and clinical laboratory</strong></td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Compliance checking/billing and accounts receivable</strong></td>
<td>30%/22%</td>
</tr>
<tr>
<td><strong>• Materials management and inventory</strong></td>
<td>—</td>
</tr>
<tr>
<td><strong>• Test partition/remote fixing and printing</strong></td>
<td>100%/100%</td>
</tr>
<tr>
<td><strong>• HIPAA-standard transaction formats</strong></td>
<td>Available</td>
</tr>
<tr>
<td><strong>• Web-based remote inquiry of reports/Web access for order entry</strong></td>
<td>13%/13%</td>
</tr>
<tr>
<td><strong>• Specimen management and tracking</strong></td>
<td>100%</td>
</tr>
<tr>
<td><strong>• Compliance and quality assurance tools</strong></td>
<td>25%</td>
</tr>
<tr>
<td><strong>• IHL (tissue typing)</strong></td>
<td>2%</td>
</tr>
<tr>
<td><strong>• Environmental health/newborn screening</strong></td>
<td>not available/81%</td>
</tr>
<tr>
<td><strong>• Stem cell laboratory</strong></td>
<td>in development</td>
</tr>
<tr>
<td><strong>Complete LIS application service provider solution?</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>ASP for physician order entry and results reporting?</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Method of charging for ASP service</strong></td>
<td>Fixed fee or transaction based</td>
</tr>
<tr>
<td><strong>Client software required</strong></td>
<td>Web portal</td>
</tr>
<tr>
<td><strong>ASP information conduit</strong></td>
<td>operates over Internet or requires use of ASP or other dedicated connection</td>
</tr>
<tr>
<td><strong>Client contracts supported from data center not operated by client</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>How data center is operated</strong></td>
<td>by vendor</td>
</tr>
<tr>
<td><strong>LIS provides surveillance data to public health agencies via computer-to-computer interface using CDC, Hl7, LOINC, SNOMED standards for:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>• Microbiology data</strong></td>
<td>4 states live</td>
</tr>
<tr>
<td><strong>• Other reportable diseases</strong></td>
<td>4 states live</td>
</tr>
<tr>
<td><strong>• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. IV, version 2.2, February 2009 edition)</strong></td>
<td>8 sites</td>
</tr>
<tr>
<td><strong>Laboratory automation systems interfaced</strong></td>
<td>Beckman Coulter, Synergen, Siemens, Orbis, Olympus, Roche, Abbott, others</td>
</tr>
<tr>
<td><strong>LIS provides validation or testing tools?</strong></td>
<td>yes (Model Soft, Camtica)</td>
</tr>
<tr>
<td><strong>LIS allows third-party updates of tables and rules/image capture, display, and reporting?</strong></td>
<td>yes (Qudxad, 3M/Info-x, ICD-9/10 codes, LOINC, Vitek, others)</td>
</tr>
<tr>
<td><strong>Software provides indexed field in each test definition for LOINC code?</strong></td>
<td>yes</td>
</tr>
<tr>
<td><strong>Provide LOINC dictionary for each new installation?</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>LIS supports use of SNOMED CT?</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Market modules for other hospital departments? (percent of installs lab only)</strong></td>
<td>yes</td>
</tr>
<tr>
<td><strong>No. of different lab instruments interfaced with LIS</strong></td>
<td>400+</td>
</tr>
<tr>
<td><strong>Source code?/User group that meets regularly?</strong></td>
<td>escrow/yes (meets via Internet; in person annually)</td>
</tr>
<tr>
<td><strong>User can modify screens?</strong></td>
<td>yes (after user-defined report writer)</td>
</tr>
<tr>
<td><strong>Query languages to retrieve information from LIS database</strong></td>
<td>ODBC, SQS, XML</td>
</tr>
<tr>
<td><strong>Smallest cost for LIS hardware/software/monthly maintenance</strong></td>
<td>$30k/$37k/$1.5k</td>
</tr>
<tr>
<td><strong>Largest cost for LIS hardware/software/monthly maintenance</strong></td>
<td>$150k/$150k</td>
</tr>
<tr>
<td><strong>Distinguishing features (supplied by vendor)</strong></td>
<td>Innovative, comprehensive, integrated suite of genetics modules for molecular/cytogenetics, HL7/immunoanergetics, biochemistry, and flow cytometry</td>
</tr>
<tr>
<td></td>
<td>powerful set of integrated laboratory-specific outreach tools</td>
</tr>
<tr>
<td></td>
<td>core lab EMR module, and specimen-tracking module to track across multiple testing locations and perform workstation redirection when necessary</td>
</tr>
</tbody>
</table>

Tabulation does not represent an endorsement by the College of American Pathologists.
<table>
<thead>
<tr>
<th>Feature/Module (listed as percent of live installs or based on availability)</th>
<th>System Features/Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Chemistry and hematology</em></td>
<td>100% installed</td>
</tr>
<tr>
<td><em>Bar-coded collection labels</em></td>
<td>100% installed</td>
</tr>
<tr>
<td><em>Handheld devices for bedside-positive patient ID</em></td>
<td>not available</td>
</tr>
<tr>
<td><em>NCLCS PCST-1A standard interface for PCST devices</em></td>
<td>not available</td>
</tr>
<tr>
<td><em>Microbiology/public health microbiology</em></td>
<td>75%/not available</td>
</tr>
<tr>
<td><em>Blood bank donor and transfusion</em></td>
<td>installed</td>
</tr>
<tr>
<td><em>Surgical pathology/cytology</em></td>
<td>not available</td>
</tr>
<tr>
<td><em>Molecular pathology/cytogenetics</em></td>
<td>10%/not available</td>
</tr>
<tr>
<td><em>Flow cytometry</em></td>
<td>not available</td>
</tr>
<tr>
<td><em>HIS or EMR interface for A/D/T</em></td>
<td>100%/95%</td>
</tr>
<tr>
<td><em>HIS or EMR interface for order entry/results reporting</em></td>
<td>100%/100%</td>
</tr>
<tr>
<td><em>HIS or EMR interface for packaging results into PDF format</em></td>
<td>30%</td>
</tr>
<tr>
<td><em>HIS or EMR interface for packaging results into CDA 1 format/CDA 2 format</em></td>
<td>not available/not available</td>
</tr>
<tr>
<td><em>Ad hoc reporting/rules-based system</em></td>
<td>100%/100%/100%</td>
</tr>
<tr>
<td><em>Management and statistical reporting</em></td>
<td>100%</td>
</tr>
<tr>
<td><em>Outreach and commercial laboratory</em></td>
<td>100% installed</td>
</tr>
<tr>
<td><em>Compliance checking/billing and accounts receivable</em></td>
<td>100%/100%</td>
</tr>
<tr>
<td><em>Materials management and inventory</em></td>
<td>not available</td>
</tr>
<tr>
<td><em>Test partition/remote faxing and printing</em></td>
<td>100%/100%</td>
</tr>
<tr>
<td><em>HIPAA-standard transaction formats</em></td>
<td>not available</td>
</tr>
<tr>
<td><em>Web-based remote inquiry of reports/Web access for order entry</em></td>
<td>45%/not available</td>
</tr>
<tr>
<td><em>Specimen management and tracking</em></td>
<td>100%</td>
</tr>
<tr>
<td><em>Compliance and quality assurance tools</em></td>
<td>70%</td>
</tr>
<tr>
<td><em>HLA (tissue typing)</em></td>
<td>not available</td>
</tr>
<tr>
<td><em>Environmental health/newborn screening</em></td>
<td>not available/not available</td>
</tr>
<tr>
<td><em>Stem cell laboratory</em></td>
<td>not available</td>
</tr>
</tbody>
</table>

**Features/Modules**

**ASP for physician order entry and results reporting?**

- no

**Complete LIS application service provider solution?**

- no

**Client software required**

- no

**LIS provides support of SNOMED CT?**

- no

**Market modules for other hospital departments?**

- yes (5%)
### Laboratory Information Systems

<table>
<thead>
<tr>
<th>Name of laboratory information system</th>
<th>Starlims Corp.</th>
<th>Sunquest Information Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First ever/most recent LIS installation (based on September survey deadline)</strong></td>
<td>2001/July 2009</td>
<td>1979/2009</td>
</tr>
<tr>
<td><strong>Last major product release for featured LIS</strong></td>
<td>2009</td>
<td>2009</td>
</tr>
<tr>
<td><strong>Total No. of contracts for sites operating LIS</strong></td>
<td>44</td>
<td>400+</td>
</tr>
<tr>
<td><em>Hospital/independent lab contracts in U.S.</em></td>
<td>1/5</td>
<td>350/460+</td>
</tr>
<tr>
<td><em>Clinic or group practice contracts in U.S./public health lab contracts in U.S.</em></td>
<td>0/20</td>
<td>—/20+ (hospitals)</td>
</tr>
<tr>
<td><em>Other contracted U.S. sites/contracts for foreign sites</em></td>
<td>0/20</td>
<td>—/20+ (hospitals)</td>
</tr>
<tr>
<td><strong>No. of those contracts that went live between Sept. 2008–Sept. 2009</strong></td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)</td>
<td>16</td>
<td>21 (21/0/0)</td>
</tr>
<tr>
<td><strong>Total No. of sites operating LIS (No. of these sites outside the U.S.)</strong></td>
<td>68 (18–Russia, U.K., Jamaica, Germany, Belgium, Malaysia, Singapore, others)</td>
<td>990+ (60+–Canada, U.K., Western Europe, Middle East)</td>
</tr>
<tr>
<td>Percentage of high-volume sites installed/low-volume sites installed</td>
<td>60%/44%</td>
<td>—/30%</td>
</tr>
<tr>
<td><strong>Staff to develop/install &amp; support/other</strong>* in entire firm**</td>
<td>38/96/34</td>
<td>253/235/126</td>
</tr>
<tr>
<td><strong>Staff to develop/install &amp; support/other</strong>* in LIS division**</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>No. of billed tests generated annually by LIS</strong></td>
<td>10,000–20,000,000</td>
<td>&lt;50,000–17,000,000 (mean, 8,500,000)</td>
</tr>
<tr>
<td><strong>Range in No. of interactive workstations in sites operating LIS</strong></td>
<td>5–1,000</td>
<td>4–500</td>
</tr>
<tr>
<td><strong>Central hardware or service type</strong></td>
<td>—</td>
<td>HP, IBM</td>
</tr>
<tr>
<td>How central server failure is handled</td>
<td>system continues uninterrupted</td>
<td>manual intervention necessary to restore operation or system continues uninterrupted (lab’s choice)</td>
</tr>
<tr>
<td><strong>Programming language(s)</strong></td>
<td>C++</td>
<td>ANSI Standard M, Caché Script, Standard C/C++, Visual Basic, others</td>
</tr>
<tr>
<td><strong>Operating system(s)</strong></td>
<td>Windows</td>
<td>AIX, HP-UX, OpenVMS, Linux, Windows XP</td>
</tr>
<tr>
<td><strong>Databases and tools</strong></td>
<td>SQL server, Oracle</td>
<td>InterSystems Caché</td>
</tr>
<tr>
<td><strong>System includes full transaction logging?</strong></td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Languages (other than English) offered on system</strong></td>
<td>French, Spanish, Chinese, Czech, Polish, Russian, Dutch, Korean, others</td>
<td>—</td>
</tr>
</tbody>
</table>

### Features/Modules

- Chemistry and hematology
- Bar-coded collection labels
- Handheld devices for bedside-positive patient ID
- NCCLS PT/STA standard interface for PT/STA devices
- Microbiology/public health microbiology
- Blood bank donor and transfusion
- Surgical pathology/cytology
- Molecular pathology/cytogenetics
- Flow cytometry
- HIS or EHR interface for AD/DT
- HIS or EHR interface for order entry/results reporting
- HIS or EHR interface for packaging results into PDF format
- HIS or EHR interface for packaging results into CD/DA1 format/CD/DA2 format
- Ad hoc reporting/rates-based system
- Management and statistical reporting
- Outreach and commercial laboratory
- Compliance checking/billing and accounts receivable
- Materials management and inventory
- Test panel/remote faxing and printing
- HIPAA-standard transaction formats
- Web-based remote inquiry of reports/Web access for order entry
- Web-based remote inquiry of reports/Web access for order entry
- Premark management and tracking
- Compliance and quality assurance tools
- NLA (fear of hyping)
- Environmental health/newborn screening
- Stem cell laboratory

Complete LIS application service provider solution?
- no
- no
- no

ASP for physician order entry and results reporting?
- no
- no
- no

Method of charging for ASP service?
- —
- —
- —

Client software required?
- no
- no
- no

ASP information conduit?
- no
- no
- no

Client contracts supported from data center not operated by client?
- yes
- yes
- yes

How data center is operated?
- —
- —
- —

### LIS Features

- Microbiology data
- Other reportable diseases
- Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic data-management system functionality

- *monitoring of high-volume sites: installed/low-volume sites installed |

LIS supports surveillance data to public health agencies via computer-to-computer interface using CDC, NE, LOINC, SNOHED standards for:
- Microbiology data
- Other reportable diseases

- Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic data-management system functionality

- *monitoring of high-volume sites: installed/low-volume sites installed |

### Information Systems Interface

<table>
<thead>
<tr>
<th>Laboratory automation systems interfaced</th>
<th>NetSuite, Heron Systems, Haemexonics, Mac-System, others</th>
<th>McKesson, Corner, Siemens, GE Healthcare, Epic, Cipla, others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beckman Coulter, Sysmex, Ortho, Olympus, America, Roche, Abbott</td>
<td>Beckman Coulter, Sysmex, Siemens, Ortho, Olympus, Roche, Abbott</td>
<td></td>
</tr>
</tbody>
</table>

LIS supports validation or testing tools?
- yes
- yes (validation scripts)

LIS allows third-party updates of tables and rules/image capture, display, and reporting?
- yes (any that use Web services, provide updates in structured file formats)
- yes (3M, ICD-9)/yes

Software provides indexed field in each test definition for LOINC code?
- yes
- yes
- yes

Provide LOINC dictionary for each new installation?
- yes
- yes
- yes

LIS supports use of C/SNOMED CT?
- yes
- yes
- yes

Market modules for other hospital departments? (percent of installs lab only)
- no (95%)

No. of different lab instruments interfaced with LIS

<table>
<thead>
<tr>
<th>Source code?/User group that meets regularly?</th>
<th>200+ (native tools or Data Innovations for interface)</th>
<th>800+ (native tools or Data Innovations for interface)</th>
</tr>
</thead>
<tbody>
<tr>
<td>User can modify screens?</td>
<td>yes (offer user-defined report writer, custom programming)</td>
<td>yes (offer user-defined report writer, custom programming)</td>
</tr>
<tr>
<td>Source code?</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>User group that meets regularly?</td>
<td>yes (meets via e-mail forums; in person every 12–18 months, others)</td>
<td>yes (meets via Internet; in person)</td>
</tr>
<tr>
<td>Source code?</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>User group that meets regularly?</td>
<td>yes (after user-defined report writer, custom programming)</td>
<td>yes</td>
</tr>
<tr>
<td>Source code?</td>
<td>yes</td>
<td>yes</td>
</tr>
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<td>yes (after user-defined report writer, custom programming)</td>
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</tr>
</tbody>
</table>

### Distinguishing Features

- Web-based remote inquiry of reports/Web access for order entry
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**Note: a dash in lieu of an answer means company did not answer question or question is not applicable**

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