# Sifting through anatomic pathology system needs and wants

*The usefulness and value of any anatomic pathology system is influenced by developments in countless areas, including cancer protocols, digital imaging, and connectivity, as well as by the marketing efforts of vendors promising new and better features. So how do you separate the wheat from the chaff when selecting new AP system modules or planning an upgrade, and how do you measure the worth of your "improved" system?* **CAP TODAY** *asked AP systems experts for their opinions. Here's what they had to say.*

**CAP TODAY**: How should you go about prioritizing new modules or upgrades to an AP system in light of recent industry advances, such as in the areas of cancer protocols, digital imaging, and connectivity with other systems?

■ *John H. Sinard, MD, PhD, director of pathology informatics and associate professor of pathology, Yale University School of Medicine/Yale-New Haven (Conn.) Hospital:* Technology can be very alluring. Recognizing this, information systems vendors frequently move quickly to integrate new technologies into their systems, and they market this integration to attract new customers or new money from existing customers. As a result, many pathology departments and groups purchase modules on the assumption that "we must be able to use this for something." They then end up with a feature that is used inconsistently or not at all, or worse yet, that disrupts the existing workflow.

**Dr. Sinard**

I have found it helpful to use an approach called the "categories of information technology impact"* when evaluating information systems features. The process involves assessing, in your work environment, the expected impact that a new or existing feature is likely to have in five areas: practice management, patient care, education, research, and marketing. The impact in each area can be positive or negative and should be evaluated based on the needs of the department or group.

This type of approach, if performed in advance, helps to manage the group's expectations and resources so the group is not disappointed that a feature failed to address a problem it was never intended to solve.

■ *Walter Henricks, MD, director of the Center for Pathology Informatics, The Cleveland Clinic Foundation:* Laboratorians should give high priority to the concept of data exchange because AP systems are increasingly being called on to exchange data with other health care information systems, such as electronic medical record systems, other laboratory information systems, Web portal servers, and systems that support tumor registries and state health departments. While such data transfer largely involves reports and results, some labs want to receive requisition information electronically through an interface, which is more difficult than receiving clinical laboratory orders electronically. The need for integration extends beyond electronic data exchange with other computer systems to exchanging data with devices and systems used in the laboratory, such as automated stainers, cassette engravers, and voice-recognition systems.

**Dr. Henricks**

The ability of AP systems to support molecular pathology testing and integrate the ordering, performance, and reporting of molecular tests into the laboratory and pathologists' workflow is becoming increasingly important. Such tests may have specialized requirements that differ from tests performed in traditional pathology operations. The ability to incorporate cancer protocols into workflow easily is also important, and labs should put flexibility in configuring protocols according to

*\* Sinard J. Evaluating anatomic pathology information systems. In: Practical Pathology Informatics: Demystifying Informatics for the Practicing Pathologist. New York, NY: Springer Science and Business Media; 2006:207–232.*

site-specific preferences and ease of use at the top of their priority list. Other modules, such as voice recognition and imaging, are also useful and should be implemented by labs if such modules fulfill their specific needs.

■ **Hal Weiner,** *president, Weiner Consulting Services, health care systems consultants, Florence, Ore.:* I believe priorities will set themselves due to one of three factors—competition, regulatory requirements, and need to reduce costs. Competition will drive the use of images on reports and online access to pathology reports. Regulations and cost reduction will drive the use of synoptic reporting to comply with cancer protocols. Regulations will

**Weiner**

also lead labs to implement new connectivity standards for integrating laboratory information systems with electronic medical record systems.

If a pathology practice has little competition, it may have no cost-justified reason to implement digital imaging. If the practice is small, manual compliance with cancer protocols may be acceptable, but as volumes increase, the use of structured data and the potential to eliminate the transcription process may drive implementation of synoptic reporting and voice-recognition technologies.

Laboratories that contract with anatomic pathology systems vendors that do not provide a solution for these emerging requirements may want to consider third-party vendors, such as mTuitive and Nikon, which offer off-the-shelf solutions that integrate with AP systems.

■ **Raymond D. Aller, MD,** *director, bioterrorism preparedness and response, LA County Public Health Acute Communicable Disease Control, Los Angeles:* The most crucial capability, and common concern, is connectivity for transmitting meaningful reports, as well as for receiving orders and billing information. Your AP system may be able to produce a beautifully formatted report with five fonts, a nice table

**Dr. Aller**

displaying cancer staging factors, and a photograph of the tumor histology, but what happens when that report is sent to a hospital information system that can display only 72-character, monospaced, upper-case lines of text? How much of the contextual information provided by

the pathologist becomes garbled or is lost on primitive hospital, clinic, physician's office, or other medical records systems?

When designing reports using these newer formatting options, pay careful attention to the capabilities of the systems that will be displaying your work to the clinician.

**CAP TODAY:** How do you assess improvements in productivity resulting from a new feature added to an existing AP system or in a new AP system?

■ **Mark Tuthill, MD,** *division head of pathology informatics, Henry Ford Health System, Detroit:* By implementing a new anatomic pathology information system or new system features, a laboratory can significantly improve its workflow and processes, thereby reducing errors and expenses and improving efficiency and overall quality of re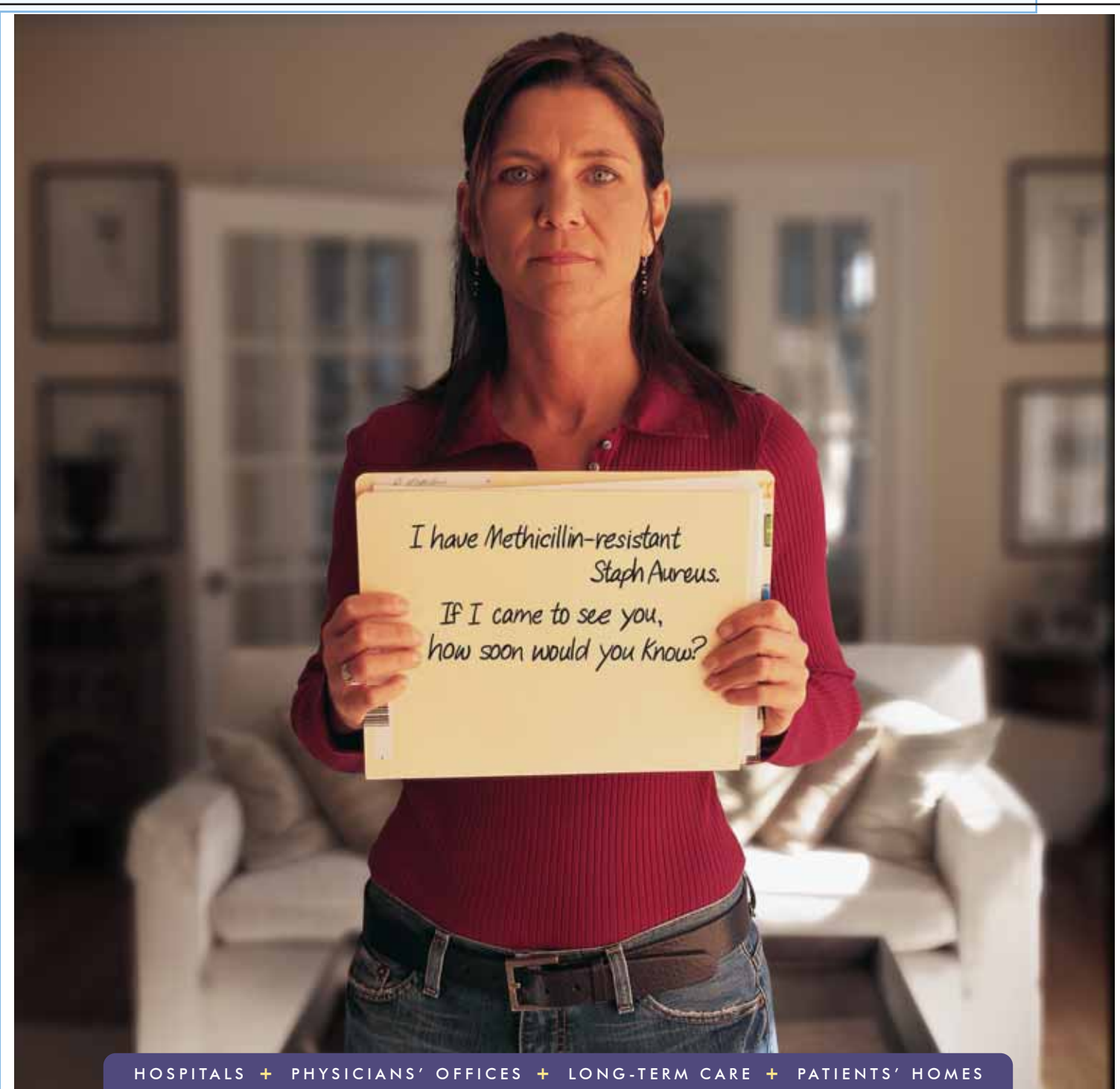porting. I believe that, new or old, AP systems continuously evolve over time as user understanding improves and new opportunities to deploy system features present themselves.

**Dr. Tuthill**

Each improvement to a system is measurable and can be monitored through reports on user activities, such as case turnaround time, number and kind of report amendments, and billing errors, as well as by external measures, such as customer satisfaction surveys. When implementing new system features, processes, or workflow, we monitor the success or failure of the change by using such reports or designing new reports to match our need. This information is used to monitor the use and accuracy of system features, as well as to provide mechanisms for analyzing

## AP systems

the data provided by a system feature. For example, we recently implemented a new feature for recording intraoperative consultation (frozen section) data entry and quality assurance. We monitored our progress by routinely running reports for completion of the required information, completion of the quality assurance data, and number of amendments, in addition to routine practice reports. This allowed us to check that the feature was being used, and being used correctly, as well as to identify user error and resulting training requirements.

While information derived from data reports is critical, we also engage clinical personnel, such as pathologists, pathologist assistants, and transcriptionists, in implementation decisions and processes. The feedback and insight provided by those using the AP system are critical to successful deployment. In addition to holding working meetings prior to, during, and following implementation, we have found it helpful to have informatics staff in the clinical areas as systems are being tested and activated. This provides us with a real-life perspective on how systems are being used and allows us to implement training for crucial areas.

The successful deployment of a new system or feature often comes down to user acceptance and training. Great systems only work well when people use them successfully.

■ *John H. Sinard, MD, PhD:* Use caution. Not every feature is intended to improve productivity. Some may be adopted for patient care reasons or simply for marketing purposes. (The categories of information technology impact approach, which I introduced in my answer to the previous question, will help clarify this.)

Implementing new features in an AP system often requires modifications to practice workflow. It can be difficult to determine whether any changes in productivity should be attributed to the feature or to the change in workflow. It may be possible, in your practice, to compare adopters to nonadopters. However, this has to be tempered with the understanding that not everyone does the same job. In a subspecialty practice model, if all of the adopters are in a single subspecialty, such as dermatopathology, it makes no more sense to compare dermatopathology to hematopathology productivity after the new feature is implemented than it did before. Nonetheless, despite the inability to systematically assess whether a feature is worthwhile or not, most people will be able to formulate a fairly accurate subjective assessment.

Users of the new feature should hold a formal discussion approximately three weeks after implementation, and again at approximately two months. This gives the group time to tweak the feature and to get used to any new workflow requirements. If people are happier after implementation, even if this is only a perceived improvement, then adding the feature was probably worth the time and expense.

■ *Raymond D. Aller, MD:* When choosing and configuring a new AP system, the ability to improve productivity should outweigh flashy features. Be aware that moving to a new AP system may cause a *decline* in productivity. Traditional measures to assess productivity include numbers of reports typed per day per transcriptionist and number of cases signed out per hour per pathologist.

My experience has shown that graphical user interface features, such as heavy use of a mouse, typically decrease the productivity of frequent system users, such as transcriptionists—requiring their hands to leave the keyboard to "mouse around" slows them down. Therefore, anyone in the market for an AP system should ask vendors if their systems provide hot keys and macros to avoid mouse use.

Assessment should also include the subjective reaction of system users, particularly those on the front line. A couple of months after your lab has begun using its new system or features, ask your least technology-savvy pathologist what the new features have done to his or her productivity. If they didn't boost the pathologist's productivity, then you may have not only wasted your money but also raised the cost of operating your laboratory, resulting in a negative return on investment.

■ *Hal Weiner:* To calculate productivity and return on investment in new technology and to calculate process improvement, it is imperative to have quantitative baseline metrics from before implementation. The lab can then compare these to results after implementation.

Defining each expected outcome initially is the first step. Whether the goal is to reduce turnaround time, eliminate specific costs, or improve client satisfaction, it needs to have measurable components. One can easily create a model to calculate break-even time frames and return on investment. Laboratories can also conduct surveys of client and employee satisfaction before and after implementation to measure qualitative and quantitative results.

■ *Walter Henricks, MD:* New features may allow a laboratory to accommodate an increase in volume while maintaining current staffing levels. Productivity is only one dimension of value creation, however, and how to create value may be a more appropriate question. For instance, does the feature or function enhance your ability to attract new clients and maintain current ones? Does the feature provide a more effective method for reporting results, and thus improve patient care? □

# Anatomic pathology computer systems

| Part 1 of 13<br><br>See accompanying article on page 18 | Aspyra (formerly CCA)<br>**Bill Blair**   sales@ccainc.com<br>26115-A Mureau Rd., Calabasas, CA 91302<br>800-437-9000   www.ccainc.com | Cerner Corp.<br>**Julie Brookings**  julie.brookings@cerner.com<br>2800 Rockcreek Parkway, Kansas City, MO 64117<br>816-201-6455   www.cerner.com |
|---|---|---|
| Name of anatomic pathology system | CyberPath | Cerner Millennium Anatomic Pathology |
| First ever AP system installation/most recent AP system installation | 2000/2005 | 1982/2005 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 24 (16/3/3/2/0) | 111 (101/1/1/8/0) |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | 2 | 30 |
| No. of sites operating AP system | 24 | 179 |
| Percentage of installations standalone | 0 | 16% |
| Staff to develop-install-support-other** | | |
| • In entire company | 20-6-20-35 | 1,360-2,075-871-2,200 |
| • In LIS division (including AP)/in AP systems only | 10-3-14-35/4-3-14-35 | 73-75-43-33/— |
| No. of interactive terminals (user workstations) in sites operating system | 2–250 (ave.,160) | 10–400+ (ave., 10–20) |
| Range in No. of surgical pathology cases per year in sites operating system | 3,000–200,000 | 5,000–100,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 3,000–10,000 | 2,500–100,000 |
| Central hardware or service type | HP/Compaq, IBM RS/6000 | Compaq, IBM RS/6000 |
| Terminals/workstations or PC platform | PC workstations | Intel Pentium |
| Innovative peripherals | voice dictation enabled, image capture/storage, report/image access† | image enabled, Web enabled, bar codes, cassette labeler, slide labeler |
| Network installation required?/networks supported | yes/ LAN, WAN, TCP/IP | yes/LAN, WAN, TCP/IP, Unix |
| Programming language(s) | MicroFocus Cobol, Dialog, C, Visual Basic | Visual C++, Visual Basic, Java |
| Databases and tools used | ODBC compliant | Oracle |
| Word processor(s) used | MS Word | MS Word, Visual Writer |
| Operating system(s) | SCO Unix, AIX | Open VMS, AIX, Windows 2000, NT, XP |
| Features (listed as a percentage of live installs or based on availability) | | |
| • Surgical pathology information system | 100% | 100% |
| • Cytology information system | 30% | 90% |
| • Autopsy information system | 100% | 80% |
| • Specimen log-in | 100% | 100% |
| • Entry of block IDs | 100% | 100% |
| • Specimen labels | 100% | 80% |
| • Histology slide labels | 100% | 100% |
| • Bar-coded slide labels | 100% | 80% |
| • Histology worksheets | 100% | 100% |
| • Word processing—vendor specific | 0 | 80% |
| • Word processing—standard tools (Word, WordPerfect) | 100% | 20% |
| • Voice entry of gross description | 100% | <5% |
| • Back-end batch voice to text | 100% | not available |
| • Gross and microscopic images integrated in reports | 100% | 15% |
| • Electronic signature | 100% | 100% |
| • Remote printing of completed reports | 100% | 80% |
| • Direct fax reports | 100% | 80% |
| • Web-based remote inquiry of reports | 40% | <5% |
| • Physician Web access for order entry | 30% | <5% |
| • Natural language search capability | — | 100% |
| • SNOMED II/SNOMED CT | not available/25% | 50%/not available |
| • Multi-site or multi-facility-wide area network | 25% | 40% |
| • Sound-alike retrieval of patient history | available in June 2006 | 100% |
| • Autopsy measurements and organ weights | available but not installed | 80% |
| • Tumor registry reports | 100% | 100% |
| • Management reports | 100% | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | 30% | 90% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 50% | 90% |
| • Histology-cytology correlation report | 50% | 90% |
| • Reports sufficient to comply with CLIA '88 regulations | 100% | 90% |
| • Comprehensive billing and accounts receivable | not available | <5% |
| • HIS interface: A/D/T | 80% | integrated |
| • HIS interface: result reporting/incoming clinical results | 80%/100% | 100%/100% |
| • Interface to external billing system | 80% | 80% |
| • Partin tables or Gleason score calculations | available in September 2006 | not available |
| • Synoptic reporting | available in September 2006 | 10% |
| • Specimen tracking and retrieval | available but not installed | not available |
| • Client services module | 40% | installed |
| • Consult management and reporting | 30% | not available |
| Software provides indexed field in each test definition for LOINC code? | yes | no |
| Provide LOINC dictionary for each new installation? | no | yes |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | NAACCR format available but not installed/1 in HL7 format | 5 in NAACCR format |
| Complete AP application service provider solution? | no | yes |
| Method of charging for ASP service | — | fixed fee |
| Client software required | — | requires software be installed on a client PC |
| ASP information conduit | — | requires use of private, dedicated circuit |
| Client contracts supported from data center not operated by client | — | 100+ |
| How data center is operated | — | by vendor |
| Other information systems interfaced | Misys, McKesson, IDX, QuadraMed, Siemens, Meditech, others | Cerner, Eclipsys, Epic, McKesson, IDX, Siemens, TDS |
| Voice-recognition packages integrated with AP system | Dragon Naturally Speaking | Dragon Medical Suite is compatible |
| Histology and cytology laboratory instruments interfaced | none | Shur/Mark, Thermo Shandon cassette and slide labelers |
| User interface in language other than English? | no | yes (German) |
| Source code?/user group? | escrow/yes | escrow/yes (meets online as well) |
| User can modify screens? | no | yes |
| 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) | • integrated with CyberLab LIS; flexible workflow from processing, transcription, and sign-out, with system decision support rules<br>• unlimited access to database for customized reports and standard statistical reports | • comprehensive, integrated single system for all lab departments<br>• over 25 years in the LIS industry, with proven scalability and performance<br>• continued innovations in LIS, including genomics, molecular testing, and patented synoptic reporting |

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

† via Web gateway

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

SYSTEM REVIEW SERIES

# Anatomic pathology computer systems

| | Cerner DHT Inc.<br>Michele Connors  mconnors@cerner.com<br>2 University Office Park, 51 Sawyer Rd., Waltham, MA 02453<br>816-885-4818  www.cerner.com | Clinical Information Systems Inc.<br>Angela Woolley  cissupport@aol.com<br>18805 Willamette Drive, West Linn, OR 97068<br>800-869-0680  www.cislab.com |
|---|---|---|
| Name of anatomic pathology system | CoPathPlus | Cislab CPS |
| First ever AP system installation/most recent AP system installation | 1982/2005 | 1988/2004 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 163 (136/21/0/5/1) | 20 (1/18/1/0/0) |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | 10 | 1 |
| No. of sites operating AP system | 326 | — |
| Percentage of installations standalone | 100% | 60% |
| Staff to develop-install-support-other** | | |
| • In entire company | 1,360-2,075-871-2,200 | 6 total |
| • In LIS division (including AP)/in AP systems only | —/15-23-23-5 | 6 total/6 total |
| No. of interactive terminals (user workstations) in sites operating system | 1–1,000 (ave., 50) | 1–100 (ave., 15) |
| Range in No. of surgical pathology cases per year in sites operating system | 3,000–350,000 | 2,500–115,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 2,000–1,000,000 | 3,000–300,000 |
| Central hardware or service type | IBM RS/6000, Intel Pentium, Sun Solaris, Dell, Compaq | DEC, HP, IBM, generic PCs, Dell, Compaq |
| Terminals/workstations or PC platform | Intel Pentium, Citrix through client, Dell, Compaq | generic PCs, Wyse 60, Link |
| Innovative peripherals | voice enabled, image enabled, bar-code scanners, cassette labelers, slide labelers, printers, stain slider interface, Web-enabled report access | WORM drive, HP scanners, Philips, optical disks |
| Network installation required?/networks supported | yes/LAN, WAN, TCP/IP, Novell, Microsoft | yes/LAN, Unix, TCP/IP |
| Programming language(s) | PowerBuilder, C++ | Delphi, Cobol, C++, Visual Basic |
| Databases and tools used | MS SQL, Sybase | Interbase, RDBMS, C-ISAM, MS SQL 7 |
| Word processor(s) used | MS Word, TX Text Control (Visual Writer) | WordPerfect tools, MS Word |
| Operating system(s) | Windows 98, 2000, 2003, XP, AIX, Unix | Windows 95, 98, NT 3.51, NT 4.0, NT 2000, SCO Unix |
| Features (listed as a percentage of live installs or based on availability) | | |
| • Surgical pathology information system | 100% | 100% |
| • Cytology information system | 100% | 100% |
| • Autopsy information system | 75% | 5% |
| • Specimen log-in | 100% | 100% |
| • Entry of block IDs | 100% | 100% |
| • Specimen labels | 100% | 100% |
| • Histology slide labels | 100% | 100% |
| • Bar-coded slide labels | 15% | 100% |
| • Histology worksheets | 100% | 100% |
| • Word processing—vendor specific | 45% | 5% |
| • Word processing—standard tools (Word, WordPerfect) | 55% | 100% |
| • Voice entry of gross description | 10% | 5% |
| • Back-end batch voice to text | not available | not available |
| • Gross and microscopic images integrated in reports | 20% | 5% |
| • Electronic signature | 100% | 100% |
| • Remote printing of completed reports | 2% | 100% |
| • Direct fax reports | 95% | 100% |
| • Web-based remote inquiry of reports | 2% | 20% |
| • Physician Web access for order entry | not available | 20% |
| • Natural language search capability | 100% | not available |
| • SNOMED II/SNOMED CT | 95%/5% | available but not installed |
| • Multi-site or multi-facility-wide area network | 30% | 1% |
| • Sound-alike retrieval of patient history | not available | not available |
| • Autopsy measurements and organ weights | not available | 5% |
| • Tumor registry reports | 100% | 100% |
| • Management reports | 100% | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | 100% | 100% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 100% | 100% |
| • Histology-cytology correlation report | 100% | 100% |
| • Reports sufficient to comply with CLIA '88 regulations | 100% | 100% |
| • Comprehensive billing and accounts receivable | not available | 50% |
| • HIS interface: A/D/T | 95% | 10% |
| • HIS interface: result reporting/incoming clinical results | 95%/available but not installed | 10%/10% |
| • Interface to external billing system | 95% | 50% |
| • Partin tables or Gleason score calculations | not available | 10% |
| • Synoptic reporting | 17% | not available |
| • Specimen tracking and retrieval | not available | not available |
| • Client services module | not available | 100% |
| • Consult management and reporting | 90% | not available |
| Software provides indexed field in each test definition for LOINC code? | no | yes |
| Provide LOINC dictionary for each new installation? | no | no |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | 3 in NAACCR format/1 in HL7 format | none |
| Complete AP application service provider solution? | yes | no |
| Method of charging for ASP service | fixed fee | — |
| Client software required | requires software be installed on a client PC | — |
| ASP information conduit | requires use of private, dedicated circuit | — |
| Client contracts supported from data center not operated by client | 2 | — |
| How data center is operated | by vendor | — |
| Other information systems interfaced | Cerner, Eclipsys, Epic, McKesson, IDX, Siemens, TDS, Meditech, Keane | Medical Manager, McKesson, Dairyland, PCN, Reynolds & Reynolds, Praxis, LabCorp |
| Voice-recognition packages integrated with AP system | Dragon, Clinical Reporter | none |
| Histology and cytology laboratory instruments interfaced | Shur/Mark, Thermo Shandon cassette labelers, Leica, Sakura, Ventana | none |
| User interface in language other than English? | no | no |
| Source code?/user group? | escrow/yes (meets online as well) | escrow/no |
| User can modify screens? | yes | no |
| Cost (hardware/software/installation and training/monthly maintenance) | | |
| • Smallest stand-alone system | — | $10k/$7.5k/$5k/$0.3k |
| • Largest stand-alone system | — | $100k/$100k/$20k/$2.5k |
| 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)<br><br>*H=U.S. hospitals, IL=independent labs in U.S.,<br>C or GP=clinics or group practices in U.S., FI=foreign installations, OS=other sites<br>**other=sales, marketing, administration, and other company functions | • extreme flexibility to clients' workflow and report formats<br>• advanced imaging and synoptic reporting capabilities<br>• outstanding dedicated support | • provides client/server point-and-click access for pathology and cytology<br>• easy to learn and use at an efficient cost<br>• easily integrated into an existing network environment |

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

**SYSTEM REVIEW SERIES**

# *Anatomic pathology computer systems*

| Part 3 of 13 | Computer Trust Corp. | Cortex Medical Management Systems Inc. |
|---|---|---|
| | David Liberman, MD info@ctcsurge.com | Stanley Gordon sgordon@cortexmed.com |
| See accompanying article on page 18 | 1 State St., Boston, MA 02109-3507 | 2001 Western Ave., Ste. 410, Seattle, WA 98121 |
| | 617-557-9264 www.ctcsurge.com | 206-812-6981 www.cortexmed.com |

| Name of anatomic pathology system | WinSurge | The Gold Standard |
|---|---|---|
| First ever AP system installation/most recent AP system installation | 1989/2005 | 1986/2005 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 67 (31/15/0/0/21†) | 49 (20/29/0/0/0) |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | 8 | 5 |
| No. of sites operating AP system | 82 | 61 |
| Percentage of installations standalone | 100% | 33% |
| Staff to develop-install-support-other** | | |
| • In entire company | confidential | 4-2-2-4 |
| • In LIS division (including AP)/in AP systems only | confidential | 4-2-2-4/4-2-2-4 |
| No. of interactive terminals (user workstations) in sites operating system | 5–3,000 (median, 30) | 3–63 (ave., 25) |
| Range in No. of surgical pathology cases per year in sites operating system | 5,000–300,000 | 50–70,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 0–250,000 | 50–120,000 |
| Central hardware or service type | Windows, Unix, others | any Windows compatible |
| Terminals/workstations or PC platform | Windows PCs, Citrix, Web, VPN, Telnet terminals | any Windows compatible |
| Innovative peripherals | multiple automated report delivery modes, comprehensive imaging, consult and requisition document management, others | TWAIN-compliant image capture, optical and mark sense readers |
| Network installation required?/networks supported | user's option/LAN, WAN, TCP/IP, Unix, Windows | yes/TCP/IP |
| Programming language(s) | Visual Basic, Caché, others | Visual Basic |
| Databases and tools used | Caché, SQL, Crystal Reports, Excel | MS SQL server |
| Word processor(s) used | MS Word/RTF text, plain text | MS Word |
| Operating system(s) | Windows 2000, 2003, XP Professional, Unix, others | Windows 2000, XP, 2003 |
| Features (listed as a percentage of live installs or based on availability) | | |
| • Surgical pathology information system | 100% | 95% |
| • Cytology information system | 83% | 95% |
| • Autopsy information system | 58% | 50% |
| • Specimen log-in | 100% | 100% |
| • Entry of block IDs | 100% | 80% |
| • Specimen labels | 100% | 80% |
| • Histology slide labels | 100% | 80% |
| • Bar-coded slide labels | 24% | 20% |
| • Histology worksheets | 100% | 95% |
| • Word processing—vendor specific | 100% | 0 |
| • Word processing—standard tools (Word, WordPerfect) | 100% | 95% |
| • Voice entry of gross description | 19% | 0 |
| • Back-end batch voice to text | 19% | 0 |
| • Gross and microscopic images integrated in reports | 77% | 20% |
| • Electronic signature | 83% | 90% |
| • Remote printing of completed reports | 48% | 90% |
| • Direct fax reports | 76% | 60% |
| • Web-based remote inquiry of reports | 56% | 25% |
| • Physician Web access for order entry | 47% | available but not installed |
| • Natural language search capability | 100% | 5% |
| • SNOMED II/SNOMED CT | 12%/available but not installed | 40%/0 |
| • Multi-site or multi-facility-wide area network | 74% | 20% |
| • Sound-alike retrieval of patient history | 100% | 10% |
| • Autopsy measurements and organ weights | 58% | 20% |
| • Tumor registry reports | 100% | 80% |
| • Management reports | 100% | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | 83% | 60% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 83% | 90% |
| • Histology-cytology correlation report | 83% | 90% |
| • Reports sufficient to comply with CLIA '88 regulations | 100% | 100% |
| • Comprehensive billing and accounts receivable | not available | 35% |
| • HIS interface: A/D/T | 29% | 20% |
| • HIS interface: result reporting/incoming clinical results | 29%/available but not installed | 20%/0 |
| • Interface to external billing system | 27% | 10% |
| • Partin tables or Gleason score calculations | 29% | 5% |
| • Synoptic reporting | 100% | 15% |
| • Specimen tracking and retrieval | 100% | 100% |
| • Client services module | 100% | 0 |
| • Consult management and reporting | 100% | 60% |
| Software provides indexed field in each test definition for LOINC code? | yes | no |
| Provide LOINC dictionary for each new installation? | no | no |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | 34% in NAACCR format | 7 in NAACCR format/3 in HL7 format |
| Complete AP application service provider solution? | no | yes |
| Method of charging for ASP service | — | fixed fee |
| 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 (AD Host) |
| Other information systems interfaced | Siemens, McKesson, TDS, Data Gate, HDS, IDX, Provation, Misys, CPSI, others | Cerner, McKesson, Meditech, Siemens, SCC Soft Computer |
| Voice-recognition packages integrated with AP system | Dragon Naturally Speaking Professional | none |
| Histology and cytology laboratory instruments interfaced | Shur/Mark cassette labelers and slide etchers | none |
| User interface in language other than English? | yes (custom offering) | no |
| Source code?/user group? | escrow (user's option and expense)/yes | escrow/yes (meets online as well) |
| User can modify screens? | yes | no |
| Cost (hardware/software/installation and training/monthly maintenance) | | |
| • Smallest stand-alone system | $10k/$25k/$10k/$0.5k | <$1k/$50k/$20k/$1k |
| • Largest stand-alone system | $100k/$2m+/$1m+/$25k+ | $75k/$500k/$200k/$7k |
| Base price of integrated system, excluding AP configuration | 0 | $80k |
| • Incremental cost to add smallest AP configuration | $10k/$25k/$10k/$0.5k | $1k/$2.8k/$1.4k/$0.5k |
| • Incremental cost to add largest AP configuration | $100k/$2m+/$1m+/$25k+ | $1k/$2.8k/$1.4k/$0.5k |

| Distinguishing features (supplied by vendor) | | |
|---|---|---|
| *H=U.S. hospitals, IL=independent labs in U.S., | • top AP LIS for over 15 years | • secure delivery system for order entry and results reporting |
| C or GP=clinics or group practices in U.S., FI=foreign installations, OS=other sites | • optimizes laboratorians' responsiveness to clients, departments, and outreach | • reflex testing for linking HPV/DNA probe cases to Pap |
| **other=sales, marketing, administration, and other company function | • exceptional customer satisfaction and retention | • on-site installation and training of all staff, with most rapid installs in industry |
| | †pathology practice management/multi-lab enterprises | |

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

# Anatomic pathology computer systems

| | EasyPath Software | eTeleNext Inc. |
|---|---|---|
| **Part 4 of 13**<br><br>*See accompanying article on page 18* | EasyPath Software<br>Selig Leyser, MD  seligl@comcast.net<br>2551 103rd SE, Beaux Arts, WA 98004<br>425-455-9012/425-899-2565  http://homepage.mac.com/seligL/easypath/ | Joseph Nollar  sales@etelenext.com<br>28570 Marguerite Parkway, Ste. 222, Mission Viejo, CA 92692<br>949-365-0952  www.etelenext.com |

| | EasyPath | AP Anywhere |
|---|---|---|
| **Name of anatomic pathology system** | EasyPath | AP Anywhere |
| First ever AP system installation/most recent AP system installation | 1992/2004 | 2004/2005 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 8 (6/1/1/0/0) | 5† (0/4/1/0/0) |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | 0 | 5 |
| No. of sites operating AP system | 5 | 5 |
| Percentage of installations standalone | 100% | 80% |
| Staff to develop-install-support-other** | | |
| • In entire company | 2 total | 6-2-2-5 |
| • In LIS division (including AP)/in AP systems only | — | 5-2-2-0/5-2-2-0 |
| No. of interactive terminals (user workstations) in sites operating system | 5–12 (ave., 10) | 1–60 (ave., 20) |
| Range in No. of surgical pathology cases per year in sites operating system | 8,000–100,000 | 3,000–75,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 100–100,000 | 3,000–75,000 |
| Central hardware or service type | Windows PC or Macintosh | IBM, Dell, Compaq |
| Terminals/workstations or PC platform | Windows PC or Macintosh | IBM, Dell, Compaq |
| Innovative peripherals | voice input optional, image capture integrated | client-controlled custom report template builder, telepathology, remote order entry and results, auto-fax, digital camera/scanner image interfacing, bar code |
| Network installation required?/networks supported | — | yes/LAN, WAN, Novell, TCP/IP |
| Programming language(s) | 4th Dimension | .Net |
| Databases and tools used | 4D, 4D Write, 4D Compiler | SQL |
| Word processor(s) used | 4D Write (integrated) | Word |
| Operating system(s) | Windows 95 or better, Macintosh OS 9 or better | Windows |
| **Features (listed as a percentage of live installs or based on availability)** | | |
| • Surgical pathology information system | 100% | 100% |
| • Cytology information system | 100% | 100% |
| • Autopsy information system | 100% | 0 |
| • Specimen log-in | 100% | 100% |
| • Entry of block IDs | 100% | 100% |
| • Specimen labels | available but not installed | 100% |
| • Histology slide labels | available but not installed | 100% |
| • Bar-coded slide labels | not available | 100% |
| • Histology worksheets | 100% | 50% |
| • Word processing—vendor specific | 100% | 100% |
| • Word processing—standard tools (Word, WordPerfect) | — | 20% |
| • Voice entry of gross description | available but not installed | available in August 2006 |
| • Back-end batch voice to text | not available | not available |
| • Gross and microscopic images integrated in reports | 25% | 100% |
| • Electronic signature | 50% | 100% |
| • Remote printing of completed reports | 100% | 100% |
| • Direct fax reports | available but not installed | 100% |
| • Web-based remote inquiry of reports | not available | 80% |
| • Physician Web access for order entry | not available | 50% |
| • Natural language search capability | 100% | 100% |
| • SNOMED II/SNOMED CT | SNOMED-like coding | available but not installed |
| • Multi-site or multi-facility-wide area network | 50% | 50% |
| • Sound-alike retrieval of patient history | 100% | not available |
| • Autopsy measurements and organ weights | 100% | not available |
| • Tumor registry reports | 100% | available but not installed |
| • Management reports | 100% | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | not available | 20% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 25% | 20% |
| • Histology-cytology correlation report | 100% | 20% |
| • Reports sufficient to comply with CLIA '88 regulations | 100% | 100% |
| • Comprehensive billing and accounts receivable | not available | 20% |
| • HIS interface: A/D/T | not available | not available |
| • HIS interface: result reporting/incoming clinical results | 25%/not available | 20%/20% |
| • Interface to external billing system | not available | 50% |
| • Partin tables or Gleason score calculations | available but not installed | 50% |
| • Synoptic reporting | not available | 50% |
| • Specimen tracking and retrieval | 100% | 100% |
| • Client services module | not available | 100% |
| • Consult management and reporting | 100% | 50% |
| Software provides indexed field in each test definition for LOINC code? | no | yes |
| Provide LOINC dictionary for each new installation? | no | no |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | none | none (but HL7 format available) |
| Complete AP application service provider solution? | 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 | — | 1 |
| How data center is operated | — | by vendor |
| Other information systems interfaced | Meditech, Cerner | Cortex, GE Medical (Triple G), Misys, Meditech, Cerner |
| Voice-recognition packages integrated with AP system | any (indirectly) | none |
| Histology and cytology laboratory instruments interfaced | none | Beckman Coulter, BD, Chromavision ACIS, FCS Express, Ventana, Aperio, Trestle |
| User interface in language other than English? | no | no |
| Source code?/user group? | escrow (on request)/no | escrow/yes (meets online as well) |
| User can modify screens? | yes | yes |
| **Cost (hardware/software/installation and training/monthly maintenance)** | | |
| • Smallest stand-alone system | $2k/$10k/—/— | $10k/$120k/$5k/0 |
| • Largest stand-alone system | $30k/$20k/$2k/— | $65k/$120k/$10k/$7.5k+ |
| Base price of integrated system, excluding AP configuration | $5k | $145k |
| • Incremental cost to add smallest AP configuration | $1.5k/$10k/—/— | 0 |
| • Incremental cost to add largest AP configuration | $1.5k per workstation and $2k per server/$20k/$2k/— | 0 |
| Distinguishing features (supplied by vendor) | • designed and updated by a practicing pathologist and professional programmer<br>• powerful, economical, and flexible<br>• inexpensive image capture and integration | • product branded for client<br>• fully customizable<br>• ASP or lab hosted |

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

†*labs privately label application by contract*

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

SYSTEM REVIEW SERIES

# Anatomic pathology computer systems

Part 5 of 13

See accompanying article on page 18

| | GE Healthcare Information Technologies<br>Larry Wimberly   larry.wimberly@med.ge.com<br>3100 Steeles Ave. East, Ste. 900, Markham, Ontario, Canada L3R 8T3<br>905-305-0041   www.gehealthcare.com | Impac Medical Systems Inc.<br>Chad Scribner   cscribner@impac.com<br>100 W. Evelyn Ave., Mountain View, CA 94041<br>888-464-6722   www.impac.com |
|---|---|---|
| Name of anatomic pathology system | Centricty Ultra Laboratory AP | PowerPath (formerly Tamtron PowerPath) |
| First ever AP system installation/most recent AP system installation | 1991/2005 | 1986/2005 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 34 (9/0/0/25/0) | 211 (160/33/14/4/0) |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | 1 | 18 |
| No. of sites operating AP system | 55 | 366 |
| Percentage of installations standalone | 0 | 100% |
| Staff to develop-install-support-other** | | |
| • In entire company | 42,500 total | 90-50-81-212 |
| • In LIS division (including AP)/in AP systems only | 43-33-16-10/3-3-3-0 | 17-18-19-19/12-10-10-12 |
| No. of interactive terminals (user workstations) in sites operating system | 2–50 (ave., 25) | 52–400 (ave., 15–30) |
| Range in No. of surgical pathology cases per year in sites operating system | 5,000–250,000 | 1,500–150,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 1,000–75,000 | 5,000–350,000 |
| Central hardware or service type | Unix servers–IBM, HP, Sun | Windows 2000 or 2003 server |
| Terminals/workstations or PC platform | Windows XP, 2000, NT | Windows 2000, 2003, XP |
| Innovative peripherals | voice input, optical storage, bar-code input, image capture and retrieval, scanning, touch screens | modules for image management, Internet inquiry, dermatopathology, histology automation, enhanced reporting, immunohistochemistry |
| Network installation required?/networks supported | yes/TCP/IP, Novell | yes/TCP/IP |
| Programming language(s) | C, C++, Unify Vision | Borland Delphi |
| Databases and tools used | Unify Data server database, Unify Development tool kit | MS SQL |
| Word processor(s) used | MS Word | MS Word |
| Operating system(s) | Unix | Windows |
| Features (listed as a percentage of live installs or based on availability) | | |
| • Surgical pathology information system | 100% | 100% |
| • Cytology information system | 100% | 100% |
| • Autopsy information system | 50% | 100% |
| • Specimen log-in | 100% | 100% |
| • Entry of block IDs | 100% | 100% |
| • Specimen labels | 100% | 100% |
| • Histology slide labels | 100% | 100% |
| • Bar-coded slide labels | installed | installed |
| • Histology worksheets | 75% | 100% |
| • Word processing—vendor specific | not available | 100% |
| • Word processing—standard tools (Word, WordPerfect) | 100% | 100% |
| • Voice entry of gross description | 5% | installed |
| • Back-end batch voice to text | available but not installed | not available |
| • Gross and microscopic images integrated in reports | available but not installed | 25% |
| • Electronic signature | 100% | 100% |
| • Remote printing of completed reports | 100% | 100% |
| • Direct fax reports | 75% | 100% |
| • Web-based remote inquiry of reports | 10% | 15% |
| • Physician Web access for order entry | available but not installed | not available |
| • Natural language search capability | not available | 100% |
| • SNOMED II/SNOMED CT | 75%/available in 2006 | 100%/100% |
| • Multi-site or multi-facility-wide area network | 75% | 100% |
| • Sound-alike retrieval of patient history | not available | 100% |
| • Autopsy measurements and organ weights | 50% | 100% |
| • Tumor registry reports | 15% | 100% |
| • Management reports | 100% | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | 60% | 100% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 60% | 100% |
| • Histology-cytology correlation report | 100% | 100% |
| • Reports sufficient to comply with CLIA '88 regulations | 75% | 100% |
| • Comprehensive billing and accounts receivable | 90% | 100% |
| • HIS interface: A/D/T | 100% | 100% |
| • HIS interface: result reporting/incoming clinical results | 100%/10% | 100%/not available |
| • Interface to external billing system | 80% | 100% |
| • Partin tables or Gleason score calculations | not available | 100% |
| • Synoptic reporting | 30% | installed |
| • Specimen tracking and retrieval | 30% | 85% |
| • Client services module | installed | 100% |
| • Consult management and reporting | 100% | 85% |
| Software provides indexed field in each test definition for LOINC code? | yes | no |
| Provide LOINC dictionary for each new installation? | no | no |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | 5 in HL7 format | 17 in HL7 format |
| Complete AP application service provider solution? | 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 | — | — |
| Other information systems interfaced | IDX, McKesson, Siemens, Meditech, Per-Sé, Cerner, Eclipsys, Compucare | Eclipsys, Cerner, Misys, Siemens, McKesson, Meditech, SCC, Phamis, IDX |
| Voice-recognition packages integrated with AP system | Philips SpeechMagic | |
| Histology and cytology laboratory instruments interfaced | Shur/Mark, Lamb, Leica | Shur/Mark, Shandon, Leica, Sakura, Ventana |
| User interface in language other than English? | no | no |
| Source code?/user group? | escrow/yes (meets online as well) | escrow/yes |
| User can modify screens? | no (available in upcoming version) | no |
| Cost (hardware/software/installation and training/monthly maintenance) | | |
| • Smallest stand-alone system | $50k/$150k/$125k/$3.5k | — |
| • Largest stand-alone system | $500k/$2m/$600k/$25k | — |
| Base price of integrated system, excluding AP configuration | $600k | — |
| • Incremental cost to add smallest AP configuration | n/a/$40k/$40k/$0.6k | — |
| • Incremental cost to add largest AP configuration | n/a/$1m/$200k/$15k | — |
| Distinguishing features (supplied by vendor) | • designed for multi-site laboratory, IDN environments<br>• fully integrated with all clinical modules, single database design<br>• superior commitment to customer care and services | • case-centric workflow<br>• outstanding customer satisfaction<br>• AP systems leader |

*H=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
**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<br><br>See accompanying article on page 18 | Medical Information Technology Inc. (Meditech)<br>Paul Berthiaume  info@meditech.com<br>Meditech Circle, Westwood, MA 02090<br>781-821-3000  www.meditech.com | Medical Information Technology Inc. (Meditech)<br>Paul Berthiaume  info@meditech.com<br>Meditech Circle, Westwood, MA 02090<br>781-821-3000  www.meditech.com |
|---|---|---|
| Name of anatomic pathology system | Meditech Anatomical Pathology–client/server | Meditech Anatomical Pathology–Magic |
| First ever AP system installation/most recent AP system installation | 1978/2005 | 1978/2005 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | —† | —† |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | —† | —† |
| No. of sites operating AP system | 176 | 612 |
| Percentage of installations standalone | — | — |
| Staff to develop-install-support-other** | 527-434-912-383 | 527-434-912-383 |
| • In entire company | —† | —† |
| • In LIS division (including AP)/in AP systems only | —† | —† |
| No. of interactive terminals (user workstations) in sites operating system | 5–100+ (ave., 5–10) | 5–100+ (ave., 5–10) |
| 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 syst. | —† | —† |
| Central hardware or service type | HP, IBM, Dell | HP, IBM, Dell |
| Terminals/workstations or PC platform | only PC workstation supported | only PC workstation supported |
| Innovative peripherals | voice input/output, image input/output | voice input/output, image input/output |
| Network installation required?/networks supported | yes/LAN, WAN, Novell, TCP/IP | yes/LAN, WAN, Novell, TCP/IP |
| Programming language(s) | Magic programming language | Magic programming language |
| Databases and tools used | Magic and client/server | Magic and client/server |
| Word processor(s) used | MS Word/rich text | MS Word/rich text |
| Operating system(s) | industry-standard solutions | Magic |
| Features (listed as a percentage of live installs or based on availability) | | |
| • Surgical pathology information system | 100% | 100% |
| • Cytology information system | 100% | 100% |
| • Autopsy information system | 100% | 100% |
| • Specimen log-in | 100% | 100% |
| • Entry of block IDs | 100% | 100% |
| • Specimen labels | 100% | 100% |
| • Histology slide labels | 100% | 100% |
| • Bar-coded slide labels | 100% | 100% |
| • Histology worksheets | 100% | 100% |
| • Word processing—vendor specific | 100% | 100% |
| • Word processing—standard tools (Word, WordPerfect) | 100% | 100% |
| • Voice entry of gross description | 100% | 100% |
| • Back-end batch voice to text | 100% | 100% |
| • Gross and microscopic images integrated in reports | 100% | 100% |
| • Electronic signature | 100% | 100% |
| • Remote printing of completed reports | 100% | 100% |
| • Direct fax reports | 100% | 100% |
| • Web-based remote inquiry of reports | 100% | 100% |
| • Physician Web access for order entry | 100% | 100% |
| • Natural language search capability | 100% | 100% |
| • SNOMED II/SNOMED CT | 100%/100% | 100%/100% |
| • Multi-site or multi-facility-wide area network | 100% | 100% |
| • Sound-alike retrieval of patient history | 100% | 100% |
| • Autopsy measurements and organ weights | 100% | 100% |
| • Tumor registry reports | 100% | 100% |
| • Management reports | 100% | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | 100% | 100% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 100% | 100% |
| • Histology-cytology correlation report | 100% | 100% |
| • Reports sufficient to comply with CLIA '88 regulations | 100% | 100% |
| • Comprehensive billing and accounts receivable | 100% | 100% |
| • HIS interface: A/D/T | 100% | 100% |
| • HIS interface: result reporting/incoming clinical results | 100%/100% | 100%/100% |
| • Interface to external billing system | 100% | 100% |
| • Partin tables or Gleason score calculations | 100% | 100% |
| • Synoptic reporting | 100% | 100% |
| • Specimen tracking and retrieval | 100% | 100% |
| • Client services module | 100% | 100% |
| • Consult management and reporting | 100% | 100% |
| Software provides indexed field in each test definition for LOINC code? | no | no |
| Provide LOINC dictionary for each new installation? | no | no |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | n/a | n/a |
| Complete AP application service provider solution? | 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 | — | — |
| Other information systems interfaced | Misys, McKesson, Siemens, others | Misys, McKesson, Siemens, others |
| Voice-recognition packages integrated with AP system | Nuance (ScanSoft) Dragon Naturally Speaking | Nuance (ScanSoft) Dragon Naturally Speaking |
| Histology and cytology laboratory instruments interfaced | n/a | n/a |
| User interface in language other than English? | no | no |
| Source code?/user group? | yes/yes | yes/yes |
| User can modify screens? | some | some |
| 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)<br><br><br>*H=U.S. hospitals, IL=independent labs in U.S.,<br>C or GP=clinics or group practices in U.S., FI=foreign installations, OS=other sites<br>**other=sales, marketing, administration, and other company functions | • over 30 years' experience developing and implementing LISs<br>• seamlessly share data across departments and facilities<br>• contains all the software needed to capture and store digital images and add notations<br>†*Meditech does not calculate these data* | • over 30 years' experience developing and implementing LISs<br>• seamlessly share data across departments and facilities<br>• contains all the software needed to capture and store digital images and add notations<br>†*Meditech does not calculate these data* |

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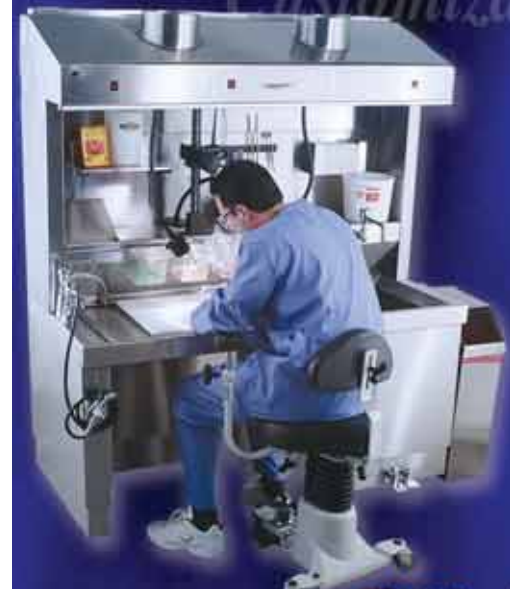
## Anatomic pathology computer systems

| | |
|---|---|
| *Part 7 of 13* | MediSolution Inc. |
| | Soraya Comeau |
| *See accompanying article on page 18* | 5915 Airport Rd., Ste. 810, Mississauga, Ontario, Canada L4V 1T1 |
| | 905-673-4100/866-467-4636   www.medisolution.com |

| | |
|---|---|
| Name of anatomic pathology system | MediLab Anatomical Pathology/Cytology |

| | |
|---|---|
| First ever AP system installation/most recent AP system installation | 1974/— |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 171 |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | — |
| No. of sites operating AP system | — |
| Percentage of installations standalone | 40% |
| Staff to develop-install-support-other** | |
| • In entire company | 410 total |
| • In LIS division (including AP)/in AP systems only | 79-11-13-6/n/a |

| | |
|---|---|
| No. of interactive terminals (user workstations) in sites operating system | 3–95 (ave., 45) |
| Range in No. of surgical pathology cases per year in sites operating system | 5,000–65,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 2,500–140,000 |

| | |
|---|---|
| Central hardware or service type | Sun, Unix, Linux, Windows, IBM, HP |
| Terminals/workstations or PC platform | IBM-compatible PC |
| Innovative peripherals | all Microsoft-compatible image retrieval, voice input/output |
| Network installation required?/networks supported | — |
| Programming language(s) | C++ |
| Databases and tools used | SQL, Oracle |
| Word processor(s) used | MS Word |
| Operating system(s) | Windows, Unix, Linux |

| | |
|---|---|
| Features (listed as a percentage of live installs or based on availability) | |
| • Surgical pathology information system | 100% |
| • Cytology information system | 90% |
| • Autopsy information system | 85% |
| • Specimen log-in | 75% |
| • Entry of block IDs | 100% |
| • Specimen labels | 100% |
| • Histology slide labels | 100% |
| • Bar-coded slide labels | 100% |
| • Histology worksheets | 80% |
| • Word processing—vendor specific | not available |
| • Word processing—standard tools (Word, WordPerfect) | 100% |
| • Voice entry of gross description | 10% |
| • Back-end batch voice to text | 10% |
| • Gross and microscopic images integrated in reports | 25% |
| • Electronic signature | 95% |
| • Remote printing of completed reports | 100% |
| • Direct fax reports | 100% |
| • Web-based remote inquiry of reports | 13% |
| • Physician Web access for order entry | installed |
| • Natural language search capability | not available |
| • SNOMED II/SNOMED CT | —/55% |
| • Multi-site or multi-facility-wide area network | 30% |
| • Sound-alike retrieval of patient history | not available |
| • Autopsy measurements and organ weights | installed |
| • Tumor registry reports | 57% |
| • Management reports | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | installed |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | installed |
| • Histology-cytology correlation report | installed |
| • Reports sufficient to comply with CLIA '88 regulations | 25% |
| • Comprehensive billing and accounts receivable | 40% |
| • HIS interface: A/D/T | 58% |
| • HIS interface: result reporting/incoming clinical results | 8%/available but not installed |
| • Interface to external billing system | 1% |
| • Partin tables or Gleason score calculations | 1% |
| • Synoptic reporting | 75% |
| • Specimen tracking and retrieval | 38% |
| • Client services module | available but not installed |
| • Consult management and reporting | 100% |

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

| | |
|---|---|
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | 0 |

| | |
|---|---|
| Complete AP application service provider solution? | yes |
| Method of charging for ASP service | fixed fee |
| Client software required | requires software be installed on a client PC |
| ASP information conduit | requires use of private, dedicated circuit |
| Client contracts supported from data center not operated by client | 2 |
| How data center is operated | by a third party (Superior Consulting Co.) |

| | |
|---|---|
| Other information systems interfaced | MediSolution, SCC, Keane, McKesson, Misys, GE Medical, Meditech, others |
| Voice-recognition packages integrated with AP system | MS Word compatible, Dragon Naturally Speaking |
| Histology and cytology laboratory instruments interfaced | Shur/Mark, SurgiPath, Fisher Scientific cassette printers, Ventana stainer |
| User interface in language other than English? | yes (21 different languages, including French, Spanish, German, Italian, Korean, Chinese) |

| | |
|---|---|
| Source code?/user group? | escrow/yes |
| User can modify screens? | yes |

| | |
|---|---|
| Cost (hardware/software/installation and training/monthly maintenance) | |
| • Smallest stand-alone system | $20k/$50k/$15k/$0.833k |
| • Largest stand-alone system | $50k/$300k/$40k/$5k |
| Base price of integrated system, excluding AP configuration | $277k |
| • Incremental cost to add smallest AP configuration | —/$3k/—/— |
| • Incremental cost to add largest AP configuration | $1k/$3k per workstation/—/$0.05k |

| | |
|---|---|
| Distinguishing features (supplied by vendor) | • integration of all images into history, does not need to be part of report |
| | • efficiency of workflow |
| *H=U.S. hospitals, IL=independent labs in U.S., | • paperless work distribution |
| 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 8 of 13<br><br>See accompanying article on page 18 | Misys Healthcare Systems<br>Leigh Burchell  marketing@misyshealthcare.com<br>8529 Six Forks Rd., Raleigh, NC 27615<br>866-647-9787  www.misyshealthcare.com | Netlims NJ LLC<br>Avi Allerhand  avi@netlims.com<br>96 Engle St., Englewood, NJ 07631<br>201-894-5300  www.netlims.com |
|---|---|---|
| Name of anatomic pathology system | CoPathPlus from Misys | AutoAP |
| First ever AP system installation/most recent AP system installation | 1979/2005 | 2000/2005 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 285 | 8 (1/1/0/6/0) |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | — | 2 |
| No. of sites operating AP system | 290 | 20 |
| Percentage of installations standalone | 0 | 0 |
| Staff to develop-install-support-other** | | |
| • In entire company | — | 53-11-20-15 |
| • In LIS division (including AP)/in AP systems only | — | 53-11-20-15/11-4-5-0 |
| No. of interactive terminals (user workstations) in sites operating system | 8–256 (ave., 32) | 20–60 (ave., 40) |
| Range in No. of surgical pathology cases per year in sites operating system | 1,000–180,000+ | 12,000–40,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 1,000–250,000 | 2,000–15,000 |
| Central hardware or service type | IBM, Dell, Compaq | IBM, HP, Dell |
| Terminals/workstations or PC platform | IBM, Dell, Compaq | Windows PCs, Dell |
| Innovative peripherals | Dragon Naturally Speaking–voice; Apollo Telemedicine–imaging management, telepathology, bar code | voice enabled, scanners, microscope camera, images attachment, others |
| Network installation required?/networks supported | yes/LAN, WAN, TCP/IP | yes/LAN, WAN, TCP/IP, Unix, Linux |
| Programming language(s) | Power Builder | C++, Java, Visual Basic, ASP .Net |
| Databases and tools used | Sybase, SQL | Oracle, MS SQL, Caché |
| Word processor(s) used | internal, MS Word | MS Word |
| Operating system(s) | AIX, Windows 2000 server, Windows 2000 and XP workstations | Windows, Linux, Unix |
| Features (listed as a percentage of live installs or based on availability) | | |
| • Surgical pathology information system | 100% | 100% |
| • Cytology information system | 100% | 100% |
| • Autopsy information system | 100% | 100% |
| • Specimen log-in | 100% | 100% |
| • Entry of block IDs | 100% | 100% |
| • Specimen labels | 85% | 100% |
| • Histology slide labels | 100% | installed |
| • Bar-coded slide labels | 80% | installed |
| • Histology worksheets | 100% | 100% |
| • Word processing—vendor specific | 15% | not available |
| • Word processing—standard tools (Word, WordPerfect) | 85% | 100% |
| • Voice entry of gross description | 15% | installed |
| • Back-end batch voice to text | — | installed |
| • Gross and microscopic images integrated in reports | 30% | 100% |
| • Electronic signature | 100% | 100% |
| • Remote printing of completed reports | 5% | 100% |
| • Direct fax reports | 95% | 100% |
| • Web-based remote inquiry of reports | — | 100% |
| • Physician Web access for order entry | available but not installed | available first quarter 2006 |
| • Natural language search capability | 100% | not available |
| • SNOMED II/SNOMED CT | 95%/available but not installed | 100%/100% |
| • Multi-site or multi-facility-wide area network | 35% | 10% |
| • Sound-alike retrieval of patient history | not available | 100% |
| • Autopsy measurements and organ weights | 100% | 100% |
| • Tumor registry reports | 95% | 100% |
| • Management reports | 100% | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | 100% | 100% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 100% | installed |
| • Histology-cytology correlation report | 100% | installed |
| • Reports sufficient to comply with CLIA '88 regulations | 100% | 100% |
| • Comprehensive billing and accounts receivable | 95% | 100% |
| • HIS interface: A/D/T | 95% | 100% |
| • HIS interface: result reporting/incoming clinical results | 95%/available but not installed | 100%/100% |
| • Interface to external billing system | 95% | not available |
| • Partin tables or Gleason score calculations | — | not available |
| • Synoptic reporting | 5% | available but not installed |
| • Specimen tracking and retrieval | — | 80% |
| • Client services module | — | 100% |
| • Consult management and reporting | — | 100% |
| Software provides indexed field in each test definition for LOINC code? | no | yes |
| Provide LOINC dictionary for each new installation? | no | no |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | 12 in NAACCR format/1 in HL7 format | 6 in HL7 format |
| Complete AP application service provider solution? | 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 | — | — |
| Other information systems interfaced | Misys products | Siemens, IDX, Cerner, Misys, SCC |
| Voice-recognition packages integrated with AP system | Dragon Naturally Speaking | Dragon Naturally Speaking |
| Histology and cytology laboratory instruments interfaced | Shur/Mark and Shandon slide and cassette labelers | none |
| User interface in language other than English? | — | yes (in any Windows-supported language) |
| Source code?/user group? | no/yes (meets online as well) | escrow/no |
| User can modify screens? | yes | yes |
| Cost (hardware/software/installation and training/monthly maintenance) | | |
| • Smallest stand-alone system | — | $30k/$120k/$30k/$2.25k |
| • Largest stand-alone system | — | $150k/$400k/$90k/$7.35k |
| Base price of integrated system, excluding AP configuration | — | — |
| • Incremental cost to add smallest AP configuration | — | $30k/$70k/$30k/$1.5k |
| • Incremental cost to add largest AP configuration | — | $120k/$250k/$75k/$4.875k |
| Distinguishing features (supplied by vendor)<br><br>*H=U.S. hospitals, IL=independent labs in U.S.,<br>C or GP=clinics or group practices in U.S., FI=foreign installations, OS=other sites<br>**other=sales, marketing, administration, and other company functions | • structured data reporting with synoptic analysis and SNOMED CT<br>• electronic cancer reporting for better cancer research and outcomes<br>• outstanding customer satisfaction and financial stability | • one database for all disciplines—AP, microbiology, general lab, etc.<br>• highly customizable to meet the needs of the lab and its clients<br>• full HL7 interfaces for orders and results; full integration with MS Office |

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

# *Anatomic pathology computer systems*

| Part 9 of 13 | NetSoft Inc. | Novovision Inc. |
|---|---|---|
| | Bill Hughes sales@netsoftusa.com | Hina Kharbey sales@novovision.com |
| See accompanying article on page 18 | 2156 W. Park Court, Ste. E, Stone Mountain, GA 30087 | 301 N. Harrison St., Ste. 384, Princeton, NJ 08540 |
| | 678-325-2909 www.netsoftusa.com | 877-668-6123 www.novovision.com |

| | | |
|---|---|---|
| Name of anatomic pathology system | IntelliPath | NovoPath |
| First ever AP system installation/most recent AP system installation | 2001/2005 | 1999/2005 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 32 (5/24/3/0/0) | 53 (4/35/14/0/0) |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | 7 | 15 |
| No. of sites operating AP system | 43 | 80 |
| Percentage of installations standalone | 100% | 100% |
| Staff to develop-install-support-other** | | |
| • In entire company | 5-5-7-2 | 8-4-3-3 |
| • In LIS division (including AP)/in AP systems only | — | — |
| No. of interactive terminals (user workstations) in sites operating system | 1–40 (ave., 12) | 3–150 (ave., 20) |
| Range in No. of surgical pathology cases per year in sites operating system | 5,000–200,000 | 3,500–275,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 12,000–60,000 | 1,500–750,000 |
| Central hardware or service type | Dell, HP Pentium IV or Xeon servers | Windows 2003 servers |
| Terminals/workstations or PC platform | Dell, HP, generic Pentium IV PCs | PC based |
| Innovative peripherals | auto fax, digital cameras and scanners for imaging, bar-code printing and scanning, voice recognition, handheld PDA and pocket PC connectivity, others | high-volume requisition scanners, interactive voice response for result delivery |
| Network installation required?/networks supported | no (but supports LAN, WAN, TCP/IP, Citrix) | yes/LAN, WAN, TCP/IP, Windows networking |
| Programming language(s) | Clarion, C++, .Net | MS Tools |
| Databases and tools used | Pervasive SQL | MS SQL server, Oracle |
| Word processor(s) used | integrated | MS Word, user preference |
| Operating system(s) | Windows XP, 2000 | Windows XP Professional |
| Features (listed as a percentage of live installs or based on availability) | | |
| • Surgical pathology information system | 100% | 100% |
| • Cytology information system | 25% | 100% |
| • Autopsy information system | 10% | 100% |
| • Specimen log-in | 100% | 100% |
| • Entry of block IDs | 100% | 100% |
| • Specimen labels | 100% | 100% |
| • Histology slide labels | 100% | 100% |
| • Bar-coded slide labels | 100% | 100% |
| • Histology worksheets | 100% | 100% |
| • Word processing—vendor specific | 100% | not available |
| • Word processing—standard tools (Word, WordPerfect) | not available | 100% |
| • Voice entry of gross description | available but not installed | 100% |
| • Back-end batch voice to text | available but not installed | 100% |
| • Gross and microscopic images integrated in reports | 10% | 100% |
| • Electronic signature | 100% | 100% |
| • Remote printing of completed reports | available but not installed | 100% |
| • Direct fax reports | 100% | 100% |
| • Web-based remote inquiry of reports | 25% | 60% |
| • Physician Web access for order entry | available but not installed | 20% |
| • Natural language search capability | 100% | 100% |
| • SNOMED II/SNOMED CT | available but not installed | available but not installed |
| • Multi-site or multi-facility-wide area network | 18% | 25% |
| • Sound-alike retrieval of patient history | installed | 100% |
| • Autopsy measurements and organ weights | 10% | 100% |
| • Tumor registry reports | 100% | 100% |
| • Management reports | 100% | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | 20% | 100% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 20% | 100% |
| • Histology-cytology correlation report | 20% | 100% |
| • Reports sufficient to comply with CLIA '88 regulations | 100% | 100% |
| • Comprehensive billing and accounts receivable | 45% | 30% |
| • HIS interface: A/D/T | 10% | 20% |
| • HIS interface: result reporting/incoming clinical results | 15%/10% | 20%/20% |
| • Interface to external billing system | 30% | 100% |
| • Partin tables or Gleason score calculations | available but not installed | installed |
| • Synoptic reporting | not available | 100% |
| • Specimen tracking and retrieval | installed | 100% |
| • Client services module | 28% | 100% |
| • Consult management and reporting | 28% | 100% |
| Software provides indexed field in each test definition for LOINC code? | no | no |
| Provide LOINC dictionary for each new installation? | no | no |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | 8 in HL7 format | not tracked |
| Complete AP application service provider solution? | no | yes |
| Method of charging for ASP service | — | fixed fee |
| Client software required | — | browser based, 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 | — | 0 |
| How data center is operated | — | by a third party |
| Other information systems interfaced | Rand, Per-Sé, WebMD, IDX | McKesson, InVision, Eclipsys, others |
| Voice-recognition packages integrated with AP system | Dragon Naturally Speaking | Dragon Naturally Speaking |
| Histology and cytology laboratory instruments interfaced | — | — |
| User interface in language other than English? | no | no |
| Source code?/user group? | escrow/no | escrow/no |
| User can modify screens? | yes | yes |
| 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) | • all modules, including word processing and billing, are fully integrated | • real-time slide video conferencing (telepathology) |
| | • full-featured system with scalable pricing | • built-in interactive results using voice |
| | • superior customer care | • report content preferences per physician |

*H=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
**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 10 of 13<br><br>*See accompanying article on page 18* | Opus Healthcare Solutions Inc.<br>**Shelli Allen**  solutions@opushealthcare.com<br>12301 Research Blvd., Bldg. IV, Ste. 200, Austin, TX 78759<br>800-676-3371  www.opushealthcare.com | Orchard Software Corp.<br>**Kerry Foster**  sales@orchardsoft.com<br>701 Congressional Blvd., Ste. 360, Carmel, IN 46032<br>800-856-1948  www.orchardsoft.com |
|---|---|---|
| Name of anatomic pathology system | Opus AP | Orchard Harvest Anatomic Pathology |
| First ever AP system installation/most recent AP system installation | 1987/2005 | 2006/2006 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 5 (5/0/0/0/0) | 9 (3/5/1/0/0) |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | 1 | 9 |
| No. of sites operating AP system | 4 | 9 (in various stages of installation) |
| Percentage of installations standalone | 0 | 0 |
| Staff to develop-install-support-other** | | |
| • In entire company | 50-15-20-25 | 23-27-18-32 |
| • In LIS division (including AP)/in AP systems only | 7-8-7-20/3-2-7-20 | 23-27-18-32/3-4-4-1 |
| No. of interactive terminals (user workstations) in sites operating system | 5–30 (ave., 19) | 2–20 (ave., 5) |
| Range in No. of surgical pathology cases per year in sites operating system | 7,058–10,253 | unknown |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 0–4,949 | unknown |
| Central hardware or service type | HP 9000, RP 5340 | Hewlett-Packard |
| Terminals/workstations or PC platform | any | Hewlett-Packard |
| Innovative peripherals | n/a | Symbol bar-code scanners, L-tron label printers (ZPL language supported) |
| Network installation required?/networks supported | yes/LAN, WAN, TCP/IP, Unix | yes/LAN, WAN, Novell, TCP/IP |
| Programming language(s) | C, Java | 4th Dimension, Java |
| Databases and tools used | Postgres, SQL | 4th Dimension, SQL |
| Word processor(s) used | proprietary Java-based text editor | none |
| Operating system(s) | HP-UX | MS Windows |
| **Features (listed as a percentage of live installs or based on availability)** | | |
| • Surgical pathology information system | 100% | installed |
| • Cytology information system | 100% | installed |
| • Autopsy information system | 60% | installed |
| • Specimen log-in | 100% | installed |
| • Entry of block IDs | 30% | installed |
| • Specimen labels | available but not installed | installed |
| • Histology slide labels | 30% | installed |
| • Bar-coded slide labels | not available | installed |
| • Histology worksheets | 30% | installed |
| • Word processing—vendor specific | 100% | installed |
| • Word processing—standard tools (Word, WordPerfect) | not available | installed |
| • Voice entry of gross description | not available | installed |
| • Back-end batch voice to text | not available | not available |
| • Gross and microscopic images integrated in reports | available in 2006 | available in fall 2006 |
| • Electronic signature | 100% | installed |
| • Remote printing of completed reports | 100% | installed |
| • Direct fax reports | 100% | installed |
| • Web-based remote inquiry of reports | 30% | installed |
| • Physician Web access for order entry | not available | installed |
| • Natural language search capability | 100% | not available |
| • SNOMED II/SNOMED CT | not available | installed |
| • Multi-site or multi-facility-wide area network | available but not installed | installed |
| • Sound-alike retrieval of patient history | not available | not available |
| • Autopsy measurements and organ weights | available but not installed | installed |
| • Tumor registry reports | 60% | installed |
| • Management reports | 100% | installed |
| • Cytology abnormal—unsatisfactory list to doctors | 30% | installed |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 30% | installed |
| • Histology-cytology correlation report | 30% | installed |
| • Reports sufficient to comply with CLIA '88 regulations | 30% | installed |
| • Comprehensive billing and accounts receivable | not available | not available |
| • HIS interface: A/D/T | 100% | installed |
| • HIS interface: result reporting/incoming clinical results | 100%/100% | installed |
| • Interface to external billing system | 50% | installed |
| • Partin tables or Gleason score calculations | not available | not available |
| • Synoptic reporting | available but not installed | installed |
| • Specimen tracking and retrieval | not available | installed |
| • Client services module | not available | installed |
| • Consult management and reporting | 50% | — |
| Software provides indexed field in each test definition for LOINC code? | no | yes |
| Provide LOINC dictionary for each new installation? | — | no |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | 1 in HL7 format | — |
| Complete AP application service provider solution? | yes | no |
| Method of charging for ASP service | fixed monthly subscription | — |
| Client software required | requires software be installed on a client PC | — |
| ASP information conduit | VPN, requires use of private, dedicated circuit | — |
| Client contracts supported from data center not operated by client | 5 | — |
| How data center is operated | by a third party (UHS Corporate) | — |
| Other information systems interfaced | Siemens, Invision, McKesson, Cycare, Medquist, Hemocare, Quest, ADL | McKesson, Misys, IDX, Siemens, Cerner, Dairyland, QuadraMed, Meditech, GE, Experior, others |
| Voice-recognition packages integrated with AP system | none | Dragon Naturally Speaking |
| Histology and cytology laboratory instruments interfaced | none | none |
| User interface in language other than English? | no | no |
| Source code?/user group? | escrow/yes (meets online as well) | escrow/yes (meets online as well) |
| User can modify screens? | yes | yes |
| **Cost (hardware/software/installation and training/monthly maintenance)** | | |
| • Smallest stand-alone system | $15k-$20k/$40k/$20k-$30k/$1k-$2k | n/a |
| • Largest stand-alone system | $20k-$30k/$40k/$30k-$50k/$2k-$4k | n/a |
| Base price of integrated system, excluding AP configuration | $100k-$300k | ~$90k |
| • Incremental cost to add smallest AP configuration | $15k-$20k/$40k/$20k-$30k/$1k-$2k | $3k/$30k/$13k/$0.25k |
| • Incremental cost to add largest AP configuration | $20k-$30k/$40k/$30k-$50k/$2k-$4k | $30k/$90k/$30k/$1k |
| Distinguishing features (supplied by vendor) | • full integration with OpusLab to include ADT, billing, results review, HIS interface<br>• flexible workflow with numerous customer options<br>• Pap smear random: 10% rescreen; 0+ negative cases is automatic | • advanced rules-based decision support logic<br>• interface and integration expertise with other systems, departments, and reference labs<br>• industry leader in installation, service, and technical support |

*H=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
**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 11 of 13<br><br>See accompanying article on page 18 | PathLogix Corp.<br>Jerry Grayson  jerry@pathlogix.com<br>470 Nautilus St., Ste. 306, La Jolla, CA 92037<br>858-454-8030  www.pathlogix.com | Psyché Systems Corp.<br>Patricia Salem  info@psychesystems.com<br>321 Fortune Blvd., Milford, MA 01757<br>800-345-1514  www.psychesystems.com |
|---|---|---|
| Name of anatomic pathology system | PathLogix | WindoPath |
| First ever AP system installation/most recent AP system installation | 1998/2005 | 1986/2005 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 73 (5/68/0/0/0) | 110 (45/29/4/32/0) |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | 5 | 7 |
| No. of sites operating AP system | 76 | 127 |
| Percentage of installations standalone | 73% | 90% |
| Staff to develop-install-support-other** | | |
| • In entire company | — | 12-8-9-6 |
| • In LIS division (including AP)/in AP systems only | — | 12-8-9-6/6-4-5-6 |
| No. of interactive terminals (user workstations) in sites operating system | 1–80 (ave., 5) | 1–45 (ave., 6) |
| Range in No. of surgical pathology cases per year in sites operating system | 1,000–40,000 | 1,000–75,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 1,000–50,000 | 0–200,000 |
| Central hardware or service type | any Windows computer | Windows NT, 2000, 2003 |
| Terminals/workstations or PC platform | standard terminals | Windows PC |
| Innovative peripherals | imaging, voice recognition, most standard peripherals | voice input/output, image management, auto fax, Web outreach, bar code, cassette/slide labelers, others |
| Network installation required?/networks supported | no, but supports all networks that support Microsoft databases | yes/LAN, WAN, TCP/IP |
| Programming language(s) | SQL, Visual Basic, C++ | VB .Net, Visual Basic, Small Talk |
| Databases and tools used | SQL server, Access | MS SQL server |
| Word processor(s) used | MS Word | integrated |
| Operating system(s) | all Windows operating systems | Windows NT, 2000, XP, 2003 server |
| Features (listed as a percentage of live installs or based on availability) | | |
| • Surgical pathology information system | 100% | 100% |
| • Cytology information system | 100% | 99% |
| • Autopsy information system | — | 100% |
| • Specimen log-in | 100% | 100% |
| • Entry of block IDs | 100% | 100% |
| • Specimen labels | 100% | 100% |
| • Histology slide labels | 100% | 100% |
| • Bar-coded slide labels | 100% | 100% |
| • Histology worksheets | 100% | 100% |
| • Word processing—vendor specific | 100% | 100% |
| • Word processing—standard tools (Word, WordPerfect) | 100% | 100% |
| • Voice entry of gross description | installed | 25% |
| • Back-end batch voice to text | installed | available but not installed |
| • Gross and microscopic images integrated in reports | installed | 100% |
| • Electronic signature | 100% | 100% |
| • Remote printing of completed reports | 100% | 100% |
| • Direct fax reports | 100% | 100% |
| • Web-based remote inquiry of reports | 2% | 10% |
| • Physician Web access for order entry | 2% | 5% |
| • Natural language search capability | 100% | 100% |
| • SNOMED II/SNOMED CT | — | available but not installed |
| • Multi-site or multi-facility-wide area network | installed | 10% |
| • Sound-alike retrieval of patient history | — | 100% |
| • Autopsy measurements and organ weights | — | 100% |
| • Tumor registry reports | installed | 100% |
| • Management reports | 100% | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | installed | 100% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 100% | 100% |
| • Histology-cytology correlation report | installed | 100% |
| • Reports sufficient to comply with CLIA '88 regulations | installed | 100% |
| • Comprehensive billing and accounts receivable | — | not available |
| • HIS interface: A/D/T | — | 100% |
| • HIS interface: result reporting/incoming clinical results | — | 100%/5% |
| • Interface to external billing system | 100% | 90% |
| • Partin tables or Gleason score calculations | — | available in early 2006 |
| • Synoptic reporting | — | 5% |
| • Specimen tracking and retrieval | 100% | available but not installed |
| • Client services module | 100% | available but not installed |
| • Consult management and reporting | 100% | 100% |
| Software provides indexed field in each test definition for LOINC code? | — | yes |
| Provide LOINC dictionary for each new installation? | — | no |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | — | 3 in NAACCR format |
| Complete AP application service provider solution? | yes | yes |
| Method of charging for ASP service | fixed fee | fixed fee |
| Client software required | requires software be installed on a client PC | browser based |
| ASP information conduit | operates over the Internet | operates over the Internet |
| Client contracts supported from data center not operated by client | — | 5 |
| How data center is operated | — | by vendor |
| Other information systems interfaced | Medical Manager, IDX Last Word | Siemens, McKesson, Meditech, Misys, Keane, others |
| Voice-recognition packages integrated with AP system | Dragon Naturally Speaking, IBM | Dragon systems |
| Histology and cytology laboratory instruments interfaced | | CAS analyzer, Ventana Benchmark, Roche Elecsys/Integra, Coulter ACT |
| User interface in language other than English? | no | yes (Italian; translation tables for all languages) |
| Source code?/user group? | escrow/no | escrow/yes |
| User can modify screens? | yes | yes |
| Cost (hardware/software/installation and training/monthly maintenance) | | |
| • Smallest stand-alone system | —/$1.49k/—/$0.08k | 0/$16.5k/$7.7k/$0.446k |
| • Largest stand-alone system | —/$17.77k/—/$0.2k | $11k/$372k/$40k/$11k |
| Base price of integrated system, excluding AP configuration | — | — |
| • Incremental cost to add smallest AP configuration | —/$2.99k/—/$0.08k | — |
| • Incremental cost to add largest AP configuration | —/$17.77k/—/$0.2k | — |
| Distinguishing features (supplied by vendor)<br><br>*H=U.S. hospitals, IL=independent labs in U.S.,<br>C or GP=clinics or group practices in U.S., FI=foreign installations, OS=other sites<br>**other=sales, marketing, administration, and other company functions | • Internet option with customer report retrieval, online requisitions, other advanced features<br>• features to help clients with marketing and customer service<br>• flexibility and scalability | • interfaces to instruments and devices, including slide/cassette labelers<br>• clinical info. module to view/report related clinical test results<br>• easy to use; customized to fit labs' specific needs/specialty |

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

# *Anatomic pathology computer systems*

| Part 12 of 13 | SCC Soft Computer<br>Ellie Vahman  ellie@softcomputer.com<br>34350 U.S. Highway 19 North, Palm Harbor, FL 34684<br>727-789-0100  www.softcomputer.com | Small Business Computers of New England Inc.<br>Gene Calvano  gene_calvano@sbcne.com<br>25 Lowell St., Ste. 401, Manchester, NH 03101<br>800-647-2263/603-695-9090  www.sbcne.com |
|---|---|---|
| *See accompanying article on page 18* | | |
| Name of anatomic pathology system | SoftPath | AP Easy |
| First ever AP system installation/most recent AP system installation | 1993/2005 | 1989/2005 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 140 (104/9/4/23/0) | 206 (48/136/17/5/0) |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | 10 | 20 |
| No. of sites operating AP system | 290 | 206 |
| Percentage of installations standalone | 3% | 100% |
| Staff to develop-install-support-other** | | |
| • In entire company | 603-79-178-170 | 4-4-4-1 |
| • In LIS division (including AP)/in AP systems only | 440-57-130-124/121-16-36-34 | — |
| No. of interactive terminals (user workstations) in sites operating system | 5–250 (ave., 10–20) | 1–53 (ave., 7–10) |
| Range in No. of surgical pathology cases per year in sites operating system | 1,000–85,000 | 1,000–50,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 25–125,000 | 2,000–75,000 |
| Central hardware or service type | IBM pSeries (RS/6000), IBM Power5 system | Windows NT, 2000, 2003, XP, Macintosh OS |
| Terminals/workstations or PC platform | PCs with Windows 2000, XP | Windows NT, 2000, 2003, XP, Macintosh OS |
| Innovative peripherals | embedded images and lab results on final reports, image-management module, Web-based portal access for ordering and reports, others | image-enabled reports with digital/microscope camera, color printing, fax robot |
| Network installation required?/networks supported | yes/LAN, WAN, TCP/IP, Unix | yes/LAN, WAN, TCP/IP |
| Programming language(s) | C++, C, VBA, Java | FileMaker Pro |
| Databases and tools used | Oracle, XML, DB Vista, SQL | FileMaker Pro |
| Word processor(s) used | MS Word/Rich Text Editor | integrated with FileMaker Pro |
| Operating system(s) | server: IBM, AIX (Unix)/client: Windows 2000, XP | Windows NT, 2000, 2003, XP, Macintosh OS |
| Features (listed as a percentage of live installs or based on availability) | | |
| • Surgical pathology information system | 100% | 100% |
| • Cytology information system | 100% | 100% |
| • Autopsy information system | 100% | 100% |
| • Specimen log-in | 100% | 100% |
| • Entry of block IDs | 100% | 100% |
| • Specimen labels | 100% | 100% |
| • Histology slide labels | 100% | 100% |
| • Bar-coded slide labels | installed | installed |
| • Histology worksheets | 100% | 100% |
| • Word processing—vendor specific | not available | n/a |
| • Word processing—standard tools (Word, WordPerfect) | 100% | 100% |
| • Voice entry of gross description | installed | available but not installed |
| • Back-end batch voice to text | available second quarter 2006 | available but not installed |
| • Gross and microscopic images integrated in reports | installed | 100% |
| • Electronic signature | 100% | 100% |
| • Remote printing of completed reports | 100% | installed |
| • Direct fax reports | 100% | installed |
| • Web-based remote inquiry of reports | 5% | 15% |
| • Physician Web access for order entry | available but not installed | 1% |
| • Natural language search capability | 100% | 100% |
| • SNOMED II/SNOMED CT | not available/installed | 100%/available but not installed |
| • Multi-site or multi-facility-wide area network | 55% | installed |
| • Sound-alike retrieval of patient history | 100% | 100% |
| • Autopsy measurements and organ weights | installed | 100% |
| • Tumor registry reports | installed | 100% |
| • Management reports | 100% | 100% |
| • Cytology abnormal—unsatisfactory list to doctors | 100% | 100% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 100% | 100% |
| • Histology-cytology correlation report | 100% | 100% |
| • Reports sufficient to comply with CLIA '88 regulations | 100% | 100% |
| • Comprehensive billing and accounts receivable | 30% | 15% |
| • HIS interface: A/D/T | 95% | installed |
| • HIS interface: result reporting/incoming clinical results | 85%/15% | installed/available but not installed |
| • Interface to external billing system | 60% | 85% |
| • Partin tables or Gleason score calculations | available second quarter 2006 | installed |
| • Synoptic reporting | installed | installed |
| • Specimen tracking and retrieval | available second quarter 2006 | 100% |
| • Client services module | installed | installed |
| • Consult management and reporting | installed | 100% |
| Software provides indexed field in each test definition for LOINC code? | yes | no |
| Provide LOINC dictionary for each new installation? | no | no |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | 10 in HL7 format | 17 in NAACCR format |
| Complete AP application service provider solution? | yes | no |
| Method of charging for ASP service | fixed fee or transaction based (or both) | — |
| Client software required | requires software be installed on a client PC | — |
| ASP information conduit | requires use of private, dedicated circuit | — |
| Client contracts supported from data center not operated by client | 1 | — |
| How data center is operated | by vendor | — |
| Other information systems interfaced | Cerner, Siemens, McKesson, IDX, QuadraMed, Eclipsys, Dairyland, others | Misys, Meditech, CPSI |
| Voice-recognition packages integrated with AP system | Dragon Professionally Speaking | Windows and Macintosh OS packages supporting FileMaker Pro |
| Histology and cytology laboratory instruments interfaced | cassette markers, slide labelers, stainers | slide labelers |
| User interface in language other than English? | yes (French) | no |
| Source code?/user group? | escrow/yes (meets online as well) | yes/no |
| User can modify screens? | yes | yes |
| Cost (hardware/software/installation and training/monthly maintenance) | | |
| • Smallest stand-alone system | $30k/$30k/$50k/$0.45k | $1k/$3k/0/0 |
| • Largest stand-alone system | $100k/$150k/$75k/$2.25k | $50k+/$22k/$3k/$0.25k |
| Base price of integrated system, excluding AP configuration | $250k | n/a |
| • Incremental cost to add smallest AP configuration | $15k/$30k/$40k/$0.45k | n/a |
| • Incremental cost to add largest AP configuration | $100k/$275k/$75k/$4.125k | n/a |
| Distinguishing features (supplied by vendor) | •unique Manager's Dashboard with real-time data and ability to delegate tasks<br>• Web-based module (SoftWeb) for remote order entry and results query<br>• powerful features for large commercial laboratories | • customized solution with ongoing customizing support<br>• Internet reporting of final reports to client physicians<br>• high level of personalized support |

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

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## Anatomic pathology computer systems

Part 13 of 13

*See accompanying article on page 18*

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| | |
|---|---|
| Name of anatomic pathology system | Integrity |
| First ever AP system installation/most recent AP system installation | 1996/2004 |
| No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* | 2 hospital contracts† |
| No. of contracts signed between Oct. 1, 2004–Oct. 1, 2005 | — |
| No. of sites operating AP system | unknown (many downloads)† |
| Percentage of installations standalone | — |
| Staff to develop-install-support-other** | |
| • In entire company | 1 total |
| • In LIS division (including AP)/in AP systems only | — |
| No. of interactive terminals (user workstations) in sites operating system | 1–6 |
| Range in No. of surgical pathology cases per year in sites operating system | 4,000–5,000 |
| Range in No. of gynecologic cytology cases per year in sites operating syst. | 0–11,000 |
| Central hardware or service type | — |
| Terminals/workstations or PC platform | PC platform |
| Innovative peripherals | voice input, others |
| Network installation required?/networks supported | no |
| Programming language(s) | Visual Basic for Access |
| Databases and tools used | Access 97, 2000 |
| Word processor(s) used | |
| Operating system(s) | Windows 95, 98, 2000, XP |
| Features (listed as a percentage of live installs or based on availability) | |
| • Surgical pathology information system | 100% |
| • Cytology information system | 50% |
| • Autopsy information system | 50% |
| • Specimen log-in | 50% |
| • Entry of block IDs | 0 |
| • Specimen labels | 0 |
| • Histology slide labels | 0 |
| • Bar-coded slide labels | 0 |
| • Histology worksheets | 0 |
| • Word processing—vendor specific | 0 |
| • Word processing—standard tools (Word, WordPerfect) | 0 |
| • Voice entry of gross description | 50% |
| • Back-end batch voice to text | 0 |
| • Gross and microscopic images integrated in reports | 50% |
| • Electronic signature | 100% |
| • Remote printing of completed reports | 50% |
| • Direct fax reports | 50% |
| • Web-based remote inquiry of reports | 0 |
| • Physician Web access for order entry | 0 |
| • Natural language search capability | 100% |
| • SNOMED II/SNOMED CT | 0 |
| • Multi-site or multi-facility-wide area network | 50% |
| • Sound-alike retrieval of patient history | 0 |
| • Autopsy measurements and organ weights | n/a |
| • Tumor registry reports | 50% |
| • Management reports | 0 |
| • Cytology abnormal—unsatisfactory list to doctors | 50% |
| • Cytology diagnostics statistics by pathologist or cytotechnologist | 50% |
| • Histology-cytology correlation report | 50% |
| • Reports sufficient to comply with CLIA '88 regulations | 50% |
| • Comprehensive billing and accounts receivable | 100% |
| • HIS interface: A/D/T | 0 |
| • HIS interface: result reporting/incoming clinical results | 0 |
| • Interface to external billing system | 0 |
| • Partin tables or Gleason score calculations | not available |
| • Synoptic reporting | available but not installed |
| • Specimen tracking and retrieval | 100% |
| • Client services module | not available |
| • Consult management and reporting | 100% |
| Software provides indexed field in each test definition for LOINC code? | no |
| Provide LOINC dictionary for each new installation? | — |
| No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry | — |
| 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 packages integrated with AP system | Dragon Naturally Speaking |
| Histology and cytology laboratory instruments interfaced | none |
| User interface in language other than English? | no |
| Source code?/user group? | yes/no |
| User can modify screens? | yes |
| 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) | • no cost for software |
| | • open architecture for individual modifications |
| | • "mini" shareware exists for those wanting pull- |
| | down menus to be exported to existing AP system |

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

† *freeware, open architecture*

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