Anatomic pathology computer systems

Part 1 of 13

Aspyra
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See accompanying article on page 12

Name of anatomic pathology system: CyberPath

First ever AP system installation: 2000
Most recent AP system installation (based on survey deadline of Dec. 2007): 2007
No. of contracts for sites operating AP system (WALIC or GP/9F/05)*: 15 (10/2/2/1 in Singapore/0)
• No. of contracts that went live in 2007: 0
• No. of contracts not yet live/No. of these contracts signed in 2007: 1/1
No. of sites operating AP system: 15
Percentage of installations that have stand-alone AP systems: 0
Staff to develop-install and support-other**:
• In entire company: 30-50-25
• In LIS division (including AP): 15-30-20
• In AP systems only: 4-7-12

No. of user workstations in sites operating system: 2–250 (avg., 150)
Range in No. of surgical pathology cases per year in sites operating system: 3,000–200,000
Range in No. of gynecologic cytology cases per year in sites operating syst.: 3,000–15,000

Programming language(s): Dialog, C, MicroFocus Cobol, Visual Basic
Databases and tools used: Microsoft SQL
Word processor(s) used: Microsoft Word
Operating system(s): Windows, Linux

Features (listed as a percentage of live installs or based on availability):
• Surgical pathology information system: 100%
• Cytology information system: 30%
• Autopsy information system: 100%
• Autopsy measurements and organ weights: 100%
• Specimen log-in/specimen tracking and retrieval: 100%/available but not installed
• Entry of block IDs/specimen labels: 30%/100%
• Histology slide labels/bar-coded slide labels: 100%/100%
• Histology worksheets: 100%
• Word processing—vendor specific: 0
• Voice entry of gross description/back-end batch voice to text: 100%
• Gross and microscopic images integrated in reports: 100%
• Electronic signature: 100%
• Remote printing of completed reports: 100%
• Direct fax reports: 100%
• Web-based remote inquiry of reports: 40%
• Physician Web access for order entry: 35%
• Natural language search capability: available in 2008
• Multi-site or multi-facility-wide area network: 35%
• Sound-alike retrieval of patient history: available in 2008
• Tumor registry reports-management reports: 100%/100%
• Reports sufficient to comply with CLIA '88 regulations: 100%
• Comprehensive billing and accounts receivable: not available
• Interface to external billing system: 80%
• HIS interface: A/D/T: 80%
• HIS interface: result reporting/incoming clinical results: 80%/100%
• PathLab tables or Gleason score calculations: available in 2008
• Synoptic reporting: available in 2008
• Client services module: 40%
• Consult management and reporting: 30%

Software provides indexed field in each test definition for LOINC code?: yes
Provide LOINC dictionary for each new installation?: no

Routine results encoded in SNOMED (in version earlier than SNOMED CT)?: no
Routine results encoded in SNOMED CT?: yes (at 25% of sites)
AP system uses autocoder to create SNOMED codes?: no
Percentage of installed sites that represent cases in free text: 75%

No. of installations that use AP system to automatically electronically transfer tumor diagnoses to a tumor registry: NAACCR vol. V ePath standard for e-pathology reporting available but not installed in older NAACCR standard (RL7)

Complete AP application service provider solution?: 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: —

Other information systems interfaced:
• Voice-recognition products or partners system uses: McKesson, IDX, QuadraMed, Siemens, Meditech, NextGen, Misys, others
• Histology and cytology devices interfaced: Dragon NaturallySpeaking
• User interface in language other than English?: yes

Source code?: escrow
User group?: yes (meets in person every 1 to ½ years)
User can modify screens?: no

Cost (hardware/software/installation and training/monthly maintenance):
• Smallest stand-alone system: —
• Largest stand-alone system: —
• Base price of integrated system, excluding AP configuration: —
• Incremental cost to add smallest AP configuration: —
• Incremental cost to add largest AP configuration: —

Distinguishing features (supplied by vendor):
• Windows platform with MS SQL database for easy data mining
• flexible workflow options with system decision support rules
• customized patient reports with incorporated images

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

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Survey editors: Raymond D. Alter, MD, and Hal Weiner

February 2008 Page 21

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*H=U.S. hospitals, I=independent labs in U.S., C or GP=clinics or group practices in U.S., FI=foreign installations, OS=other sites
**Other=sales, marketing, administration, and other company functions

February 2008 CAP TODAY / 21
### Anatomic pathology computer systems

#### Part 2 of 13

<table>
<thead>
<tr>
<th>Name of anatomic pathology system</th>
<th>Cerner CoPathPlus Anatomic Pathology System</th>
<th>Cerner Millennium PathNet Anatomic Pathology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First ever AP system installation</strong></td>
<td>1982</td>
<td>1982</td>
</tr>
<tr>
<td><strong>Most recent AP system installation (based on survey deadline of Dec. 2007)</strong></td>
<td>2007</td>
<td>2007</td>
</tr>
<tr>
<td><strong>No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)</strong>*</td>
<td>194 (160/27/6 in Canada, Saudi Arabia/0)</td>
<td>153 (141/21/1/9/0)</td>
</tr>
<tr>
<td><strong>No. of contracts that went live in 2007</strong></td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td><strong>No. of contracts not yet live/No. of these contracts signed in 2007</strong></td>
<td>4/4</td>
<td>47/12</td>
</tr>
<tr>
<td><strong>No. of sites operating AP system</strong></td>
<td>290</td>
<td>318</td>
</tr>
<tr>
<td><strong>Percentage of installations that have stand-alone AP systems</strong></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Staff to develop-install and support-other</strong></td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td><strong>In entire company</strong></td>
<td>1,590-2,287-3,542</td>
<td>1,900-2,287-3,542</td>
</tr>
<tr>
<td><strong>In LIS division (including AP)</strong></td>
<td>73-118-39</td>
<td>73-118-39</td>
</tr>
<tr>
<td><strong>In AP systems only</strong></td>
<td>15-45-10</td>
<td>0</td>
</tr>
</tbody>
</table>

#### No. of user workstations in sites operating systems

- **Range in No. of surgical pathology cases per year in sites operating system**
  - 1–4,000 (avg., 560) | 10–400 (avg., 10–20) |
  - 3,000–37,500,000 | 5,000–100,000 |
  - 2,000–1,000,000 | 2,500–100,000 |

#### Operating systems

<table>
<thead>
<tr>
<th>Programming language(s)</th>
<th>PowerBuilder, C++</th>
<th>Visual C++, Visual Basic, Java</th>
</tr>
</thead>
<tbody>
<tr>
<td>Databases and tools used</td>
<td>Microsoft SQL, Sybase, Microsoft Word, TiaText Control</td>
<td>Oracle Microsoft Word, Visual Writer</td>
</tr>
<tr>
<td>Operating system(s)</td>
<td>Windows 98, 2000, 2003, XP, AIX, Unix</td>
<td>Open VMS, AIX, Windows 2000, NT, XP</td>
</tr>
</tbody>
</table>

#### Features

- **Surgical pathology information system**
- **Cytology information system**
- **Autopsy information system**
- **Autopsy measurements and organ weights**
- **Specimen log-in/specimen tracking and retrieval**
- **Entry of block libs/specimen labels**
- **Histology slide labels/bar-coded slide labels**
- **Histology worksheets**
- **Word processing—vendor specific**
- **Voice entry of gross description/back-end batch voice to text**
- **Gross and microscopic images integrated in reports**
- **Electronic signature**
- **Remote printing of completed reports**
- **Direct fax reports**
- **Web-based remote inquiry of reports**
- **Physician Web access for order entry**
- **Natural language search capability**
- **Multi-site or multi-facility-wide area network**
- **Sound-alike retrieval of patient history**
- **Tumor registry reports/report management reports**
- **Reports sufficient to comply with CLIA ’88 regulations**
- **Comprehensive billing and accounts receivable**
- **Interface to external billing system**
- **HIS interface: A/D/T**
- **HIS interface: result reporting/incoming clinical results**
- **Partin tables or Gleason score calculations**
- **Synoptic reporting**
- **Client services module**
- **Consult management and reporting**

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

- **No** | **Yes** |

#### Provide LOINC dictionary for each new installation?

- **No** | **Yes** |

#### Routine results encoded in SNOMED (in version earlier than SNOMED CT)?

- **Yes (at 90% of sites)** | **No** |

#### Routine results encoded in SNOMED CT?

- **Yes (at 10% of sites)** | **Yes** |

#### AP system uses autocoder to create SNOMED codes?

- **Yes** | **No** |

#### Percentage of installed sites that represent cases in free text

- **40%** | **not tracked** |

#### No. of installations that use AP system to automatically electronically transfer tumor diagnoses to a tumor registry

- **5 in NACCOR vol. V ePath standard for e-pathology reporting and 25 in nonstandard data feed** | **not tracked** |

#### Complete AP application service provider solution?

- **No** | **Yes** |

#### Method of charging for ASP service

- **fixed fee** | **requires software be installed on a client PC** |

#### Client software required

- **—** | **requires use of a private, dedicated circuit** |

#### ASP information conduit

- **by vendor** | **—** |

#### Client contracts supported from data center not operated by client

- **—** | **—** |

#### How data center is operated

- **—** | **—** |

#### Other information systems interfaced

- **Cerner, McKesson, Meditech, Siemens, Epic, SCC Soft Computer** | **Cerner, Eclipse, Epic, McKesson, IDX, Siemens, TDS** |

#### Voice-recognition products or partners system uses

- **Dragon NaturallySpeaking** | **Dragon Medical Suite voice recognition** |

#### Histology and cytology devices interfaced

- **Shur/Mark, Thermo Shandon**, **Leica, Sakura, Dako, General Data cassette and slide labeling devices, Ventana staining device** | **Shur/Mark, Thermo Shandon cassette and slide labelers** |

#### User interface language other than English?

- **no** | **yes** (German) |

#### Source code?

- **escrow** | **escrow** (meets via Internet and in person) |

#### User group?

- **yes** | **yes** (meets via Internet quarterly) |

#### User can modify screens?

- **yes** | **yes** |

#### Cost (hardware/software/installation and training/monthly maintenance)

- **Smallest stand-alone system** | **accession-to-storage tissue tracking in CoPath with advanced bar-coding/tracking system** |
- **Largest stand-alone system** | **Web-based report availability** |
- **Base price of integrated system, excluding AP configuration** | **CoPath’s integrated imaging and synoptic reporting systems** |
- **Incremental cost to add smallest AP configuration** | **more than 25 years in the industry with proven scalability and performance** |
- **Incremental cost to add largest AP configuration** | **comprehensive integrated single system for all lab departments** |
- **Cost of ASP solution** | **continued innovations—that is, genomics, laboratory outreach solutions, patented synoptic reporting** |

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*1-Independent labs in U.S., C or GP=clinics or group practices in U.S., FI=foreign installations, OS=other sites

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

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Clinical Information Systems

Transaction based 100%—

Dragon NaturallySpeaking Professional (integrated directly into WinSurge)

617-557-9264

2,500–115,000

Interbase, Microsoft SQL, C-ISAM, Access

100% 1–100+ (avg., 15)

100%—

confidential

100%/100%

100%/40%

$7.5k–$150k

60%

yes (at 5% of sites)

95%

$10k/$25k/$10k/$0.5k

1%

1

5,000–300,000

6-6-1

Windows, Unix

20%

80%

85%

5%

yes (at 10% of sites)

no

5%

no

escrow

yes

100%/100%

35%

slide engravers, cassette writers, slide labelers, microscope cameras/

2/2

Computer Trust Corp.

100%—

0

30%

60%

3,000–300,000

100%/100%

20

100%/100%

0

—/$50k–$100k/$5k–$20k/$2.5k

6-6-1

Windows, Unix (user's choice)

20% 80%

85%

5%

yes (at 10% of sites)

no

5%

50%

not available

fourth quarter 2007

20 (1/18/1/0/0)

Medical Manager, McKesson, Dairyland, PCN, Reynolds & Reynolds, Praxis,

operates over the Internet

97

65%

100%

NAACCR vol. V ePath standard for e-pathology reporting available to all

100%

yes (at 3% of sites)

60%

Windows, Unix

33%/installed

WordPerfect tools, Microsoft Word

100%

none

November 2007

no

Delphi, Cobol, C++, ASP, Visual Basic

Interbase, Microsoft SQL, C-IsAM, Access

Word, Rich Text, plain text

Object Caché, SQL

nsis Vt. Crystal Reports, Microsoft Word Document Templates

Windows, Unix

100/

40%

100%/100%

100% 50%

not available

escrow

yes

75%

$100k/$2.5m/$1.5m/$35k

100%

100%

100/available but not installed

NAACCR vol. V ePath standard for e-pathology reporting available to all

100%/100%

confidential

yes

100%/100%

100%/100%

$100k/$100k/$20k/$2.5k

100%/100%

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100%/100%

100%/100%

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no

5%

50%

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100%

100/available but not installed

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confidential

yes

100%/100%

100%/100%

$100k/$100k/$20k/$2.5k

100%/100%

confidential

100%/100%

100%/100%

20%

80%

85%

5%

yes (at 10% of sites)

no

5%

50%

not available

fourth quarter 2007

20 (1/18/1/0/0)

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97

65%

100%

NAACCR vol. V ePath standard for e-pathology reporting available to all

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WordPerfect tools, Microsoft Word

100%

none

November 2007

no

Delphi, Cobol, C++, ASP, Visual Basic

Interbase, Microsoft SQL, C-IsAM, Access

Word, Rich Text, plain text

Object Caché, SQL

nsis Vt. Crystal Reports, Microsoft Word Document Templates

Windows, Unix

100/

40%

100%/100%

100% 50%

not available

escrow

yes

75%

$100k/$2.5m/$1.5m/$35k

100%

100%

100/available but not installed

NAACCR vol. V ePath standard for e-pathology reporting available to all

100%/100%

confidential

yes

100%/100%

100%/100%

$100k/$100k/$20k/$2.5k

100%/100%

confidential

100%/100%

100%/100%

20%

80%

85%

5%

yes (at 10% of sites)

no

5%

50%

not available

fourth quarter 2007

20 (1/18/1/0/0)

Medical Manager, McKesson, Dairyland, PCN, Reynolds & Reynolds, Praxis,

operates over the Internet

97

65%

100%

NAACCR vol. V ePath standard for e-pathology reporting available to all

100%

yes (at 3% of sites)

60%

Windows, Unix

33%/installed

WordPerfect tools, Microsoft Word

100%

none

November 2007

no

Delphi, Cobol, C++, ASP, Visual Basic

Interbase, Microsoft SQL, C-IsAM, Access

Word, Rich Text, plain text

Object Caché, SQL

nsis Vt. Crystal Reports, Microsoft Word Document Templates

Windows, Unix

100/

40%

100%/100%

100% 50%

not available

escrow

yes

75%
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical pathology information system</td>
<td>100%</td>
</tr>
<tr>
<td>Cytology information system</td>
<td>100%</td>
</tr>
<tr>
<td>Autopsy information system</td>
<td>100%</td>
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<tr>
<td>Autopsy measurements and organ weights</td>
<td>100%</td>
</tr>
<tr>
<td>Specimen log-in/specimen tracking and retrieval</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Entry of block IDs/specimen labels</td>
<td>80%/10%</td>
</tr>
<tr>
<td>Histology slide labels/bar-coded slide labels</td>
<td>80%/20%</td>
</tr>
<tr>
<td>Histology worksheets</td>
<td>100%</td>
</tr>
<tr>
<td>Word processing—vendor specific</td>
<td>100%</td>
</tr>
<tr>
<td>Voice entry of gross description/back-end batch voice to text</td>
<td>10%</td>
</tr>
<tr>
<td>Gross and microscopic images integrated in reports</td>
<td>80%</td>
</tr>
<tr>
<td>Electronic signature</td>
<td>10%</td>
</tr>
<tr>
<td>Remote printing of completed reports</td>
<td>0</td>
</tr>
<tr>
<td>Direct fax reports</td>
<td>0</td>
</tr>
<tr>
<td>Web-based remote inquiry of reports</td>
<td>0</td>
</tr>
<tr>
<td>Physician Web access for order entry</td>
<td>not available</td>
</tr>
<tr>
<td>Natural language search capability</td>
<td>0</td>
</tr>
<tr>
<td>Multi-site or multi-facility-wide area network</td>
<td>25%</td>
</tr>
<tr>
<td>Sound-alike retrieval of patient history</td>
<td>0</td>
</tr>
<tr>
<td>Tumor registry reports/management reports</td>
<td>0</td>
</tr>
<tr>
<td>Reports sufficient to comply with CLIA ‘88 regulations</td>
<td>100%</td>
</tr>
<tr>
<td>Comprehensive billing and accounts receivable</td>
<td>80%/100%</td>
</tr>
<tr>
<td>Interface to external billing system</td>
<td>10%</td>
</tr>
<tr>
<td>HIS interface: A/D/T</td>
<td>80%</td>
</tr>
<tr>
<td>HIS interface: result reporting/incoming clinical results</td>
<td>100%</td>
</tr>
<tr>
<td>Partin tables/Gleason score calculations</td>
<td>0</td>
</tr>
<tr>
<td>Synoptic reporting</td>
<td>10%</td>
</tr>
<tr>
<td>Client services module</td>
<td>0</td>
</tr>
<tr>
<td>Consult management and reporting</td>
<td>100%</td>
</tr>
</tbody>
</table>

Software provides indexed field in each test definition for LOINC code?  
Provide LOINC dictionary for new installation?  
Routine results encoded in SNOMED (in version earlier than SNOMED CT)?  
Routine results encoded in SNOMED CT?  
AP system uses autoencoder to create SNOMED codes?  
Percentage of installed sites that represent cases in free text  
No. of installations that use AP system to automatically electronically transfer tumor diagnoses to a tumor registry  
Operating system(s)  
Word processor(s) used  
Databases and tools used  
Programming language(s)  
Features (listed as a percentage of live installs or based on availability)  
• Surgical pathology information system  
• Cytology information system  
• Autopsy information system  
• Autopsy measurements and organ weights  
• Specimen log-in/specimen tracking and retrieval  
• Entry of block IDs/specimen labels  
• Histology slide labels/bar-coded slide labels  
• Histology worksheets  
• Word processing—vendor specific  
• Voice entry of gross description/back-end batch voice to text  
• Gross and microscopic images integrated in reports  
• Electronic signature  
• Remote printing of completed reports  
• Direct fax reports  
• Web-based remote inquiry of reports  
• Physician Web access for order entry  
• Natural language search capability  
• Multi-site or multi-facility-wide area network  
• Sound-alike retrieval of patient history  
• Tumor registry reports/management reports  
• Reports sufficient to comply with CLIA ‘88 regulations  
• Comprehensive billing and accounts receivable  
• Interface to external billing system  
• HIS interface: A/D/T  
• HIS interface: result reporting/incoming clinical results  
• Partin tables/Gleason score calculations  
• Synoptic reporting  
• Client services module  
• Consult management and reporting  

No. of sites operating AP system  
Range in No. of surgical pathology cases per year in sites operating system  
Range in No. of gynecologic cytology cases per year in sites operating system  
No. of user workstations in sites operating system  
Operating system(s)  
Word processor(s) used  
Databases and tools used  
Programming language(s)  
Features (listed as a percentage of live installs or based on availability)  
• Surgical pathology information system  
• Cytology information system  
• Autopsy information system  
• Autopsy measurements and organ weights  
• Specimen log-in/specimen tracking and retrieval  
• Entry of block IDs/specimen labels  
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• Tumor registry reports/management reports  
• Reports sufficient to comply with CLIA ‘88 regulations  
• Comprehensive billing and accounts receivable  
• Interface to external billing system  
• HIS interface: A/D/T  
• HIS interface: result reporting/incoming clinical results  
• Partin tables/Gleason score calculations  
• Synoptic reporting  
• Client services module  
• Consult management and reporting  

No. of installations that use AP system to automatically electronically transfer tumor diagnoses to a tumor registry  
10 in nonstandard data feed  
all in nonstandard data feed  
Complete AP application service provider solution?  
Method of charging for ASP service  
Client software required?  
ASP information conduit?  
Client contracts supported from data center not operated by client  
How data center is operated  
by a third party (ID Host)  
Other information systems interfaced  
Voice-recognition products or partners system uses  
Histology and cytology devices interfaced  
User interface in language other than English?  
Source code?  
User group?  
User can modify screens?  
Cost (hardware/software/installation and training/monthly maintenance)  
• Smallest stand-alone system  
• Largest stand-alone system  
• Base price of integrated system, excluding AP configuration  
• Incremental cost to add smallest AP configuration  
• Incremental cost to add largest AP configuration  
Distinguishing features (supplied by vendor)  
• SuperCase reflex testing for linking HPV cases to gynecologic cases  
• 25 years of business experience specifically in the area of anatomic pathology  
• ASP subscription rental service available using the same AP system offered to customers who purchase the software  
• economical but powerful and easy to use  
• written by a practicing pathologist with a professional programmer; easily customized  

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**Anatomic pathology computer systems**

**Part 5 of 13**

<table>
<thead>
<tr>
<th>Name of anatomic pathology system</th>
<th>APAnywhere</th>
<th>Centricity Laboratory Anatomic Pathology and Cytology</th>
</tr>
</thead>
<tbody>
<tr>
<td>First ever AP system installation</td>
<td>2004</td>
<td>1991</td>
</tr>
<tr>
<td>No. of contracts for sites operating AP system (W/L/C or GP/FI/OS)*</td>
<td>13 (8/12/0/1/1)</td>
<td>23 (11/0/0/12 in United Kingdom, Australia, Qatar/0)</td>
</tr>
<tr>
<td>• No. of contracts that went live in 2007</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>• No. of contracts not yet live/No. of these contracts signed in 2007</td>
<td>3/2</td>
<td>1/0</td>
</tr>
<tr>
<td>• No. of sites operating AP system</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>Percentage of installations that have stand-alone AP systems</td>
<td>90%</td>
<td>2%</td>
</tr>
<tr>
<td>Staff to develop/install and support AP systems</td>
<td>9-4-2</td>
<td>44-49-7</td>
</tr>
<tr>
<td>• In entire company</td>
<td>9-4-2</td>
<td>44-49-7</td>
</tr>
<tr>
<td>• In LIS division (including AP)</td>
<td>9-4-2</td>
<td>44-49-7</td>
</tr>
<tr>
<td>• In AP systems only</td>
<td>8-3-1</td>
<td>not available</td>
</tr>
<tr>
<td>No. of user workstations in sites operating system</td>
<td>2–50 (avg., 25)</td>
<td></td>
</tr>
<tr>
<td>Range in No. of surgical pathology cases per year in sites operating system</td>
<td>3,000–75,000</td>
<td></td>
</tr>
<tr>
<td>Range in No. of gynecologic pathology cases per year in sites operating system</td>
<td>1,000–75,000</td>
<td></td>
</tr>
</tbody>
</table>

| Programming language(s) | C++, .Net | G++, C++, Unity Vision |
| Databases and tools used | SQL | Unix Database server/database, Unix Development tool kit |
| Word processor(s) used | Microsoft Word | Microsoft Word |
| Operating system(s) | Windows | Unix |

**Features (listed as a percentage of live installs or based on availability)**

- Surgical pathology information system: 100%
- Cytopathology information system: 100%
- Autopsy information system: 100%
- Autopsy measurements and organ weights: 50%
- Specimen log-in/specimen tracking and retrieval: 100%
- Entry of block IDs/specimen labels: 100%
- Histology slide labels/bar-coded slide labels: 100%
- Histology worksheets: 75%
- Word processing—vendor specific: 100%
- Voice entry of gross description/back-end batch voice to text: 100%
- Gross and microscopic images integrated in reports: 100%
- Electronic signature: 100%
- Remote printing of completed reports: 100%
- Direct fax reports: 100%
- Web-based remote inquiry of reports: 100%
- Physician Web access for order entry: 100%
- Natural language search capability: 100%
- Multi-site or multi-facility-wide area network: 100%
- Sound-alike retrieval of patient history: 100%
- Tumor registry reports/managing reports: available but not installed/100%
- Reports sufficient to comply with CLIA '88 regulations: 100%
- Comprehensive billing and accounts receivable: 100%
- Interface to external billing system: 100%
- HIS interface: A/D/T: 100%
- HIS interface: result reporting/incoming clinical results: 20%
- Parthi tables or Gleason score calculations: 65%
- Symptomatic reporting: 75%
- Client services module: 100%
- Consult management and reporting: 100%

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

- yes
- no

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

- yes
- no

**Routine results encoded in SNOMED (in version earlier than SNOMED CT)?**

- yes
- no

**Routine results encoded in SNOMED CT?**

- yes
- no

**AP system uses autocoder to create SNOMED codes?**

- yes
- no

**Percentage of installed sites that report cases in free text**

- 0
- n/a

**No. of installations that use AP system to automatically electronically transfer tumor diagnoses to a tumor registry**

- none
- 5 in Eiffel via FTP and 3 in nonstandard data feed

**Complete AP application service provider solution?**

- yes
- no

**Method of charging for ASP service**

- fixed fee
- hourly

**Client software required**

- browser based
- vendor specific

**ASP information conduit**

- operates over the Internet
- vendor specific

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

- 1
- vendor specific

**New data center is operated**

- by vendor
- vendor specific

**Other information systems interfaced**

- Cerner, GE Healthcare, Misys, Meditech, Cerner
- GE, McKesson, Siemens, Meditech, Per-Si, Cerner, Eclipsys, Compucare

**Voice-recognition products or partners system uses**

- Beckman Coulter, BD, ChromaVision ACS5, Trestle, Aperio, others
- Philips SpeechMagic, Dragon Naturally Speaking

**Histogram and cytology devices interfaced**

- Shur/Mark, Lam, Leica, Tainn-compatible cameras
- native

**User interface in language other than English?**

- yes
- no

**Source code?**

- eschew
- yes (meets via internet)

**User group?**

- yes
- no

**User can modify screens?**

- yes
- yes (meets via internet quarterly and in person annually)

**Cost hardware/software/installation and training/monthly maintenance**

- Smallest stand-alone system: $20k/$15k/$9k/$9k
- Largest stand-alone system: $100k/$299k/$39k
- Base price of integrated system, excluding AP configuration: $50k
- Incremental cost to add smallest AP configuration: $25k
- Incremental cost to add largest AP configuration: $75k

**Distinguishing features (supplied by vendor)**

- product branded for client
- client-controlled, user-defined custom report builder, including images, graphs, etc.
- LIS fully Web enabled

---

*†‡* U.S. hospitals, L=lympholab in U.S., C or GP=clinics or group practices in U.S., FI=foreign installations, OS=other sites
*§* other=sales, marketing, administration, and other company functions

Tabulation does not represent an endorsement by the College of American Pathologists.
Anatomic pathology computer systems

**Part 6 of 13**

**Impac Medical Systems**
Rick Callahan sales@impac.com
150 Matilda Place, 5th floor
Sunnyvale, CA 94086
888-464-6722 www.impac.com

**McKesson Corp.**
Joseph Stabile joseph.stabile@mckesson.com
5995 Windward Parkway
Alpharetta, GA 30005
404-338-6000 www.mckesson.com/laboratory

**See accompanying article on page 12**

### Name of anatomic pathology system

<table>
<thead>
<tr>
<th>PowerPath</th>
<th>Horizon Anatomic Pathology</th>
</tr>
</thead>
</table>

| **First ever AP system installation** | 1986 |
| **Most recent AP system installation** (based on survey deadline of Dec. 2007) | December 2007 |

| **No. of contracts for sites operating AP system in U.S.** (4H or 6G or GP/FI or OS)** | 211 (160/33/14/4 in Canada/0) |
| **No. of contracts that went live in 2007** | 14 |
| **No. of contracts not yet live/No. of these contracts signed in 2007** | —/13 |

| **No. of sites operating AP system** | 423 |
| **Percentage of installations that have stand-alone AP systems** | 100% |
| **Staff to develop-install and support-otherwise** |
| **In entire company** | 130-131-212 |
| **In LIS division (including AP)** | 17-37-19 |
| **In AP systems only** | 12-20-12 |

No. of user workstations in sites operating system:

- **52–400 (avg., 15–30)**
- **1,500–100,000**
- **5,000–500,000**

### Programming language(s)

- C++, Net, Borland Delphi
- Microsoft SQL
- Microsoft Word
- Windows

### Databases and tools used

- Java, .Net Framework, C++
- Oracle 10g
- Microsoft Word
- Windows, Linux, HP-UX, AIX

### Word processor(s) used

- Microsoft Word
- Windows

### Operating system(s)

- Windows

### Features (listed as a percentage of live installs or based on availability)

- Surgical pathology information system: 100%
- Cytology information system: 100%
- Autopsy information system: 100%
- Autopsy measurements and organ weights: installed
- Specimen log-in/specimen tracking and retrieval: 100%/2%
- Entry of block ids/specimen labels: 100%/100%
- Histology slide labels/bar-coded slide labels: 100%/100%
- Histology worksheets: 100%
- Word processing—vendor specific: 100%
- Voice entry of gross description/back-end batch voice to text: installed
- Gross and microscopic images integrated in reports: 30%
- Electronic signature: 100%
- Remote printing of completed reports: 100%
- Direct fax reports: 100%
- Web-based remote inquiry of reports: 18%
- Physician Web access for order entry: not available
- Natural language search capability: 100%
- Multi-site or multi-facility-wide area network: 100%
- Sound-alike retrieval of patient history: 100%
- Tumor registry reports/managers reports: 100%/100%
- Reports sufficient to comply with CLIA ’88 regulations: 100%
- Comprehensive billing and accounts receivable: 100%
- Interface to external billing system: 100%
- HIS interface: A/D/T: 98%
- HIS interface: result reporting/incoming clinical results: 98%/available but not installed
- Partin tables or Gleason score calculations: 100%
- Synoptic reporting: installed
- Client services module: 100%
- Consult management and reporting: 85%
- Client contracts supported from data center not operated by client: not available
- ASP information conduit: ---
- Method of charging for ASP service: ---
- Software provides indexed field in each test definition for LOINC code: no
- Provide LOINC dictionary for each new installation: no
- Routine results encoded in SNOMEDCT (in version earlier than SNOMED CT?): yes
- Routine results encoded in SNOMED CT?: yes
- AP system uses autoencoder to create SNOMED codes?: no
- Percentage of installed sites that represent cases in free text: not tracked
- No. of installations that use AP system to automatically electronically transfer tumor diagnoses to a tumor registry: 2 in NAACCR vol. V ePath standard for e-pathology reporting
- Complete AP application service provider solution?: 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: ---
- Other information systems interfaced

<table>
<thead>
<tr>
<th>Eclipsys, Cerner, Misys, Siemens, McKesson, Meditech, SCC Soft Computer, IDX, others</th>
<th>McKesson Star HIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice-recognition products or partners system uses</td>
<td>Dragon NaturallySpeaking, Voicebrook</td>
</tr>
<tr>
<td>Histology and cytology devices interfaced</td>
<td>Shar/Mark, Shandon, Leica, Sakura, Ventana, General Data</td>
</tr>
<tr>
<td>User interface in language other than English?</td>
<td>yes (meets in person annually)</td>
</tr>
</tbody>
</table>

### Source code?

- escrow
- yes (meets in person via 1 annual conference and regional conferences through year)

### User can modify screens?

- yes

### Cost (hardware/software/installation and training/monthly maintenance)

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Smallest stand-alone system</strong></td>
<td>---</td>
</tr>
<tr>
<td><strong>Largest stand-alone system</strong></td>
<td>---</td>
</tr>
<tr>
<td><strong>Base price of integrated system, excluding AP configuration</strong></td>
<td>---</td>
</tr>
<tr>
<td><strong>Incremental cost to add smallest AP configuration</strong></td>
<td>---</td>
</tr>
<tr>
<td><strong>Incremental cost to add largest AP configuration</strong></td>
<td>---</td>
</tr>
</tbody>
</table>

### Distinguishing features (supplied by vendor)

- advanced materials processing module enhances patient safety with expanded use of bar-code technology to track case materials from accessioning to sign-out
- case-centric workflow enables users to see pertinent details about a case
- outstanding customer satisfaction
- task-based design
- pathologist console (includes virtual slide tray) that allows the pathologist to navigate to any function with a single click to view patient history and clinical results, add orders, sign reports, request a consult, etc.
- extensive use of bar coding and industry standard embedded tools

---

**Footnotes:**

1. "Hi.-U.S. hospitals, IL—Independent labs in U.S., C or GP—Clinics or group practices in U.S., FI—Foreign installations, OS—Other sites
2. **—others, sales, marketing, administration, and other company functions
3. Product expected to be commercially available first quarter 2008; answers based on pilot site
Anatomic pathology computer systems

**Features** (listed as a percentage of live installs or based on availability)

- Surgical pathology information system: 100%
- Cytology information system: 100%
- Autopsy information system: 100%
- Autopsy measurements and organ weights: 100%
- Specimen log-in/specimen tracking and retrieval: 100%/100%
- Entry of block IDs/specimen labels: 100%/100%
- Histology slide labels/bar-coded slide labels: 100%/100%
- Histology worksheets: 100%
- Word processing—vendor specific: 100%
- Voice entry of gross description/back-end batch voice to text: 100%
- Gross and microscopic images integrated in reports: 100%
- Electronic signature: 100%
- Remote printing of completed reports: 100%
- Direct fax reports: 100%
- Web-based remote inquiry of reports: 100%
- Physician Web access for order entry: 100%
- Natural language search capability: 100%
- Multi-site or multi-facility-wide area network: 100%
- Sound-alike retrieval of patient history: 100%
- Tumor registry reports/managers reports: 100%/100%
- Reports sufficient to comply with CLIA '88 regulations: 100%
- Comprehensive billing and accounts receivable: 100%
- Interface to external billing system: 100%
- HIS interface: A/D/T: 100%
- HIS interface: result reporting/incoming clinical results: 100%/100%
- Partin tables or Gleason score calculations: 100%
- Synoptic reporting: 100%
- Client services module: 100%
- Consult management and reporting: 100%

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

- Yes

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

- Yes

**Routine results encoded in SNOMED (in version earlier than SNOMED CT)?**

- Yes (at 100% of sites)

**Routine results encoded in SNOMED CT?**

- No

**AP system uses autoencoder to create SNOMED codes?**

- No

**Percentage of installed sites that represent cases in free text**

- None

**Complete AP service application provider solution?**

- No

**Method of charging for ASP service**

- No

**Client software required**

- No

**ASP information conduit**

- No

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

- No

**How data center is operated**

- No

**Other information systems interfaced**

- Sunquest, McKesson, Siemens, others

**Voice-recognition products or partners system uses**

- Nuance Dragon NaturallySpeaking

**Histology and cytology devices interfaced**

- None

**User interface in language other than English?**

- No

**Source code?**

- Yes

**User group?**

- Yes (meets in person)

**User can modify screens?**

- Yes

**Cost (hardware/software/installation and training/monthly maintenance)**

- Over 38 years’ experience developing and implementing LISs
- Seamless exchange of data across departments and facilities regardless of care setting
- Contains necessary software to capture and store digital images and added notations

**Distinguishing features (supplied by vendor)**

- Over 38 years’ experience developing and implementing LISs
- Seamless exchange of data across departments and facilities regardless of care setting
- Contains necessary software to capture and store digital images and added notations

---

**Part 7 of 13**

---

**Medical Information Technology (Meditech)**

**Medical Information Technology (Meditech)**

**Paul Berthiaume** info@meditech.com

**Meditech Circle**

**Westwood, MA 02090**

**781-821-3000** www.meditech.com

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**See accompanying article on page 12**

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**February 2008**
<table>
<thead>
<tr>
<th>Features (listed as a percentage of live installs or based on availability)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical pathology information system</td>
<td>100%</td>
</tr>
<tr>
<td>Cytology information system</td>
<td>100%</td>
</tr>
<tr>
<td>Autopsy information system</td>
<td>100%</td>
</tr>
<tr>
<td>Autopsy measurements and organ weights installed</td>
<td>100%</td>
</tr>
<tr>
<td>Specimen log-in/specimen tracking and retrieval</td>
<td>75%/20%</td>
</tr>
<tr>
<td>Entry of block IDs/specimen labels</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Histology slide labels/bar-coded slide labels</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Histology worksheets</td>
<td>85%</td>
</tr>
<tr>
<td>Word processing—vendor specific</td>
<td>100%</td>
</tr>
<tr>
<td>Voice entry of gross description/back-end batch voice to text installed</td>
<td>—</td>
</tr>
<tr>
<td>Gross and microscopic images integrated in reports</td>
<td>—</td>
</tr>
<tr>
<td>Electronic signature</td>
<td>100%</td>
</tr>
<tr>
<td>Remote printing of completed reports</td>
<td>100%</td>
</tr>
<tr>
<td>Direct fax reports</td>
<td>100%</td>
</tr>
<tr>
<td>Web-based remote inquiry of reports</td>
<td>100%</td>
</tr>
<tr>
<td>Physician Web access for order entry installed</td>
<td>66%</td>
</tr>
<tr>
<td>Natural language search capability</td>
<td>25%</td>
</tr>
<tr>
<td>Multi-site or multi-facility-wide area network</td>
<td>45%</td>
</tr>
<tr>
<td>Sound-alike retrieval of patient history not available</td>
<td>100%</td>
</tr>
<tr>
<td>Tumor registry reports/manuscript reports 57%/100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Reports sufficient to comply with CLIA '99 regulations</td>
<td>30%</td>
</tr>
<tr>
<td>Comprehensive billing and accounts receivable</td>
<td>40%</td>
</tr>
<tr>
<td>Interface to external billing system</td>
<td>10%</td>
</tr>
<tr>
<td>HIS interface: A/D/T 58%</td>
<td>80%</td>
</tr>
<tr>
<td>HIS interface: result reporting/incoming clinical results</td>
<td>10%/installed</td>
</tr>
<tr>
<td>Partan tables or Gleason score calculations</td>
<td>9%</td>
</tr>
<tr>
<td>Symptomatic reporting available but not installed</td>
<td>75%</td>
</tr>
<tr>
<td>Client services module</td>
<td>100%</td>
</tr>
<tr>
<td>Consult management and reporting</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Cost (hardware/software/installation and training/monthly maintenance)

- Smallest stand-alone system
- Largest stand-alone system
- Base price of integrated system, excluding AP configuration
- Incremental cost to add smallest AP configuration
- Incremental cost to add largest AP configuration

### Distinguishing features (supplied by vendor)

- Complete online history, including images and retrospective review
- Ongoing development of new functionalities (ThinPrep, WIF, role-based logic, etc.)
- Positive sample ID with bar codes for efficient paperless workflow
- One database for all disciplines—AP, microbiology, general lab
- Easily tailored for any environment and work procedure
- Advanced technology—database choice, document management, Web, Windows integration
## Anatomic pathology computer systems

### Part 9 of 13

#### Name of anatomic pathology system

<table>
<thead>
<tr>
<th>System</th>
<th>First ever AP system installation</th>
<th>Most recent AP system installation</th>
<th>No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)</th>
<th>No. of contracts not yet live/No. of these contracts signed in 2007</th>
<th>No. of sites operating AP system</th>
<th>Percentage of installations that have stand-alone AP systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetSoft</td>
<td>2001</td>
<td>December 2007</td>
<td>8</td>
<td>1/1</td>
<td>70</td>
<td>100%</td>
</tr>
<tr>
<td>NovoPath</td>
<td>1999</td>
<td>December 2007</td>
<td>81 (6/34/101 in Canada/U)</td>
<td>—</td>
<td>81</td>
<td>100%</td>
</tr>
</tbody>
</table>

#### No. of user workstations in sites operating system

<table>
<thead>
<tr>
<th>Range in No. of surgical pathology cases per year in sites operating system</th>
<th>Range in No. of gynecologic cytology cases per year in sites operating system</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,500–750,000</td>
<td>12,000–65,000</td>
</tr>
</tbody>
</table>

#### Programming language(s)

- Clarion, C++, .Net
- Microsoft Visual Studio Platform

#### Databases and tools used

- SQL server, Oracle

#### Operating system(s)

- Windows 2000, XP, Vista
- Microsoft Windows or Web browser based

#### Features (list as a percentage of live installs or based on availability)

- Surgical pathology information system: 100%
- Cytology information system: 20%
- Anatomic pathology interface: 10%
- Anatomic pathology measurements and organ weights: 10%
- Specimen log-in/specimen tracking and retrieval: 100%/100%
- Entry of block ids/specimen labels: 100%/100%
- Histology slide labels/bar-coded slide labels: 100%/100%
- Histology worksheets: 90%
- Word processing—vendor specific: 100%
- Voice entry of gross description/back-end batch voice to text: 100%
- Gross and microscopic images integrated in reports: 100%
- Electronic signature: 100%
- Remote printing of completed reports: 100%
- Direct fax reports: 95%
- Web-based remote inquiry of reports: 90%
- Physician Web access for order entry: 90%
- Natural language search capability: 100%
- Multi-site or multi-facility-wide area network: 25%
- Sound-alike retrieval of patient history: 25%
- Tumor registry reports/management reports: 100%/100%
- Reports sufficient to comply with CLIA ’88 regulations: 100%
- Comprehensive billing and accounts receivable: 45%
- Interface to external billing system: 35%
- HIS interface: A/D/T: 15%
- HIS interface: result reporting/incoming clinical results: 15%/10%
- Partin tables or Gleason score calculations: 5%
- Synoptic reporting: 5%
- Client services module: 5%
- Consult management and reporting: 100%

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

- Yes

#### Routine results encoded in SNOMED (in version earlier than SNOMED CT)?

- No

#### AP system uses autoencoder to create SNOMED codes?

- Yes

#### AP system uses autoencoder to create SNOMED codes?

- No

#### Distinguishing features (supplied by vendor)

- **other=sales, marketing, administration, and other company functions**
- **H=U.S. hospitals, IL=independent labs in U.S.,**
- **GP=clinics or group practices in U.S.,**
- **FI=foreign installations, OS=other sites**
- **%e=examines, marketing, administration, and other company functions**

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

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*Note: CAP is the College of American Pathologists.*
### Anatomic Pathology Computer Systems

**Part 10 of 13**

<table>
<thead>
<tr>
<th>Anatomical Pathology System</th>
<th>Orchard Software</th>
<th>PathLogix Corp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Orchard Pathology</td>
<td>PathLogix</td>
</tr>
<tr>
<td>First ever AP system</td>
<td>2006</td>
<td>1988</td>
</tr>
<tr>
<td>Most recent AP system</td>
<td>November 2007</td>
<td>December 2007</td>
</tr>
<tr>
<td>No. of contracts for sites</td>
<td>16 (6/0/3/0/1)</td>
<td>86 (68/0/0/0/0)</td>
</tr>
<tr>
<td>Operating system</td>
<td>4D, Java, C++, HTML</td>
<td>SQL, Visual Basic, C++</td>
</tr>
<tr>
<td>Database and tools used</td>
<td>4D, SOL</td>
<td>SQL server, Access, commonly used Internet tools</td>
</tr>
<tr>
<td>Word processor(s) used</td>
<td>4D, SQL</td>
<td>Microsoft Word</td>
</tr>
</tbody>
</table>

#### Features (listed as a percentage of live installs or based on availability)

- **Surgical pathology information system**: 100%
- **Cytology information system**: 95%
- **Autopsy information system**: installed
- **Autopsy measurements and organ weights**: installed
- **Specimen log-in/specimen tracking and retrieval**: 100%/100%
- **Entry of block IDs/specimen labels**: 100%/100%
- **Histology slide labels/bar-coded slide labels**: installed/100%
- **Histology worksheets**: 100%
- **Word processing—vendor specific**: 100%
- **Voice entry of gross description/back-end batch voice to text**: 100%
- **Gross and microscopic images integrated in reports**: 100%
- **Electronic signature**: 100%
- **Remote printing of completed reports**: 100%
- **Direct fax reports**: installed
- **Web-based remote inquiry of reports**: 50%
- **Physician Web access for order entry**: 50%
- **Natural language search capability**: available but not installed
- **Multi-site or multi-facility-wide area network**: installed
- **Sound-alike retrieval of patient history**: not available
- **Tumor registry reports/management reports**: installed/100%
- **Reports sufficient to comply with CLIA ’88 regulations**: 100%
- **Comprehensive billing and accounts receivable**: not available
- **Interface to external billing system**: installed
- **HIS interface—A/D/T**: 100%
- **HIS interface: result reporting/incoming clinical results**: 80%/100%
- **Partin tables or Gleason score calculations**: 100%
- **Synoptic reporting**: 100%
- **Client services module**: installed
- **Consult management and reporting**: 100%

#### Software provides index field in each text definition for LOINC code?

- Yes
- No

#### Routine results encoded in SNOMED (in version earlier than SNOMED CT)?

- Yes
- No

#### AP system uses autocoder to create SNOMED codes?

- Yes
- No

#### Percentage of installed sites that represent cases in free text

- 100%

#### User interface in language other than English?

- No

### Additional Features

- **Complete AP application service provider solution**: no
- **Method of charging for ASP service**: transaction based
- **Client software required**: requires software be installed on a client PC
- **ASP information conduit**: operates over the Internet
- **Client contracts supported from data center not operated by client**: 2
- **How data center is operated**: by a third party (selected by customer)

#### Other information systems interfaced

- McKesson, Mays, IDX, Siemens, Cerner, Dairyland, QuadradeMed, Meditech, GE, Experior, others
- Dragon NaturallySpeaking
- Nikes, Ventana immunostainers

#### Source code?

- escrow
- yes (meets in person biannually and via Internet on an unlimited basis)

#### User can modify screens?

- Yes
- No

#### Cost (hardware/software/installation and training/monthly maintenance)

- **Smallest stand-alone system**: $8k/$50k/$28k/10%
- **Largest stand-alone system**: $25k/$100k/$42k/10%
- **Base price of integrated system, excluding AP configuration**: $7k
- **Incremental cost to add smallest AP configuration**: $3k/$83k/$33k/10%
- **Incremental cost to add largest AP configuration**: $25k/$80k/$42k/10%
- **$3k/0/$0.1k
- **$20k/0/$0.3k
- **$20k/0/$0.3k
- **$20k/0/$0.3k
- **$20k/0/$0.3k

#### Distinguishing features (supplied by vendor)

- **Fully integrated clinical, molecular, AP, reference lab results via a single database for combining results onto a single patient report**
- **Advanced rules-based decision-support technology**
- **Experts in integration, installation, service, and technical support**
- **Internet option with customer report retrieval, online requisitions, others**
- **Features that help clients with marketing and customer service**
- **Flexibility and unlimited scalability**

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Tabulation does not represent an endorsement by the College of American Pathologists.
Anatomic pathology computer systems

February 2008

Part 11 of 13

PathView Systems Ltd.
Michael Mihalik
9523 E. FM 495
Amarillo, TX 79109

See accompanying article on page 12
800-798-3540 www.pathview.com

Psyche Systems Corp.
James Gearheart
321 Fortune Blvd.
Milford, MA 01757
800-345-1514 www.windopath.com

Name of anatomic pathology system
Pregeny

WindPath

First ever AP system installation
1990

Most recent AP system installation (based on survey deadline of Dec. 2007)
April 2006

No. of contracts for sites operating AP system (W/H/LC or GP/GP/GP)*
1 (0/0/10/0)

• No. of contracts that went live in 2007
0

• No. of contracts not yet live/No. of these contracts signed in 2007
1/1

No. of sites operating AP system
2

Percentage of installations that have stand-alone AP systems
100%

Staff to develop-install and support-OTHER**
93%

• In entire company
10-19-6

• In LIS division (including AP)
10-19-6

• In AP systems only
9-12-4

No. of user workstations in sites operating system
30

Range in No. of surgical pathology cases per year in sites operating system
1-43 (avg., 10)

Range in No. of gynecologic pathology cases per year in sites operating system
1,000-75,000

Programming language(s)
InterSystems Cache ObjectScript, Visual Basic

Word processor(s) used
Microsoft Word 2003

Operating system(s)
Windows XP, Windows server 2003

Features (listed as a percentage of live installs or based on availability)

• Surgical pathology information system
100%

• Cytology information system
100%

• Autopsy information system
100%

• Autopsy measurements and organ weights
100%

• Specimen log-in/specimen tracking and retrieval
100%/100%

• Entry of block IDs/specimen labels
100%/100%

• Histology slides/bar-coded slide labels
100%/100%

• Histology worksheets
100%

• Word processing—vendor specific
not available

• Voice entry of gross description/back-end batch voice to text
installed

• Gross and microscopic images integrated in reports
100%

• Electronic signature
100%

• Remote printing of completed reports
100%

• Direct fax reports
100%

• Web-based remote inquiry of reports
100%

• Physician Web access for order entry
available in 2008

• Natural language search capability
100%

• Multi-site or multi-facility-wide area network
100%

• Sound-alike retrieval of patient history
not available

• Tumor registry reports/management reports
100%/100%

• Reports sufficient to comply with CLIA '88 regulations
100%

• Comprehensive billing and accounts receivable
not available

• Interface to external billing system
100%

• HIS interface: A/D/T
100%

• HIS interface: result reporting/incoming clinical results
100%/100%

• Parin tables or Gleason score calculations
not available

• Synoptic reporting
available but not installed

• Client services module
installed

• Consult management and reporting
100%

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

Provide LOINC dictionary for each new installation?
yes

Routine results encoded in SNOMED (in version earlier than SNOMED CT)?
no

Routine results encoded in SNOMED CT?
no

AP system uses autoencoder to create SNOMED codes?
yes (at 8% of sites)

Percentage of installed sites that represent cases in free text
92%

No. of installations that use AP system to automatically electronically transfer tumor diagnoses to a tumor registry
1 in nonstandard data feed

5 in NAACCR vol. V ePath standard for e-pathology reporting

Complete AP application service provider solution?
no

Method of charging for ASP service
fixed fee

Client software required
—

ASP information conduit
operates over the Internet

Client contracts supported from data center not operated by client
—

How data center is operated
by vendor

Other information systems interfaced

Epic, proprietary, client-developed LIS

PSYS, Siemens, McKesson, Meditech, Misys, Cerner, others

Dragn NaturallySpeaking

CAS analyzer, Ventana Benchmark, Digene HPV, Leica

User interface in language other than English?
no

Source code?
escrow

User group?
no

User can modify screens?
no

Cost (hardware/software/installation and training/monthly maintenance)

• Smallest stand-alone system
$9k/$23k/$21k/$5k

• Largest stand-alone system
$50k/$27k/$20k/$8.1k

• Smallest stand-alone system

• Largest stand-alone system

Base price of integrated system, excluding AP configuration
—

• Incremental cost to add smallest AP configuration
—

• Incremental cost to add largest AP configuration
—

Distinguishing features (supplied by vendor)

• pervasive use of bar coding on requisitions, cassettes, and slides allows hands-free processing throughout case workflow

• comprehensive and extensive specimen tracking

• ongoing management consultation part of support package

• easy to use; customized to fit the lab’s specific needs/specialty

• dynamic customizable reports, both final and statistical analysis, with the ability to define outputs based on physician preferences

• interfaces to instruments and devices

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

**H=LMS, hospitals, IL=Independent labs in U.S., GP=Group practices in U.S., GP=Group practices, OS=other sites
**other=sales, marketing, administration, and other company functions
<table>
<thead>
<tr>
<th>Features</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical pathology information system</td>
<td>100%</td>
</tr>
<tr>
<td>Cytology information system</td>
<td>100%</td>
</tr>
<tr>
<td>Autopsy information system</td>
<td>100%</td>
</tr>
<tr>
<td>Autopsy measurements and organ weights</td>
<td>installed</td>
</tr>
<tr>
<td>Specimen log-in/specimen tracking and retrieval</td>
<td>100%/installed</td>
</tr>
<tr>
<td>Entry of block IDs/specimen labels</td>
<td>100%/100%</td>
</tr>
<tr>
<td>Histology slide labels/bar-coded slide labels</td>
<td>100%/installed</td>
</tr>
<tr>
<td>Histology worksheets</td>
<td>100%</td>
</tr>
<tr>
<td>Word processing—vendor specific</td>
<td>not available</td>
</tr>
<tr>
<td>Voice entry of gross description/back-end batch voice to text</td>
<td>installed</td>
</tr>
<tr>
<td>Gross and microscopic images integrated in reports</td>
<td>installed</td>
</tr>
<tr>
<td>Electronic signature</td>
<td>100%</td>
</tr>
<tr>
<td>Remote printing of completed reports</td>
<td>installed</td>
</tr>
<tr>
<td>Direct fax reports</td>
<td>installed</td>
</tr>
<tr>
<td>Web-based remote inquiry of reports</td>
<td>5%</td>
</tr>
<tr>
<td>Physician Web access for order entry</td>
<td>available but not installed</td>
</tr>
<tr>
<td>Natural language search capability</td>
<td>100%</td>
</tr>
<tr>
<td>Multi-site or multi-facility-wide area network</td>
<td>55%</td>
</tr>
<tr>
<td>Sound-alike retrieval of patient history</td>
<td>100%</td>
</tr>
<tr>
<td>Tumor registry reports/management reports</td>
<td>100%/installed</td>
</tr>
<tr>
<td>Reports sufficient to comply with CLIA '88 regulations</td>
<td>100%</td>
</tr>
<tr>
<td>Comprehensive billing and accounts receivable</td>
<td>30%</td>
</tr>
<tr>
<td>Interface to external billing system</td>
<td>60%</td>
</tr>
<tr>
<td>HIS interface: A/D/T</td>
<td>95%</td>
</tr>
<tr>
<td>HIS interface: result reporting/incoming clinical results</td>
<td>85%/10%</td>
</tr>
<tr>
<td>Partin tables or Gleason score calculations</td>
<td>available in June 2008</td>
</tr>
<tr>
<td>Synoptic reporting</td>
<td>installed</td>
</tr>
<tr>
<td>Client services module</td>
<td>installed</td>
</tr>
<tr>
<td>Consult management and reporting</td>
<td>installed</td>
</tr>
<tr>
<td>Software provides indexed field in each test definition for LOINC code?</td>
<td>yes</td>
</tr>
<tr>
<td>Provide LOINC dictionary for each new installation?</td>
<td>yes</td>
</tr>
<tr>
<td>Routine results encoded in SNOMED (in version earlier than SNOMED CT)?</td>
<td>yes</td>
</tr>
<tr>
<td>Routine results encoded in SNOMED CT?</td>
<td>yes</td>
</tr>
<tr>
<td>AP system uses autoencoder to create SNOMED codes?</td>
<td>yes</td>
</tr>
<tr>
<td>Percentage of installed sites that represent cases in free text</td>
<td>60%</td>
</tr>
<tr>
<td>No. of installations that use AP system to automatically electronically transfer tumor diagnoses to a tumor registry</td>
<td>52,75,000</td>
</tr>
<tr>
<td>Complete AP application service provider solution?</td>
<td>yes</td>
</tr>
<tr>
<td>Method of charging for ASP service</td>
<td>—</td>
</tr>
<tr>
<td>Client software required</td>
<td>requires software be installed on a client PC</td>
</tr>
<tr>
<td>ASP information conduit</td>
<td>requires use of a private, dedicated circuit</td>
</tr>
<tr>
<td>Client contracts supported from data center not operated by client</td>
<td>1</td>
</tr>
<tr>
<td>How data center is operated</td>
<td>by vendor</td>
</tr>
<tr>
<td>Other information systems interfaced</td>
<td>Msys, CPSL, Medisoft, A4, eClinicalWorks, Cerner, Siemens, others</td>
</tr>
<tr>
<td>Voice-recognition products or partners system uses</td>
<td>Windows packaged supporting FileMaker Pro</td>
</tr>
<tr>
<td>History and cytology devices interfaced</td>
<td>slide labelers, cassette markers</td>
</tr>
<tr>
<td>User interface language other than English?</td>
<td>yes (French)</td>
</tr>
<tr>
<td>Source code?</td>
<td>yes</td>
</tr>
<tr>
<td>User group?</td>
<td>yes</td>
</tr>
<tr>
<td>User can modify screens?</td>
<td>yes</td>
</tr>
<tr>
<td>Cost (hardware/software/installation and training/monthly maintenance)</td>
<td></td>
</tr>
<tr>
<td>Smallest stand-alone system</td>
<td>$30k/$30k/$50k/$100k</td>
</tr>
<tr>
<td>Largest stand-alone system</td>
<td>$30k/$50k/$75k/$150k</td>
</tr>
<tr>
<td>Base price of integrated systems, excluding AP configuration</td>
<td>$250k</td>
</tr>
<tr>
<td>Incremental cost to add smallest AP configuration</td>
<td>$15k/$30k/$45k/$60k</td>
</tr>
<tr>
<td>Incremental cost to add largest AP configuration</td>
<td>$100k/$375k/$75k/$90k</td>
</tr>
</tbody>
</table>

### Anatomic pathology computer systems

**Distinguishing features (supplied by vendor)**
- Full integration with SoftLab LIS suite, including cytogenetics, molecular, flow cytometry, ELA
- Available integrated Web-based module (SoftWeb) for remote ordering/requisitions, results/report viewing, printing
- Powerful features for high-volume laboratories—online alerts, full system audits, multisite billing
- Customized solution with ongoing customized support
- Low-cost solution for start-up, small, and medium-sized labs
- Results reporting by Internet portal, faxing reports, and custom lab interfaces to various EMR client software systems
<table>
<thead>
<tr>
<th>Part</th>
<th>13 of 13</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of anatomic pathology system</strong></td>
<td>Sunquest CoPathPlus</td>
<td>WebPathLab</td>
</tr>
<tr>
<td><strong>First ever AP system installation</strong></td>
<td>1982</td>
<td>2000</td>
</tr>
<tr>
<td><strong>Most recent AP system installation</strong></td>
<td>2007</td>
<td>November 2007</td>
</tr>
<tr>
<td><strong>No. of contracts for sites operating AP system (H/H/L/C or GP/GP/OS)</strong></td>
<td>290</td>
<td>7 (1/0/0/0)</td>
</tr>
<tr>
<td><strong>• No. of contracts that went live in 2007</strong></td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td><strong>• No. of contracts not yet live/no of these contracts signed in 2007</strong></td>
<td>9/9</td>
<td>0</td>
</tr>
<tr>
<td><strong>No. of sites operating AP system</strong></td>
<td>500+</td>
<td>11</td>
</tr>
<tr>
<td><strong>Percentage of installations that have stand-alone AP systems</strong></td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Staff to develop/install and support-others</strong></td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>• In entire company</strong></td>
<td>380-250-90</td>
<td>6–3–3</td>
</tr>
<tr>
<td><strong>• In LIS division (including AP)</strong></td>
<td>365-240-90</td>
<td>6–3–3</td>
</tr>
<tr>
<td><strong>• In AP systems only</strong></td>
<td>—</td>
<td>6–3–3</td>
</tr>
<tr>
<td><strong>No. of user workstations in sites operating system</strong></td>
<td>5–280 (avg., 40)</td>
<td>8–50</td>
</tr>
<tr>
<td><strong>Range in No. of surgical pathology cases per year in sites operating system</strong></td>
<td>10,000–600,000</td>
<td>2,000–18,000</td>
</tr>
<tr>
<td><strong>Range in No. of gynecologic cytology cases per year in sites operating system</strong></td>
<td>10,000–600,000</td>
<td>—</td>
</tr>
<tr>
<td><strong>Programming language(s)</strong></td>
<td>C, Visual Basic, Powerbuilder</td>
<td>ASP.Net 2.0, AJAX, XML</td>
</tr>
<tr>
<td><strong>Databases and tools used</strong></td>
<td>Sybase, Powerbuilder</td>
<td>MySql database</td>
</tr>
<tr>
<td><strong>Word processor(s) used</strong></td>
<td>Microsoft Word 2003</td>
<td>integrated into Web-based solution—Native; requires Internet Explorer</td>
</tr>
<tr>
<td><strong>Features (listed as a percentage of five installs or based on availability)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Surgical pathology information system</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>• Cytology information system</td>
<td>90%</td>
<td>expected to be operating in 43% of sites by February 2008</td>
</tr>
<tr>
<td>• Autopsy information system</td>
<td>100%</td>
<td>available but not installed</td>
</tr>
<tr>
<td>• Autopsy measurements and organ weights</td>
<td>100%</td>
<td>available but not installed</td>
</tr>
<tr>
<td>• Specimen log-in/specimen tracking and retrieval</td>
<td>100%/100%</td>
<td>100%/100%</td>
</tr>
<tr>
<td>• Entry of block IDs/specimen labels</td>
<td>100%/100%</td>
<td>50%/75%</td>
</tr>
<tr>
<td>• Histology slide labels/bar-coded slide labels</td>
<td>100%/100%</td>
<td>100%/available but not installed</td>
</tr>
<tr>
<td>• Histology worksheets</td>
<td>installed</td>
<td>100%</td>
</tr>
<tr>
<td>• Word processing—vendor specific</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>• Voice entry of gross description/back-end batch voice to text</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>• Gross and microscopic images integrated in reports</td>
<td>30%</td>
<td>not available</td>
</tr>
<tr>
<td>• Electronic signature</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>• Remote printing of completed reports</td>
<td>installed</td>
<td>100%</td>
</tr>
<tr>
<td>• Direct fax reports</td>
<td>installed</td>
<td>100%</td>
</tr>
<tr>
<td>• Web-based remote inquiry of reports</td>
<td>installed</td>
<td>100%</td>
</tr>
<tr>
<td>• Physician Web access for order entry</td>
<td>installed</td>
<td>100%</td>
</tr>
<tr>
<td>• Natural language search capability</td>
<td>100%</td>
<td>not available</td>
</tr>
<tr>
<td>• Multi-site or multi-facility-wide area network</td>
<td>30%</td>
<td>100%</td>
</tr>
<tr>
<td>• Sound-alike retrieval of patient history</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td>• Tumor registry reports/management reports</td>
<td>95%/100%</td>
<td>43%/100%</td>
</tr>
<tr>
<td>• Reports sufficient to comply with CLIA ’96 regulations</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>• Comprehensive billing and accounts receivable</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>• Interface to external billing system</td>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td>• HIS interface: A/D/T</td>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td>• HIS interface: result reporting/incoming clinical results</td>
<td>90%/installed</td>
<td>100%/100%</td>
</tr>
<tr>
<td>• Partin tables or Gleason score calculations</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td>• Symptopic reporting</td>
<td>installed</td>
<td>not available</td>
</tr>
<tr>
<td>• Client services module</td>
<td>not available</td>
<td>available</td>
</tr>
<tr>
<td>• Consult management and reporting</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Software providers index field in each test definition for LOINC code?</strong></td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td><strong>Provide LOINC dictionary for each new installation?</strong></td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td><strong>Routine results encoded in SNOMED (in version earlier than SNOMED CT)?</strong></td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td><strong>Routine results encoded in SNOMED CT?</strong></td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td><strong>AP system uses autoencoder to create SNOMED codes?</strong></td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td><strong>Percentage of installed sites that represent cases in free text</strong></td>
<td>20%</td>
<td>—</td>
</tr>
<tr>
<td><strong>No. of installations that use AP system to automatically electronically transfer tumor diagnoses to a tumor registry</strong></td>
<td>NAACCR vol. IV–ePath standard for e-pathology reporting available/12 in older NAACCR standard (volume II)</td>
<td>6 in older NAACCR standard (Florida Cancer Data System, Texas Tumor Registry)</td>
</tr>
<tr>
<td><strong>Complete AP application service provider solution?</strong></td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Method of charging for ASP service</strong></td>
<td>—</td>
<td>fixed fee</td>
</tr>
<tr>
<td><strong>Client software required</strong></td>
<td>—</td>
<td>browser based</td>
</tr>
<tr>
<td><strong>ASP information conduit</strong></td>
<td>—</td>
<td>operates over the Internet</td>
</tr>
<tr>
<td><strong>Client contracts supported from data center not operated by client</strong></td>
<td>—</td>
<td>by vendor</td>
</tr>
<tr>
<td><strong>New data center is operated</strong></td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Other information systems interfaced</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Voice-recognition products or partners system uses</strong></td>
<td>Epic, McKesson, Cerner, Siemens, GE, others</td>
<td>Meditech, EpicCare, Opus</td>
</tr>
<tr>
<td><strong>Histology and cytology devices interfaced</strong></td>
<td>Nuance Dragon NaturallySpeaking, Ventana stainers, Apollo PathPACS imaging</td>
<td>none</td>
</tr>
<tr>
<td><strong>User interface in language other than English?</strong></td>
<td>cassette and slide engravers, —</td>
<td>yes (Spanish, German, Chinese)</td>
</tr>
<tr>
<td><strong>Source code?</strong></td>
<td>escrow</td>
<td>escrow</td>
</tr>
<tr>
<td><strong>User group?</strong></td>
<td>yes (meets in person annually, with quarterly regional meetings, and via Internet as set by region)</td>
<td>no</td>
</tr>
<tr>
<td><strong>User can modify screens?</strong></td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Cost (hardware/software/instal/lnstallation and training/monthly maintenance)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Smallest stand-alone system</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>• Largest stand-alone system</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>• Base price of integrated system, excluding AP configuration</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>• Incremental cost to add smallest AP configuration</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>• Incremental cost to add largest AP configuration</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Distinguishing features (supplied by vendor)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• outstanding support, usability, and client satisfaction</td>
<td>— 100% Web based; provides universally secure access and increased efficiency</td>
<td></td>
</tr>
<tr>
<td>• integration with Sunquest LIS; flexibility for all disciplines</td>
<td>increases referring clinician satisfaction by providing online requisition, online reporting, online data mining of all reports, and complete interface with any HL7-capable EMR system</td>
<td></td>
</tr>
<tr>
<td>• enhanced structured reporting module and imaging</td>
<td>complete integrated billing solution reduces billing cycle to as low as seven days and maximizes cash flow</td>
<td></td>
</tr>
</tbody>
</table>

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