

Faltering feature: tumor reporting

Raymond D. Aller, MD

A child of the 70s, the modern anatomic pathology system has flourished through the years, adopting numerous features that have stayed in vogue with succeeding generations of AP systems. However, unlike the original wave of AP systems and their users, the current lot has not adequately addressed the reporting of cancer cases to tumor registries.

The first online AP system, which became operational in 1976, automatically identified cases of malignancy and electronically transferred case information to the tumor registry. With the inexorable increase in cancer rates during the past 30 years, one would expect that such a capability would be used extensively today, but, perhaps surprisingly, it has largely been overlooked.

One difficulty is that no revenue stream exists for reporting cases to tumor registries. As with many other areas of public health, improving our understanding of the epidemiology of cancer has not been a budgeting priority for anatomic pathology laboratories and hospitals.

The public health community, however, fully recognizes the value of electronic transfer from surgical pathology systems to the central tumor registry. The North American Association of Central Cancer Registries, or NAACCR, has published on its Web site, www.naaccr.org, standard formats and an implementation guide for electronically transferring surgical pathology cases and diagnoses to the tumor registry. Alternatively, tumor cases can be transferred using the HL7 standard or a non-standard format.

Experience in other domains of public health has shown that automatic electronic reporting significantly improves the reporting rate. For example, in the reporting of infectious diseases by clinical laboratories, a number of estimates have shown that electronic laboratory reporting at least doubles the number of cases transmitted to public health agencies.

While several vendors in this year's anatomic pathology systems survey, pages 77-94, provide electronic reporting capabilities, some do not. Among those vendors who do offer such functionality, only a limited number of users are taking advantage of it. Interestingly, foreign installations appear to electronically report

cases to tumor registries more routinely than U.S. sites. A strong argument can be made that these interfaces should be a standard feature of all software installations. In most jurisdictions, medical facilities are legally required to report cancer cases to the tumor registry, and most vendors' contracts include a clause that legal and regulatory requirements will automatically be included in the software.

Use of a reporting standard such as NAACCR is helpful, but it is by no means a panacea. As with earlier versions of HL7, optional fields and fields with latitude in how they are applied make it critical to develop an implementation profile that the laboratory and the tumor registry can use to ensure that data will be transmitted accurately.

Mark Tuthill, MD, president of the Association of Pathology Informatics, points out that central tumor registries in different states may receive different transmission formats, even while requiring the same NAACCR "standard." But as users gain experience with such functionality and as vendors increasingly deploy electronic interfaces, some of these disparities should dissipate.

For electronic transmission of anatomic pathology cases to tumor registries to become standard practice, however, medical facilities must ask their vendors to implement this capability for them. Vendors don't have the resources to provide users with features that they have not requested and may not use.

The ability to report cancer cases to tumor registries is just one feature listed in the AP systems survey on the following pages. The survey provides detailed information on 21 AP systems from 19 vendors. The information and features presented are based entirely on information supplied by the software vendors.

We urge readers to contact vendors of interest to obtain a complete list of users and to speak with a few of those users to verify that the vendor's AP system has the capabilities stated. Even more important, ask those users about the level of service and support provided by the vendor—this is far more crucial than the mix of features offered with the software. □

Dr. Aller is director of bioterrorism preparedness and response for Los Angeles County Public Health Acute Communicable Diseases. He can be reached at raller@ladhs.org.

Anatomic pathology computer systems

Part 1 of 11	CCA (Creative Computer Applications Inc.) Chris Coleman sales@ccainc.com 26115 Mureau Rd., Calabasas, CA 91302 800-437-9000/818-880-6700 www.ccainc.com
See accompanying article at left	
Name of anatomic pathology system	CyberPath
First ever AP system installation/most recent AP system installation No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* No. of contracts signed in calendar year 2004 No. of sites operating AP system Percentage of installations standalone Staff to develop-install-support-other** <ul style="list-style-type: none">In entire companyIn LIS division (including AP)/in AP systems only	2000/2004 24 (16/3/3/2/0) 0 20 0 13-4-19-33 7-4-13-33/2-4-13-33
No. of interactive terminals in sites operating system Range in No. of surgical pathology cases per year in sites operating system Range in No. of gynecologic cytology cases per year in sites operating syst.	2-250 (ave. 150) 3,000-200,000 3,000-10,000
Central hardware or service type Terminals/workstations or PC platform Innovative peripherals Network installation required?/networks supported Programming language(s) Databases and tools used Word processor(s) used Operating system(s)	HP/Compaq, IBM PC workstations voice dictation, image capture and storage, others yes/LAN, WAN, TCP/IP Microfocus Cobol, HTML, Java, Visual Basic ODBC compliant MS Word SCO, AIX
Features (listed as a percentage of live installs or based on availability) <ul style="list-style-type: none">Surgical pathology information systemCytology information systemAutopsy information systemSpecimen log-inEntry of block IDsSpecimen labelsHistology slide labelsBar-coded slide labelsHistology worksheetsWord processing—vendor specificWord processing—standard tools (Word, WordPerfect)Voice entry of gross description/voice entry of final diagnosisBack-end batch voice to textGross and microscopic images integrated in reportsElectronic signatureRemote printing of completed reportsDirect fax reportsWeb-based remote inquiry of reportsPhysician Web access for order entryNatural language search capabilitySNOMED II/SNOMED CTMulti-site or multi-facility-wide area networkSound-alike retrieval of patient historyAutopsy measurements and organ weightsTumor registry reportsManagement reportsCytology abnormal—unsatisfactory list to doctorsCytology diagnostics statistics by pathologist or cytotechnologistHistology-cytology correlation reportReports sufficient to comply with CLIA '88 regulationsComprehensive billing and accounts receivableHIS interface: A/D/THIS interface: result reporting/incoming clinical resultsInterface to external billing systemPartin tables or Gleason score calculationsSynoptic reportingSpecimen tracking and retrievalClient services moduleConsult management and reporting	100% 45% 100% 100% 100% 100% 100% 100% 100% not available 100% installed not available installed 100% 100% 100% 40% 30% — not available/25% 100% not available available but not installed 100% 100% 45% 45% 45% 100% optional interface 80% 80%/100% 100% — — 100% not available via Report Writer
Software provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	yes no
No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry	1 (NAACCR format), 1 (HL7 format)
Complete AP ASP solution? <ul style="list-style-type: none">Method of charging for ASP serviceClient software requiredASP information conduitClient contracts supported from data center not operated by clientHow data center is operated	no — — — — —
Other IS interfaces Voice-recognition packages integrated with AP system Histology and cytology laboratory instruments interfaced	McKesson, Meditech, Siemens, QuadraMed, others Dragon Naturally Speaking generic interface avail. for interfacing with cytology lab instruments
Source code?/user group? User can modify screens?	escrow/yes no (but provide user-defined report writer, custom programming)
Cost (hardware/software/installation and training/monthly maintenance) <ul style="list-style-type: none">Smallest stand-alone systemLargest stand-alone systemBase price of integrated system, excluding AP configurationIncremental cost to add smallest AP configurationIncremental cost to add largest AP configuration	— — — — —
Distinguishing features (supplied by vendor) *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	<ul style="list-style-type: none">comprehensive and integrated with CyberLab LISreports/image access via WebGatewaycorporate commitment to quality service and support

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

Survey editor: Raymond Aller, MD

Part 2 of 11	Cerner Corp.	Cerner DHT Inc.
See accompanying article on page 76	Angela Betts abetts@cerner.com 2800 Rockcreek Parkway, Kansas City, MO 64117 816-201-2771 www.cerner.com	Michele Connors mconnors@cerner.com 51 Sawyer Rd., 2 University Office Park, Waltham, MA 02453 781-434-2200 www.cerner.com
Name of anatomic pathology system	Cerner Millennium Anatomic Pathology	CoPath Plus
First ever AP system installation/most recent AP system installation No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* No. of contracts signed in calendar year 2004 No. of sites operating AP system Percentage of installations standalone Staff to develop-install-support-other** • In entire company • In LIS division (including AP)/in AP systems only	1982/2004 116 (105/2/2/7/0) 37 165+ <5% 800+-1,900+-800+-1,300+ 73-75-43-33/—	1982/2004 389 (332/20/25/11/1) 42 550+ 100% 800+-1,900+-800+-1,300+ —/14-21-24-4
No. of interactive terminals in sites operating system Range in No. of surgical pathology cases per year in sites operating system Range in No. of gynecologic cytology cases per year in sites operating syst.	10–400+ (ave. 10–20) 5,000–100,000+ 2,500–100,000+	2–500+ (ave. 50) 300–350,000+ 2,000–1,000,000
Central hardware or service type Terminals/workstations or PC platform Innovative peripherals Network installation required?/networks supported Programming language(s) Databases and tools used Word processor(s) used Operating system(s)	Compaq, IBM RS/6000 Intel Pentium image enabled, Web enabled, bar codes, cassette labeler, engraver enabled yes/LAN, WAN, TCP/IP, Unix Visual C++, Visual Basic, Java Oracle MS Word, Visual Writer Open VMS, AIX, Windows 2000, NT, XP	IBM RISC, Intel Pentium Intel Pentium, Citrix thin client Web enabled, voice enabled, image enabled, bar codes, cassette labeler, others yes/LAN, WAN, TCP/IP, Novell, Microsoft Power Builder, C++ MS SQL, Sybase MS Word, Visual Writer Windows NT, 98, 2000, XP, AIX, Unix
Features (listed as a percentage of live installs or based on availability) • Surgical pathology information system • Cytology information system • Autopsy information system • Specimen log-in • Entry of block IDs • Specimen labels • Histology slide labels • Bar-coded slide labels • Histology worksheets • Word processing—vendor specific • Word processing—standard tools (Word, WordPerfect) • Voice entry of gross description/voice entry of final diagnosis • Back-end batch voice to text • Gross and microscopic images integrated in reports • Electronic signature • Remote printing of completed reports • Direct fax reports • Web-based remote inquiry of reports • Physician Web access for order entry • Natural language search capability • SNOMED II/SNOMED CT • Multi-site or multi-facility-wide area network • Sound-alike retrieval of patient history • Autopsy measurements and organ weights • Tumor registry reports • Management reports • Cytology abnormal—unsatisfactory list to doctors • Cytology diagnostics statistics by pathologist or cytotechnologist • Histology-cytology correlation report • Reports sufficient to comply with CLIA '88 regulations • Comprehensive billing and accounts receivable • HIS interface: A/D/T • HIS interface: result reporting/incoming clinical results • Interface to external billing system • Partin tables or Gleason score calculations • Synoptic reporting • Specimen tracking and retrieval • Client services module • Consult management and reporting	100% 100% 80% 100% 100% 80% 100% 80% 100% 80% 20% <5%/<5% not available 15% 100% 80% 80% <5% <5% 100% installed/available but not installed (new) 40% 100% 80% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% <5% 100% 100%/100% (integrated, not interfaced) 80% not available 10% not available installed not available	100% 100% 75% 100% 100% 100% 15% 100% 45% 55% 10%/10% not available 15% 100% 2% 95% 2% available in 2005 100% 95%/5% 30% not available 100% 100% 100% 100% 100% 100% 100% 90% 95% 95%/available 95% not available 15% not available not available 90%
Software provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	no yes	no no
No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry	<5 (NAACCR format), <5 (HL7 format)	3 (NAACCR format), 1 (HL7 format)
Complete AP ASP solution? • Method of charging for ASP service • Client software required • ASP information conduit • Client contracts supported from data center not operated by client • How data center is operated	yes fixed fee requires software be installed on client PC requires use of private, dedicated circuit >100 by vendor	no — — — — —
Other IS interfaces Voice-recognition packages integrated with AP system Histology and cytology laboratory instruments interfaced	Cerner, Eclipsys, Epic, McKesson, IDX, Siemens, TDS Dragon Medical Suite Shur/Mark, Thermo Shandon cassette labelers	Cerner, Eclipsys, Epic, McKesson, IDX, Siemens, TDS, Meditech, Keane Dragon Naturally Speaking, Clinical Reporter Shur/Mark, Thermo Shandon, Leica, Sakura, Ventana
Source code?/user group? User can modify screens?	escrow/yes (meets via Internet) yes (also provide user-defined report writer, custom programming)	escrow/yes (meets online as well) yes (also provide user-defined report writer, custom programming)
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) *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	• comprehensive, totally integrated single system for all lab departments • over 25 years in the LIS industry • continued innovations in LIS, including genomics, molecular testing, and patented synoptic reporting	• extreme flexibility to clients, workflow, and report formats • advanced imaging and synoptic reporting capabilities • outstanding, dedicated support

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

Anatomic pathology computer systems

Part 3 of 11 See accompanying article on page 76	Clinical Information Systems Inc. V. Flaxbeard cissupport@aol.com 18805 Willamette Drive, West Linn, OR 97068 800-869-0680 www.cislab.com	Computer Trust Corp. David Liberman, MD info@ctcsurge.com 1 State St., Boston, MA 02109-3507 617-557-9264 www.ctcsurge.com
Name of anatomic pathology system	CISlab CPS	WinSurge
First ever AP system installation/most recent AP system installation No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* No. of contracts signed in calendar year 2004 No. of sites operating AP system Percentage of installations standalone Staff to develop-install-support-other** • In entire company • In LIS division (including AP)/in AP systems only	1988/— 28 (5/23/0/0/0) 3 28 60% 6-7-3-1 6-7-3-1/—	1989/2004 62 (30/14/0/0/18†) 7 77 100% — —
No. of interactive terminals in sites operating system Range in No. of surgical pathology cases per year in sites operating system Range in No. of gynecologic cytology cases per year in sites operating syst.	1–100 (ave. 15) 2,500–115,000 3,000–300,000	4–3,000 (mean, 75) 5,000–300,000 0–250,000
Central hardware or service type Terminals/workstations or PC platform Innovative peripherals Network installation required?/networks supported Programming language(s) Databases and tools used Word processor(s) used Operating system(s)	DEC, HP, IBM, generic PCs generic PCs, Wyse 60, Link WORM drive, HP scanners, Philips, optical disks yes/LAN, Unix, WAN, TCP/IP Delphi, Cobol Delphi 3, SQL relational databases WordPerfect tools, MS Word Windows 98, XP Pro, 2000 Pro, 2000/2003 server	Windows server, Unix server Windows PCs, Citrix, Web, VPN, Telnet, terminals auto fax, graphical report, remote print color reports to doctors offices, voice recognition, microscope cameras, TWAIN imaging, others user's option/LAN, WAN, TCP/IP, Unix, Windows 2003, 2000, NT, XP Visual Basic VI Caché, SQL, Crystal Reports RTF text, plain text, MS Word Windows 2003, 2000, NT, XP
Features (listed as a percentage of live installs or based on availability) • Surgical pathology information system • Cytology information system • Autopsy information system • Specimen log-in • Entry of block IDs • Specimen labels • Histology slide labels • Bar-coded slide labels • Histology worksheets • Word processing—vendor specific • Word processing—standard tools (Word, WordPerfect) • Voice entry of gross description/voice entry of final diagnosis • Back-end batch voice to text • Gross and microscopic images integrated in reports • Electronic signature • Remote printing of completed reports • Direct fax reports • Web-based remote inquiry of reports • Physician Web access for order entry • Natural language search capability • SNOMED II/SNOMED CT • Multi-site or multi-facility-wide area network • Sound-alike retrieval of patient history • Autopsy measurements and organ weights • Tumor registry reports • Management reports • Cytology abnormal—unsatisfactory list to doctors • Cytology diagnostics statistics by pathologist or cytotechnologist • Histology-cytology correlation report • Reports sufficient to comply with CLIA '88 regulations • Comprehensive billing and accounts receivable • HIS interface: A/D/T • HIS interface: result reporting/incoming clinical results • Interface to external billing system • Partin tables or Gleason score calculations • Synoptic reporting • Specimen tracking and retrieval • Client services module • Consult management and reporting	100% 100% 5% 100% not available 100% 100% 100% 100% 5% 100% 5%/5% not available 5% 100% 100% 100% not available 5%/5% 10% not available 5% 100% 100% 100% 100% 100% 50% 10% 10%/10% 50% 5% not available 100% 100% not available	100% 82% 55% 100% 100% 100% 19% 100% 100% 14%/14% 14% 76% 82% 45% 74% 14% available but not installed 100% 13%/available but not installed 74% 100% 55% 100% 100% 82% 82% 82% 100% not available 29% 29%/available but not installed 27% 29% 100% 100% 100% 100%
Software provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	yes no	yes no
No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry	0	31% (NAACCR format)
Complete AP ASP solution? • Method of charging for ASP service • Client software required • ASP information conduit • Client contracts supported from data center not operated by client • How data center is operated	no — — — — —	no — — — — —
Other IS interfaces Voice-recognition packages integrated with AP system Histology and cytology laboratory instruments interfaced	Medical Manager, Medfax, McKesson, Dairyland, PCN, Reynolds & Reynolds, Praxis, LabCorp DragonSpeak none	Siemens, McKesson, HDS, IDX, others Dragon Naturally Speaking Professional Shur/Mark cassette labeler, slide etcher, microscope cameras, others
Source code?/user group? User can modify screens?	escrow/no no (but provide custom programming)	escrow (user's option and expense)/yes yes (also provide user-defined report writer, custom programming)
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	\$7.5k/\$7.5k/\$3k/\$.35k \$100k/\$100k/\$20k/\$2.5k — — —	\$10k/\$25k/\$12k/\$.5k \$100k/\$1m+/\$500k+/\$20k+ \$0 \$10k/\$25k/\$12k/\$.5k \$100k/\$1m+/\$500k+/\$20k+
Distinguishing features (supplied by vendor) *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	• provide client/server point-and-click access for pathology and cytology • easy to learn and use at an efficient cost • easily integrated into existing network environment	• lab-by-lab workflows on true enterprise system • outstanding service and responsiveness • powerful yet easy ad hoc report writer for non-IS laboratorians † pathology practice management/multi-lab enterprises

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

Anatomic pathology computer systems

Part 4 of 11 See accompanying article on page 76	Cortex Medical Management Systems Inc. Stephen D. Steele ssteale@cortexmed.com 2001 Western Ave., Ste. 410, Seattle, WA 98121 800-278-4645/206-812-6981 www.cortexmed.com	EasyPath Software Selig Leyser, MD seligl@comcast.net 2551 103rd SE, Beaux Arts, WA 98004 425-455-9012/425-899-2565 http://homepage.mac.com/SeligL/easypath/
Name of anatomic pathology system	The Gold Standard	EasyPath
First ever AP system installation/most recent AP system installation No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* No. of contracts signed in calendar year 2004 No. of sites operating AP system Percentage of installations standalone Staff to develop-install-support-other** <ul style="list-style-type: none">• In entire company• In LIS division (including AP)/in AP systems only	1986/2004 134 (23/39/0/0/72) 5 72 100% 3-2-4-4 3-2-4-4/—	1982/— 6 (4/1/1/0/0) 0 5 100% 2 total —
No. of interactive terminals in sites operating system Range in No. of surgical pathology cases per year in sites operating system Range in No. of gynecologic cytology cases per year in sites operating syst.	1–70 (ave. 15) 1,000–70,000 1,000–150,000	5–15 (ave. 10) 8,000–100,000 1,000–100,000
Central hardware or service type Terminals/workstations or PC platform Innovative peripherals Network installation required?/networks supported Programming language(s) Databases and tools used Word processor(s) used Operating system(s)	any hardware that supports current version of Windows any hardware that supports current version of Windows voice recognition, mark sense reading yes/Windows compatible, TCP/IP Visual Basic MS SQL server MS Word current version of Windows	any PC or Macintosh any PC or Macintosh voice input, point-and-click image capture no (but supports TCP/IP, LAN, WAN) 4th Dimension (Pascal-like) 4D server, compiler, 4D Tools 4D Write (tightly integrated) Windows 98, 2000, XP, Macintosh OS 9, X
Features (listed as a percentage of live installs or based on availability) <ul style="list-style-type: none">• Surgical pathology information system• Cytology information system• Autopsy information system• Specimen log-in• Entry of block IDs• Specimen labels• Histology slide labels• Bar-coded slide labels• Histology worksheets• Word processing—vendor specific• Word processing—standard tools (Word, WordPerfect)• Voice entry of gross description/voice entry of final diagnosis• Back-end batch voice to text• Gross and microscopic images integrated in reports• Electronic signature• Remote printing of completed reports• Direct fax reports• Web-based remote inquiry of reports• Physician Web access for order entry• Natural language search capability• SNOMED II/SNOMED CT• Multi-site or multi-facility-wide area network• Sound-alike retrieval of patient history• Autopsy measurements and organ weights• Tumor registry reports• Management reports• Cytology abnormal—unsatisfactory list to doctors• Cytology diagnostics statistics by pathologist or cytotechnologist• Histology-cytology correlation report• Reports sufficient to comply with CLIA '88 regulations• Comprehensive billing and accounts receivable• HIS interface: A/D/T• HIS interface: result reporting/incoming clinical results• Interface to external billing system• Partin tables or Gleason score calculations• Synoptic reporting• Specimen tracking and retrieval• Client services module• Consult management and reporting	100% 90% 20% 100% 100% 100% 100% 10% not available — 100% 5%/5% 5% 15% 100% 20% 20% 25% available but not installed installed installed/— 10% installed available but not installed available but not installed 100% 100% 100% 100% 100% 30% 25% 25%/5% 10% not available installed 100% not available 100%	100% 100% 100% 100% 100% 100% 100% available but not installed 100% 100% not available available but not installed available but not installed 20% 40% 100% 100% available but not installed available but not installed 100% SNOMED-like coding 60% available but not installed 100% 100% 100% 20% 60% 100% 100% not available available but not installed 60%/available but not installed not availaible available but not installed not available 100% not available 100%
Software provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	no no	no no
No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry	none	60% (NAACCR format)
Complete AP ASP solution? <ul style="list-style-type: none">• 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	yes fixed fee — operates over Internet 0 —	yes by arrangement requires software be installed on client PC operates over Internet 0 —
Other IS interfaces Voice-recognition packages integrated with AP system Histology and cytology laboratory instruments interfaced	McKesson, Cerner, Meditech, IDX, CCA, Siemens, others none none	Meditech, Cerner none none
Source code?/user group? User can modify screens?	escrow/yes no (but provide user-defined report writer, custom programming)	escrow (on request)/no yes (also provide user-defined report writer, custom programming)
Cost (hardware/software/installation and training/monthly maintenance) <ul style="list-style-type: none">• Smallest stand-alone system• Largest stand-alone systemBase price of integrated system, excluding AP configuration• Incremental cost to add smallest AP configuration• Incremental cost to add largest AP configuration	—/\$50k/\$20k/\$1k —/\$500k/\$200k/\$7k \$80k —/\$2.8k/\$1.4k/\$.5k —/\$2.8k/\$1.4k/\$.5k	\$1.2k/\$10k/\$0/\$0 \$20k/\$18k/\$0/\$0 — — —
Distinguishing features (supplied by vendor) *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	<ul style="list-style-type: none">• sole focus has been pathology laboratories for 21 years• system originally designed by a pathologist; all enhancements at the direction of the user group• customers have all information online since original installation	<ul style="list-style-type: none">• powerful yet inexpensive system to purchase, set up, use, maintain• designed by a practicing pathologist• simple point-and-click integrated image capture and point-and-click Bethesda 2001 reporting

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

Anatomic pathology computer systems

Part 5 of 11	Impac Medical Systems (formerly Tamtron Corp.) Chad Scribner salesinfo@impac.com 100 W. Evelyn Ave., Mountain View, CA 94041 888-464-6722 www.impac.com	Medical Information Technology Inc. (Meditech) Paul Berthiaume info@meditech.com Meditech Circle, Westwood, MA 02090 781-821-3000 www.meditech.com
See accompanying article on page 76		
Name of anatomic pathology system	PowerPath	Meditech Anatomical Pathology—client/server
First ever AP system installation/most recent AP system installation	1986/2004	1978/2004
No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)*	193 (145/31/13/4/0)	—†
No. of contracts signed in calendar year 2004	25	—†
No. of sites operating AP system	412	160
Percentage of installations standalone	100%	—
Staff to develop-install-support-other**		
• In entire company	422 total	2,070 total
• In LIS division (including AP)/in AP systems only	85 total/45 total	—†
No. of interactive terminals in sites operating system	5–400	5–100+ (ave. 5–10)
Range in No. of surgical pathology cases per year in sites operating system	1,000–120,000	—†
Range in No. of gynecologic cytology cases per year in sites operating syst.	200–350,000	—†
Central hardware or service type	Windows 2000 server	HP, IBM, Dell
Terminals/workstations or PC platform	Windows 2000, XP	only PC workstation supported
Innovative peripherals	image-management module, Internet-inquiry module, dermatopathology module	voice input/output, image input/output
Network installation required?/networks supported	yes/TCP/IP	yes/LAN, WAN, Novell, TCP/IP
Programming language(s)	Borland Delphi	Magic programming language
Databases and tools used	MS SQL 2000	Magic client/server
Word processor(s) used	MS Word	MS Word, rich text
Operating system(s)	Windows	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	20%	100%
• Histology worksheets	100%	100%
• Word processing—vendor specific	100%	100%
• Word processing—standard tools (Word, WordPerfect)	100%	100%
• Voice entry of gross description/voice entry of final diagnosis	available as add-ons	100%/100%
• Back-end batch voice to text	—	100%
• Gross and microscopic images integrated in reports	25%	100%
• Electronic signature	100%	100%
• Remote printing of completed reports	100%	100%
• Direct fax reports	100%	100%
• Web-based remote inquiry of reports	10%	100%
• Physician Web access for order entry	available as add-on	100%
• Natural language search capability	100%	100%
• SNOMED II/SNOMED CT	100%/0	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%
• Interface to external billing system	100%	100%
• Partin tables or Gleason score calculations	15%	100%
• Synoptic reporting	15%	100%
• Specimen tracking and retrieval	80%	100%
• Client services module	100%	100%
• Consult management and reporting	80%	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	15 (HL7 format)	n/a
Complete AP ASP 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 IS interfaces	McKesson, Siemens, Eclipsys, IDX, Cerner, Misys, Meditech	Misys, McKesson, Siemens, others
Voice-recognition packages integrated with AP system	available as add-on	Dragon Systems
Histology and cytology laboratory instruments interfaced	Shur/Mark, Shandon, Leica, Ventana	n/a
Source code?/user group?	escrow/yes	yes/yes
User can modify screens?	no (but provide user-defined report writer, custom programming)	some (also provide user-defined report writer, custom programming)
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)	• AP systems leader • case-centric workflow • outstanding customer satisfaction	• over 30 years' experience developing and implementing LISs • seamless support for labs in an integrated delivery network • accurate, up-to-the-minute patient data and charge information
*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		† Meditech does not calculate these data

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

Part 6 of 11	Medical Information Technology Inc. (Meditech) Paul Berthiaume info@meditech.com Meditech Circle, Westwood, MA 02090 781-821-3000 www.meditech.com	MediSolution Anne Gin anne.gin@medisolution.com 2999 N. 44th St., Ste. 308, Phoenix, AZ 85018 602-269-8373 www.medisolution.com
See accompanying article on page 76		
Name of anatomic pathology system	Meditech Anatomical Pathology–Magic	MediLab Anatomic Pathology Module
First ever AP system installation/most recent AP system installation No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* No. of contracts signed in calendar year 2004 No. of sites operating AP system Percentage of installations standalone Staff to develop-install-support-other** • In entire company • In LIS division (including AP)/in AP systems only	1978/2004 —† —† 580 — 2,070 total —†	1974/2004 237 (0/0/0/237†/0) 25 300 20% 380 total 79-23-4-0/26-7-2-0
No. of interactive terminals in sites operating system Range in No. of surgical pathology cases per year in sites operating system Range in No. of gynecologic cytology cases per year in sites operating syst.	5–100+ (ave. 5–10) —† —†	4–200 (ave. 15) 2,000–80,000 40,000–340,000
Central hardware or service type Terminals/workstations or PC platform Innovative peripherals Network installation required?/networks supported Programming language(s) Databases and tools used Word processor(s) used Operating system(s)	HP, IBM, Dell only PC workstation supported voice input/output, image input/output yes/LAN, WAN, Novell, TCP/IP Magic programming language Magic client/server MS Word, rich text Magic	any type Windows PC any Windows compatible yes/LAN, WAN, Novell, TCP/IP, Unix C++ Oracle, SQL server MS Word server: any; workstation: Windows 2000, XP
Features (listed as a percentage of live installs or based on availability) • Surgical pathology information system • Cytology information system • Autopsy information system • Specimen log-in • Entry of block IDs • Specimen labels • Histology slide labels • Bar-coded slide labels • Histology worksheets • Word processing—vendor specific • Word processing—standard tools (Word, WordPerfect) • Voice entry of gross description/voice entry of final diagnosis • Back-end batch voice to text • Gross and microscopic images integrated in reports • Electronic signature • Remote printing of completed reports • Direct fax reports • Web-based remote inquiry of reports • Physician Web access for order entry • Natural language search capability • SNOMED II/SNOMED CT • Multi-site or multi-facility-wide area network • Sound-alike retrieval of patient history • Autopsy measurements and organ weights • Tumor registry reports • Management reports • Cytology abnormal—unsatisfactory list to doctors • Cytology diagnostics statistics by pathologist or cytotecnologist • Histology-cytology correlation report • Reports sufficient to comply with CLIA ’88 regulations • Comprehensive billing and accounts receivable • HIS interface: A/D/T • HIS interface: result reporting/incoming clinical results • Interface to external billing system • Partin tables or Gleason score calculations • Synoptic reporting • Specimen tracking and retrieval • Client services module • Consult management and reporting	100% 100%	100% 80% 50% 100% 100% 100% 95% 95% 10% 100% 100% installed 5% 75% 100% 100% 100% 25% 15% 100% 1%/90% 20% 100% 10% 30% 100% 80% 80% 80% 100% 25% 100% 20%/0 20% installed 80% 100% installed 100%
Software provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	no no	yes no
No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry	n/a	70 (HL7 format)
Complete AP ASP solution? • Method of charging for ASP service • Client software required • ASP information conduit • Client contracts supported from data center not operated by client • How data center is operated	no — — — — —	yes fixed fee browser based or requires software be installed on client PC operates over Internet 3 by a third party
Other IS interfaces Voice-recognition packages integrated with AP system Histology and cytology laboratory instruments interfaced	Misys, McKesson, Siemens, others Dragon Systems n/a	Meditech, GE Medical, Misys, SCC, Keane, self-developed, others Dragon, IBM Voice, Kurzziel Zentana automatic stainers, Surgipath and Sakura block printers
Source code??/user group? User can modify screens?	yes/yes some (also provide user-defined report writer, custom programming)	escrow/yes yes (also provide user-defined report writer)
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	— — — — —	\$5k/\$25k/\$20k/\$.45k \$45k/\$400k/\$90k/\$7k — \$1k/\$7k/\$1.2k/\$.15k \$40k/\$400k/\$50k/\$7k
Distinguishing features (supplied by vendor) *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	• over 30 years’ experience developing and implementing LISs • seamless support for labs in an integrated delivery network • accurate, up-to-the-minute patient data and charge information † Meditech does not calculate these data	• paperless system • online, real-time data entry • pathologists can order extra staining online ‡ recently started marketing product in the United States

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

Anatomic pathology computer systems

Part 7 of 11	Misys Plc. Donna Urmston donna.urmston@misyshealthcare.com 8529 Six Forks Rd., Raleigh, NC 27615 866-647-9787 www.misyshealthcare.com	NetSoft Inc. Bill Hughes sales@netsoftusa.com 2156 W. Park Court, Ste. E, Stone Mountain, GA 30087 866-463-8763/678-325-2909 www.netsoftusa.com
See accompanying article on page 76		
Name of anatomic pathology system	CoPathPlus from Misys	IntelliPath
First ever AP system installation/most recent AP system installation	1979/2004	2001/2004
No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)*	212	28 (3/21/3/1/0)
No. of contracts signed in calendar year 2004	16	8
No. of sites operating AP system	280+	38
Percentage of installations standalone	0	100%
Staff to develop-install-support-other**		6-4-5-2
• In entire company	—	—
• In LIS division (including AP)/in AP systems only	—/15-10-23-5	
No. of interactive terminals in sites operating system	8–256 (ave. 32)	5–40 (ave. 15)
Range in No. of surgical pathology cases per year in sites operating system	1,000–180,000+	5,000–200,000
Range in No. of gynecologic cytology cases per year in sites operating syst.	1,000–250,000	12,000–60,000
Central hardware or service type	IBM, Dell, Compaq	Pentium IV/Xeon servers (Dell, HP)
Terminals/workstations or PC platform	IBM, Dell, Compaq	Pentium IV PCs (Dell, HP, generic)
Innovative peripherals	Dragon Naturally Speaking—voice, Apollo Telemedicine—imaging management, telepathology, bar code	auto fax, digital camera/scanners for imaging, bar-code printing/scanning, PDA connectivity, voice recognition, Web access/delivery
Network installation required?/networks supported	yes/LAN, WAN, TCP/IP	no (but supports LAN, WAN, TCP/IP, Citrix)
Programming language(s)	Power Builder	Clarion, C++, .NET
Databases and tools used	Sybase, SQL	Pervasive SQL, TopSpeed
Word processor(s) used	internal, MS Word	integrated
Operating system(s)	AIX, Windows 2000 server, Windows 2000, XP workstations	Windows XP, 2000, NT
Features (listed as a percentage of live installs or based on availability)		
• Surgical pathology information system	100%	100%
• Cytology information system	100%	22%
• Autopsy information system	100%	10%
• Specimen log-in	100%	100%
• Entry of block IDs	100%	100%
• Specimen labels	85%	100%
• Histology slide labels	100%	100%
• Bar-coded slide labels	80%	available but not installed
• Histology worksheets	100%	installed
• Word processing—vendor specific	15%	100%
• Word processing—standard tools (Word, WordPerfect)	85%	not available
• Voice entry of gross description/voice entry of final diagnosis	15%/15%	available but not installed/4%
• Back-end batch voice to text	—	not available
• Gross and microscopic images integrated in reports	30%	25%
• Electronic signature	100%	100%
• Remote printing of completed reports	5%	available but not installed
• Direct fax reports	95%	100%
• Web-based remote inquiry of reports	—	30%
• Physician Web access for order entry	available but not installed	available but not installed
• Natural language search capability	100%	100%
• SNOMED II/SNOMED CT	95%/available but not installed	available but not installed
• Multi-site or multi-facility-wide area network	35%	10%
• Sound-alike retrieval of patient history	not available	not available
• Autopsy measurements and organ weights	100%	10%
• Tumor registry reports	95%	100%
• Management reports	100%	100%
• Cytology abnormal—unsatisfactory list to doctors	100%	20%
• Cytology diagnostics statistics by pathologist or cytotechnologist	100%	20%
• Histology-cytology correlation report	100%	20%
• Reports sufficient to comply with CLIA '88 regulations	100%	100%
• Comprehensive billing and accounts receivable	95%	50%
• HIS interface: A/D/T	95%	10%
• HIS interface: result reporting/incoming clinical results	95%/available but not installed	15%/10%
• Interface to external billing system	95%	30%
• Partin tables or Gleason score calculations	—	not available
• Synoptic reporting	5%	available second quarter 2005
• Specimen tracking and retrieval	—	available first quarter 2005
• Client services module	—	28%
• Consult management and reporting	—	28%
Software provides indexed field in each test definition for LOINC code?	no	no
Provide LOINC dictionary for each new installation?	no	—
No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry	12 (NAACCR format), 1 (HL7 format)	—
Complete AP ASP 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 IS interfaces	Misys products	Rand, Per-Se, WebMD, IDX
Voice-recognition packages integrated with AP system	Dragon Naturally Speaking	Dragon Naturally Speaking
Histology and cytology laboratory instruments interfaced	Shur/Mark, Shandon slide and cassette labelers	none
Source code?/user group?	no/yes (meets online as well)	escrow/yes
User can modify screens?	yes (also provide user-defined report writer, custom programming)	yes (also provide user-defined report writer, custom programming)
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)	• structured data reporting with synoptic analysis and SNOMED CT • electronic cancer reporting—better cancer research and outcomes • outstanding customer satisfaction and financial stability	• all components, including word processing and billing, fully integrated • unsurpassed reporting system using Crystal Reports customized for IntelliPath • superior value and customer care
*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 8 of 11 See accompanying article on page 76	Novovision Inc. Hina Kharbey sales@novovision.com 301 N. Harrison St., Ste. 384, Princeton, NJ 08540 877-668-6123 www.novovision.com	Opus Healthcare Solutions Shelli Allen solutions@opushealthcare.com 12301 Research Blvd., Bldg. IV, Ste. 200, Austin, TX 78759 800-676-3371 www.opushealthcare.com
Name of anatomic pathology system	NovoPath	OpusAP
First ever AP system installation/most recent AP system installation No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)* No. of contracts signed in calendar year 2004 No. of sites operating AP system Percentage of installations standalone Staff to develop-install-support-other** • In entire company • In LIS division (including AP)/in AP systems only	1999/2004 38 (4/24/10/0/0) 12 50 100% 7-3-3-3 —	1987/2002 4 (4/0/0/0/0) 1 4 0 50-15-20-25 7-8-7-20/3-2-7-20
No. of interactive terminals in sites operating system Range in No. of surgical pathology cases per year in sites operating system Range in No. of gynecologic cytology cases per year in sites operating syst.	3–100 (ave. 18) 3,000–150,000 1,500–90,000	5–30 (ave. 19) 7,031–10,740 0–2,934
Central hardware or service type Terminals/workstations or PC platform Innovative peripherals Network installation required?/networks supported Programming language(s) Databases and tools used Word processor(s) used Operating system(s)	Windows 2003 servers PC based digital voice recorders, requisition scanners yes/LAN, WAN, TCP/IP, Windows networking MS tools MS SQL server, Oracle MS Word, user preference Windows 2000, XP	HP 9000, RP 5340 Dell — yes/LAN, WAN, TCP/IP, Unix C, Java Postgres, SQL proprietary Java-based text editor HP-UX
Features (listed as a percentage of live installs or based on availability) • Surgical pathology information system • Cytology information system • Autopsy information system • Specimen log-in • Entry of block IDs • Specimen labels • Histology slide labels • Bar-coded slide labels • Histology worksheets • Word processing—vendor specific • Word processing—standard tools (Word, WordPerfect) • Voice entry of gross description/voice entry of final diagnosis • Back-end batch voice to text • Gross and microscopic images integrated in reports • Electronic signature • Remote printing of completed reports • Direct fax reports • Web-based remote inquiry of reports • Physician Web access for order entry • Natural language search capability • SNOMED II/SNOMED CT • Multi-site or multi-facility-wide area network • Sound-alike retrieval of patient history • Autopsy measurements and organ weights • Tumor registry reports • Management reports • Cytology abnormal—unsatisfactory list to doctors • Cytology diagnostics statistics by pathologist or cytotechnologist • Histology-cytology correlation report • Reports sufficient to comply with CLIA '88 regulations • Comprehensive billing and accounts receivable • HIS interface: A/D/T • HIS interface: result reporting/incoming clinical results • Interface to external billing system • Partin tables or Gleason score calculations • Synoptic reporting • Specimen tracking and retrieval • Client services module • Consult management and reporting	100% 100% 100% 100% 100% 100% 100% 100% 100% not available 100% 100% 100%/100% 100% 100% 100% 30% 100% 100% 40% 10% 100% available but not installed 20% 100% 100% 100% 100% 100% 100% 100% 100% 30% 20% 20%/20% 100% installed 100% 100% 100% 100% 100%	100% 100% 60% 100% 30% available but not installed 30% — 30% 100% not available not available available but not installed 100% 100% 100% 30% 100% 30% not available 100% not available available but not installed not available available but not installed 60% 100% 30% 30% 30% 30% not available 100% 100%/100% 50% not available available but not installed not available not available 50%
Software provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	no no	no —
No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry	1 (NAACCR format)	1 (HL7 format)
Complete AP ASP solution? • Method of charging for ASP service • Client software required • ASP information conduit • Client contracts supported from data center not operated by client • How data center is operated	yes fixed fee browser based, requires software be installed on client PC operates over Internet 0 by a third party	yes fixed monthly subscription browser based, requires software be installed on client PC VPN (operates over Internet), requires use of private, dedicated circuit — by a third party (UHS Corporate)
Other IS interfaces Voice-recognition packages integrated with AP system Histology and cytology laboratory instruments interfaced	Invision, Open Link, Care Manager (HL7) Dragon Naturally Speaking —	Siemens, McKesson, Cycare, Hemocare, others none none
Source code?/user group? User can modify screens?	escrow (funded by client)/no yes (also provide user-defined report writer, custom programming)	escrow/yes yes (also provide custom programming)
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	— — — — —	\$5k–\$10k/\$30k/\$10k–\$20k/\$1k–\$2k \$10k–\$20k/\$30k/\$20k–\$40k/\$2k–\$4k \$100k–\$300k \$5k–\$10k/\$30k/\$10k–\$20k/\$1k–\$2k \$10k–\$20k/\$30k/\$20k–\$40k/\$2k–\$4k
Distinguishing features (supplied by vendor) *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	• billing summary on sign out for accurate billing • dial-up remote printing of color reports • automatic organ map annotation based on diagnosis	• full integration with OpusLab to include ADT, billing, results review, HIS interface • remote-access ready • Pap smear random: 10% rescreen; 0+ negative cases is automatic

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

Anatomic pathology computer systems

Part 9 of 11	PathLogix Corp. Jerry Grayson info@pathlogix.com 470 Nautilus St., Ste. 306, La Jolla, CA 92037 858-454-8030 www.pathlogix.com	Psyche Systems Corp. Patricia A. Salem info@psyschesystems.com 321 Fortune Blvd., Milford, MA 01757 800-345-1514 www.windopath.com
See accompanying article on page 76		
Name of anatomic pathology system	PathLogix	WindoPath
First ever AP system installation/most recent AP system installation	1988/2004	1986/2004
No. of contracts for sites operating AP system (H/IL/C or GP/Fl/OS)*	74 (8/66/0/0/0)	98 (46/33/0/19/0)
No. of contracts signed in calendar year 2004	—	6
No. of sites operating AP system	80	112
Percentage of installations standalone	100%	90%
Staff to develop-install-support-other**		
• In entire company	—	11-11-7-6
• In LIS division (including AP)/in AP systems only	—	11-11-7-6/3-4-6-3
No. of interactive terminals 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.	1,000–40,000	0–100,000+
Central hardware or service type	any Windows PC	Compaq or equivalent, Proliant ML 370 or equivalent
Terminals/workstations or PC platform	standard terminals	Compaq or equivalent, Compaq MicroTower PC or equivalent
Innovative peripherals	operates with most standard peripherals	voice recognition, Dragon Naturally Speaking, professional imaging integrated into WindoPath
Network installation required?/networks supported	no	yes/LAN, WAN, TCP/IP, Windows networking
Programming language(s)	Visual Basic, C++, SQL	Small Talk, Visual Basic
Databases and tools used	SQL server, Access	MS SQL server 7.0, 2000, Briquery report writing, RightFax
Word processor(s) used	integrated MS Word	integrated
Operating system(s)	all Windows operating systems, server 2003	Windows NT, 95, 98, 2000, XP
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	not available	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	not available	100%
• Histology worksheets	100%	100%
• Word processing—vendor specific	100%	100%
• Word processing—standard tools (Word, WordPerfect)	100%	100%
• Voice entry of gross description/voice entry of final diagnosis	available but not installed	25%/25%
• Back-end batch voice to text	available but not installed	available but not installed
• 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	available but not installed	10%
• Physician Web access for order entry	available but not installed	available but not installed
• Natural language search capability	100%	100%
• SNOMED II/SNOMED CT	100%	available but not installed
• Multi-site or multi-facility-wide area network	10%	10%
• Sound-alike retrieval of patient history	not available	100%
• Autopsy measurements and organ weights	not available	100%
• Tumor registry reports	available but not 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	not available	not available
• HIS interface: A/D/T	—	100%
• HIS interface: result reporting/incoming clinical results	—	100%/available but not installed
• Interface to external billing system	available but not installed	available but not installed
• Partin tables or Gleason score calculations	—	available in early 2006
• Synoptic reporting	—	installed
• Specimen tracking and retrieval	100%	available but not installed
• Client services module	100%	not available
• 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. of installations that use system to automatically transfer tumor diagnoses to a tumor registry	—	3 (NAACCR format)
Complete AP ASP solution?	no	yes
• Method of charging for ASP service	—	fixed fee
• Client software required	—	browser based
• ASP information conduit	—	operates over Internet
• Client contracts supported from data center not operated by client	—	1
• How data center is operated	—	by vendor
Other IS interfaces	IDX, Medical Manager, MediNotes; can be interfaced w/any system	Siemens, McKesson, Meditech, Misys
Voice-recognition packages integrated with AP system	all major systems	Dragon Naturally Speaking
Histology and cytology laboratory instruments interfaced	—	CAS analyzer, others
Source code?/user group?	escrow/—	yes/yes (meets online as well)
User can modify screens?	yes (also provide custom programming)	yes (also provide user-defined report writer, custom programming)
Cost (hardware/software/installation and training/monthly maintenance)		
• Smallest stand-alone system	—/\$2.5k/—/—	\$5k/\$23k/\$11.5k/\$.368k
• Largest stand-alone system	—/\$55k/—/—	\$70k/\$147k/\$30k/\$2.3k
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)	• Internet option with customer report retrieval, online requisitions • features to help clients with marketing and customer service • flexibility and scalability	• clinical information module to view/report related clinical test results from any LIS or directly from instruments • interfaces to instruments/devices—flow cytometry, cytogenetics, molecular diagnostics, IHC stainers, cassette/slide labelers • easy to use; customized to fit labs' specific needs/specialty
*H=U.S. hospitals, IL=independent labs in U.S., C or GP=clinics or group practices in U.S., Fl=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 11	SCC Soft Computer Ellie Vahman ellie@softcomputer.com 34350 U.S. Highway 19 North, Palm Harbor, FL 34684 727-789-0100 www.softcomputer.com	Small Business Computers of New England Inc. Gene Calvano gene_calvano@sbcne.com 25 Lowell St., Ste. 401, Manchester, NH 03101 800-647-2263/603-695-9090 www.sbcne.com
See accompanying article on page 76		
Name of anatomic pathology system	SoftPath	AP Easy
First ever AP system installation/most recent AP system installation	1993/2004	1989/2004
No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)*	131 (94/9/4/24/0)	186 (46/126/11/3/0)
No. of contracts signed in calendar year 2004	5	19
No. of sites operating AP system	284	186
Percentage of installations standalone	2%	100%
Staff to develop-install-support-other**		4-4-4-1
• In entire company	573-80-169-139	—
• In LIS division (including AP)/in AP systems only	401-56-118-97/106-15-31-26	
No. of interactive terminals in sites operating system	5–110 (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.	25–115,000	2,000–75,000
Central hardware or service type	IBM pSeries (RS/6000), IBM Powers system	Windows 98, NT, 2000, 2003, XP, Macintosh OS
Terminals/workstations or PC platform	PCs with Windows 2000, XP	Windows 98, NT, 2000, 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 camera, microscope camera, color printing, direct fax
Network installation required?/networks supported	yes/LAN, WAN, TCP/IP, Unix	yes/LAN, WAN, TCP/IP
Programming language(s)	C++, C, VBA	FileMaker Pro
Databases and tools used	Oracle, XML, DB Vista	FileMaker Pro
Word processor(s) used	MS Word, Rich Text Editor	integrated with FileMaker Pro
Operating system(s)	server: IBM AIX (Unix); clients: Windows 2000, XP	Windows 98, NT, 2000, XP, Macintosh OS, Linux (server only)
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	—
• Word processing—standard tools (Word, WordPerfect)	100%	100%
• Voice entry of gross description/voice entry of final diagnosis	installed	available but not installed
• Back-end batch voice to text	not available	available but not installed
• Gross and microscopic images integrated in reports	25%	100%
• Electronic signature	100%	100%
• Remote printing of completed reports	100%	installed
• Direct fax reports	100%	installed
• Web-based remote inquiry of reports	1%	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	not available	installed
• Synoptic reporting	installed	installed
• Specimen tracking and retrieval	available in June 2005	100%
• Client services module	installed	installed
• Consult management and reporting	installed	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	5 (HL7 format)	15 (NAACCR format)
Complete AP ASP solution?	yes	no
• Method of charging for ASP service	—	—
• Client software required	requires software be installed on 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 IS interfaces	Cerner, Siemens, McKesson, IDX, QuadraMed, Eclipsys, SCC, others	Misys, Meditech, CPSI
Voice-recognition packages integrated with AP system	Dragon Professional Speaking	Windows and Macintosh OS packages supporting FileMaker Pro
Histology and cytology laboratory instruments interfaced	cassette markers, slide labelers	—
Source code?/user group?	escrow/yes (meets online as well)	yes/no
User can modify screens?	yes (also provide user-defined report writer, custom programming)	yes (also provide user-defined report writer, custom programming)
Cost (hardware/software/installation and training/monthly maintenance)		
• Smallest stand-alone system	\$30k/\$30k/\$50k/\$.45k	\$1k/\$3k/\$0/\$0
• Largest stand-alone system	\$100k/\$150k/\$75k/\$2.25k	\$50k+/\$22k/\$3k/\$.25k
Base price of integrated system, excluding AP configuration	\$250k	n/a
• Incremental cost to add smallest AP configuration	\$15k/\$30k/\$40k/\$.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 • Web-based module (SoftWeb) for remote order entry and results query • powerful features for large commercial laboratories—online alerts, full system audits, multi-site, billing	• customized solution; lab involved in design and implementation • Internet reporting of final reports to client physicians • 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		

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

Anatomic pathology computer systems

Part 11 of 11	Sysmex Tammy Kutz kutzt@sysmex.com 1 Nelson C. White Parkway, Mundelein, IL 60060 847-996-4531 www.sysmex.com/usa	William Shang, MD William Shang, MD wshang@yahoo.com Cortland Memorial Hospital, 134 Homer Ave., Cortland, NY 13045 607-756-3621 www.geocities.com/wshang/
See accompanying article on page 76		
Name of anatomic pathology system	Molis AP	Integrity
First ever AP system installation/most recent AP system installation	1983/2004	1996/2004
No. of contracts for sites operating AP system (H/IL/C or GP/FI/OS)*	24 (0/1/0/23/0)	2 hospital contracts†
No. of contracts signed in calendar year 2004	2	—
No. of sites operating AP system	25	unknown (many downloads)†
Percentage of installations standalone	50%	—
Staff to develop-install-support-other**		
• In entire company	1,900 total	1 total
• In LIS division (including AP)/in AP systems only	60-75-50-15/15-10-20-5	—
No. of interactive terminals in sites operating system	5–90 (ave. 40)	1–6
Range in No. of surgical pathology cases per year in sites operating system	250–145,000	4,000–5,000
Range in No. of gynecologic cytology cases per year in sites operating syst.	1,000–100,000	0–11,000
Central hardware or service type	Intel, Dell, HP, IBM	—
Terminals/workstations or PC platform	any Windows PC	PC platform
Innovative peripherals	voice input, images, digital cameras, integrated digital dictation	voice input, others
Network installation required?/networks supported	yes/LAN, TCP/IP	no
Programming language(s)	Lotus Notes (moving to .NET and C++)	Visual Basic for Access
Databases and tools used	Domino (moving to Oracle)	Access 97, 2000
Word processor(s) used	Lotus Notes (moving to MS Word)	Dragon Naturally Speaking
Operating system(s)	Windows 2000 server	Windows 95, 98, 2000, XP
Features (listed as a percentage of live installs or based on availability)		
• Surgical pathology information system	100%	100%
• Cytology information system	100%	50%
• Autopsy information system	100%	50%
• Specimen log-in	100%	50%
• Entry of block IDs	100%	0
• Specimen labels	100%	0
• Histology slide labels	100%	0
• Bar-coded slide labels	100%	0
• Histology worksheets	100%	0
• Word processing—vendor specific	100%	0
• Word processing—standard tools (Word, WordPerfect)	0	0
• Voice entry of gross description/voice entry of final diagnosis	15%/15%	50%/50%
• Back-end batch voice to text	10%	0
• Gross and microscopic images integrated in reports	30%	50%
• Electronic signature	80%	100%
• Remote printing of completed reports	100%	50%
• Direct fax reports	installed	50%
• Web-based remote inquiry of reports	installed	0
• Physician Web access for order entry	installed	0
• Natural language search capability	100%	100%
• SNOMED II/SNOMED CT	installed/available in 2005	0
• Multi-site or multi-facility-wide area network	90%	50%
• Sound-alike retrieval of patient history	available in 2005	0
• Autopsy measurements and organ weights	installed	n/a
• Tumor registry reports	installed	50%
• Management reports	100%	0
• Cytology abnormal—unsatisfactory list to doctors	100%	50%
• Cytology diagnostics statistics by pathologist or cytotechnologist	100%	50%
• Histology-cytology correlation report	installed	50%
• Reports sufficient to comply with CLIA '88 regulations	available in 2005	50%
• Comprehensive billing and accounts receivable	avaialble in 2005	100%
• HIS interface: A/D/T	80%	0
• HIS interface: result reporting/incoming clinical results	80%/80%	0
• Interface to external billing system	100%	0
• Partin tables or Gleason score calculations	available in 2005	not available
• Synoptic reporting	100%	available but not installed
• Specimen tracking and retrieval	installed	100%
• Client services module	available in 2005	not available
• Consult management and reporting	100%	100%
Software provides indexed field in each test definition for LOINC code?	yes	no
Provide LOINC dictionary for each new installation?	no (available in 2005)	—
No. of installations that use system to automatically transfer tumor diagnoses to a tumor registry	12 (HL7 format)	—
Complete AP ASP 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 IS interfaces	Molis, Delphic, HISCOMM	—
Voice-recognition packages integrated with AP system	Philips, Dragon	Dragon Naturally Speaking
Histology and cytology laboratory instruments interfaced	—	none
Source code?/user group?	escrow/—	yes/no
User can modify screens?	limited (but provide user-defined report writer, custom programming)	yes (also provide user-defined report writer, custom programming)
Cost (hardware/software/installation and training/monthly maintenance)		
• Smallest stand-alone system	\$15k/\$100k/\$60k/\$1.5k	—
• Largest stand-alone system	\$80k/\$300k/\$150k/\$4.5k	—
Base price of integrated system, excluding AP configuration	\$500k	—
• Incremental cost to add smallest AP configuration	\$15k/\$100k/\$60k/\$1.5k	—
• Incremental cost to add largest AP configuration	\$80k/\$300k/\$150k/\$4.5k	—
Distinguishing features (supplied by vendor)	• intuitive, easy-to-use screens • case-centric workflow designed to maximize workflow • moving to HTML (Web based) this year	• 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

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