Doub 1 of 7	Albara Digital Haalib		Oliviana
Part 1 of 7	Altera Digital Health Susan Eben susan.eben@alterahealth.com Niagra Falls, NY www.alterahealth.com	Clinical Software Solutions Elaine Nordhues info@clin1.com Queen Creek, AZ 480-888-9447 www.clin1mobile.net	Clinisys Amber Kazansky amber.kazansky@clinisys.com Tucson, AZ 520-570-2000 www.clinisys.com
Name of laboratory information system	Altera Lab [†]	CLIN1 Laboratory	Clinisys Clinical Laboratory [†]
How LIS functionality is deployed	remote hosting or local hosting if Data Innovations	remote hosting and/or local server/software	remote hosting or local server/software
Company provides list of client sites to potential customers on request	server on site yes (partial list of comparable sites but prospective clients must sign a nondisclosure agreement)	yes (partial list of comparable sites but prospective clients must sign a nondisclosure agreement)	yes (partial list of comparable sites with no restrictions regarding its use)
Updates covered by standard software maintenance fee • Schedule for providing standard software updates to clients • Clients must install updates in specified timespans to avoid maintenance fee increase	all updates annually or as needed yes (support current release and one back; upgrades to current version required)	some updates (specific customizations charged separately) annually no	all updates semiannually no
Fee for software modifications to comply with federal regulations and laws	standard (no charge)	standard (no charge)	standard (no charge)
Year company began selling LISs (any brand or model) Most recent LIS go-live at a client site (based on August 2023 survey deadline) Last product release or update for featured LIS Total No. of contracts for sites operating LIS worldwide	2022 June 2023 June 2023, version 23.1 45 6 sales/5 installations	1987 July 2023 July 2023, version 12.3 56	1979 January 2023 April 2023, version 2023.1 140+
No. of sales and installations of LIS between August 2022–July 2023 Total No. of sites operating LIS in the U.S. (hospitals/independent labs/clinics or group practices/public health labs/other sites) Percentage of high-volume* U.S. sites installed/Low-volume** U.S. sites installed	43 (42/1/0/0) 50%/50%	4 sales/4 installations 56 (0/53/0/0/3–education) 10%/90%	25 sales —
Foreign locations where company actively markets LIS Foreign locations where LIS has been sold Human languages (other than English) supported by LIS	worldwide (English-speaking countries only) Qatar, Saudi Arabia —	none Canada, United Kingdom —	worldwide — —
Approximate No. of employees in entire company	5,500	_	1,400+
Central hardware or service type Programming languages and development applications or environments Operating system(s) Databases and tools/System includes full transaction logging	Hewlett-Packard, IBM, Dell, Azure C, C#, Java, JavaScript, Perl, HTML, CSS Windows, Red Hat Enterprise Linux, Oracle Linux Oracle/yes	client/server, software-as-a-service 4GL, C# Microsoft Windows Microsoft SQL/yes	service model accessed by a Web browser .Net 6, C#, SQL, PL/SQL Microsoft Windows Oracle Enterprise/no
Features/modules incorporated in product:			
Chemistry/Hematology/Bar-coded collection labels Microbiology/Public health microbiology	installed at client sites (all 3 features) installed at client sites/installed at client sites	installed at client sites (all 3 features) installed at client sites/installed at client sites	installed at client sites (all 3 features) installed at client sites/installed at client sites
Blood bank donor/Blood bank transfusion Surgical pathology/Cytology	available via WellSky/available via WellSky available via NovoPath/available via NovoPath	available but not installed/available but not installed installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
Molecular pathology/Cytogenetics/Flow cytometry	available via NovoPath/available via NovoPath/	installed at client sites/installed at client sites/	installed at client sites/installed at client sites/
EHR interface for admission/discharge/transfer (ADT)	available via NovoPath installed at client sites	available but not installed installed at client sites	installed at client sites installed at client sites
EHR interface for order entry/EHR interface for results reporting EHR interface for packaging results into PDF format	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites
EHR interface for packaging results into CDA1 format/CDA2 format	not available/not available	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Ad hoc reporting/Rules-based system Management and statistical reporting/Client services or CRM module	installed at client sites/installed at client sites installed at client sites/not available	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
POL link or Web portal to physician offices/Patient Web portal	not available/not available	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Commercial reference lab functionality/Compliance checking Comprehensive billing and accounts receivable or RCM	installed at client sites/not available not available	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites
Materials management and inventory/Test partition Remote faxing/Remote printing	not available/—	installed at client sites/installed at client sites	installed at client sites/installed at client sites
HIPAA-standard transaction formats	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites
Web-based remote inquiry of reports/Web access for order entry Management and tracking of specimens in lab/Before arriving in lab	not available/not available installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
QA tools/Environmental health Interfaces for sending orders from primary lab to reference lab, handling results return, and status updates	installed at client sites/installed at client sites installed at client sites	installed at client sites/available but not installed installed at client sites	installed at client sites/installed at client sites installed at client sites
Business analytics/Clinical analytics	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
 Ability to schedule patient for test collection/Patient-based test registration Ability to coordinate with nurses for collections that phlebotomists cannot perform 	not available/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites
 Interfaces with public health databases using ELR as part of Promoting Interoperability Results for tests run using different methods show method on clinical reports 	installed at client sites installed at client sites	installed at client sites installed at client sites	installed at client sites installed at client sites
Barcode symbologies supported by LIS	Code 39, Code 128	Codabar (NW-7), Code 39, Code 128, DataMatrix (LIS also supports QR codes)	—
LIS can generate analytics for tests based on specific data elements Ability to use artificial intelligence (e.g., machine-learning software) with LIS	planned for future planned for future	planned for future yes (via interface to Amazon Rekognition)	yes (based on all data in database) planned for future
LIS can report lab data to public health agencies via automated electronic transmission using specified formats (e.g., HL7 2.5.1, LOINC, SNOMED, etc.) for:	planned for ruture	yes (via interface to Affiazoff nekogifilioff)	planned for ruture
Microbiology (culture and sensitivity)	yes	yes	yes
Other reportable diseases (e.g., blood lead, immunology, etc.) Tumor diagnosis and case data to regional cancer registry****	yes yes	yes no	yes yes
Other vendors' lab systems to which LIS bidirectionally interfaces in live sites Lab automation systems or workcells to which LIS has a direct interface	Cerner, Clinisys, NovoPath, Epic, Orchard, CPSI, others interface through Data Innovations to Beckman, Siemens, QuidelOrtho, Roche, Sysmex, many others yes, for all instrument interfaces (Data Innovations)	Altera, Athena, eClinicalWorks, Epic, Orchard, others Beckman Coulter, Siemens, QuidelOrtho, Sysmex, Thermo Scientific, Olympus, Roche, Abbott, Tecan, others no (interface directly)	Beckman Coulter, Siemens, QuidelOrtho, Sysmex, Olympus, Roche, Abbott, Bayer, Thermo Scientific, Tecan combination of direct interfaces and third-party
LIS uses third-party middleware for LIS-instrument interfaces	,	no (interface directly)	middleware (Data Innovations)
LIS supports use of SNOMED CT LIS automatically ingests and applies electronic updates of tables and rules from organizations and government agencies LIS allows for image capture, display, reporting	yes, for all cases planned for future yes	yes, for all cases yes (LOINC, CPT, ICD-10; drug interactions) yes	yes, for all cases yes yes
LIS provides indexed field in each test definition for LOINC code	yes (provide LOINC dictionary free of charge with install)	yes	yes
Company provides LIS clients with positive patient ID software to identify patients and/or blood specimens collected at bedside LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside	software to identify patients and blood specimens integrated in LIS–no additional fee	software to identify patients and blood specimens integrated in LIS–no additional fee	software to identify patients and blood specimens integrated in LIS–additional fee none
Client gets copy of source code/User group that meets on established schedule Qualified users or third parties can modify or augment LIS functions or features Methods by which users can tailor LIS in their own setting	escrow/yes (via webinar and conference call) yes (client users and designated third parties) ad hoc query tools, user-defined interfaces, dictionary settings, read/write privileges, workflow configuration, tailored worklists, interface engine	no/yes (via webinar and conference call) no (all modifications made by vendor) ad hoc query tools, dictionary settings, workflow configuration	escrow/yes (via conference call and in person) yes (client users) ad hoc query tools, user-defined interfaces, dictionary settings, workflow configuration, tailored worklists, rules engine
Distinguishing product features (supplied by company) *generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day **generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ***using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable	fits well in most organizations: extremely scalable, flexible, customizable substantially decreased total cost of ownership with availability of Linux platform formerly Horizon Lab, McKesson Lab, Allscripts Lab	experienced and personalized support; customized workflows backed by powerful software multi-lab, multi-site, multi-use capable with client/patient portals and SMS/email notification	handles environmental and clinical work naturally in the same system Clinisys is a large independent global LIMS/LIS provider offering superior resources and expertise *formerly Sunquest Laboratory*

Section of the control of the contro	Part 2 of 7	Clinsis LLC Cedric Simon cedric.simon@clinsis.com Dover, DE 765-276-3451 www.clinsis.com	Comp Pro Med Dave McClung dmcclung@comppromed.com Santa Rosa, CA 707-890-6589 www.comppromed.com	CompuGroup Medical Gene Williamson gene.williamson@cgm.com Owings Mills, MD 800-359-0911 www.cgm.com/us
Section control of a price of the property of control on a control of price of the	Name of laboratory information system	Clinsis	Polytech LIS	CGM LABDAQ
Special content of the content of	, , ,	yes (complete list but prospective clients must sign a	•	yes (partial list of comparable sites with no restrictions
Authors (Author) 1 April 12 Am of the description of the control o	Schedule for providing standard software updates to clients Clients must install updates in specified timespans to avoid maintenance fee increase	all updates monthly no	every 6 months no	all updates 2–3 per year no
Autor 2007. Autor	.,	, ,,,	, , ,	, J
4 sleed on multilation of 10 sleed and entitletion of 10 sleed in multilation of 10 sleed in multilati	Most recent LIS go-live at a client site (based on August 2023 survey deadline) Last product release or update for featured LIS	June 2023 August 2023, version 16.1.4	July 2023 February 2023, version 8.6.6	August 2023 April 2023, version CGM LABDAQ 23.1
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Approximate the management than beginned exponentially 1.5 South 1	Foreign locations where company actively markets LIS	Central America, Caribbean Dominican Republic, Trinidad and Tobago, Nicaragua,	Africa, Bhutan, Canada, Caribbean, Ethiopia,	none
Description for particular for control page and development applications or environments (particul page and development applications) control page and development and develop	Human languages (other than English) supported by LIS		• • • • • • • • • • • • • • • • • • • •	none
Programming imagings and individual or interviewed in pages. John M. S. and Sorth S. G. suppression by Company or an extraction in pages. The interviewed in a place of the control of t	Approximate No. of employees in entire company	5	8	9,200
Description packed in Laboration languing Charles (Line Controlled		• .	• • • • • • • • • • • • • • • • • • • •	,
Installated and central tasks and Statemens Installated and central tasks a	Operating system(s)	Linux	Windows	Windows Server 2022, Windows 11 on workstations
Producty products hought another production of the conduction of	·	installed at alient sites (all 9 features)	installed at client sites (all 9 factures)	installed at client cites (all 2 features)
in clases comorbiced basis commobiles de la seix d	Microbiology/Public health microbiology	installed at client sites/not available	,	, ,
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Fig. 1 Institution for packaging results in 160 for from the 150 for formation of cells and section and solidate. Institute of cells and section and section and solidate. Institute of cells and section and courts or cells and courts and courts or cells and courts and courts or cells and courts a				
- An important pilluser-bosine system - An important pilluser-bosine system - An important pilluser-bosine system - Out for professional statistical protestical color statistical and color statistic	EHR interface for packaging results into PDF format	installed at client sites	installed at client sites	installed at client sites
Name and statistical control subjective analysis of celevate supprising Clinical supprising Clinical subjective analysis of celevation of the celevatio				
One productive beligned accorate presentable or ECM Postable at client alterior installation of client affective installati	Management and statistical reporting/Client services or CRM module	installed at client sites/not available	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Statistical accounts receivable or KIA Statistical accounts receivable accounts receivable or content accounts receivable or content accounts receivable accounts received by the content accounts or decelerate the content accounts received by the content				
Bear to sompfiere to printing	Comprehensive billing and accounts receivable or RCM	installed at client sites	installed at client sites	available via CGM DAQ BILLING, CGM ARIA RCM
Heavy-Assandant transaction formats Indexelopment of transaction formats Indexelopment				
Installation at clients altes/restablished at client altes/restablished at cl	HIPAA-standard transaction formats	in development	installed at client sites	installed at client sites
- Oxfoods-Environmental hashalf) - Interfaces for sending orders form primary list be reference list, handling results refuture, and status updates - Rusiness amplifys conclude patient for first collection-Patient based and registration - Rusiness amplifys conclude patient for first collection-Patient based and registration - Rusiness amplifys conclude patient for first collection-Patient based and registration - Rusiness amplifys conclude patient for first collection-Patient based and registration - Rusiness amplifys conclude patient for first collection-Patient based and registration - Rusiness amplifys conclude patient for first collection-Patient based on patient by the first collection patient by the first collection patient for first collection-Patient based on patient by the first patient patient for first patient patie				
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Ability to coordinate with ruses for collections that philebothomids cannot perform his interfaces with public health disables using ERR as part of Pormoting Interporation and available installed at client sites in stalled at client sites in stalled at client sites in stal				
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Us can report lab data to public health agencies via automated electronic transmission using specified formats (e.g., HZ 7.2.5.1, LDMC, SNOMED, etc.) bn: Microbiology (culture and sensitivity) Other reportable diseases (e.g., blood lead, immunology, etc.) The reportable diseases (e.g., blood lead, immunology, etc.) Other vendors' lab systems to which LIS bidirectionally interfaces in live sites Lab automation systems or workcells to which LIS has a direct interface Beckman Coulter, Semens, QuidelOrtho, Sysmex, Thermo Scientific, Abbott, Bayer, BloMérieux, others on (interface directify) Us supports use of SNOMED CT LIS supports use of SNOMED CT LIS automatically ingests and applies electronic updates of tables and rules from organizations and government agencies Us automatically ingests and applies electronic updates of tables and rules from organizations and government agencies Us allows for image capture, display, reporting Us provides indexed field in each test definition for CINIC code yes yes yes yes yes yes (Company provides LIS clients with positive patient) Borthware to identify patients and/or blood specimens collected at bedside • LiS interfaces or third parties can indiffer or years the parties of the	LIS can generate analytics for tests based on specific data elements	yes (based on all data in database)	also supports QR codes) yes (based on all data in database)	also supports QR codes) yes (based on all data in database)
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from organizations and government agencies LIS allows for image capture, display, reporting LIS provides indexed field in each test definition for LOINC code Company provides LIS clients with positive patient ID software to identify patients and/or blood specimens collected at bedside LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside Client gets copy of source code/User group that meets on established schedule Qualified users or third parties can modify or augment LIS functions or features Methods by which users can tailor LIS in their own setting Distinguishing product features (supplied by company) *generate >500,000 billed tests annually, or >200 bed hospitals, or <500 requisitions per day *"generate >500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"generate >500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. *User friendly and intuitive; minimal training required *"using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. * user friendly, 90% of work done on one screen * user friendly, 90% of work done on one screen * user friendly, 90% of work done on one screen * user friendly, 90% of work done on one screen * user friendly, 90% of work done on one screen * user friendly, 90% of work done on one screen * user friendly, 90% of work done on one screen * user fri	LIS automatically ingests and applies electronic updates of tables and rules	planned for future		yes (CodeMap, CMS diagnosis codes)
patients and/or blood specimens collected at bedside LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside Client gets copy of source code/User group that meets on established schedule Qualified users or third parties can modify or augment LIS functions or features Methods by which users can tailor LIS in their own setting Distinguishing product features (supplied by company) **generate >500,000 billed tests annually, or >200 bed hospitals, or <500 requisitions per day **generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate = 500,000 billed tests annually,	from organizations and government agencies LIS allows for image capture, display, reporting		yes	yes
patients and/or blood specimens collected at bedside LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside Client gets copy of source code/User group that meets on established schedule Qualified users or third parties can modify or augment LIS functions or features Methods by which users can tailor LIS in their own setting Distinguishing product features (supplied by company) *generate >500,000 billed tests annually, or >200 bed hospitals, or <500 requisitions per day *generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *generate Teach of Cathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. *no/no no/no no/no no/no no/no no/no no/no no/no no/no no (all modifications made by vendor) user-defined interfaces, dictionary settings, workflow configuration, tailored worklists ad hoc query tools, user-defined interfaces, dictionary settings, read/write privileges, workflow configuration, tailored worklists, built-in customizable report generator • user friendly and intuitive; minimal training required • reliable and flexible, a complete HIS and RIS as well • reliable and flexible, a complete HIS and RIS as well • user friendly; 90% of work done on one screen • intuitive navigation; powerful rules; data-mining queries for data analysis; experienced support staff	<u>'</u>		,,	•
Qualified users or third parties can modify or augment LIS functions or features Methods by which users can tailor LIS in their own setting Methods by which users can tailor LIS in their own setting Distinguishing product features (supplied by company) *generate >500,000 billed tests annually, or >200 bed hospitals, or <500 requisitions per day *"generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. *In modifications made by vendor) user-defined interfaces, dictionary settings, workflow configuration, tailored worklists ad hoc query tools, user-defined interfaces, deftionary settings, read/write privileges, workflow configuration, tailored worklists, user-configuration and connectivity capability * eavanced integration and connectivity capability with instruments, EHRs, billing software, more * intuitive navigation; powerful rules; data-mining queries for data analysis; experienced support staff	LIS interfaces to third-party positive patient ID software to identify	_	_	_
Distinguishing product features (supplied by company) *generate >500,000 billed tests annually, or >200 bed hospitals, or <500 requisitions per day *"generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day *"senerate <500,000 billed tests annually, or <200 bed hospitals, or <50	Qualified users or third parties can modify or augment LIS functions or features	no (all modifications made by vendor) user-defined interfaces, dictionary settings, workflow	yes (client users) ad hoc query tools, user-defined interfaces, dictionary	yes (client users) ad hoc query tools, user-defined interfaces, read/write
*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day **generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day **using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. * reliable and flexible, a complete HIS and RIS as well * user friendly; 90% of work done on one screen * user friendly; 90% of work done on one screen * user friendly; 90% of work done on one screen * user friendly; 90% of work done on one screen		comiguration, tailored worklists		
Note: a dash as an answer means company did not respond or question is not applicable	*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day **generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day		phone trees for support calls	with instruments, EHRs, billing software, more

• suitable for all laboratory disciplines: core lab, microbiology, flow cytometry, cytology, more

Part 3 of 7	CompuGroup Medical Gene Williamson gene.williamson@cgm.com Owings Mills, MD 800-359-0911 www.cgm.com/us	CompuGroup Medical Gene Williamson gene.williamson@cgm.com Owings Mills, MD 800-359-0911 www.cgm.com/us	Epic Nick Trentadue ntrentad@epic.com Verona, WI 608-271-9000 www.epic.com
Name of laboratory information system	CGM MEDICUS†	CGM SCHUYLAB†	Beaker
How LIS functionality is deployed	local server/software	local server/software	remote hosting and local server/software
Company provides list of client sites to potential customers on request	yes (partial list of comparable sites with no restrictions regarding its use)	yes (partial list of comparable sites with no restrictions regarding its use)	yes (complete list with no restrictions regarding its use)
Updates covered by standard software maintenance fee Schedule for providing standard software updates to clients Clients must install updates in specified timespans to avoid maintenance fee increase	all updates 1–2 per year no	all updates 1–2 per year no	all updates quarterly no
Fee for software modifications to comply with federal regulations and laws	standard (no charge)	standard (no charge)	standard (no charge)
Year company began selling LISs (any brand or model)	2000	1991	1980
Most recent LIS go-live at a client site (based on August 2023 survey deadline) Last product release or update for featured LIS Total No. of contracts for sites operating LIS worldwide	August 2023 July 2023, version 4.8.83 379	July 2023 June 2023, version 4.0 414	July 2023 May 2023, version May 2023 298
No. of sales and installations of LIS between August 2022–July 2023	50 sales/50 installations	28 sales/20 installations	35 sales/35 installations
Total No. of sites operating LIS in the U.S. (hospitals/independent labs/clinics or group practices/public health labs/other sites)	379 (0/0/379/0/0)	414 (67/111/213/0/23–schools, vendors, veterinary)	276 (266/9/tracked as hospitals/1/0)
Percentage of high-volume* U.S. sites installed/Low-volume** U.S. sites installed	0/100%	40%/60%	90%/10%
Foreign locations where company actively markets LIS	none	Guam, Caribbean, Canada, Africa, Pacific Rim, South	Canada, UK, Singapore, Norway, Netherlands, Saudi
		East Asia, Mexico	Arabia, UAE, Belgium, Lebanon, Australia, others
Foreign locations where LIS has been sold Human languages (other than English) supported by LIS	_	Guam, Caribbean, Canada, Grenada, Ghana, Malaysia, Pacific Rim, South East Asia Spanish, Portuguese, Chinese, German, French, Italian	Canada, UK, Singapore, Norway, Netherlands, Saudi Arabia, UAE, Belgium, Lebanon, Australia Norwegian, French, German, Finnish, Dutch, others
Approximate No. of employees in entire company	9,200	9,200	13,000
Approximate No. or employees in entire company Central hardware or service type		·	·
Central nardware or service type Programming languages and development applications or environments	client/server (business grade) Visual Basic 6.0, C#, SQL, .Net	client/server (business grade) C	HP 9000, HP Integrity, Sun Sparc, IBM p5 Series, others Caché, C#, ASP .Net, JavaScript
Operating system(s)	Windows 10, 11	Windows 10, 11	Unix, Windows, Linux
Databases and tools/System includes full transaction logging	Microsoft SQL/yes	FairCom C-Tree/no	Chronicles Extended Relational Database Management
Costures/modules income system in a ward out			System/yes
Features/modules incorporated in product: Chemistry/Hematology/Bar-coded collection labels	installed at client sites (all 3 features)	installed at client sites (all 3 features)	installed at client sites (all 3 features)
Microbiology/Public health microbiology	not available/not available	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Blood bank donor/Blood bank transfusion Ownigst at the law (Ontal law)	not available/not available	installed at client sites/available but not installed	not available/not available
Surgical pathology/Cytology Molecular pathology/Cytogenetics/Flow cytometry	not available/not available not available/not available/not available	available via CGM AP EASY/installed at client sites installed at client sites/not avail./installed at client sites	installed at client sites/installed at client sites installed at client sites (all 3 features)
EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
EHR interface for order entry/EHR interface for results reporting EHR interface for packaging results into PDF format	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites
EHR interface for packaging results into CDA1 format/CDA2 format	not available/not available	installed at client sites installed at client sites/in development	installed at client sites/installed at client sites
Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Management and statistical reporting/Client services or CRM module POL link or Web portal to physician offices/Patient Web portal	installed at client sites/not available in development/in development	installed at client sites/available but not installed installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
Commercial reference lab functionality/Compliance checking	not available/not available	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Comprehensive billing and accounts receivable or RCM Materials management and inventory/Test partition	not available not available/installed at client sites	available via CGM ARIA RCM installed at client sites/in development	installed at client sites not available/installed at client sites
Remote faxing/Remote printing	not available/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
HIPAA-standard transaction formats	installed at client sites	installed at client sites	installed at client sites
Web-based remote inquiry of reports/Web access for order entry Management and tracking of specimens in lab/Before arriving in lab	not available/not available not available/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
QA tools/Environmental health	installed at client sites/not available	installed at client sites/not available	installed at client sites/installed at client sites
 Interfaces for sending orders from primary lab to reference lab, handling results return, and status updates 	installed at client sites	installed at client sites	installed at client sites
Business analytics/Clinical analytics	not available/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Ability to schedule patient for test collection/Patient-based test registration Ability to coordinate with purses for collections that philabet mich connect performs.	not available	in development/in development	installed at client sites/installed at client sites
 Ability to coordinate with nurses for collections that phlebotomists cannot perform Interfaces with public health databases using ELR as part of Promoting Interoperability 	not available installed at client sites	installed at client sites installed at client sites	installed at client sites installed at client sites
Results for tests run using different methods show method on clinical reports	not available	installed at client sites	installed at client sites
Barcode symbologies supported by LIS	Codabar (NW-7), Code 39, Code 128 (LIS also supports	Codabar (NW-7), Code 39, Code 128, DataMatrix (LIS	Codabar (NW-7), Code 39, Code 128, DataMatrix (LIS
	QR codes)	also supports QR codes)	also supports QR codes)
LIS can generate analytics for tests based on specific data elements	yes (based on all data in database)	yes (based on all data in database, except telephone number, email, employment status)	yes (based on all data in database)
Ability to use artificial intelligence (e.g., machine-learning software) with LIS	no	no	yes (deploy predictive models; integrate with large language models; interface to Paige, PathAl; more)
LIS can report lab data to public health agencies via automated electronic transmission			5 - 5
using specified formats (e.g., HL7 2.5.1, LOINC, SNOMED, etc.) for:			
Microbiology (culture and sensitivity) Other reportable diseases (e.g., blood lead, immunology, etc.)	no voc (COVID only)	yes	yes
Other reportable diseases (e.g., blood lead, immunology, etc.) Tumor diagnosis and case data to regional cancer registry****	yes (COVID only) no	yes no	yes yes
Other vendors' lab systems to which LIS bidirectionally interfaces in live sites		Orchard Software	SCC, Oracle Health, Clinisys, Orchard, others
Lab automation systems or workcells to which LIS has a direct interface	none	Beckman Coulter, Siemens, QuidelOrtho, Sysmex,	interface through Data Innovations to Beckman,
LIC upon third party middlessors for LIC inchromant interfere	no (interfece directly)	Thermo Scientific, Olympus, Roche, Abbott, Bayer	Siemens, QuidelOrtho, Sysmex, Olympus, Roche, others
LIS uses third-party middleware for LIS-instrument interfaces LIS supports use of SNOMED CT	no (interface directly) for some types of cases (COVID reporting)	no (interface directly) yes, for all cases	yes, for all instrument interfaces (DI, Abbott AMS) yes, for all cases
LIS automatically ingests and applies electronic updates of tables and rules	no	yes (CodeMap)	no
from organizations and government agencies LIS allows for image capture, display, reporting	no	yes	yes
LIS provides indexed field in each test definition for LOINC code	yes	yes	yes (provide LOINC dictionary free of charge with install)
Company provides LIS clients with positive patient ID software to identify	no	no	software to identify patients and blood specimens
patients and/or blood specimens collected at bedside			integrated in LIS–no additional fee; Epic Rover
LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside	_	_	_
Client gets copy of source code/User group that meets on established schedule	no/no	escrow/yes (in person and via webinar)	yes/yes (via webinar, conference call, and in person)
Qualified users or third parties can modify or augment LIS functions or features	no (all modifications made by vendor)	yes (client users)	yes (client users and designated third parties)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, workflow configuration, tailored	ad hoc query tools, user-defined interfaces, dictionary	ad hoc query tools, user-defined interfaces, dictionary
5.0	worklists	settings, tailored worklists	settings, read/write privileges, more
Distinguishing product features (supplied by company)	cost-effective and easy for physician office labs to use	 optional, fully integrated billing system for any lab doing its own accounts receivables 	 seamless native data transfer from LIS to EMR without need for interfaces or translation tables
*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day **generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day	seamless integration with a practice's EHR and lab	ideal for multi-lingual labs and international	suitable for all laboratory disciplines: core lab,

• seamless integration with a practice's EHR and lab instruments

 $^{\dagger} \textit{formerly Medicus 4 by Medicus LIS}$

 † formerly SchuyLab by Schuyler House

markets

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

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

***using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed.

Note: a dash as an answer means company did not respond or question is not applicable

Part 4 of 7	Evident LLC Sales Department sales@evident.com Mobile, AL	LabWare Sarah Jones sjones@labware.com Wilmington, DE	LigoLab Information Systems Suren Avunjian suren@ligolab.com Glendale, CA
	800-711-2774 www.evident.com	302-658-8444 www.labware.com	800-544-6522/818-230-1307 www.ligolab.com
Name of laboratory information system	Thrive EHR-LIS [†]	LabWare	LigoLab LIS & RCM Laboratory Informatics Platform 2023 [†]
How LIS functionality is deployed Company provides list of client sites to potential customers on request	remote hosting and local server/software ^{††} yes (partial list of comparable sites with no restrictions regarding its use)	remote hosting or local server/software yes (complete list with no restrictions regarding its use)	remote hosting and local server/software yes (complete list but prospective clients must sign a nondisclosure agreement)
Updates covered by standard software maintenance fee Schedule for providing standard software updates to clients Clients must install undates in acceptable the providing standard software updates to clients	all updates annually	all updates maintenance patches 3–4 times per year; new modules 6–10 times per year	all updates quarterly
 Clients must install updates in specified timespans to avoid maintenance fee increase Fee for software modifications to comply with federal regulations and laws 	yes standard (no charge)	no standard (no charge)	no standard (no charge)
Year company began selling LISs (any brand or model) Most recent LIS go-live at a client site (based on August 2023 survey deadline) Last product release or update for featured LIS	1986 August 2023 January 2022, version 2104	1999 July 2023 April 2023, version 8G	2006 July 2023 August 2023, version 2023.1.65
Total No. of contracts for sites operating LIS worldwide No. of sales and installations of LIS between August 2022–July 2023 Total No. of sites operating LIS in the U.S. (hospitals/independent labs/clinics or	449 25 sales/25 installations 489 (hospital sites)	245 14 sales/10 installations 113 (4/23/0/44/42-biobank, research, veterinary)	133 24 sales/21 installations 226 (0/208/18/0/0)
group practices/public health labs/other sites) Percentage of high-volume* U.S. sites installed/Low-volume** U.S. sites installed	1%/99%	25%/75%	65%/35%
Foreign locations where company actively markets LIS	Canada, Caribbean, St. Maarten, India	worldwide	none
Foreign locations where LIS has been sold Human languages (other than English) supported by LIS	Caribbean, Anguilla	UK, India, Kenya, Portugal, Columbia, China, Brazil, Switzerland, Spain, Belgium, Iraq, other countries German, French, Spanish, Swedish, Chinese, others	_
Approximate No. of employees in entire company	2,520 (total for parent company, CPSI)	880	87
Central hardware or service type	ASP, cloud hosting via TruBridge (sister company)	database server: Sun, Unix, Linux, Windows, others; application server: Windows 2012, 2016, 2019, 2022; hosted environments: Amazon Web Services	_
Programming languages and development applications or environments Operating system(s)	Java, Python, PERL, C, C++, HTML, COBOL, others Linux	Java, .Net, Smalltalk application server: Windows; database server: Sun,	Java Windows, Macintosh
Databases and tools/System includes full transaction logging	PostgreSQL/yes	Unix, Linux, Windows, others Oracle, Microsoft SQL, PostgreSQL/yes	Microsoft SQL/yes
Features/modules incorporated in product:	installed at alient sites (all 0 feeture)	installed at alignt sites (all 2 feet mes)	installed at aliest sites (all 0.5 at inval)
Chemistry/Hematology/Bar-coded collection labels Microbiology/Public health microbiology	installed at client sites (all 3 features) installed at client sites/installed at client sites	installed at client sites (all 3 features) installed at client sites/installed at client sites	installed at client sites (all 3 features) installed at client sites/installed at client sites
Blood bank donor/Blood bank transfusion Surgical pathology/Ortology	installed at client sites/installed at client sites	available via WellSky/available via WellSky	installed at alient sites/installed at alient sites
Surgical pathology/Cytology Molecular pathology/Cytogenetics/Flow cytometry	installed at client sites/installed at client sites not available/not available/not available	installed at client sites/installed at client sites installed at client sites (all 3 features)	installed at client sites/installed at client sites installed at client sites (all 3 features)
EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
EHR interface for order entry/EHR interface for results reporting EHR interface for packaging results into PDF format	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites
EHR interface for packaging results into CDA1 format/CDA2 format	installed at client sites/installed at client sites	available but not installed/available but not installed installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
Ad hoc reporting/Rules-based system Management and statistical reporting/Client services or CRM module	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
POL link or Web portal to physician offices/Patient Web portal Commercial reference lab functionality/Compliance checking	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
Comprehensive billing and accounts receivable or RCM	installed at client sites	installed at client sites	installed at client sites
Materials management and inventory/Test partition Remote faxing/Remote printing	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
HIPAA-standard transaction formats	installed at client sites	installed at client sites	installed at client sites
Web-based remote inquiry of reports/Web access for order entry Management and tracking of specimens in lab/Before arriving in lab	installed at client sites/installed at client sites not available/not available	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
QA tools/Environmental health Interfaces for sending orders from primary lab to reference lab, handling results	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites
return, and status updates			
Business analytics/Clinical analytics Ability to schedule patient for test collection/Patient-based test registration	installed at client sites/installed at client sites installed at client sites/not available	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
Ability to coordinate with nurses for collections that phlebotomists cannot perform	installed at client sites	installed at client sites	installed at client sites
 Interfaces with public health databases using ELR as part of Promoting Interoperability Results for tests run using different methods show method on clinical reports 	installed at client sites installed at client sites	installed at client sites installed at client sites	installed at client sites installed at client sites
Barcode symbologies supported by LIS	Codabar (NW-7)	Codabar (NW-7), Code 39, Code 128, DataMatrix, others (LIS also supports QR codes)	Code 39, Code 128, DataMatrix (LIS also supports QR codes)
LIS can generate analytics for tests based on specific data elements Ability to use artificial intelligence (e.g., machine-learning software) with LIS	yes (based on all data in database, except specimen type, analyte, result, patient demographics) no	yes (based on all data in database) yes (configurable data science engine allows users to	yes (based on all data in database) planned for future
		manage R or Python statistical or ML environments)	
LIS can report lab data to public health agencies via automated electronic transmission using specified formats (e.g., HL7 2.5.1, LOINC, SNOMED, etc.) for: • Microbiology (culture and sensitivity)	yes	yes	yes
Other reportable diseases (e.g., blood lead, immunology, etc.) Tumor diagnosis and case data to regional cancer registry***	yes yes	yes yes	yes yes
Other vendors' lab systems to which LIS bidirectionally interfaces in live sites Lab automation systems or workcells to which LIS has a direct interface LIS uses third-party middleware for LIS—instrument interfaces	Dawning Technologies Beckman Coulter, Siemens, QuidelOrtho, Thermo Scientific, Olympus, Roche Diagnostics, Abbott no (interface directly)	Clinisys, Oracle Health, SCC, Epic, others Beckman Coulter, Siemens, QuidelOrtho, Thermo Scientific, Olympus America, Roche Diagnostics, Abbott, Tecan no (interface directly)	Oracle Health, Clinisys, CGM, Orchard, Xifin Beckman Coulter, Siemens, QuidelOrtho, Sysmex, Thermo Scientific, Olympus, Roche, Abbott, Tecan, Bayer no (interface directly)
LIS supports use of SNOMED CT LIS automatically ingests and applies electronic updates of tables and rules from organizations and government agencies	yes, for all cases yes (AMA, CPT, LOINC)	yes, for all cases yes (LOINC, CPT, ICD, SNOMED, others)	yes, for all cases yes (LOINC codes, CPT additions)
LIS allows for image capture, display, reporting LIS provides indexed field in each test definition for LOINC code	yes yes (provide LOINC dictionary for a fee with install)	yes yes	yes yes (provide LOINC dictionary free of charge with install)
Company provides LIS clients with positive patient ID software to identify patients and/or blood specimens collected at bedside • LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside	software to identify patients integrated in LIS-no additional fee none	software to identify patients and blood specimens integrated in LIS–no additional fee —	software to identify patients and blood specimens integrated in LIS–no additional fee
Client gets copy of source code/User group that meets on established schedule Qualified users or third parties can modify or augment LIS functions or features Methods by which users can tailor LIS in their own setting	escrow/yes (via webinar and in person) yes (client users) ad hoc query tools, dictionary settings, workflow configuration, tailored worklists	escrow/yes (in person) yes (client users) ad hoc query tools, user-defined interfaces, dictionary settings, read/write privileges, others	escrow/yes (via webinar, conference call, and in person) yes (client users) ad hoc query tools, user-defined interfaces, dictionary settings, read/write privileges
Distinguishing product features (supplied by company) *generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day **generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ***using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable	fully integrated EHR and ONC-certified HIT interface management system supports requests for interoperability with other vendors' systems †formerly CPSI System ††cloud hosting via sister company, TruBridge	configurability and upgradability allow customers to respond to changing needs, stay current inclusive user license provides access to integrated tools for all clinical lab disciplines, research	SaaS that includes AP, CP, billing/RCM, direct-to-consumer in a single integrated infrastructure aligned pricing and shared risk/reward partnership model; no upfront licensing fees; more formerly LigoLab AP/LIS/RCM 2022

Part 5 of 7	Oracle Health Dustin Greer dustin.greer@oracle.com Austin, TX 800-633-0738 www.oracle.com/healthcare	Orchard Software Corp. Steve Hurwitz shurwitz@orchardsoft.com Carmel, IN 800-856-1948 www.orchardsoft.com	Orchard Software Corp. Steve Hurwitz shurwitz@orchardsoft.com Carmel, IN 800-856-1948 www.orchardsoft.com
Name of laboratory information system	Oracle Health Laboratory [†]	Orchard Enterprise Lab [†]	Orchard Harvest LIS
How LIS functionality is deployed Company provides list of client sites to potential customers on request	remote hosting or local server/software yes (partial list of comparable sites with no restrictions regarding its use)	remote hosting or local server/software yes (partial list of comparable sites with no restrictions regarding its use)	remote hosting or local server/software yes (partial list of comparable sites with no restrictions regarding its use)
Updates covered by standard software maintenance fee Schedule for providing standard software updates to clients	all updates innovation releases quarterly; correction releases every 2 weeks	all updates quarterly	all updates quarterly
Clients must install updates in specified timespans to avoid maintenance fee increase Fee for software modifications to comply with federal regulations and laws	no standard (no charge)	no standard (no charge)	no standard (no charge)
Year company began selling LISs (any brand or model) Most recent LIS go-live at a client site (based on August 2023 survey deadline) Last product release or update for featured LIS Total No. of contracts for sites operating LIS worldwide No. of sales and installations of LIS between August 2022–July 2023	1982 July 2023 July 2023, version 2018.16 — 40 installations	1993 June 2023 May 2023, version 10 — 27 sales/27 installations	1993 June 2023 May 2023, version 14.230518 — 22 sales/6 installations
Total No. of sites operating LIS in the U.S. (hospitals/independent labs/clinics or group practices/public health labs/other sites) Percentage of high-volume* U.S. sites installed/Low-volume** U.S. sites installed		78 (2/6/47/1/22–universities, drug testing, pain management, COVID) 100%/0	1,796 (253/211/1,130/36/166–correctional facilities, nursing homes, pain management, others) 47%/53%
Foreign locations where company actively markets LIS • Foreign locations where LIS has been sold	Australia, Canada, UK, Ireland, Belgium, Nordic countries, Middle East, Singapore, Caribbean Australia, Canada, Middle East, Singapore, Caribbean,	none	none Canada
Human languages (other than English) supported by LIS	Latin America, EU countries, other countries British-English, German, Spanish, French	none	none
Approximate No. of employees in entire company	160,000+	277	277
Central hardware or service type Programming languages and development applications or environments Operating system(s) Databases and tools/System includes full transaction logging	— Java, Visual Basic, C++, C#, Visual C HP-UX, AIX, VMS Oracle/yes	HP Business Class SQL, Java Windows Server 2012 R2 SP1, 64-bit or later Microsoft SQL/yes	HP Business Class in a client/server environment, SaaS 4th Dimension with portions in C, C++, HTML; others Windows Server 2012 R2 SP1, 64-bit or later 4D/yes
Features/modules incorporated in product:			
Chemistry/Hematology/Bar-coded collection labels Microbiology/Public health microbiology	installed at client sites (all 3 features) installed at client sites/installed at client sites	installed at client sites (all 3 features) installed at client sites/installed at client sites	installed at client sites (all 3 features) installed at client sites/installed at client sites
Blood bank donor/Blood bank transfusion Surgical pathology/Cytology	not available/installed at client sites installed at client sites/installed at client sites	available via Haemonetics/available via Haemonetics available via Orchard Enterprise Pathology (both features)	available via Haemonetics/available via Haemonetics installed at client sites/installed at client sites
Molecular pathology/Cytology Molecular pathology/Cytogenetics/Flow cytometry	installed at client sites/installed at client sites installed at client sites (all 3 features)	available via Orchard Molecular (all 3 features)	installed at client sites (all 3 features)
EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
EHR interface for order entry/EHR interface for results reporting EHR interface for packaging results into PDF format	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites
EHR interface for packaging results into CDA1 format/CDA2 format	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Ad hoc reporting/Rules-based system Management and statistical reporting/Client services or CRM module	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/available via Orchard Outreach	installed at client sites/installed at client sites installed at client sites/installed at client sites
POL link or Web portal to physician offices/Patient Web portal	available via Oracle Health Provider Portal/available via Oracle Health Patient Portal	available via Orchard Outreach/available via Orchard Patient Portal	installed at client sites/available via Orchard Patient Portal
Commercial reference lab functionality/Compliance checking	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Comprehensive billing and accounts receivable or RCM Materials management and inventory/Test partition	installed at client sites not available/installed at client sites	available via PGM Billing installed at client sites	available via PGM Billing installed at client sites/installed at client sites
Remote faxing/Remote printing	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
HIPAA-standard transaction formats Web-based remote inquiry of reports/Web access for order entry	installed at client sites	installed at client sites	installed at client sites
Management and tracking of specimens in lab/Before arriving in lab	avail. via Oracle Health Provider Portal (both features) installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
QA tools/Environmental health Interfaces for sending orders from primary lab to reference lab, handling results	installed at client sites/installed at client sites available via Oracle Health Reference Lab Network	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites
return, and status updates • Business analytics/Clinical analytics	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Ability to schedule patient for test collection/Patient-based test registration	installed at client sites/installed at client sites	—	—
Ability to coordinate with nurses for collections that phlebotomists cannot perform	installed at client sites		available via Orchard Outreach
 Interfaces with public health databases using ELR as part of Promoting Interoperability Results for tests run using different methods show method on clinical reports 	installed at client sites installed at client sites	available via Orchard Outreach installed at client sites	installed at client sites installed at client sites
Barcode symbologies supported by LIS LIS can generate analytics for tests based on specific data elements Ability to use artificial intelligence (e.g., machine-learning software) with LIS	Codabar (NW-7), Code 39, Code 128, DataMatrix yes (based on all data in database) planned for future	Codabar (NW-7), Code 39, Code 128, DataMatrix yes (based on all data in database) planned for future	Codabar (NW-7), Code 39, Code 128, DataMatrix, others yes (based on all data in database) planned for future
LIS can report lab data to public health agencies via automated electronic transmission using specified formats (e.g., HL7 2.5.1, LOINC, SNOMED, etc.) for: • Microbiology (culture and sensitivity)	yes	yes	yes
 Other reportable diseases (e.g., blood lead, immunology, etc.) Tumor diagnosis and case data to regional cancer registry*** 	yes yes	yes yes	yes yes
Other vendors' lab systems to which LIS bidirectionally interfaces in live sites	_	CGM, Meditech, Siemens, Oracle Health, Epic, CPSI,	CGM, Epic, Meditech, Oracle Health, CPSI, Clinisys,
Lab automation systems or workcells to which LIS has a direct interface LIS uses third-party middleware for LIS-instrument interfaces	Beckman Coulter, Siemens, QuidelOrtho, Sysmex, Thermo Scientific, Olympus, Roche, Abbott, Tecan, others no (interface directly)	Clinisys, SCC, Psyche Systems, many others Beckman Coulter, Siemens, QuidelOrtho, Sysmex, Thermo Scientific, Olympus, Roche, Abbott, Tecan, others no (interface directly)	SCC, Psyche Systems, LabSoft, many others Beckman Coulter, Siemens, QuidelOrtho, Sysmex, Thermo Scientific, Olympus, Roche, Abbott, Tecan, others no (interface directly)
LIS supports use of SNOMED CT LIS automatically ingests and applies electronic updates of tables and rules from organizations and government agencies	yes, for all cases yes (LOINC, SNOMED, others)	yes, for all cases no	yes, for all cases no
LIS allows for image capture, display, reporting LIS provides indexed field in each test definition for LOINC code	yes yes (provide LOINC dictionary free of charge with install)	yes yes	yes yes
Company provides LIS clients with positive patient ID software to identify	software to identify patients and blood specimens	no	no
patients and/or blood specimens collected at bedside LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside	integrated in LIS—additional fee Lattice MediCopia, Cardinal Health Care Fusion	Lattice MediCopia	_
Client gets copy of source code/User group that meets on established schedule Qualified users or third parties can modify or augment LIS functions or features Methods by which users can tailor LIS in their own setting	no/yes (in person and via webinar) yes (client users) ad hoc query tools, user-defined interfaces, dictionary settings, workflow configuration, others	escrow/no yes (client users) ad hoc query tools, user-defined interfaces, dictionary settings, read/write privileges, workflow configuration, tailored worklists, rules, user-defined security, others	escrow/no yes (client users) ad hoc query tools, user-defined interfaces, dictionary settings, read/write privileges, workflow configuration, tailored worklists, rules, user-defined security, others
Distinguishing product features (supplied by company) *generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day **generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ***using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable	can be configured in an integrated manner with the EHR or as a standalone offering proven, stable, Millennium architecture supports clients' long-term growth *formerly Cerner Laboratory*	interfacing and integration with instruments, EMR and host systems, departments, reference labs robust rules-based decision support logic and data-mining technology for data analytics formerly Orchard Sequoia	interfacing and integration with instruments, EMR and host systems, departments, reference labs robust rules-based decision support logic and data-mining technology for data analytics

Part 6 of 7		Pathagility Mark McCuin mark@pathagility.com Conway, AR 888-222-2792 www.pathagility.com	Quality Software Systems Lana Kolesnikova info@labhealth.com Spring Valley, NY 845-352-4313 www.labhealth.com	SCC Soft Computer Ellie Vahman ellie@softcomputer.com Clearwater, FL 800-763-8352 www.softcomputer.com
Name of laboratory information system		WorkPath	LabHealth	SoftLab
How LIS functionality is deployed Company provides list of client sites to		remote hosting yes (partial list of comparable sites with no restrictions regarding its use)	remote hosting or local server/software yes (partial list of comparable sites but prospective clients must sign a nondisclosure agreement)	remote hosting or local server/software yes (partial list of comparable sites with no restrictions regarding its use)
Updates covered by standard software • Schedule for providing standard soft • Clients must install updates in specific • Fee for software modifications to cor	ware updates to clients ed timespans to avoid maintenance fee increase	some updates ~ every 2 weeks yes standard (no charge)	some updates variable no optional (extra cost)	all updates 2 releases per year no standard (no charge)
Year company began selling LISs (any Most recent LIS go-live at a client site Last product release or update for feat	(based on August 2023 survey deadline)	 July 2023 August 2023, version 23.31.1	1984 May 2023 May 2023, version 12.1	1985 May 2023 June 2023, version 4.5.8.4
Total No. of contracts for sites operating No. of sales and installations of LIS b Total No. of sites operating LIS in the U group practices/public health labs/ot	LIS worldwide letween August 2022–July 2023 .S. (hospitals/independent labs/clinics or	36 licenses (not tracked by contract) 5 sales/5 installations 36 (0/36/0/0/0)	100 6 sales/6 installations 100 (1/89/10/0/0)	359 26 sales/49 installations 1,079 (848/59/168/4/0)
Foreign locations where company activ • Foreign locations where LIS has been	vely markets LIS	20%/80% none	60%/40% none	60%/40% worldwide Australia, Belgium, Brazil, Canada, France, China,
Human languages (other than English	h) supported by LIS	_	_	Jamaica, Malaysia, Israel, UK, other countries French, Portuguese, Hebrew, Spanish
Approximate No. of employees in entire	, ,,	_	18	2,000
Central hardware or service type	. ,	Amazon Web Services	Dell servers	IBM Power Series (AIX/Unix), Intel x64 (Linux), Oracle
Programming languages and developm Operating system(s)	nent applications or environments	Python, Java agnostic	ASP .Net Windows	Cloud, Amazon Web Services, others C, C++, C#, Java servers: IBM AIX, Red Hat Linux; workstations:
Databases and tools/System includes f	iull transaction logging	SQL/yes	SQL server/yes	Microsoft Windows, Web based Oracle, OAS, Tomcat, ServiceMix, ESB, Golden Gate,
Features/modules incorporated in prod	luct.			Oracle WebLogic/yes
Chemistry/Hematology/Bar-coded co	ollection labels	installed at client sites (all 3 features)	installed at client sites (all 3 features)	installed at client sites (all 3 features)
Microbiology/Public health microbiology		installed at client sites/not available	installed at client sites/installed at client sites	installed at client sites/installed at client sites
 Blood bank donor/Blood bank transfu Surgical pathology/Cytology 	JSION	not available/not available installed at client sites/installed at client sites	in development/in development installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
 Molecular pathology/Cytogenetics/Flo 	ow cytometry	installed at client sites (all 3 features)	installed at client sites (all 3 features)	installed at client sites (all 3 features)
 EHR interface for admission/discharg EHR interface for order entry/EHR int 		installed at client sites installed at client sites/installed at client sites	installed at client sites installed at client sites/installed at client sites	installed at client sites installed at client sites/installed at client sites
EHR interface for packaging results in		installed at client sites	installed at client sites	installed at client sites
EHR interface for packaging results in	nto CDA1 format/CDA2 format	installed at client sites/installed at client sites	installed at client sites/installed at client sites	available but not installed/available but not installed
Ad hoc reporting/Rules-based system Management and attriction reporting		installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
 Management and statistical reporting POL link or Web portal to physician o 		installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
Commercial reference lab functionali	, ,	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Comprehensive billing and accounts Materials management and inventors		not available installed at client sites/installed at client sites	installed at client sites	installed at client sites
 Materials management and inventory Remote faxing/Remote printing 	y lest partition	installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
HIPAA-standard transaction formats		installed at client sites	installed at client sites	installed at client sites
 Web-based remote inquiry of reports Management and tracking of specim 		installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
QA tools/Environmental health	ens in lab/before arriving in lab	installed at client sites/installed at client sites installed at client sites/not available	installed at client sites/installed at client sites installed at client sites/installed at client sites	installed at client sites/installed at client sites installed at client sites/installed at client sites
·	imary lab to reference lab, handling results	installed at client sites	installed at client sites	installed at client sites
return, and status updates • Business analytics/Clinical analytics		installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Ability to schedule patient for test col	llection/Patient-based test registration	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
 Ability to coordinate with nurses for of 	collections that phlebotomists cannot perform	installed at client sites	installed at client sites	installed at client sites
	s using ELR as part of Promoting Interoperability nethods show method on clinical reports	installed at client sites installed at client sites	installed at client sites installed at client sites	installed at client sites installed at client sites
Barcode symbologies supported by LIS	·	Codabar (NW-7), Code 39, Code 128, DataMatrix (LIS also supports QR codes)	Code 39, Code 128 (LIS also supports QR codes)	Codabar (NW-7); Code 39; Code 128, 128A, 128B, 128C; Interleaved 2 of 5 (LIS also supports QR codes)
LIS can generate analytics for tests bas Ability to use artificial intelligence (e.g.		yes (based on all data in database) planned for future	yes (based on all data in database) planned for future	yes (based on all data in database) yes (SCC SoftBl data warehouse allows third-party
LIS can report lab data to public health a using specified formats (e.g., HL7 2.5	gencies via automated electronic transmission			Al/Bl [GoogleAl, etc.] real-time access to LIS data)
Microbiology (culture and sensitivity)		yes	yes	yes
Other reportable diseases (e.g., blood Tumor diagnosis and case data to reg		yes yes	yes yes	yes yes
Other vendors' lab systems to which LI Lab automation systems or workcells t	o which LIS has a direct interface	none (planned for future)	Oracle Health, Veradigm, others Beckman Coulter, Siemens, QuidelOrtho, Bayer, Tecan, Thermo Scientific, Olympus, Roche, Abbott, Sysmex	Epic, Meditech, Clinisys, homegrown, others Beckman Coulter, Siemens, QuidelOrtho, Thermo Scientific, Olympus, Roche, Abbott, Tecan, Bayer, Sysmex
LIS uses third-party middleware for LIS LIS supports use of SNOMED CT	o-instrument interfaces	no (interface directly) yes, for all cases	no (interface directly) yes, for all cases	no (interface directly) ves, for all cases
LIS automatically ingests and applies e from organizations and government LIS allows for image capture, display, r	agencies	planned for future yes	no yes	yes (LOINC, CPT, CAP) yes
LIS provides indexed field in each test		no establishment	yes	yes (provide LOINC dictionary for a fee)
Company provides LIS clients with pos patients and/or blood specimens co • LIS interfaces to third-party positive patients and/or blood specimens co	ollected at bedside patient ID software to identify	planned for future —	software to identify patients integrated in LIS–no additional fee —	software to identify patients and blood specimens integrated in LIS–additional fee —
	roup that meets on established schedule dify or augment LIS functions or features in their own setting	no/no (connect similar clients if beneficial) no (all modifications made by vendor) ad hoc query tools, e-requisition	no/no no (all modifications made by vendor) ad hoc query tools, user-defined interfaces, dictionary settings, workflow configuration, tailored worklists	escrow/yes (in person) yes (client users) ad hoc query tools, dictionary settings
**generate <500,000 billed tests annually, or	>200 bed hospitals, or >500 requisitions per day <200 bed hospitals, or <500 requisitions per day ronic Reporting, vol. V, version 4.0, April 2011 ed.	rapid deployment and ability to provide client- customization features for a wide range of testing cost-effective, high-volume accessioning and multi-channel result distribution	true browser-based LIS with comprehensive lab and billing modules company customizes client Web portal, LIS, billing, and sales portal for each customer	integrated single platform, single database, and patient record across CP, AP, and genetics full NGS automation with complete suite of LIMS modules for all genetics disciplines

LABORATORY INFORMATION	NOVEMBER 2023 I CAP TODAY 55	
Part 7 of 7	Seacoast Laboratory Data Systems Lisa M. Turgeon info@sldsi.com Dover, NH 603-431-4114 www.sldsi.com	XiFin Joseph Nollar jnollar@xifin.com San Diego, CA 858-793-5700 www.xifin.com
Name of laboratory information system	SurroundLab Plus	XiFin LIS
How LIS functionality is deployed Company provides list of client sites to potential customers on request	remote hosting or local server/software yes (partial list of comparable sites but prospective clients must sign a nondisclosure agreement)	remote hosting yes (partial list of comparable sites with no restrictions regarding its use)
Updates covered by standard software maintenance fee	some updates (updates to custom options not covered)	all updates
 Schedule for providing standard software updates to clients Clients must install updates in specified timespans to avoid maintenance fee increase Fee for software modifications to comply with federal regulations and laws 	annually no optional (extra cost)	monthly yes standard (no charge)
Year company began selling LISs (any brand or model) Most recent LIS go-live at a client site (based on August 2023 survey deadline) Last product release or update for featured LIS Total No. of contracts for sites operating LIS worldwide No. of sales and installations of LIS between August 2022—July 2023 Total No. of sites operating LIS in the U.S. (hospitals/independent labs/clinics or group practices/public health labs/other sites) Percentage of high-volume* U.S. sites installed/Low-volume** U.S. sites installed	2000 June 2022 October 2022, version 102022 — 1 installation 75 (0/75/0/0/0) 75%/25%	2004 July 2023 July 2023, version 9.7 82 5 sales/5 installations 94 (0/67/26/0/1–veterinary pathology) 40%/60%
Foreign locations where company actively markets LIS • Foreign locations where LIS has been sold • Human languages (other than English) supported by LIS	none — —	Africa, Asia, Europe UK, Holland, China, Rwanda, Tanzania, Ethiopia, Haiti none
Approximate No. of employees in entire company	25	848
Central hardware or service type	physical or virtual servers, cloud based (Amazon Web Services)	ASP
Programming languages and development applications or environments Operating system(s) Databases and tools/System includes full transaction logging	M-Caché Linux, Windows GT.M/yes	C#, .Net Windows Server 2022 (hosted) Microsoft SQL/yes
Features/modules incorporated in product: • Chemistry/Hematology/Bar-coded collection labels	installed at client sites (all 3 features)	installed at client sites (all 3 features)
Microbiology/Public health microbiology	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Blood bank donor/Blood bank transfusion Surgical pathology/Cytology	-	not available/not available installed at client sites
Molecular pathology/Cytogenetics/Flow cytometry	installed at client sites	installed at client sites (all 3 features)
EHR interface for admission/discharge/transfer (ADT) EHR interface for order entry/EHR interface for results reporting	installed at client sites installed at client sites/installed at client sites	installed at client sites installed at client sites/installed at client sites
EHR interface for packaging results into PDF format EHR interface for packaging results into CDA1 format/CDA2 format	installed at client sites —	installed at client sites installed at client sites
Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites
Management and statistical reporting/Client services or CRM module POL link or Web portal to physician offices/Patient Web portal	installed at client sites/installed at client sites installed at client sites/—	installed at client sites/installed at client sites installed at client sites/avail. via XiFin Patient Portal
Commercial reference lab functionality/Compliance checking Comprehensive billing and accounts receivable or RCM	installed at client sites/installed at client sites available via Seacoast's SurroundLab AR	installed at client sites/installed at client sites available via XiFin RPM
Materials management and inventory/Test partition	—/installed at client sites	installed at client sites/installed at client sites
Remote faxing/Remote printing HIPAA-standard transaction formats	installed at client sites/installed at client sites installed at client sites	installed at client sites/installed at client sites installed at client sites
Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	installed at client sites/installed at client sites
 Management and tracking of specimens in lab/Before arriving in lab QA tools/Environmental health 	installed at client sites/installed at client sites installed at client sites/—	installed at client sites/installed at client sites installed at client sites/not available
 Interfaces for sending orders from primary lab to reference lab, handling results return, and status updates 	installed at client sites	installed at client sites
Business analytics/Clinical analytics	installed at client sites/installed at client sites	available via XiFin Business Intelligence/installed
Ability to schedule patient for test collection/Patient-based test registration	installed at client sites/installed at client sites	at client sites not available/available via XiFin Patient Portal
 Ability to coordinate with nurses for collections that phlebotomists cannot perform Interfaces with public health databases using ELR as part of Promoting Interoperability 	installed at client sites installed at client sites	not available installed at client sites
Results for tests run using different methods show method on clinical reports	installed at client sites	installed at client sites
Barcode symbologies supported by LIS LIS can generate analytics for tests based on specific data elements Ability to use artificial intelligence (e.g., machine-learning software) with LIS	Code 39, Code 128 (LIS also supports QR codes) yes (based on all data in database) no	Code 39, Code 128, DataMatrix yes (based on all data in database) yes (XiFin Business Intelligence supports Al analytics)
LIS can report lab data to public health agencies via automated electronic transmission using specified formats (e.g., HL7 2.5.1, LOINC, SNOMED, etc.) for:		
Microbiology (culture and sensitivity)	yes	yes
 Other reportable diseases (e.g., blood lead, immunology, etc.) Tumor diagnosis and case data to regional cancer registry*** 	yes no	yes yes
Other vendors' lab systems to which LIS bidirectionally interfaces in live sites	Psyche Systems, Clinisys, CGM, Orchard Software, others	Oracle Health, Clinisys, LabVantage, Illumina, custom
Lab automation systems or workcells to which LIS has a direct interface	Beckman, Siemens, Sysmex, Thermo Scientific, Olympus, Roche, Abbott, Bayer, Tecan, Sarstedt	Beckman Coulter, Siemens, Sysmex, Thermo Scientific, Olympus America, Roche, Tecan
LIS uses third-party middleware for LIS—instrument interfaces LIS supports use of SNOMED CT	combination of direct interfaces and third-party middleware (Data Innovations, CentraLink, others) for some types of cases (microbiology)	combination of direct interfaces and third-party middleware (Data Innovations) yes, for all cases
LIS automatically ingests and applies electronic updates of tables and rules from organizations and government agencies LIS allows for image capture, display, reporting	yes (LOINC, ICD-10, SNOMED) yes	yes, for an cases yes (CPT, ICD codes) yes
LIS provides indexed field in each test definition for LOINC code	yes	yes
Company provides LIS clients with positive patient ID software to identify patients and/or blood specimens collected at bedside LIS interfaces to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside	no 	no
Client gets copy of source code/User group that meets on established schedule Qualified users or third parties can modify or augment LIS functions or features Methods by which users can tailor LIS in their own setting	no/no no (all modifications made by vendor) ad hoc query tools, user-defined interfaces, dictionary settings, tailored worklists	escrow/yes (via webinar) yes (client users) ad hoc query tools, user-defined interfaces, dictionary settings, read/write privileges, workflow configuration, tailored worklists, data-entry screens, others
Distinguishing product features (supplied by company) *nenerate >500 000 billed tests annually or >200 hed hospitals or >500 requisitions per day	 commercial lab centric; scalable; fully customizable; superior customer support 	 configurable workflows and scalability for CP, AP, molecular, and NGS

customizable; superior customer support

orders, toxicology

optional modules for microbiology, QC, standing

report for clinicians

• creates comprehensive reports; ability to

combine multiple test results into a single

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

***using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed.

Note: a dash as an answer means company did not respond or question is not applicable